

Module 2 Cellular Regulation

The Concept of Cellular Regulation

1) The nurse is teaching a class to prospective parents about the role that deoxyribonucleic acid (DNA) plays in the development of the human fetus. Which statement made by the parents indicates understanding of the teaching?

- A) "DNA molecules are made up of genes."
- B) "DNA is used to form ribosomes."
- C) "DNA is outside the nucleus of the cell."
- D) "DNA is attached to the endoplasmic reticulum."

Answer: A

Explanation: A) DNA is contained in the nucleus, and it contains all the instructions, or genes, needed to determine an individual's inherited characteristics and produce every protein needed by the body. RNA, not DNA, is used to form ribosomes, and ribosomes are found on the endoplasmic reticulum.

B) DNA is contained in the nucleus, and it contains all the instructions, or genes, needed to determine an individual's inherited characteristics and produce every protein needed by the body. RNA, not DNA, is used to form ribosomes, and ribosomes are found on the endoplasmic reticulum.

C) DNA is contained in the nucleus, and it contains all the instructions, or genes, needed to determine an individual's inherited characteristics and produce every protein needed by the body. RNA, not DNA, is used to form ribosomes, and ribosomes are found on the endoplasmic reticulum.

D) DNA is contained in the nucleus, and it contains all the instructions, or genes, needed to determine an individual's inherited characteristics and produce every protein needed by the body. RNA, not DNA, is used to form ribosomes, and ribosomes are found on the endoplasmic reticulum.

Page Ref: 32

Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.1. Analyze the physiology of cellular regulation in the body.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

2) A nurse educator is explaining the term hyperplasia to a group of nursing students. Which statement, made by a nursing student, indicates an understanding of why hyperplasia occurs with myocardial infarction?

- A) "Heart muscle cells experience hyperplasia with the prolonged need for oxygen."
- B) "Heart muscle cells are hyperplastic in response to muscle damage."
- C) "Heart muscle cells are hyperplastic when they have lost fluid."
- D) "Heart muscle cells experience hyperplasia when they respond to decreased metabolic demands."

Answer: A

Explanation: A) Hyperplasia is an increase in density or number of normal cells in response to stress—in this case, the increased demand for oxygen. Cells that lose fluid will shrink in size. Muscle damage occurs because of inadequate nutrition, not because of hyperplasia. Heart muscle cells may become hyperplastic because of increased metabolic demands, not decreased metabolic demands.

B) Hyperplasia is an increase in density or number of normal cells in response to stress—in this case, the increased demand for oxygen. Cells that lose fluid will shrink in size. Muscle damage occurs because of inadequate nutrition, not because of hyperplasia. Heart muscle cells may become hyperplastic because of increased metabolic demands, not decreased metabolic demands.

C) Hyperplasia is an increase in density or number of normal cells in response to stress—in this case, the increased demand for oxygen. Cells that lose fluid will shrink in size. Muscle damage occurs because of inadequate nutrition, not because of hyperplasia. Heart muscle cells may become hyperplastic because of increased metabolic demands, not decreased metabolic demands.

D) Hyperplasia is an increase in density or number of normal cells in response to stress—in this case, the increased demand for oxygen. Cells that lose fluid will shrink in size. Muscle damage occurs because of inadequate nutrition, not because of hyperplasia. Heart muscle cells may become hyperplastic because of increased metabolic demands, not decreased metabolic demands.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: VIII.3. Promote the image of nursing by modeling the values and articulating the knowledge, skills, and attitudes of the nursing profession. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Evaluation

Learning Outcome: 3.2. Differentiate alterations in cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

3) The nurse is preparing to perform a health assessment on an adult client who has a family history of cancer. Which questions should the nurse ask the client to assess for the early warning signs of cancer? Select all that apply.

A) "Do you have a cough that is associated with seasonal allergies?"

B) "Have you noticed a change in your appetite?"

C) "Have you noticed any cuts that have not healed?"

D) "Have you had any changes in bowel or bladder habits?"

E) "Have you experienced any problems swallowing?"

Answer: C, D, E

Explanation: A) Nurses should assess all clients, especially those with a history of cancer, for early warning signs of cancer. The early warning signs include change in bowel or bladder habits, a sore that does not heal, unusual bleeding or discharge, thickening or lump in the breast or elsewhere, indigestion or difficulty swallowing, obvious change in wart or mole, or a nagging cough or hoarseness. Changes in appetite or cough that is associated with seasonal allergies are not associated with the early warning signs of cancer.

B) Nurses should assess all clients, especially those with a history of cancer, for early warning signs of cancer. The early warning signs include change in bowel or bladder habits, a sore that does not heal, unusual bleeding or discharge, thickening or lump in the breast or elsewhere, indigestion or difficulty swallowing, obvious change in wart or mole, or a nagging cough or hoarseness. Changes in appetite or cough that is associated with seasonal allergies are not associated with the early warning signs of cancer.

C) Nurses should assess all clients, especially those with a history of cancer, for early warning signs of cancer. The early warning signs include change in bowel or bladder habits, a sore that does not heal, unusual bleeding or discharge, thickening or lump in the breast or elsewhere, indigestion or difficulty swallowing, obvious change in wart or mole, or a nagging cough or hoarseness. Changes in appetite or cough that is associated with seasonal allergies are not associated with the early warning signs of cancer.

D) Nurses should assess all clients, especially those with a history of cancer, for early warning signs of cancer. The early warning signs include change in bowel or bladder habits, a sore that does not heal, unusual bleeding or discharge, thickening or lump in the breast or elsewhere, indigestion or difficulty swallowing, obvious change in wart or mole, or a nagging cough or hoarseness. Changes in appetite or cough that is associated with seasonal allergies are not associated with the early warning signs of cancer.

E) Nurses should assess all clients, especially those with a history of cancer, for early warning signs of cancer. The early warning signs include change in bowel or bladder habits, a sore that does not heal, unusual bleeding or discharge, thickening or lump in the breast or elsewhere, indigestion or difficulty swallowing, obvious change in wart or mole, or a nagging cough or hoarseness. Changes in appetite or cough that is associated with seasonal allergies are not associated with the early warning signs of cancer.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.5. Differentiate common assessment procedures and tests used to examine cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

4) The nurse is caring for a client who is diagnosed with cancer. Which diagnostic tests may be helpful to assist with treatment options? Select all that apply.

- A) Tumor markers
- B) Urinalysis
- C) Physical assessment
- D) MRI
- E) Stool analysis

Answer: A, B, D

Explanation: A) Many diagnostic tests are helpful in determining treatment for cancer. An MRI, urinalysis, and tumor markers are all diagnostic tests that may be used to determine treatment for cancer. A stool analysis is not a diagnostic test listed to determine treatment for cancer. A physical assessment may be useful to determine how a client is responding to treatment, but it is not considered a diagnostic test.

B) Many diagnostic tests are helpful in determining treatment for cancer. An MRI, urinalysis, and tumor markers are all diagnostic tests that may be used to determine treatment for cancer. A stool analysis is not a diagnostic test listed to determine treatment for cancer. A physical assessment may be useful to determine how a client is responding to treatment, but it is not considered a diagnostic test.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Planning

Learning Outcome: 2.5. Differentiate common assessment procedures and tests used to examine cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

5) The nurse instructs a group of community members about ways to reduce the development of cancer. Which participant statements indicate that teaching has been effective? Select all that apply.

A) "I should eat at least two servings of fruits or vegetables each day."

B) "Sunscreen should be applied before spending time outdoors."

C) "I need to cut down on my smoking."

D) "I need to get my home tested for radon."

E) "I need to minimize my child's exposure to secondhand smoke."

Answer: B, D, E

Explanation: A) Efforts to reduce the development of cancer include eating five servings of fruits and vegetables each day. Sunscreen should be used by those who spend time outside regularly for work or recreation. All smoking should be discouraged. The home should be tested for radon, which is a known cancer-causing substance. Children should be protected from exposure to tobacco smoke.

B) Efforts to reduce the development of cancer include eating five servings of fruits and vegetables each day. Sunscreen should be used by those who spend time outside regularly for work or recreation. All smoking should be discouraged. The home should be tested for radon, which is a known cancer-causing substance. Children should be protected from exposure to tobacco smoke.

C) Efforts to reduce the development of cancer include eating five servings of fruits and vegetables each day. Sunscreen should be used by those who spend time outside regularly for work or recreation. All smoking should be discouraged. The home should be tested for radon, which is a known cancer-causing substance. Children should be protected from exposure to tobacco smoke.

D) Efforts to reduce the development of cancer include eating five servings of fruits and vegetables each day. Sunscreen should be used by those who spend time outside regularly for work or recreation. All smoking should be discouraged. The home should be tested for radon, which is a known cancer-causing substance. Children should be protected from exposure to tobacco smoke.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.4. Explain the promotion of healthy cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

6) The nurse is caring for a client with leukemia. Which treatment should the nurse expect to be prescribed for this client?

- A) Diuretic therapy
- B) Chemotherapy
- C) Electrolyte replacement therapy
- D) IV fluid therapy

Answer: B

Explanation: A) The client with an alteration in cell growth has cancer and will most likely be treated with chemotherapy and antibiotics. Diuretic therapy, IV fluids, and electrolyte replacement are not typically used to treat cancer, although they may be used if complications develop.

B) The client with an alteration in cell growth has cancer and will most likely be treated with chemotherapy and antibiotics. Diuretic therapy, IV fluids, and electrolyte replacement are not typically used to treat cancer, although they may be used if complications develop.

C) The client with an alteration in cell growth has cancer and will most likely be treated with chemotherapy and antibiotics. Diuretic therapy, IV fluids, and electrolyte replacement are not typically used to treat cancer, although they may be used if complications develop.

D) The client with an alteration in cell growth has cancer and will most likely be treated with chemotherapy and antibiotics. Diuretic therapy, IV fluids, and electrolyte replacement are not typically used to treat cancer, although they may be used if complications develop.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: III.A.6. Describe how the strength and relevance of available evidence influences the choice of interventions in provision of patient-centered care. | AACN

Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Planning

Learning Outcome: 2.7. Summarize collaborative therapies used by interdisciplinary teams for clients with alterations in cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

7) The nurse is caring for an adolescent client with a strong family history of breast cancer. What should the nurse instruct the client regarding cancer prevention? Select all that apply.

- A) Encourage the client to learn more about the disease.
- B) Talk to family members who have the disease.
- C) Perform monthly breast self-examination.
- D) Teach the side effects of cancer treatment.
- E) Discuss cancer fears with the healthcare provider.

Answer: A, C

Explanation: A) When there is a familial history of cancer, the family should be encouraged to learn more about the cancer. Talking to family members who have the disease will not help with early detection or prevention. In families with a history of breast cancer, the nurse should inform clients about breast self-examination. Teaching the side effects of cancer treatment would be appropriate if the client was diagnosed with breast cancer. The client can discuss cancer fears with the nurse; however, this action will not help prevent the development of the disease.

B) When there is a familial history of cancer, the family should be encouraged to learn more about the cancer. Talking to family members who have the disease will not help with early detection or prevention. In families with a history of breast cancer, the nurse should inform clients about breast self-examination. Teaching the side effects of cancer treatment would be appropriate if the client was diagnosed with breast cancer. The client can discuss cancer fears with the nurse; however, this action will not help prevent the development of the disease.

C) When there is a familial history of cancer, the family should be encouraged to learn more about the cancer. Talking to family members who have the disease will not help with early detection or prevention. In families with a history of breast cancer, the nurse should inform clients about breast self-examination. Teaching the side effects of cancer treatment would be appropriate if the client was diagnosed with breast cancer. The client can discuss cancer fears with the nurse; however, this action will not help prevent the development of the disease.

D) When there is a familial history of cancer, the family should be encouraged to learn more about the cancer. Talking to family members who have the disease will not help with early detection or prevention. In families with a history of breast cancer, the nurse should inform clients about breast self-examination. Teaching the side effects of cancer treatment would be appropriate if the client was diagnosed with breast cancer. The client can discuss cancer fears with the nurse; however, this action will not help prevent the development of the disease.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.4. Explain the promotion of healthy cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

8) A client with anemia is prescribed synthetic erythropoietin. When teaching the client about the therapeutic effect of this treatment, which is appropriate for the nurse to include?

- A) Increase in platelets
- B) Increase in red blood cells
- C) Decrease in white blood cells
- D) Decrease in lymph fluid

Answer: B

Explanation: A) Erythropoietin is a hormone produced in the body to stimulate production of red blood cells; synthetic forms are available for administration to cancer clients or others with significantly low red blood cell counts. Erythropoietin will not stimulate or decrease the production of platelets, white blood cells, or lymph fluid.

B) Erythropoietin is a hormone produced in the body to stimulate production of red blood cells; synthetic forms are available for administration to cancer clients or others with significantly low red blood cell counts. Erythropoietin will not stimulate or decrease the production of platelets, white blood cells, or lymph fluid.

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D) Erythropoietin is a hormone produced in the body to stimulate production of red blood cells; synthetic forms are available for administration to cancer clients or others with significantly low red blood cell counts. Erythropoietin will not stimulate or decrease the production of platelets, white blood cells, or lymph fluid.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.7. Summarize collaborative therapies used by interdisciplinary teams for clients with alterations in cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

- 9) The nurse educator is teaching a group of student nurses regarding human growth and development. Which statement by the student nurse indicates that teaching has been effective?
- A) "The zygote undergoes differentiation to form a multicellular embryo, which becomes a fetus and then an infant."
 - B) "Meiosis occurs only in the sex cells of the testes and ovaries."
 - C) "Mitosis reduces the amount of genetic material by half."
 - D) "When the two sex cells combine during fertilization, a total of 50 chromosomes are present in the offspring's cells."

Answer: B

Explanation: A) The zygote undergoes mitosis to form a multicellular embryo, which becomes a fetus and then an infant. Meiosis, which reduces the amount of genetic material by half, occurs only in the sex cells of the testes and ovaries. When the two sex cells combine during fertilization, the total number of chromosomes present in the offspring's cells is 46, not 50.

B) The zygote undergoes mitosis to form a multicellular embryo, which becomes a fetus and then an infant. Meiosis, which reduces the amount of genetic material by half, occurs only in the sex cells of the testes and ovaries. When the two sex cells combine during fertilization, the total number of chromosomes present in the offspring's cells is 46, not 50.

C) The zygote undergoes mitosis to form a multicellular embryo, which becomes a fetus and then an infant. Meiosis, which reduces the amount of genetic material by half, occurs only in the sex cells of the testes and ovaries. When the two sex cells combine during fertilization, the total number of chromosomes present in the offspring's cells is 46, not 50.

D) The zygote undergoes mitosis to form a multicellular embryo, which becomes a fetus and then an infant. Meiosis, which reduces the amount of genetic material by half, occurs only in the sex cells of the testes and ovaries. When the two sex cells combine during fertilization, the total number of chromosomes present in the offspring's cells is 46, not 50.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: VIII.3. Promote the image of nursing by modeling the values and articulating the knowledge, skills, and attitudes of the nursing profession. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Evaluation

Learning Outcome: 2.1. Analyze the physiology of cellular regulation in the body.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

10) A nurse educator is teaching student nurses about methods of cellular transport. When instructing on passive transportation, which process will the nurse include in the teaching plan?

- A) Endocytosis
- B) Facilitated diffusion
- C) Exocytosis
- D) Phagocytosis

Answer: B

Explanation: A) Passive cellular transportation does not require energy and includes facilitated diffusion, diffusion, osmosis, and filtration. Active cellular transportation requires energy and includes active transport pumps, endocytosis, phagocytosis, pinocytosis, and exocytosis.

B) Passive cellular transportation does not require energy and includes facilitated diffusion, diffusion, osmosis, and filtration. Active cellular transportation requires energy and includes active transport pumps, endocytosis, phagocytosis, pinocytosis, and exocytosis.

C) Passive cellular transportation does not require energy and includes facilitated diffusion, diffusion, osmosis, and filtration. Active cellular transportation requires energy and includes active transport pumps, endocytosis, phagocytosis, pinocytosis, and exocytosis.

D) Passive cellular transportation does not require energy and includes facilitated diffusion, diffusion, osmosis, and filtration. Active cellular transportation requires energy and includes active transport pumps, endocytosis, phagocytosis, pinocytosis, and exocytosis.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.1. Analyze the physiology of cellular regulation in the body.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

11) A nurse is caring for a client with cancer. The nurse teaches the client about which potentially undesirable cellular alterations that can occur during the cell cycle? Select all that apply.

- A) Hyperplasia
- B) Differentiation
- C) Anaplasia
- D) Dysphagia
- E) Adaptation

Answer: A, C

Explanation: A) Potentially undesirable cellular alterations that can occur during the cell cycle include hyperplasia and anaplasia. Hyperplasia is an increase in the number or density of normal cells, while anaplasia is the regression of a cell to an immature or undifferentiated cell type. Differentiation is a normal process occurring over many cell cycles that allows cells to specialize in certain tasks. Dysphagia and adaptation are not a part of the cell cycle.

B) Potentially undesirable cellular alterations that can occur during the cell cycle include hyperplasia and anaplasia. Hyperplasia is an increase in the number or density of normal cells, while anaplasia is the regression of a cell to an immature or undifferentiated cell type. Differentiation is a normal process occurring over many cell cycles that allows cells to specialize in certain tasks. Dysphagia and adaptation are not a part of the cell cycle.

C) Potentially undesirable cellular alterations that can occur during the cell cycle include hyperplasia and anaplasia. Hyperplasia is an increase in the number or density of normal cells, while anaplasia is the regression of a cell to an immature or undifferentiated cell type. Differentiation is a normal process occurring over many cell cycles that allows cells to specialize in certain tasks. Dysphagia and adaptation are not a part of the cell cycle.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.2. Differentiate alterations in cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

12) The nurse is caring for a client with sickle cell anemia. The nurse teaches the client that the inherited alteration of which type of hemoglobin causes the abnormal shape to the red blood cell?

- A) Hgb A
- B) Hgb S
- C) Hgb B
- D) Hgb E

Answer: B

Explanation: A) The inherited alteration of Hgb S causes the abnormal sickle-shaped red blood cell in sickle cell anemia.

B) The inherited alteration of Hgb S causes the abnormal sickle-shaped red blood cell in sickle cell anemia.

C) The inherited alteration of Hgb S causes the abnormal sickle-shaped red blood cell in sickle cell anemia.

D) The inherited alteration of Hgb S causes the abnormal sickle-shaped red blood cell in sickle cell anemia.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.2. Differentiate alterations in cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

13) What independent nursing intervention is important for the nurse to implement for clients who have alterations in cellular regulation?

- A) Administer pain and other medications
- B) Help the client identify support systems
- C) Design a diet that provides proper nutrition
- D) Suggest contacting the nurse's spiritual leader

Answer: B

Explanation: A) Clients who are diagnosed with an alteration in cellular regulation will experience many different emotions, and they will need a proper support system to help them cope with the diagnosis and provide care when needed. The nurse can help the client identify a support system of friends, family, and support groups. Administering medications is a collaborative intervention. Nurses should refer clients to a dietitian for a diet plan. The nurse should facilitate contact with the client's spiritual leader if desired, not the nurse's spiritual leader.

B) Clients who are diagnosed with an alteration in cellular regulation will experience many different emotions, and they will need a proper support system to help them cope with the diagnosis and provide care when needed. The nurse can help the client identify a support system of friends, family, and support groups. Administering medications is a collaborative intervention. Nurses should refer clients to a dietitian for a diet plan. The nurse should facilitate contact with the client's spiritual leader if desired, not the nurse's spiritual leader.

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Cognitive Level: Remembering

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.6. Analyze independent interventions nurses can implement for clients with alterations in cellular regulation.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

14) The nurse is caring for a toddler who is undergoing treatment for sickle cell crisis. The parents ask the nurse, "Our child has been potty trained for 2 years, but suddenly he's wetting the bed again. What do we do?" How should the nurse respond?

A) "He is likely rebelling because he doesn't like the treatments. You may need to discipline him."

B) "Bedwetting is often a sign of urinary tract infection. I will have the provider check for that."

C) "Toddlers often regress in behaviors when they are sick. Just be patient with him."

D) "Nocturnal enuresis is a side effect of his medications. Once he's done with his treatment, he will stop wetting the bed."

Answer: C

Explanation: A) A toddler who has been potty trained will often regress in behaviors and begin wetting the bed when faced with a stressful illness. It is important for the parents to understand that this is common and that the child will likely return to previous behaviors once the health crisis is past. Bedwetting is not usually a sign of rebellion. It may be a sign of a urinary tract infection or a side effect of medications, but without additional signs or symptoms, these explanations are less likely to be true.

B) A toddler who has been potty trained will often regress in behaviors and begin wetting the bed when faced with a stressful illness. It is important for the parents to understand that this is common and that the child will likely return to previous behaviors once the health crisis is past. Bedwetting is not usually a sign of rebellion. It may be a sign of a urinary tract infection or a side effect of medications, but without additional signs or symptoms, these explanations are less likely to be true.

C) A toddler who has been potty trained will often regress in behaviors and begin wetting the bed when faced with a stressful illness. It is important for the parents to understand that this is common and that the child will likely return to previous behaviors once the health crisis is past. Bedwetting is not usually a sign of rebellion. It may be a sign of a urinary tract infection or a side effect of medications, but without additional signs or symptoms, these explanations are less likely to be true.

D) A toddler who has been potty trained will often regress in behaviors and begin wetting the bed when faced with a stressful illness. It is important for the parents to understand that this is common and that the child will likely return to previous behaviors once the health crisis is past. Bedwetting is not usually a sign of rebellion. It may be a sign of a urinary tract infection or a side effect of medications, but without additional signs or symptoms, these explanations are less likely to be true.

Page Ref: 44

Cognitive Level: Applying

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.8. Differentiate considerations related to the care of clients with alterations in cellular regulation throughout the lifespan.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

15) The nurse is caring for a pregnant woman with a cellular regulation disorder. The nurse understands that the woman is at higher risk for certain serious complications of pregnancy, so the nurse is planning a client teaching session related to signs and symptoms of these complications. Which condition should the nurse include in her teaching?

- A) Gestational diabetes
- B) Placenta previa
- C) Urinary tract infection
- D) Preeclampsia

Answer: D

Explanation: A) Women with cellular regulation disorders are at higher risk for preeclampsia and eclampsia during pregnancy. They may also be at risk for other complications of pregnancy, but the specific risks will depend on the woman's underlying condition. Urinary tract infection is not a serious complication. Gestational diabetes and placenta previa are not specifically related to cellular regulation disorders.

B) Women with cellular regulation disorders are at higher risk for preeclampsia and eclampsia during pregnancy. They may also be at risk for other complications of pregnancy, but the specific risks will depend on the woman's underlying condition. Urinary tract infection is not a serious complication. Gestational diabetes and placenta previa are not specifically related to cellular regulation disorders.

C) Women with cellular regulation disorders are at higher risk for preeclampsia and eclampsia during pregnancy. They may also be at risk for other complications of pregnancy, but the specific risks will depend on the woman's underlying condition. Urinary tract infection is not a serious complication. Gestational diabetes and placenta previa are not specifically related to cellular regulation disorders.

D) Women with cellular regulation disorders are at higher risk for preeclampsia and eclampsia during pregnancy. They may also be at risk for other complications of pregnancy, but the specific risks will depend on the woman's underlying condition. Urinary tract infection is not a serious complication. Gestational diabetes and placenta previa are not specifically related to cellular regulation disorders.

Page Ref: 44

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.7

Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. |

NLN Competencies: Relationship Centered Care: Factors that contribute to or threaten health. |

Nursing Process: Implementation

Learning Outcome: 2.8. Differentiate considerations related to the care of clients with alterations in cellular regulation throughout the lifespan.

MNL LO: Analyze the concept of cellular regulation and its application to nursing care.

Exemplar 2.A Cancer

1) During a treatment meeting on an oncology unit, the nurse learns that a client is scheduled for chemotherapy before and after surgery. What are the purposes for this client to receive chemotherapy at these specific times? Select all that apply.

- A) Eradicate all cancer cells.
- B) Shrink the tumor.
- C) Kill remaining cancer cells.
- D) Allow the immune system to kill cancer cells.
- E) Improve wound healing.

Answer: B, C

Explanation: A) It is impossible to eradicate all cancer cells with chemotherapy. Chemotherapy before surgery is used to shrink the tumor. Chemotherapy is used after surgery to kill remaining cancer cells. The use of chemotherapy before and after surgery will not allow the immune system to kill the cancer cells. Chemotherapy is not used to improve wound healing.

B) It is impossible to eradicate all cancer cells with chemotherapy. Chemotherapy before surgery is used to shrink the tumor. Chemotherapy is used after surgery to kill remaining cancer cells. The use of chemotherapy before and after surgery will not allow the immune system to kill the cancer cells. Chemotherapy is not used to improve wound healing.

C) It is impossible to eradicate all cancer cells with chemotherapy. Chemotherapy before surgery is used to shrink the tumor. Chemotherapy is used after surgery to kill remaining cancer cells. The use of chemotherapy before and after surgery will not allow the immune system to kill the cancer cells. Chemotherapy is not used to improve wound healing.

D) It is impossible to eradicate all cancer cells with chemotherapy. Chemotherapy before surgery is used to shrink the tumor. Chemotherapy is used after surgery to kill remaining cancer cells. The use of chemotherapy before and after surgery will not allow the immune system to kill the cancer cells. Chemotherapy is not used to improve wound healing.

E) It is impossible to eradicate all cancer cells with chemotherapy. Chemotherapy before surgery is used to shrink the tumor. Chemotherapy is used after surgery to kill remaining cancer cells. The use of chemotherapy before and after surgery will not allow the immune system to kill the cancer cells. Chemotherapy is not used to improve wound healing.

Page Ref: 59

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Planning

Learning Outcome: 2.A.5. Analyze cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

2) The nurse has completed a seminar teaching a group in the community about ways to reduce cancer risks. The nurse returns a month later to evaluate the effectiveness of the seminar. Which statements made by members of the group indicate retention and application of the material presented by the nurse to reduce the risk of developing cancer? Select all that apply.

- A) "I started using sunscreen when I work outside."
- B) "I began drinking two glasses of red wine a day with dinner."
- C) "I have reduced my intake of fiber."
- D) "I have increased the amount of fried fish in my diet."
- E) "I am trying to quit smoking."

Answer: A, E

Explanation: A) Sun exposure increases the risk of skin cancer, so using sunscreen when outdoors would indicate understanding. Smoking increasing the risk of lung and other types of cancer, so trying to quit smoking would indicate understanding. Increasing the amount of fried fish and drinking two glasses of red wine daily are not actions that reduce cancer risk. Increased fiber intake reduces the risk of colon cancer.

B) Sun exposure increases the risk of skin cancer, so using sunscreen when outdoors would indicate understanding. Smoking increasing the risk of lung and other types of cancer, so trying to quit smoking would indicate understanding. Increasing the amount of fried fish and drinking two glasses of red wine daily are not actions that reduce cancer risk. Increased fiber intake reduces the risk of colon cancer.

C) Sun exposure increases the risk of skin cancer, so using sunscreen when outdoors would indicate understanding. Smoking increasing the risk of lung and other types of cancer, so trying to quit smoking would indicate understanding. Increasing the amount of fried fish and drinking two glasses of red wine daily are not actions that reduce cancer risk. Increased fiber intake reduces the risk of colon cancer.

D) Sun exposure increases the risk of skin cancer, so using sunscreen when outdoors would indicate understanding. Smoking increasing the risk of lung and other types of cancer, so trying to quit smoking would indicate understanding. Increasing the amount of fried fish and drinking two glasses of red wine daily are not actions that reduce cancer risk. Increased fiber intake reduces the risk of colon cancer.

E) Sun exposure increases the risk of skin cancer, so using sunscreen when outdoors would indicate understanding. Smoking increasing the risk of lung and other types of cancer, so trying to quit smoking would indicate understanding. Increasing the amount of fried fish and drinking two glasses of red wine daily are not actions that reduce cancer risk. Increased fiber intake reduces the risk of colon cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.A.3. Analyze cancer as it relates to cellular regulation. Compare the risk factors for and prevention of cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

3) The nurse is preparing a seminar that discusses the risk and incidence of cancer and culture. What information is considered culturally correct when teaching about the risk of developing cancer?

- A) African Americans are more likely to develop cancer than any other ethnic group.
- B) Native Americans have the highest incidence of prostate cancer.
- C) The incidence and mortality rate of all types of cancers are lowest in the Caucasian population.
- D) The Hispanic population has the lowest mortality rate of any racial or ethnic group.

Answer: A

Explanation: A) African American clients are more likely to develop cancer than any other ethnic group. There is no specific information about the Hispanic population. The incidence and mortality rate for cancer are lower in Native American men and women than in any other ethnic or racial group, and Native Americans and Asians have the lowest incidence of prostate cancer. Mortality rates for cancer are the lowest among the Asian/Pacific Islander population.

B) African American clients are more likely to develop cancer than any other ethnic group. There is no specific information about the Hispanic population. The incidence and mortality rate for cancer are lower in Native American men and women than in any other ethnic or racial group, and Native Americans and Asians have the lowest incidence of prostate cancer. Mortality rates for cancer are the lowest among the Asian/Pacific Islander population.

C) African American clients are more likely to develop cancer than any other ethnic group. There is no specific information about the Hispanic population. The incidence and mortality rate for cancer are lower in Native American men and women than in any other ethnic or racial group, and Native Americans and Asians have the lowest incidence of prostate cancer. Mortality rates for cancer are the lowest among the Asian/Pacific Islander population.

D) African American clients are more likely to develop cancer than any other ethnic group. There is no specific information about the Hispanic population. The incidence and mortality rate for cancer are lower in Native American men and women than in any other ethnic or racial group, and Native Americans and Asians have the lowest incidence of prostate cancer. Mortality rates for cancer are the lowest among the Asian/Pacific Islander population.

Page Ref: 46

Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.A.3. Analyze cancer as it relates to cellular regulation. Compare the risk factors for and prevention of cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

4) A preschool-age child is seen in a pediatric oncology clinic. The nurse assigned to care for the client anticipates a diagnosis of cancer. Which reactions are considered common for the preschool-age child to experience with illnesses and hospitalizations? Select all that apply.

A) Unawareness of the illness and its severity

B) Understanding of what cancer is and how it is treated

C) Thoughts that they caused their illness and are being punished

D) Confusion as to why a parent is unable to make the illness go away

E) Acceptance, especially if able to discuss the disease with children their own age

Answer: C, D

Explanation: A) Preschoolers are beginning to understand illness. However, they may think they caused their illness and may be confused about why the parent cannot make the illness go away. Immediate acceptance will not occur with children of any age. Adolescents find contact with others who have gone through their experience helpful. School-age children can understand a diagnosis of cancer. Infants and toddlers are unaware of the severity of the disease.

B) Preschoolers are beginning to understand illness. However, they may think they caused their illness and may be confused about why the parent cannot make the illness go away. Immediate acceptance will not occur with children of any age. Adolescents find contact with others who have gone through their experience helpful. School-age children can understand a diagnosis of cancer. Infants and toddlers are unaware of the severity of the disease.

C) Preschoolers are beginning to understand illness. However, they may think they caused their illness and may be confused about why the parent cannot make the illness go away. Immediate acceptance will not occur with children of any age. Adolescents find contact with others who have gone through their experience helpful. School-age children can understand a diagnosis of cancer. Infants and toddlers are unaware of the severity of the disease.

D) Preschoolers are beginning to understand illness. However, they may think they caused their illness and may be confused about why the parent cannot make the illness go away. Immediate acceptance will not occur with children of any age. Adolescents find contact with others who have gone through their experience helpful. School-age children can understand a diagnosis of cancer. Infants and toddlers are unaware of the severity of the disease.

E) Preschoolers are beginning to understand illness. However, they may think they caused their illness and may be confused about why the parent cannot make the illness go away. Immediate acceptance will not occur with children of any age. Adolescents find contact with others who have gone through their experience helpful. School-age children can understand a diagnosis of cancer. Infants and toddlers are unaware of the severity of the disease.

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Cognitive Level: Analyzing

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.A.6. Analyze cancer as it relates to cellular regulation. Differentiate considerations for care of clients with cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

5) A client being treated for cancer has a tumor designation of Stage IV, T4, N3, M1. What does this staging indicate to the nurse?

- A) The tumor will respond to chemotherapy.
- B) The tumor is small in size.
- C) The tumor has metastasized with lymph node involvement.
- D) There is one single tumor to treat.

Answer: C

Explanation: A) T refers to the depth of invasion. N refers to the absence or presence and extent of lymph node involvement. M refers to presence of metastasis. The numbers range from 0 to 4, with higher numbers indicating increased size and metastasis. Stage IV indicates metastasis. The staging system is not used to determine tumor response to chemotherapy.

B) T refers to the depth of invasion. N refers to the absence or presence and extent of lymph node involvement. M refers to presence of metastasis. The numbers range from 0 to 4, with higher numbers indicating increased size and metastasis. Stage IV indicates metastasis. The staging system is not used to determine tumor response to chemotherapy.

C) T refers to the depth of invasion. N refers to the absence or presence and extent of lymph node involvement. M refers to presence of metastasis. The numbers range from 0 to 4, with higher numbers indicating increased size and metastasis. Stage IV indicates metastasis. The staging system is not used to determine tumor response to chemotherapy.

D) T refers to the depth of invasion. N refers to the absence or presence and extent of lymph node involvement. M refers to presence of metastasis. The numbers range from 0 to 4, with higher numbers indicating increased size and metastasis. Stage IV indicates metastasis. The staging system is not used to determine tumor response to chemotherapy.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.A.5. Analyze cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

6) The nurse is providing discharge instructions to a client being treated for cancer. For which symptoms should the client be instructed to call for help at home? Select all that apply.

- A) Difficulty breathing
- B) Significant increase in vomiting
- C) Desire to end life
- D) Improved sense of well-being
- E) New onset of bleeding

Answer: A, B, C, E

Explanation: A) The client should be instructed to call for help with any difficulty breathing, significant increase in vomiting, a desire to end life, or a new onset of bleeding. An increased sense of well-being would be a desired effect of treatment for cancer.

B) The client should be instructed to call for help with any difficulty breathing, significant increase in vomiting, a desire to end life, or a new onset of bleeding. An increased sense of well-being would be a desired effect of treatment for cancer.

C) The client should be instructed to call for help with any difficulty breathing, significant increase in vomiting, a desire to end life, or a new onset of bleeding. An increased sense of well-being would be a desired effect of treatment for cancer.

D) The client should be instructed to call for help with any difficulty breathing, significant increase in vomiting, a desire to end life, or a new onset of bleeding. An increased sense of well-being would be a desired effect of treatment for cancer.

E) The client should be instructed to call for help with any difficulty breathing, significant increase in vomiting, a desire to end life, or a new onset of bleeding. An increased sense of well-being would be a desired effect of treatment for cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Safe and Effective Care Environment: Management of Care

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.A.7. Analyze cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

7) The nurse instructs a group of community members on the difference between benign and malignant neoplasms. Which participant statements indicate that teaching has been effective? Select all that apply.

- A) "Benign tumors grow slowly."
- B) "Malignant tumors are easy to remove."
- C) "Benign tumors stay in one area."
- D) "Malignant tumors crowd out surrounding tissue."
- E) "Malignant tumors can grow back."

Answer: A, C, E

Explanation: A) Benign tumors are slow-growing, stay in one area, are easy to remove, and crowd out surrounding tissue. Malignant tumors are more difficult to remove. They invade neighboring tissue and can return once removed.

B) Benign tumors are slow-growing, stay in one area, are easy to remove, and crowd out surrounding tissue. Malignant tumors are more difficult to remove. They invade neighboring tissue and can return once removed.

C) Benign tumors are slow-growing, stay in one area, are easy to remove, and crowd out surrounding tissue. Malignant tumors are more difficult to remove. They invade neighboring tissue and can return once removed.

D) Benign tumors are slow-growing, stay in one area, are easy to remove, and crowd out surrounding tissue. Malignant tumors are more difficult to remove. They invade neighboring tissue and can return once removed.

E) Benign tumors are slow-growing, stay in one area, are easy to remove, and crowd out surrounding tissue. Malignant tumors are more difficult to remove. They invade neighboring tissue and can return once removed.

Page Ref: 46-47

Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Evaluation

Learning Outcome: 2.A.1. Analyze cancer as it relates to cellular regulation. Describe the pathophysiology of cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

8) The nurse is caring for a thin, older adult client who is diagnosed with cancer and is receiving aggressive chemotherapy. The client is experiencing severe side effects from the therapy and has lost 10 pounds in the past week. What should the nurse teach the client to do? Select all that apply.

A) Purchase fast foods and prepared foods.

B) Eat cold foods rather than hot foods.

C) Keep a food diary and record intake.

D) Eat large frequent meals high in calories.

E) Drink liquid supplements to increase intake of nutrients.

Answer: B, C, E

Explanation: A) The goal of nutritional teaching is to help the client increase caloric and nutrient intake through the use of liquid supplements, small frequent meals, and a food diary that will help the nurse evaluate strengths and weaknesses of the current plan. The client receiving chemotherapy may tolerate cold foods better than hot foods. Fast foods and prepared foods tend to be high in fat and sodium and are not the best choice because they do not contain adequate healthy nutrients.

B) The goal of nutritional teaching is to help the client increase caloric and nutrient intake through the use of liquid supplements, small frequent meals, and a food diary that will help the nurse evaluate strengths and weaknesses of the current plan. The client receiving chemotherapy may tolerate cold foods better than hot foods. Fast foods and prepared foods tend to be high in fat and sodium and are not the best choice because they do not contain adequate healthy nutrients.

C) The goal of nutritional teaching is to help the client increase caloric and nutrient intake through the use of liquid supplements, small frequent meals, and a food diary that will help the nurse evaluate strengths and weaknesses of the current plan. The client receiving chemotherapy may tolerate cold foods better than hot foods. Fast foods and prepared foods tend to be high in fat and sodium and are not the best choice because they do not contain adequate healthy nutrients.

D) The goal of nutritional teaching is to help the client increase caloric and nutrient intake through the use of liquid supplements, small frequent meals, and a food diary that will help the nurse evaluate strengths and weaknesses of the current plan. The client receiving chemotherapy may tolerate cold foods better than hot foods. Fast foods and prepared foods tend to be high in fat and sodium and are not the best choice because they do not contain adequate healthy nutrients.

E) The goal of nutritional teaching is to help the client increase caloric and nutrient intake through the use of liquid supplements, small frequent meals, and a food diary that will help the nurse evaluate strengths and weaknesses of the current plan. The client receiving chemotherapy may tolerate cold foods better than hot foods. Fast foods and prepared foods tend to be high in fat and sodium and are not the best choice because they do not contain adequate healthy nutrients.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.A.7. Analyze cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

9) In the carcinogenic process, what happens during the initiation stage?

- A) DNA changes are passed on to more cells during cell replication.
- B) A carcinogen causes permanent damage to DNA.
- C) A carcinogen acts repeatedly on cells with damaged DNA.
- D) A gene is activated that promotes cell proliferation.

Answer: C

Explanation: A) The initiation state involves permanent damage in the cellular DNA as a result of exposure to a carcinogen. The promotion stage involves conditions such as smoking or alcohol use that act repeatedly on the already affected cells. The progression stage involves inherited changes that are acquired during cell replication developing into a cancer. Oncogenes are genes that promote cell proliferation; they are not part of the carcinogenic process.

B) The initiation state involves permanent damage in the cellular DNA as a result of exposure to a carcinogen. The promotion stage involves conditions such as smoking or alcohol use that act repeatedly on the already affected cells. The progression stage involves inherited changes that are acquired during cell replication developing into a cancer. Oncogenes are genes that promote cell proliferation; they are not part of the carcinogenic process.

C) The initiation state involves permanent damage in the cellular DNA as a result of exposure to a carcinogen. The promotion stage involves conditions such as smoking or alcohol use that act repeatedly on the already affected cells. The progression stage involves inherited changes that are acquired during cell replication developing into a cancer. Oncogenes are genes that promote cell proliferation; they are not part of the carcinogenic process.

D) The initiation state involves permanent damage in the cellular DNA as a result of exposure to a carcinogen. The promotion stage involves conditions such as smoking or alcohol use that act repeatedly on the already affected cells. The progression stage involves inherited changes that are acquired during cell replication developing into a cancer. Oncogenes are genes that promote cell proliferation; they are not part of the carcinogenic process.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.A.2. Analyze cancer as it relates to cellular regulation. Describe the etiology of cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

10) For clients with cancer, what should the nurse regularly monitor to assess for cachexia?

- A) Weight
- B) Blood pressure
- C) Heart rate
- D) Temperature

Answer: A

Explanation: A) Cachexia is a wasting syndrome associated with cancer that includes malnutrition and unexplained loss of weight and muscle mass. It is unrelated to blood pressure, heart rate, or body temperature.

B) Cachexia is a wasting syndrome associated with cancer that includes malnutrition and unexplained loss of weight and muscle mass. It is unrelated to blood pressure, heart rate, or body temperature.

C) Cachexia is a wasting syndrome associated with cancer that includes malnutrition and unexplained loss of weight and muscle mass. It is unrelated to blood pressure, heart rate, or body temperature.

D) Cachexia is a wasting syndrome associated with cancer that includes malnutrition and unexplained loss of weight and muscle mass. It is unrelated to blood pressure, heart rate, or body temperature.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1 Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment
Learning Outcome: 2.A.4. Analyze cancer as it relates to cellular regulation. Identify the clinical manifestations of cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with cancer.

Exemplar 2.B Anemia

1) A client complaining of mouth soreness had gastric bypass surgery 1 year ago. During the assessment, the nurse notes the client's tongue is beefy, red, and smooth and the client's skin appears yellowish. Which additional information is most likely needed before diagnosing this client?

- A) Vitamin B₆ levels
- B) Vitamin B₁₂ levels
- C) Potassium levels
- D) Iron levels

Answer: B

Explanation: A) Vitamin B₁₂ deficiency is associated with resection of the stomach or ileum. A deficiency of vitamin B₁₂ will result in pernicious anemia. This deficiency will manifest as pallor, jaundice, weakness, and a beefy, smooth red tongue. Iron deficiency anemia will manifest with weakness and fatigue. Vitamin B₆ deficiencies are not typically seen with gastric bypass surgeries and are not manifested with a beefy, red, smooth tongue. The client's reports are not consistent with a potassium deficiency.

B) Vitamin B₁₂ deficiency is associated with resection of the stomach or ileum. A deficiency of vitamin B₁₂ will result in pernicious anemia. This deficiency will manifest as pallor, jaundice, weakness, and a beefy, smooth red tongue. Iron deficiency anemia will manifest with weakness and fatigue. Vitamin B₆ deficiencies are not typically seen with gastric bypass surgeries and are not manifested with a beefy, red, smooth tongue. The client's reports are not consistent with a potassium deficiency.

C) Vitamin B₁₂ deficiency is associated with resection of the stomach or ileum. A deficiency of vitamin B₁₂ will result in pernicious anemia. This deficiency will manifest as pallor, jaundice, weakness, and a beefy, smooth red tongue. Iron deficiency anemia will manifest with weakness and fatigue. Vitamin B₆ deficiencies are not typically seen with gastric bypass surgeries and are not manifested with a beefy, red, smooth tongue. The client's reports are not consistent with a potassium deficiency.

D) Vitamin B₁₂ deficiency is associated with resection of the stomach or ileum. A deficiency of vitamin B₁₂ will result in pernicious anemia. This deficiency will manifest as pallor, jaundice, weakness, and a beefy, smooth red tongue. Iron deficiency anemia will manifest with weakness and fatigue. Vitamin B₆ deficiencies are not typically seen with gastric bypass surgeries and are not manifested with a beefy, red, smooth tongue. The client's reports are not consistent with a potassium deficiency.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1. Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment
Learning Outcome: 2.B.4. Analyze anemia as it relates to cellular regulation. Identify the clinical manifestations of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

2) A client experiencing fatigue, pallor, and dyspnea on exertion has a complete blood count drawn. Which red blood cell disorder should the nurse anticipate the client is experiencing?

- A) Polycythemia
- B) Erythropoiesis
- C) Herpes simplex
- D) Anemia

Answer: D

Explanation: A) Anemia is the most common red blood cell disorder, involving a low RBC count and decreased hemoglobin content. Signs and symptoms of anemia can include pallor of the skin and mucous membranes and dyspnea on exertion. Polycythemia is an abnormally high RBC count. Herpes simplex is not a red blood cell disorder; erythropoiesis is the term for RBC production.

B) Anemia is the most common red blood cell disorder, involving a low RBC count and decreased hemoglobin content. Signs and symptoms of anemia can include pallor of the skin and mucous membranes and dyspnea on exertion. Polycythemia is an abnormally high RBC count. Herpes simplex is not a red blood cell disorder; erythropoiesis is the term for RBC production.

C) Anemia is the most common red blood cell disorder, involving a low RBC count and decreased hemoglobin content. Signs and symptoms of anemia can include pallor of the skin and mucous membranes and dyspnea on exertion. Polycythemia is an abnormally high RBC count. Herpes simplex is not a red blood cell disorder; erythropoiesis is the term for RBC production.

D) Anemia is the most common red blood cell disorder, involving a low RBC count and decreased hemoglobin content. Signs and symptoms of anemia can include pallor of the skin and mucous membranes and dyspnea on exertion. Polycythemia is an abnormally high RBC count. Herpes simplex is not a red blood cell disorder; erythropoiesis is the term for RBC production.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.B.4. Analyze anemia as it relates to cellular regulation. Identify the clinical manifestations of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

3) A client with a history of anemia has started a vegan diet. Which addition to meals should the nurse recommend to help ensure that this client has adequate amounts of iron in the diet? Select all that apply.

- A) Legumes
- B) Orange juice
- C) Yeast
- D) Okra
- E) Peas

Answer: A, B, E

Explanation: A) While all these options are good ones for someone on a vegan diet, the ones that would best prevent iron deficiency are legumes, peas, and orange juice. Legumes and peas are good sources of nonheme iron. Orange juice supports iron absorption from foods since it is high in vitamin C. Yeast is a good source of folic acid. Okra is not a good source of iron.

B) While all these options are good ones for someone on a vegan diet, the ones that would best prevent iron deficiency are legumes, peas, and orange juice. Legumes and peas are good sources of nonheme iron. Orange juice supports iron absorption from foods since it is high in vitamin C. Yeast is a good source of folic acid. Okra is not a good source of iron.

C) While all these options are good ones for someone on a vegan diet, the ones that would best prevent iron deficiency are legumes, peas, and orange juice. Legumes and peas are good sources of nonheme iron. Orange juice supports iron absorption from foods since it is high in vitamin C. Yeast is a good source of folic acid. Okra is not a good source of iron.

D) While all these options are good ones for someone on a vegan diet, the ones that would best prevent iron deficiency are legumes, peas, and orange juice. Legumes and peas are good sources of nonheme iron. Orange juice supports iron absorption from foods since it is high in vitamin C. Yeast is a good source of folic acid. Okra is not a good source of iron.

E) While all these options are good ones for someone on a vegan diet, the ones that would best prevent iron deficiency are legumes, peas, and orange juice. Legumes and peas are good sources of nonheme iron. Orange juice supports iron absorption from foods since it is high in vitamin C. Yeast is a good source of folic acid. Okra is not a good source of iron.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.B.5. Analyze anemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

4) An older adult client with renal failure is diagnosed with anemia. Based on this data, which cause of anemia will the nurse plan for when providing care?

- A) Loss of the kidney hormone erythropoietin
- B) A loss of appetite related to elevated blood urea nitrogen (BUN) and creatinine levels
- C) The renal dialysis used to treat the chronic renal failure
- D) Loss of blood through the urine because the failing kidney does not function properly

Answer: A

Explanation: A) The anemia associated with renal failure is related to the loss of erythropoietin, which is produced by the healthy kidney and stimulates bone marrow to produce red blood cells. The anemia is not directly related to anorexia or hemodialysis, although these factors may be somewhat associated with the anemia. Renal failure causes the loss of protein, not blood, through the urine.

B) The anemia associated with renal failure is related to the loss of erythropoietin, which is produced by the healthy kidney and stimulates bone marrow to produce red blood cells. The anemia is not directly related to anorexia or hemodialysis, although these factors may be somewhat associated with the anemia. Renal failure causes the loss of protein, not blood, through the urine.

C) The anemia associated with renal failure is related to the loss of erythropoietin, which is produced by the healthy kidney and stimulates bone marrow to produce red blood cells. The anemia is not directly related to anorexia or hemodialysis, although these factors may be somewhat associated with the anemia. Renal failure causes the loss of protein, not blood, through the urine.

D) The anemia associated with renal failure is related to the loss of erythropoietin, which is produced by the healthy kidney and stimulates bone marrow to produce red blood cells. The anemia is not directly related to anorexia or hemodialysis, although these factors may be somewhat associated with the anemia. Renal failure causes the loss of protein, not blood, through the urine.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.B.2. Analyze anemia as it relates to cellular regulation. Describe the etiology of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

5) A nursing student is preparing an educational program on hemolytic anemia for the residents of an assisted living center. Which extrinsic causes of hemolytic anemia should the student include in the program? Select all that apply.

- A) Bacterial infection
- B) Thalassemia
- C) Blood transfusion reaction
- D) Prosthetic heart valves
- E) Acetaminophen use

Answer: A, C, D

Explanation: A) Prosthetic heart valves, blood transfusion reactions, and bacterial infections are all extrinsic causes of hemolytic anemia. Acetaminophen use is not associated with hemolytic anemia. Thalassemia is considered an intrinsic cause of hemolytic anemia and would not be appropriate to include in this particular teaching.

B) Prosthetic heart valves, blood transfusion reactions, and bacterial infections are all extrinsic causes of hemolytic anemia. Acetaminophen use is not associated with hemolytic anemia. Thalassemia is considered an intrinsic cause of hemolytic anemia and would not be appropriate to include in this particular teaching.

C) Prosthetic heart valves, blood transfusion reactions, and bacterial infections are all extrinsic causes of hemolytic anemia. Acetaminophen use is not associated with hemolytic anemia. Thalassemia is considered an intrinsic cause of hemolytic anemia and would not be appropriate to include in this particular teaching.

D) Prosthetic heart valves, blood transfusion reactions, and bacterial infections are all extrinsic causes of hemolytic anemia. Acetaminophen use is not associated with hemolytic anemia. Thalassemia is considered an intrinsic cause of hemolytic anemia and would not be appropriate to include in this particular teaching.

E) Prosthetic heart valves, blood transfusion reactions, and bacterial infections are all extrinsic causes of hemolytic anemia. Acetaminophen use is not associated with hemolytic anemia. Thalassemia is considered an intrinsic cause of hemolytic anemia and would not be appropriate to include in this particular teaching.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.B.2. Analyze anemia as it relates to cellular regulation. Describe the etiology of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

6) The home healthcare nurse is preparing a care plan for a client with severe anemia. The client currently lives alone and states, "I can't even walk to the kitchen without getting winded." What would be the priority nursing diagnosis for this client?

- A) Hopelessness
- B) Activity Intolerance
- C) Imbalanced Nutrition, Less than Body Requirements
- D) Anxiety

Answer: B

Explanation: A) Activity Intolerance would be a priority diagnosis for this client. While Anxiety, Hopelessness, and Imbalanced Nutrition may be appropriate nursing diagnoses for this client, they are not the priority.

B) Activity Intolerance would be a priority diagnosis for this client. While Anxiety, Hopelessness, and Imbalanced Nutrition may be appropriate nursing diagnoses for this client, they are not the priority.

C) Activity Intolerance would be a priority diagnosis for this client. While Anxiety, Hopelessness, and Imbalanced Nutrition may be appropriate nursing diagnoses for this client, they are not the priority.

D) Activity Intolerance would be a priority diagnosis for this client. While Anxiety, Hopelessness, and Imbalanced Nutrition may be appropriate nursing diagnoses for this client, they are not the priority.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.B.7. Analyze anemia as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

7) The nurse is evaluating a client's understanding of dietary needs to treat dietary deficiency anemia. Which client statement indicates a need for additional teaching?

A) "I will eat more fruits and vegetables, especially green leafy ones, to get more iron in my diet."

B) "I will need to include more protein foods in my diet such as meats, dried beans, and whole-grain breads."

C) "I will decrease foods high in vitamin C, as they decrease my absorption of iron."

D) "I will take vitamins with extra iron in addition to eating a balanced diet with meat to correct my anemia."

Answer: C

Explanation: A) Increasing foods high in vitamin C will increase absorption of iron. The lack of iron is the problem that needs to be addressed. Extra iron is needed to help replace RBCs and treat the dietary deficiency anemia. Green leafy vegetables will increase iron in the diet. Protein foods such as meats, dried beans, and whole-grain breads do contain iron that will help dietary deficiency anemia.

B) Increasing foods high in vitamin C will increase absorption of iron. The lack of iron is the problem that needs to be addressed. Extra iron is needed to help replace RBCs and treat the dietary deficiency anemia. Green leafy vegetables will increase iron in the diet. Protein foods such as meats, dried beans, and whole-grain breads do contain iron that will help dietary deficiency anemia.

C) Increasing foods high in vitamin C will increase absorption of iron. The lack of iron is the problem that needs to be addressed. Extra iron is needed to help replace RBCs and treat the dietary deficiency anemia. Green leafy vegetables will increase iron in the diet. Protein foods such as meats, dried beans, and whole-grain breads do contain iron that will help dietary deficiency anemia.

D) Increasing foods high in vitamin C will increase absorption of iron. The lack of iron is the problem that needs to be addressed. Extra iron is needed to help replace RBCs and treat the dietary deficiency anemia. Green leafy vegetables will increase iron in the diet. Protein foods such as meats, dried beans, and whole-grain breads do contain iron that will help dietary deficiency anemia.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.B.5. Analyze anemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

8) The nurse suspects that a client with severe shortness of breath in the absence of cyanosis is experiencing anemia. Which laboratory tests should the nurse review to confirm anemia? Select all that apply.

- A) Serum electrolytes
- B) Cardiac enzymes
- C) Hemoglobin
- D) Blood sugar
- E) Hematocrit

Answer: C, E

Explanation: A) Severe anemia will interfere with the development of cyanosis, so the nurse should review the hemoglobin and hematocrit. Blood sugar, cardiac enzymes, and serum electrolytes are not implicated in this phenomenon.

B) Severe anemia will interfere with the development of cyanosis, so the nurse should review the hemoglobin and hematocrit. Blood sugar, cardiac enzymes, and serum electrolytes are not implicated in this phenomenon.

C) Severe anemia will interfere with the development of cyanosis, so the nurse should review the hemoglobin and hematocrit. Blood sugar, cardiac enzymes, and serum electrolytes are not implicated in this phenomenon.

D) Severe anemia will interfere with the development of cyanosis, so the nurse should review the hemoglobin and hematocrit. Blood sugar, cardiac enzymes, and serum electrolytes are not implicated in this phenomenon.

E) Severe anemia will interfere with the development of cyanosis, so the nurse should review the hemoglobin and hematocrit. Blood sugar, cardiac enzymes, and serum electrolytes are not implicated in this phenomenon.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.B.5. Analyze anemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

9) The nurse is caring for an older adult client with hemolytic anemia. When planning care for this client, which should the nurse take into consideration regarding this diagnosis?

- A) It causes the red blood cells to be microcytic.
- B) It is associated with a decrease in the reticulocyte count.
- C) It is the result of blood loss.
- D) It is a result of the premature destruction of red blood cells.

Answer: D

Explanation: A) Hemolytic anemia is more common with aging and is caused by the premature destruction of the red blood cells. It is not associated with blood loss. There is an increase, not a decrease, in the reticulocyte (immature red blood cell) count because they are released early from the bone marrow to compensate. Hemolytic anemias are normocytic (red blood cells are normal size), not microcytic.

B) Hemolytic anemia is more common with aging and is caused by the premature destruction of the red blood cells. It is not associated with blood loss. There is an increase, not a decrease, in the reticulocyte (immature red blood cells) count because they are released early from the bone marrow to compensate. Hemolytic anemias are normocytic (red blood cells are normal size), not microcytic.

C) Hemolytic anemia is more common with aging and is caused by the premature destruction of the red blood cells. It is not associated with blood loss. There is an increase, not a decrease, in the reticulocyte (immature red blood cells) count because they are released early from the bone marrow to compensate. Hemolytic anemias are normocytic (red blood cells are normal size), not microcytic.

D) Hemolytic anemia is more common with aging and is caused by the premature destruction of the red blood cells. It is not associated with blood loss. There is an increase, not a decrease, in the reticulocyte (immature red blood cells) count because they are released early from the bone marrow to compensate. Hemolytic anemias are normocytic (red blood cells are normal size), not microcytic.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Planning

Learning Outcome: 2.B.2. Analyze anemia as it relates to cellular regulation. Describe the etiology of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

10) The nurse is instructing a client with iron deficiency anemia about appropriate menu choices. Which diet choice indicates that teaching has been effective?

- A) Tofu with mixed vegetables in curry, milk, whole-wheat bun
- B) Broiled fish, lettuce salad, grapefruit half, carrot sticks
- C) Pork chop, mashed potatoes and gravy, cauliflower, tea
- D) Roast beef, steamed spinach, tomato soup, orange juice

Answer: D

Explanation: A) This client is anemic and needs iron. This meal contains iron in the beef, folic acid and iron in the spinach, and vitamin C in the tomato soup and orange juice. Vitamin C helps absorption of the iron; folic acid is needed for production of red cells. The meal of tofu with mixed vegetables in curry, milk, and a whole-wheat bun is high in calcium, but the client has iron deficiency anemia and requires a high-iron diet. The meal with a pork chop, mashed potatoes and gravy, cauliflower, and tea has a moderate amount of protein, but no vitamin C. The meal of fish, lettuce, grapefruit, and carrot sticks is high in fiber, low in fat, and moderately high in protein, but low in iron.

B) This client is anemic and needs iron. This meal contains iron in the beef, folic acid and iron in the spinach, and vitamin C in the tomato soup and orange juice. Vitamin C helps absorption of the iron; folic acid is needed for production of red cells. The meal of tofu with mixed vegetables in curry, milk, and a whole-wheat bun is high in calcium, but the client has iron deficiency anemia and requires a high-iron diet. The meal with a pork chop, mashed potatoes and gravy, cauliflower, and tea has a moderate amount of protein, but no vitamin C. The meal of fish, lettuce, grapefruit, and carrot sticks is high in fiber, low in fat, and moderately high in protein, but low in iron.

C) This client is anemic and needs iron. This meal contains iron in the beef, folic acid and iron in the spinach, and vitamin C in the tomato soup and orange juice. Vitamin C helps absorption of the iron; folic acid is needed for production of red cells. The meal of tofu with mixed vegetables in curry, milk, and a whole-wheat bun is high in calcium, but the client has iron deficiency anemia and requires a high-iron diet. The meal with a pork chop, mashed potatoes and gravy, cauliflower, and tea has a moderate amount of protein, but no vitamin C. The meal of fish, lettuce, grapefruit, and carrot sticks is high in fiber, low in fat, and moderately high in protein, but low in iron.

D) This client is anemic and needs iron. This meal contains iron in the beef, folic acid and iron in the spinach, and vitamin C in the tomato soup and orange juice. Vitamin C helps absorption of the iron; folic acid is needed for production of red cells. The meal of tofu with mixed vegetables in curry, milk, and a whole-wheat bun is high in calcium, but the client has iron deficiency anemia and requires a high-iron diet. The meal with a pork chop, mashed potatoes and gravy, cauliflower, and tea has a moderate amount of protein, but no vitamin C. The meal of fish, lettuce, grapefruit, and carrot sticks is high in fiber, low in fat, and moderately high in protein, but low in iron.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.B.5. Analyze anemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

11) A nurse is educating a client with anemia about the pathophysiological mechanisms of anemia. Which should be excluded in the nurse's teaching plan for this client?

- A) Altered hemoglobin synthesis
- B) Altered DNA synthesis
- C) Decreased hemolysis
- D) Bone marrow failure

Answer: C

Explanation: A) The pathophysiological mechanisms of anemia include altered hemoglobin synthesis, altered DNA synthesis, bone marrow failure, and increased hemolysis. Altered hemoglobin synthesis is the mechanism involved in iron deficiency anemia, Thalassemia, and chronic inflammation. Altered DNA synthesis is the mechanism involved in vitamin B₁₂ malabsorption or deficiency, and folic acid malabsorption or deficiency. Bone marrow failure is the mechanism in aplastic anemia, red cell aplasia, myeloproliferative leukemias, and lymphomas.

B) The pathophysiological mechanisms of anemia include altered hemoglobin synthesis, altered DNA synthesis, bone marrow failure, and increased hemolysis. Altered hemoglobin synthesis is the mechanism involved in iron deficiency anemia, Thalassemia, and chronic inflammation. Altered DNA synthesis is the mechanism involved in vitamin B₁₂ malabsorption or deficiency, and folic acid malabsorption or deficiency. Bone marrow failure is the mechanism in aplastic anemia, red cell aplasia, myeloproliferative leukemias, and lymphomas.

C) The pathophysiological mechanisms of anemia include altered hemoglobin synthesis, altered DNA synthesis, bone marrow failure, and increased hemolysis. Altered hemoglobin synthesis is the mechanism involved in iron deficiency anemia, Thalassemia, and chronic inflammation. Altered DNA synthesis is the mechanism involved in vitamin B₁₂ malabsorption or deficiency, and folic acid malabsorption or deficiency. Bone marrow failure is the mechanism in aplastic anemia, red cell aplasia, myeloproliferative leukemias, and lymphomas.

D) The pathophysiological mechanisms of anemia include altered hemoglobin synthesis, altered DNA synthesis, bone marrow failure, and increased hemolysis. Altered hemoglobin synthesis is the mechanism involved in iron deficiency anemia, Thalassemia, and chronic inflammation. Altered DNA synthesis is the mechanism involved in vitamin B₁₂ malabsorption or deficiency, and folic acid malabsorption or deficiency. Bone marrow failure is the mechanism in aplastic anemia, red cell aplasia, myeloproliferative leukemias, and lymphomas.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.B.2. Analyze anemia as it relates to cellular regulation. Describe the etiology of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

12) A nurse is providing discharge instructions to a client with iron deficiency anemia who is experiencing glossitis. Which statements will the nurse include in the discharge teaching for this client? Select all that apply.

A) Monitor the condition of the lips and tongue daily.

B) Use an alcohol-based mouthwash every 2 to 4 hours.

C) Provide frequent oral hygiene.

D) Apply a non-petroleum-based lubricating jelly or ointment to the lips after oral care.

E) Use a soft toothbrush or sponge to provide oral care.

Answer: A, C, E

Explanation: A) Glossitis, inflammation of the tongue that may cause the tongue and lips to turn red, and cheilosis (fissures or cracks at the corners of the mouth) may occur with nutritional deficiencies of iron, folate, and vitamin B₁₂. Client education should include monitoring the condition of lips and tongue daily and providing frequent oral hygiene with a soft-bristle toothbrush or sponge. The client should not use an alcohol-based mouthwash, as this would worsen the glossitis. The client should use a petroleum-based lubricating jelly or ointment to the lips after oral care.

B) Glossitis, inflammation of the tongue that may cause the tongue and lips to turn red, and cheilosis (fissures or cracks at the corners of the mouth) may occur with nutritional deficiencies of iron, folate, and vitamin B₁₂. Client education should include monitoring the condition of lips and tongue daily and providing frequent oral hygiene with a soft-bristle toothbrush or sponge. The client should not use an alcohol-based mouthwash, as this would worsen the glossitis. The client should use a petroleum-based lubricating jelly or ointment to the lips after oral care.

C) Glossitis, inflammation of the tongue that may cause the tongue and lips to turn red, and cheilosis (fissures or cracks at the corners of the mouth) may occur with nutritional deficiencies of iron, folate, and vitamin B₁₂. Client education should include monitoring the condition of lips and tongue daily and providing frequent oral hygiene with a soft-bristle toothbrush or sponge. The client should not use an alcohol-based mouthwash, as this would worsen the glossitis. The client should use a petroleum-based lubricating jelly or ointment to the lips after oral care.

D) Glossitis, inflammation of the tongue that may cause the tongue and lips to turn red, and cheilosis (fissures or cracks at the corners of the mouth) may occur with nutritional deficiencies of iron, folate, and vitamin B₁₂. Client education should include monitoring the condition of lips and tongue daily and providing frequent oral hygiene with a soft-bristle toothbrush or sponge. The client should not use an alcohol-based mouthwash, as this would worsen the glossitis. The client should use a petroleum-based lubricating jelly or ointment to the lips after oral care.

E) Glossitis, inflammation of the tongue that may cause the tongue and lips to turn red, and cheilosis (fissures or cracks at the corners of the mouth) may occur with nutritional deficiencies of iron, folate, and vitamin B₁₂. Client education should include monitoring the condition of lips and tongue daily and providing frequent oral hygiene with a soft-bristle toothbrush or sponge. The client should not use an alcohol-based mouthwash, as this would worsen the glossitis. The client should use a petroleum-based lubricating jelly or ointment to the lips after oral care.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.B.7. Analyze anemia as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

13) Which form of anemia can be prevented by a change in diet?

- A) Iron deficiency anemia
- B) Aplastic anemia
- C) Blood loss anemia
- D) Hemolytic anemia

Answer: A

Explanation: A) Nutritional causes of anemia include iron deficiency, vitamin B₁₂ deficiency, and folic acid deficiency. Blood loss anemia recurs as a result of hemorrhage or other forms of blood loss. Aplastic anemia occurs when the bone marrow fails to produce red and white blood cells. Hemolytic anemias occur when red blood cells are destroyed prematurely. Only nutritional anemias can be prevented by a change in diet.

B) Nutritional causes of anemia include iron deficiency, vitamin B₁₂ deficiency, and folic acid deficiency. Blood loss anemia recurs as a result of hemorrhage or other forms of blood loss. Aplastic anemia occurs when the bone marrow fails to produce red and white blood cells. Hemolytic anemias occur when red blood cells are destroyed prematurely. Only nutritional anemias can be prevented by a change in diet.

C) Nutritional causes of anemia include iron deficiency, vitamin B₁₂ deficiency, and folic acid deficiency. Blood loss anemia recurs as a result of hemorrhage or other forms of blood loss. Aplastic anemia occurs when the bone marrow fails to produce red and white blood cells. Hemolytic anemias occur when red blood cells are destroyed prematurely. Only nutritional anemias can be prevented by a change in diet.

D) Nutritional causes of anemia include iron deficiency, vitamin B₁₂ deficiency, and folic acid deficiency. Blood loss anemia recurs as a result of hemorrhage or other forms of blood loss. Aplastic anemia occurs when the bone marrow fails to produce red and white blood cells. Hemolytic anemias occur when red blood cells are destroyed prematurely. Only nutritional anemias can be prevented by a change in diet.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.8 Implement evidence-based nursing interventions as appropriate for managing acute and chronic care of patients and promoting health across the lifespan. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation
Learning Outcome: 2.B.3. Analyze anemia as it relates to cellular regulation. Compare the risk factors for and prevention of anemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

14) A NICU nurse is caring for several newborns with anemia. Which infant with anemia would the nurse be *least* concerned about?

- A) A baby born at 32 weeks' gestation after the mother suffered from abruptio placentae
- B) A baby born at 38 weeks' gestation who has a blood group incompatibility with the mother
- C) A baby born at 35 weeks' gestation who suffered birth trauma to the head
- D) A baby born at 39 weeks' gestation via a scheduled cesarean section

Answer: D

Explanation: A) For full-term infants with no birth complications, a normal, gradual drop in hemoglobin during the first 6 to 12 weeks of life is called physiologic anemia of the newborn. When the hemoglobin begins to drop, the bone marrow produces RBCs again, and the anemia disappears. The infants who suffered birth trauma, abruptio placentae, or blood group incompatibility may have anemia related to blood loss or hemolysis, which is much more serious than physiologic anemia of the newborn.

B) For full-term infants with no birth complications, a normal, gradual drop in hemoglobin during the first 6 to 12 weeks of life is called physiologic anemia of the newborn. When the hemoglobin begins to drop, the bone marrow produces RBCs again, and the anemia disappears. The infants who suffered birth trauma, abruptio placentae, or blood group incompatibility may have anemia related to blood loss or hemolysis, which is much more serious than physiologic anemia of the newborn.

C) For full-term infants with no birth complications, a normal, gradual drop in hemoglobin during the first 6 to 12 weeks of life is called physiologic anemia of the newborn. When the hemoglobin begins to drop, the bone marrow produces RBCs again, and the anemia disappears. The infants who suffered birth trauma, abruptio placentae, or blood group incompatibility may have anemia related to blood loss or hemolysis, which is much more serious than physiologic anemia of the newborn.

D) For full-term infants with no birth complications, a normal, gradual drop in hemoglobin during the first 6 to 12 weeks of life is called physiologic anemia of the newborn. When the hemoglobin begins to drop, the bone marrow produces RBCs again, and the anemia disappears. The infants who suffered birth trauma, abruptio placentae, or blood group incompatibility may have anemia related to blood loss or hemolysis, which is much more serious than physiologic anemia of the newborn.

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Cognitive Level: Analyzing

Client Need/Sub: Safe and Effective Care Environment: Management of Care

Standards: QSEN Competencies: III.A.2. Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management

across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Relationship Centered Care: Factors that contribute to or threaten health. |

Nursing Process: Evaluation

Learning Outcome: 2.B.6. Analyze anemia as it relates to cellular regulation. Differentiate considerations for care of clients with anemia across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with anemia.

Exemplar 2.C Breast Cancer

1) The nurse is reviewing data collected during a health history and physical assessment and determines that a client is at risk for developing breast cancer. Which data supports this client's risk for developing breast cancer? Select all that apply.

- A) Age 60
- B) Breastfed both children
- C) Sister had breast cancer
- D) Body mass index 22
- E) Menopause at age 58

Answer: A, C, E

Explanation: A) The risk for developing breast cancer increases with age. Having a first-degree relative with breast cancer increases the risk. Menopause after the age of 55 also increases the risk for developing breast cancer. Breastfeeding and maintaining a normal body weight lower a person's risk for developing breast cancer.

B) The risk for developing breast cancer increases with age. Having a first-degree relative with breast cancer increases the risk. Menopause after the age of 55 also increases the risk for developing breast cancer. Breastfeeding and maintaining a normal body weight lower a person's risk for developing breast cancer.

C) The risk for developing breast cancer increases with age. Having a first-degree relative with breast cancer increases the risk. Menopause after the age of 55 also increases the risk for developing breast cancer. Breastfeeding and maintaining a normal body weight lower a person's risk for developing breast cancer.

D) The risk for developing breast cancer increases with age. Having a first-degree relative with breast cancer increases the risk. Menopause after the age of 55 also increases the risk for developing breast cancer. Breastfeeding and maintaining a normal body weight lower a person's risk for developing breast cancer.

E) The risk for developing breast cancer increases with age. Having a first-degree relative with breast cancer increases the risk. Menopause after the age of 55 also increases the risk for developing breast cancer. Breastfeeding and maintaining a normal body weight lower a person's risk for developing breast cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.C.3. Analyze breast cancer as it relates to cellular regulation. Compare the risk factors for and prevention of breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

2) The nurse is instructing a group of women between the ages of 40 and 50 about early detection of breast cancer. What should the nurse include in this teaching?

- A) Perform monthly breast self-exams.
- B) See a healthcare provider if there is a strong family history of breast cancer.
- C) Have a yearly mammogram.
- D) Have a clinical breast exam performed by a healthcare provider every 5 years.

Answer: C

Explanation: A) Yearly mammography for all women over the age of 45 is encouraged, as it decreases the mortality from breast cancer, and women between ages 40 and 45 can choose to have a mammogram annually. Breast self-exam is no longer recommended for all women. Discussing a family history of breast cancer would be part of the annual breast exam performed by a healthcare provider. It is inappropriate for women in this age group to have a clinical breast exam every 5 years.

B) Yearly mammography for all women over the age of 45 is encouraged, as it decreases the mortality from breast cancer, and women between ages 40 and 45 can choose to have a mammogram annually. Breast self-exam is no longer recommended for all women. Discussing a family history of breast cancer would be part of the annual breast exam performed by a healthcare provider. It is inappropriate for women in this age group to have a clinical breast exam every 5 years.

C) Yearly mammography for all women over the age of 45 is encouraged, as it decreases the mortality from breast cancer, and women between ages 40 and 45 can choose to have a mammogram annually. Breast self-exam is no longer recommended for all women. Discussing a family history of breast cancer would be part of the annual breast exam performed by a healthcare provider. It is inappropriate for women in this age group to have a clinical breast exam every 5 years.

D) Yearly mammography for all women over the age of 45 is encouraged, as it decreases the mortality from breast cancer, and women between ages 40 and 45 can choose to have a mammogram annually. Breast self-exam is no longer recommended for all women. Discussing a family history of breast cancer would be part of the annual breast exam performed by a healthcare provider. It is inappropriate for women in this age group to have a clinical breast exam every 5 years.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.C.3. Analyze breast cancer as it relates to cellular regulation. Compare the risk factors for and prevention of breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

3) The nurse is providing care to a client who was recently diagnosed with breast cancer. The nurse is providing education regarding the possible treatment options. Which options will the nurse include in the teaching session? Select all that apply.

- A) Mastectomy
- B) Hormone therapy
- C) Lumpectomy
- D) Palliative care
- E) Radiation

Answer: A, B, C, E

Explanation: A) Treatment options appropriate for a client newly diagnosed with breast cancer may include mastectomy, hormone therapy, lumpectomy, and radiation. Palliative care will only be implemented once the client's cancer is considered to be terminal in nature.

B) Treatment options appropriate for a client newly diagnosed with breast cancer may include mastectomy, hormone therapy, lumpectomy, and radiation. Palliative care will only be implemented once the client's cancer is considered to be terminal in nature.

C) Treatment options appropriate for a client newly diagnosed with breast cancer may include mastectomy, hormone therapy, lumpectomy, and radiation. Palliative care will only be implemented once the client's cancer is considered to be terminal in nature.

D) Treatment options appropriate for a client newly diagnosed with breast cancer may include mastectomy, hormone therapy, lumpectomy, and radiation. Palliative care will only be implemented once the client's cancer is considered to be terminal in nature.

E) Treatment options appropriate for a client newly diagnosed with breast cancer may include mastectomy, hormone therapy, lumpectomy, and radiation. Palliative care will only be implemented once the client's cancer is considered to be terminal in nature.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.C.5. Analyze breast cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

4) A client prescribed tamoxifen (Nolvadex) for breast cancer treatment asks the nurse how the medication works. What is the best response by the nurse?

- A) "Tamoxifen works by inhibiting the cellular mitosis of breast cancer."
- B) "Tamoxifen works by blocking estrogen receptors on breast tissue."
- C) "Tamoxifen works by binding to the DNA of breast cancer cells."
- D) "Tamoxifen works by inhibiting the metabolism of breast cancer cells."

Answer: B

Explanation: A) Breast cancer is dependent on estrogen for growth. Tamoxifen (Nolvadex) acts by blocking estrogen receptors; the tumor is deprived of estrogen. Tamoxifen does not inhibit the metabolism of breast cancer cells. Tamoxifen does not inhibit the cellular mitosis of breast cancer. Tamoxifen does not bind to the DNA of breast cancer cells.

B) Breast cancer is dependent on estrogen for growth. Tamoxifen (Nolvadex) acts by blocking estrogen receptors; the tumor is deprived of estrogen. Tamoxifen does not inhibit the metabolism of breast cancer cells. Tamoxifen does not inhibit the cellular mitosis of breast cancer.

Tamoxifen does not bind to the DNA of breast cancer cells.

C) Breast cancer is dependent on estrogen for growth. Tamoxifen (Nolvadex) acts by blocking estrogen receptors; the tumor is deprived of estrogen. Tamoxifen does not inhibit the metabolism of breast cancer cells. Tamoxifen does not inhibit the cellular mitosis of breast cancer.

Tamoxifen does not bind to the DNA of breast cancer cells.

D) Breast cancer is dependent on estrogen for growth. Tamoxifen (Nolvadex) acts by blocking estrogen receptors; the tumor is deprived of estrogen. Tamoxifen does not inhibit the metabolism of breast cancer cells. Tamoxifen does not inhibit the cellular mitosis of breast cancer.

Tamoxifen does not bind to the DNA of breast cancer cells.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.C.5. Analyze breast cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

5) The nurse instructs a client recovering from a mastectomy on ways to prevent lymphedema. Which client statement indicates that teaching has been successful?

- A) "I should do the exercises on my affected arm every day."
- B) "I have to take no special precautions."
- C) "I should avoid cleansing my skin with soap."
- D) "Eating fresh fruits and vegetables will prevent my arm from swelling."

Answer: A

Explanation: A) Range-of-motion exercises in the affected arm help develop collateral drainage and prevent the development of lymphedema. The client should be instructed to protect the affected limb by not permitting blood pressure measurement and avoiding tight jewelry and clothing on the limb. There is no reason for the client to avoid cleansing the skin of the affected arm with soap. Consuming fresh fruits and vegetables will not prevent the development of lymphedema.

B) Range-of-motion exercises in the affected arm help develop collateral drainage and prevent the development of lymphedema. The client should be instructed to protect the affected limb by not permitting blood pressure measurement and avoiding tight jewelry and clothing on the limb. There is no reason for the client to avoid cleansing the skin of the affected arm with soap. Consuming fresh fruits and vegetables will not prevent the development of lymphedema.

C) Range-of-motion exercises in the affected arm help develop collateral drainage and prevent the development of lymphedema. The client should be instructed to protect the affected limb by not permitting blood pressure measurement and avoiding tight jewelry and clothing on the limb. There is no reason for the client to avoid cleansing the skin of the affected arm with soap. Consuming fresh fruits and vegetables will not prevent the development of lymphedema.

D) Range-of-motion exercises in the affected arm help develop collateral drainage and prevent the development of lymphedema. The client should be instructed to protect the affected limb by not permitting blood pressure measurement and avoiding tight jewelry and clothing on the limb. There is no reason for the client to avoid cleansing the skin of the affected arm with soap. Consuming fresh fruits and vegetables will not prevent the development of lymphedema.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.C.7. Analyze breast cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

6) While completing a physical examination, the nurse suspects a client has breast cancer. What did the nurse assess in this client? Select all that apply.

- A) Rash along the inside of the right arm
- B) Left nipple retraction
- C) Palpable lump in the upper outer right quadrant
- D) Scaliness near the right nipple
- E) Pain when extending the left arm

Answer: B, C, D

Explanation: A) Manifestations of breast cancer include nipple retraction; a palpable lump, usually in the upper outer quadrant; and scaliness of the skin. A rash on the arm and arm pain upon extension are not manifestations of breast cancer.

B) Manifestations of breast cancer include nipple retraction; a palpable lump, usually in the upper outer quadrant; and scaliness of the skin. A rash on the arm and arm pain upon extension are not manifestations of breast cancer.

C) Manifestations of breast cancer include nipple retraction; a palpable lump, usually in the upper outer quadrant; and scaliness of the skin. A rash on the arm and arm pain upon extension are not manifestations of breast cancer.

D) Manifestations of breast cancer include nipple retraction; a palpable lump, usually in the upper outer quadrant; and scaliness of the skin. A rash on the arm and arm pain upon extension are not manifestations of breast cancer.

E) Manifestations of breast cancer include nipple retraction; a palpable lump, usually in the upper outer quadrant; and scaliness of the skin. A rash on the arm and arm pain upon extension are not manifestations of breast cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.C.4. Analyze breast cancer as it relates to cellular regulation. Identify the clinical manifestations of breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

7) Which form of breast cancer is the most malignant form?

- A) Infiltrating ductal carcinoma
- B) Inflammatory carcinoma of the breast
- C) Carcinoma of the mammary ducts
- D) Paget disease

Answer: B

Explanation: A) The most malignant form of breast cancer is inflammatory carcinoma of the breast, which is a systemic disease. Infiltrating ductal carcinoma is the most common type of breast cancer. Paget disease is an atypical breast cancer. Carcinoma of the mammary ducts is a category of breast cancer.

B) The most malignant form of breast cancer is inflammatory carcinoma of the breast, which is a systemic disease. Infiltrating ductal carcinoma is the most common type of breast cancer. Paget disease is an atypical breast cancer. Carcinoma of the mammary ducts is a category of breast cancer.

C) The most malignant form of breast cancer is inflammatory carcinoma of the breast, which is a systemic disease. Infiltrating ductal carcinoma is the most common type of breast cancer. Paget disease is an atypical breast cancer. Carcinoma of the mammary ducts is a category of breast cancer.

D) The most malignant form of breast cancer is inflammatory carcinoma of the breast, which is a systemic disease. Infiltrating ductal carcinoma is the most common type of breast cancer. Paget disease is an atypical breast cancer. Carcinoma of the mammary ducts is a category of breast cancer.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.C.1. Analyze breast cancer as it relates to cellular regulation. Describe the pathophysiology of breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

8) A woman has a family history of breast cancer, and genetic testing has revealed a mutation in *BRCA2*. If this woman develops breast cancer, what is the most likely mechanism for why the cancer developed?

- A) The cells' ability to accurately translate the RNA was impaired.
- B) The cells underwent mitosis rather than meiosis.
- C) The cells' ability to suppress tumor growth was impaired.
- D) The cells were stimulated to undergo rapid cell division.

Answer: C

Explanation: A) Both *BRCA1* and *BRCA2* are tumor suppressor genes that help prevent the overstimulation of cell growth. If one or both are mutated, the cell's ability to suppress tumor growth is impaired. *BRCA1* and *BRCA2* do not stimulate cells to undergo rapid cell division or impair translation of RNA to protein. Only germ cells undergo meiosis, not cancer cells.

B) Both *BRCA1* and *BRCA2* are tumor suppressor genes that help prevent the overstimulation of cell growth. If one or both are mutated, the cell's ability to suppress tumor growth is impaired. *BRCA1* and *BRCA2* do not stimulate cells to undergo rapid cell division or impair translation of RNA to protein. Only germ cells undergo meiosis, not cancer cells.

C) Both *BRCA1* and *BRCA2* are tumor suppressor genes that help prevent the overstimulation of cell growth. If one or both are mutated, the cell's ability to suppress tumor growth is impaired. *BRCA1* and *BRCA2* do not stimulate cells to undergo rapid cell division or impair translation of RNA to protein. Only germ cells undergo meiosis, not cancer cells.

D) Both *BRCA1* and *BRCA2* are tumor suppressor genes that help prevent the overstimulation of cell growth. If one or both are mutated, the cell's ability to suppress tumor growth is impaired. *BRCA1* and *BRCA2* do not stimulate cells to undergo rapid cell division or impair translation of RNA to protein. Only germ cells undergo meiosis, not cancer cells.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.2 Recognize the relationship of genetics and genomics to health, prevention, screening, diagnostics, prognostics, selection of treatment, and monitoring of treatment effectiveness, using a constructed pedigree from collected family history information as well as standardized symbols and terminology. | NLN Competencies:

Relationship Centered Care: Factors that contribute to or threaten health. | Nursing Process: Assessment

Learning Outcome: 2.C.2. Analyze breast cancer as it relates to cellular regulation. Describe the etiology of breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

9) Why should the nurse tell a client who has undergone surgery for breast cancer to avoid wearing deodorant on the affected side?

- A) Deodorant can stimulate tumor growth in remaining cancer cells.
- B) Deodorant can inhibit the production of sweat, which stimulates healing.
- C) Deodorant can harbor bacteria and increase the client's risk for infection.
- D) Deodorant can irritate the skin and slow the healing process.

Answer: D

Explanation: A) Substances like deodorant and talcum powder can irritate the skin and impede healing. Deodorant does not harbor bacteria or stimulate tumor growth, and although deodorant with an antiperspirant may inhibit sweat production, sweat does not contribute to the healing process.

B) Substances like deodorant and talcum powder can irritate the skin and impede healing. Deodorant does not harbor bacteria or stimulate tumor growth, and although deodorant with an antiperspirant may inhibit sweat production, sweat does not contribute to the healing process.

C) Substances like deodorant and talcum powder can irritate the skin and impede healing. Deodorant does not harbor bacteria or stimulate tumor growth, and although deodorant with an antiperspirant may inhibit sweat production, sweat does not contribute to the healing process.

D) Substances like deodorant and talcum powder can irritate the skin and impede healing. Deodorant does not harbor bacteria or stimulate tumor growth, and although deodorant with an antiperspirant may inhibit sweat production, sweat does not contribute to the healing process.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: III.A.2. Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.7 Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.C.7. Analyze breast cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with breast cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

10) The nurse is providing community teaching related to risk factors for breast cancer for a group of young women. Which woman might the nurse identify as being at a higher risk for developing breast cancer at a young age?

- A) A 28-year-old woman who received radiation for a spinal cord tumor at L3 during childhood
- B) A 26-year-old woman who had a 32-year-old brother with breast cancer
- C) A 34-year-old woman who has breastfed four children
- D) A 42-year-old woman who has a second cousin diagnosed with breast cancer at age 58.

Answer: B

Explanation: A) The risk factors include having a close relative, such as a parent or sibling, or a male relative who has had breast cancer or having radiation therapy to the breast or chest during childhood. The 28-year-old woman had radiation therapy, but not to the breast or chest. The 42-year-old woman had a relative, but not a close relative, with breast cancer. Breastfeeding is a protective factor for developing breast cancer.

B) The risk factors include having a close relative, such as a parent or sibling, or a male relative who has had breast cancer or having radiation therapy to the breast or chest during childhood. The 28-year-old woman had radiation therapy, but not to the breast or chest. The 42-year-old woman had a relative, but not a close relative, with breast cancer. Breastfeeding is a protective factor for developing breast cancer.

C) The risk factors include having a close relative, such as a parent or sibling, or a male relative who has had breast cancer or having radiation therapy to the breast or chest during childhood. The 28-year-old woman had radiation therapy, but not to the breast or chest. The 42-year-old woman had a relative, but not a close relative, with breast cancer. Breastfeeding is a protective factor for developing breast cancer.

D) The risk factors include having a close relative, such as a parent or sibling, or a male relative who has had breast cancer or having radiation therapy to the breast or chest during childhood. The 28-year-old woman had radiation therapy, but not to the breast or chest. The 42-year-old woman had a relative, but not a close relative, with breast cancer. Breastfeeding is a protective factor for developing breast cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7 Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Factors that contribute to or threaten health. | Nursing Process: Assessment
Learning Outcome: 2.C.6. Analyze breast cancer as it relates to cellular regulation. Differentiate considerations for care of clients with breast cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

11) The nurse is caring for a 78-year-old woman who was recently diagnosed with breast cancer. What consideration may the nurse need to make for this woman that she may not need to make for younger women with breast cancer?

- A) Discussing the woman's life expectancy
- B) Arranging transportation to appointments
- C) Ensuring the woman has adequate emotional support
- D) Providing teaching related to breast-conservation treatments

Answer: B

Explanation: A) Older women may not have access to transportation if they or their partner do not drive. The nurse may need to help arrange transportation to appointments for these women. Older women are less likely to show emotional distress compared to younger women, and all clients with breast cancer should receive information related to life expectancy and breast-conservation techniques.

B) Older women may not have access to transportation if they or their partner do not drive. The nurse may need to help arrange transportation to appointments for these women. Older women are less likely to show emotional distress compared to younger women, and all clients with breast cancer should receive information related to life expectancy and breast-conservation techniques.

C) Older women may not have access to transportation if they or their partner do not drive. The nurse may need to help arrange transportation to appointments for these women. Older women are less likely to show emotional distress compared to younger women, and all clients with breast cancer should receive information related to life expectancy and breast-conservation techniques.

D) Older women may not have access to transportation if they or their partner do not drive. The nurse may need to help arrange transportation to appointments for these women. Older women are less likely to show emotional distress compared to younger women, and all clients with breast cancer should receive information related to life expectancy and breast-conservation techniques.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.C.6. Analyze breast cancer as it relates to cellular regulation. Differentiate considerations for care of clients with breast cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with breast cancer.

Exemplar 2.D Colorectal Cancer

1) The nurse is speaking with a client who wants information regarding colorectal cancer. Which statement indicates the client understood the information presented by the nurse?

A) The risk of colorectal cancer decreases with age.

B) Colorectal cancer can be detected in early stages by measuring the level of the carcinogenic embryonic antigen (CEA).

C) Colorectal cancer occurs more frequently in clients who have a history of inflammatory bowel disease.

D) Colorectal cancer has no symptoms in the early stage and there are no definitive diagnostic tests.

Answer: C

Explanation: A) Colorectal cancer is asymptomatic in the early stages. Screening tools such as annual fecal occult blood testing and colonoscopy performed every 10 years can detect the cancer when it is still in the curable stage. Being over age 50 is a risk factor for colorectal cancer. Carcinogenic embryonic antigen (CEA) is not considered a diagnostic test but is used as a tumor marker to follow and manage the disease in clients diagnosed with the disease. The incidence of colorectal cancer is increased in clients with a history of inflammatory bowel disease.

B) Colorectal cancer is asymptomatic in the early stages. Screening tools such as annual fecal occult blood testing and colonoscopy performed every 10 years can detect the cancer when it is still in the curable stage. Being over age 50 is a risk factor for colorectal cancer. Carcinogenic embryonic antigen (CEA) is not considered a diagnostic test but is used as a tumor marker to follow and manage the disease in clients diagnosed with the disease. The incidence of colorectal cancer is increased in clients with a history of inflammatory bowel disease.

C) Colorectal cancer is asymptomatic in the early stages. Screening tools such as annual fecal occult blood testing and colonoscopy performed every 10 years can detect the cancer when it is still in the curable stage. Being over age 50 is a risk factor for colorectal cancer. Carcinogenic embryonic antigen (CEA) is not considered a diagnostic test but is used as a tumor marker to follow and manage the disease in clients diagnosed with the disease. The incidence of colorectal cancer is increased in clients with a history of inflammatory bowel disease.

D) Colorectal cancer is asymptomatic in the early stages. Screening tools such as annual fecal occult blood testing and colonoscopy performed every 10 years can detect the cancer when it is still in the curable stage. Being over age 50 is a risk factor for colorectal cancer. Carcinogenic embryonic antigen (CEA) is not considered a diagnostic test but is used as a tumor marker to follow and manage the disease in clients diagnosed with the disease. The incidence of colorectal cancer is increased in clients with a history of inflammatory bowel disease.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Evaluation

Learning Outcome: 2.D.3. Analyze colorectal cancer as it relates to cellular regulation. Compare the risk factors for and prevention of colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

2) The nurse provides an educational session for community members about the risk factors for colorectal cancer. Which participant statement indicates that teaching has been effective? Select all that apply.

- A) "There is a genetic link in the development of colorectal cancer."
- B) "People with other bowel diseases are at increased risk for developing this cancer."
- C) "Eating a diet high in red meat reduces the risk for developing this type of cancer."
- D) "Eating cereal fiber reduces the risk of developing colorectal cancer."
- E) "Taking aspirin and a multivitamin each day reduces the risk of colorectal cancer."

Answer: A, B, E

Explanation: A) Genetic factors are strongly linked to the risk for colorectal cancer. Family history of the disease increases an individual's risk for its development. Inflammatory bowel diseases increase the risk of colorectal cancer. The disease is prevalent in people who consume diets high in meat proteins. Cereal fiber does not play a role in the development of colorectal cancer. The use of aspirin and multivitamins may reduce the risk of developing colorectal cancer.

B) Genetic factors are strongly linked to the risk for colorectal cancer. Family history of the disease increases an individual's risk for its development. Inflammatory bowel diseases increase the risk of colorectal cancer. The disease is prevalent in people who consume diets high in meat proteins. Cereal fiber does not play a role in the development of colorectal cancer. The use of aspirin and multivitamins may reduce the risk of developing colorectal cancer.

C) Genetic factors are strongly linked to the risk for colorectal cancer. Family history of the disease increases an individual's risk for its development. Inflammatory bowel diseases increase the risk of colorectal cancer. The disease is prevalent in people who consume diets high in meat proteins. Cereal fiber does not play a role in the development of colorectal cancer. The use of aspirin and multivitamins may reduce the risk of developing colorectal cancer.

D) Genetic factors are strongly linked to the risk for colorectal cancer. Family history of the disease increases an individual's risk for its development. Inflammatory bowel diseases increase the risk of colorectal cancer. The disease is prevalent in people who consume diets high in meat proteins. Cereal fiber does not play a role in the development of colorectal cancer. The use of aspirin and multivitamins may reduce the risk of developing colorectal cancer.

E) Genetic factors are strongly linked to the risk for colorectal cancer. Family history of the disease increases an individual's risk for its development. Inflammatory bowel diseases increase the risk of colorectal cancer. The disease is prevalent in people who consume diets high in meat proteins. Cereal fiber does not play a role in the development of colorectal cancer. The use of aspirin and multivitamins may reduce the risk of developing colorectal cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Evaluation

Learning Outcome: 2.D.3. Analyze colorectal cancer as it relates to cellular regulation. Compare the risk factors for and prevention of colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

3) A client recovering from surgery to place a permanent colostomy as treatment for colon cancer is concerned that her spouse will no longer find her sexually attractive. Which response by the nurse is the most appropriate?

A) "Tell me more about the concerns you are having."

B) "Would you like me to speak with your husband for you?"

C) "Do not worry about sex right now. It is more important to focus on recovery."

D) "I will refer you to a counselor to talk about your concerns."

Answer: A

Explanation: A) Since the client has expressed concern to the nurse regarding sexual functioning, the nurse should ask the client to expand upon why there are concerns. Although a referral may be needed for the client at some point, this is not the most appropriate response by the nurse. Telling the client not to worry about the concern and offering to speak to her spouse are not the most appropriate responses at this time.

B) Since the client has expressed concern to the nurse regarding sexual functioning, the nurse should ask the client to expand upon why there are concerns. Although a referral may be needed for the client at some point, this is not the most appropriate response by the nurse. Telling the client not to worry about the concern and offering to speak to her spouse are not the most appropriate responses at this time.

C) Since the client has expressed concern to the nurse regarding sexual functioning, the nurse should ask the client to expand upon why there are concerns. Although a referral may be needed for the client at some point, this is not the most appropriate response by the nurse. Telling the client not to worry about the concern and offering to speak to her spouse are not the most appropriate responses at this time.

D) Since the client has expressed concern to the nurse regarding sexual functioning, the nurse should ask the client to expand upon why there are concerns. Although a referral may be needed for the client at some point, this is not the most appropriate response by the nurse. Telling the client not to worry about the concern and offering to speak to her spouse are not the most appropriate responses at this time.

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Cognitive Level: Applying

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.D.7. Analyze colorectal cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

4) A client has just been told that a colectomy and ileostomy are needed to treat a new diagnosis of colon cancer. Which diagnosis should the nurse use to plan this client's preoperative nursing care?

- A) Knowledge Deficit
- B) Risk for Disuse Syndrome
- C) Risk for Perioperative-Positioning Injury
- D) Anticipatory Grieving

Answer: D

Explanation: A) The client and family will require support to deal with their emotional response to learning the client has cancer and will undergo body image-changing surgery. Disuse syndrome and injury from positioning may be factors after surgery. Now is not the time to begin instructions for postoperative care, because the client will most likely be unable to learn or concentrate on what the nurse is teaching.

B) The client and family will require support to deal with their emotional response to learning the client has cancer and will undergo body image-changing surgery. Disuse syndrome and injury from positioning may be factors after surgery. Now is not the time to begin instructions for postoperative care, because the client will most likely be unable to learn or concentrate on what the nurse is teaching.

C) The client and family will require support to deal with their emotional response to learning the client has cancer and will undergo body image-changing surgery. Disuse syndrome and injury from positioning may be factors after surgery. Now is not the time to begin instructions for postoperative care, because the client will most likely be unable to learn or concentrate on what the nurse is teaching.

D) The client and family will require support to deal with their emotional response to learning the client has cancer and will undergo body image-changing surgery. Disuse syndrome and injury from positioning may be factors after surgery. Now is not the time to begin instructions for postoperative care, because the client will most likely be unable to learn or concentrate on what the nurse is teaching.

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Cognitive Level: Analyzing

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.D.7. Analyze colorectal cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

5) The nurse is evaluating care provided to a client recovering from surgery for colorectal cancer. Which outcomes indicate that care has been successful? Select all that apply.

- A) Client reports pain level as an 8 on a rating scale of 0 to 10.
- B) Client has an hourly urine output of 45 mL.
- C) Client performs morning care with assistance.
- D) Client states family members will care for the ostomy at home.
- E) Client tolerates full liquid diet and is requesting solid food.

Answer: B, C, E

Explanation: A) Evidence that care has been effective includes an adequate hourly urine output of at least 0.5 mL/kg/hr, ability to perform activities of daily living, and tolerating oral intake. Not participating in the care of an ostomy and stating that family will provide the care needed are evidence of ineffective coping, an undesirable outcome. Pain rating should be at a level of 3 or less as evidence of successful care.

B) Evidence that care has been effective includes an adequate hourly urine output of at least 0.5 mL/kg/hr, ability to perform activities of daily living, and tolerating oral intake. Not participating in the care of an ostomy and stating that family will provide the care needed are evidence of ineffective coping, an undesirable outcome. Pain rating should be at a level of 3 or less as evidence of successful care.

C) Evidence that care has been effective includes an adequate hourly urine output of at least 0.5 mL/kg/hr, ability to perform activities of daily living, and tolerating oral intake. Not participating in the care of an ostomy and stating that family will provide the care needed are evidence of ineffective coping, an undesirable outcome. Pain rating should be at a level of 3 or less as evidence of successful care.

D) Evidence that care has been effective includes an adequate hourly urine output of at least 0.5 mL/kg/hr, ability to perform activities of daily living, and tolerating oral intake. Not participating in the care of an ostomy and stating that family will provide the care needed are evidence of ineffective coping, an undesirable outcome. Pain rating should be at a level of 3 or less as evidence of successful care.

E) Evidence that care has been effective includes an adequate hourly urine output of at least 0.5 mL/kg/hr, ability to perform activities of daily living, and tolerating oral intake. Not participating in the care of an ostomy and stating that family will provide the care needed are evidence of ineffective coping, an undesirable outcome. Pain rating should be at a level of 3 or less as evidence of successful care.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.D.7. Analyze colorectal cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

6) A nurse is caring for a client who has had a double-barrel colostomy. Which is true regarding the proximal stoma? Select all that apply.

- A) It is also called the mucous fistula.
- B) It diverts feces to the abdominal wall.
- C) It expels mucus from the distal colon.
- D) It is a functional stoma.
- E) It expels mucus from the proximal colon.

Answer: B, D

Explanation: A) When a double-barrel colostomy is performed, two separate stomas are created. The distal colon is not removed, but bypassed. The proximal stoma, which is functional, diverts feces to the abdominal wall. The distal stoma, also called the mucous fistula, expels mucus from the distal colon.

B) When a double-barrel colostomy is performed, two separate stomas are created. The distal colon is not removed, but bypassed. The proximal stoma, which is functional, diverts feces to the abdominal wall. The distal stoma, also called the mucous fistula, expels mucus from the distal colon.

C) When a double-barrel colostomy is performed, two separate stomas are created. The distal colon is not removed, but bypassed. The proximal stoma, which is functional, diverts feces to the abdominal wall. The distal stoma, also called the mucous fistula, expels mucus from the distal colon.

D) When a double-barrel colostomy is performed, two separate stomas are created. The distal colon is not removed, but bypassed. The proximal stoma, which is functional, diverts feces to the abdominal wall. The distal stoma, also called the mucous fistula, expels mucus from the distal colon.

E) When a double-barrel colostomy is performed, two separate stomas are created. The distal colon is not removed, but bypassed. The proximal stoma, which is functional, diverts feces to the abdominal wall. The distal stoma, also called the mucous fistula, expels mucus from the distal colon.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

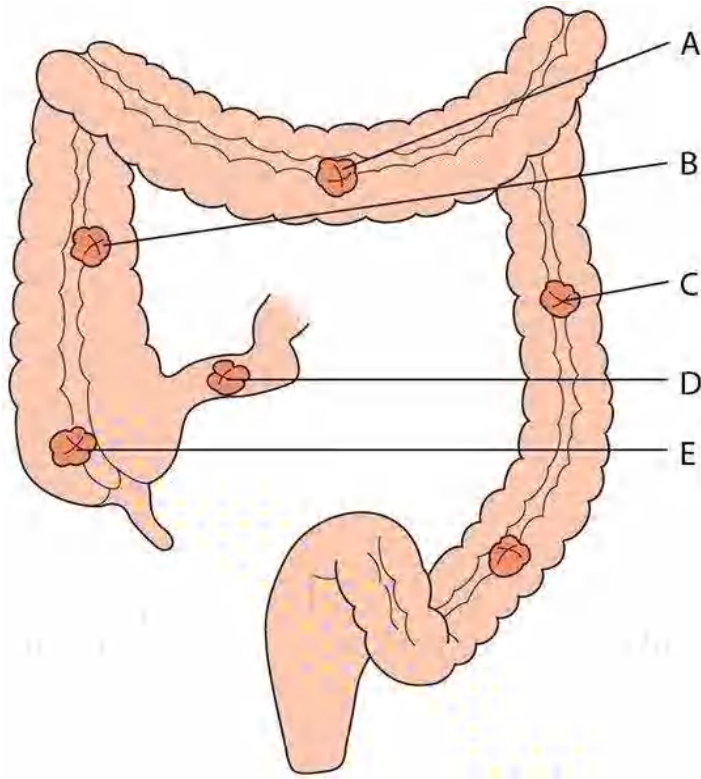
Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.D.5. Analyze colorectal cancer as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

7) The nurse is caring for a client with colorectal cancer who is postoperative from a transverse colostomy placement. What area of the bowel is involved?



- A) A
- B) B
- C) C
- D) D
- E) E

Answer: A

Explanation: A) Colostomies take the name of the portion of the colon from which they are formed. The transverse colon is the area of the bowel involved.

B) Colostomies take the name of the portion of the colon from which they are formed. The transverse colon is the area of the bowel involved.

C) Colostomies take the name of the portion of the colon from which they are formed. The transverse colon is the area of the bowel involved.

D) Colostomies take the name of the portion of the colon from which they are formed. The transverse colon is the area of the bowel involved.

E) Colostomies take the name of the portion of the colon from which they are formed. The transverse colon is the area of the bowel involved.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.D.5. Analyze colorectal cancer as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

8) A client has colorectal cancer at stage I, T2. What has the tumor invaded?

- A) The submucosa of the bowel
- B) The muscularis propria of the bowel
- C) The perirectal tissues
- D) The lymph nodes

Answer: B

Explanation: A) A tumor with stage T1 has invaded the submucosa. A tumor with the stage T2 has invaded the muscularis propria. A tumor with stage T3 has invaded the perirectal tissues. A tumor that has metastasized to the lymph nodes would be given an N1 to N3 designation.

B) A tumor with stage T1 has invaded the submucosa. A tumor with the stage T2 has invaded the muscularis propria. A tumor with stage T3 has invaded the perirectal tissues. A tumor that has metastasized to the lymph nodes would be given an N1 to N3 designation.

C) A tumor with stage T1 has invaded the submucosa. A tumor with the stage T2 has invaded the muscularis propria. A tumor with stage T3 has invaded the perirectal tissues. A tumor that has metastasized to the lymph nodes would be given an N1 to N3 designation.

D) A tumor with stage T1 has invaded the submucosa. A tumor with the stage T2 has invaded the muscularis propria. A tumor with stage T3 has invaded the perirectal tissues. A tumor that has metastasized to the lymph nodes would be given an N1 to N3 designation.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1 Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.D.1. Analyze colorectal cancer as it relates to cellular regulation. Describe the pathophysiology of colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

9) A client with colorectal cancer has no metastasis in regional lymph nodes. What can the nurse conclude from this about metastasis of this cancer?

- A) The distal lymph nodes and other major organs will also not have metastasis.
- B) The tumor has instead metastasized to distal lymph nodes.
- C) The nurse cannot conclude anything about metastasis to other areas of the body.
- D) The tumor has instead metastasized through the circulatory system to other major organs.

Answer: C

Explanation: A) In some types of cancer, the regional lymph nodes are a good marker for metastasis. However, metastasis from colorectal cancer is not always an orderly process, and the absence or presence of metastasis in regional lymph nodes has no bearing on metastasis to distal lymph nodes or other major organs.

B) In some types of cancer, the regional lymph nodes are a good marker for metastasis. However, metastasis from colorectal cancer is not always an orderly process, and the absence or presence of metastasis in regional lymph nodes has no bearing on metastasis to distal lymph nodes or other major organs.

C) In some types of cancer, the regional lymph nodes are a good marker for metastasis. However, metastasis from colorectal cancer is not always an orderly process, and the absence or presence of metastasis in regional lymph nodes has no bearing on metastasis to distal lymph nodes or other major organs.

D) In some types of cancer, the regional lymph nodes are a good marker for metastasis. However, metastasis from colorectal cancer is not always an orderly process, and the absence or presence of metastasis in regional lymph nodes has no bearing on metastasis to distal lymph nodes or other major organs.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.D.2. Analyze colorectal cancer as it relates to cellular regulation. Describe the pathophysiology of colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

10) Which complaint by the client should the nurse report to the physician as a potential indication of colorectal cancer?

- A) Abdominal pain
- B) Constipation
- C) Diarrhea
- D) Rectal bleeding

Answer: D

Explanation: A) Although all of these clinical manifestations can be related to colorectal cancer, abdominal pain, constipation, and diarrhea can have many etiologies unrelated to colorectal cancer. Rectal bleeding has fewer etiologies and should be assessed further for the potential cause.

B) Although all of these clinical manifestations can be related to colorectal cancer, abdominal pain, constipation, and diarrhea can have many etiologies unrelated to colorectal cancer. Rectal bleeding has fewer etiologies and should be assessed further for the potential cause.

C) Although all of these clinical manifestations can be related to colorectal cancer, abdominal pain, constipation, and diarrhea can have many etiologies unrelated to colorectal cancer. Rectal bleeding has fewer etiologies and should be assessed further for the potential cause.

D) Although all of these clinical manifestations can be related to colorectal cancer, abdominal pain, constipation, and diarrhea can have many etiologies unrelated to colorectal cancer. Rectal bleeding has fewer etiologies and should be assessed further for the potential cause.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1 Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.D.4. Analyze colorectal cancer as it relates to cellular regulation. Identify the clinical manifestations of colorectal cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

11) The nurse is assessing several children with polyps in the colon and rectum. Which child is at highest risk of developing colorectal cancer in adulthood?

- A) A 4-year-old with isolated juvenile polyps
- B) A 6-month-old with diffuse juvenile polyposis of infancy
- C) A 12-year-old with juvenile polyposis coli
- D) A 7-year-old with adenomatous polyps

Answer: C

Explanation: A) Children who develop juvenile polyposis or juvenile polyposis coli have an increased risk of developing colorectal cancer in adulthood by as much as 50%. Adenomatous polyps also increase the risk for malignancy as adults, but this risk is not as high as 50%. Isolated juvenile polyps lack malignant potential. Diffuse juvenile polyposis of infancy is almost always fatal, so the client is not likely to reach adulthood.

B) Children who develop juvenile polyposis or juvenile polyposis coli have an increased risk of developing colorectal cancer in adulthood by as much as 50%. Adenomatous polyps also increase the risk for malignancy as adults, but this risk is not as high as 50%. Isolated juvenile polyps lack malignant potential. Diffuse juvenile polyposis of infancy is almost always fatal, so the client is not likely to reach adulthood.

C) Children who develop juvenile polyposis or juvenile polyposis coli have an increased risk of developing colorectal cancer in adulthood by as much as 50%. Adenomatous polyps also increase the risk for malignancy as adults, but this risk is not as high as 50%. Isolated juvenile polyps lack malignant potential. Diffuse juvenile polyposis of infancy is almost always fatal, so the client is not likely to reach adulthood.

D) Children who develop juvenile polyposis or juvenile polyposis coli have an increased risk of developing colorectal cancer in adulthood by as much as 50%. Adenomatous polyps also increase the risk for malignancy as adults, but this risk is not as high as 50%. Isolated juvenile polyps lack malignant potential. Diffuse juvenile polyposis of infancy is almost always fatal, so the client is not likely to reach adulthood.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.D.6. Analyze colorectal cancer as it relates to cellular regulation.

Differentiate considerations for care of clients with colorectal cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

12) The nurse is assessing an older adult client recently diagnosed with colorectal cancer. What information is important for the nurse to ask for when completing the geriatric assessment?

- A) The names, addresses, and birthdates of all of the client's children
- B) The client's food diary for the past month
- C) A complete list of all medications and supplements the client is currently taking
- D) Whether the client has ever had a gastrointestinal disorder that caused diarrhea

Answer: C

Explanation: A) The geriatric assessment should evaluate the patient's functional status, physical performance, comorbidities, polypharmacy, nutritional status, cognitive function, emotional function, and social support. Asking for a complete list of all medications and supplements the client is currently taking will help assess polypharmacy. The client may not have a food diary for the past month unless specifically asked to record all food intake. A past history of gastrointestinal disorders is not as important as current comorbidities. Although information related to social support is important, the nurse does not need the names, addresses, and birthdates of the client's children.

B) The geriatric assessment should evaluate the patient's functional status, physical performance, comorbidities, polypharmacy, nutritional status, cognitive function, emotional function, and social support. Asking for a complete list of all medications and supplements the client is currently taking will help assess polypharmacy. The client may not have a food diary for the past month unless specifically asked to record all food intake. A past history of gastrointestinal disorders is not as important as current comorbidities. Although information related to social support is important, the nurse does not need the names, addresses, and birthdates of the client's children.

C) The geriatric assessment should evaluate the patient's functional status, physical performance, comorbidities, polypharmacy, nutritional status, cognitive function, emotional function, and social support. Asking for a complete list of all medications and supplements the client is currently taking will help assess polypharmacy. The client may not have a food diary for the past month unless specifically asked to record all food intake. A past history of gastrointestinal disorders is not as important as current comorbidities. Although information related to social support is important, the nurse does not need the names, addresses, and birthdates of the client's children.

D) The geriatric assessment should evaluate the patient's functional status, physical performance, comorbidities, polypharmacy, nutritional status, cognitive function, emotional function, and social support. Asking for a complete list of all medications and supplements the client is currently taking will help assess polypharmacy. The client may not have a food diary for the past month unless specifically asked to record all food intake. A past history of gastrointestinal disorders is not as important as current comorbidities. Although information related to social support is important, the nurse does not need the names, addresses, and birthdates of the client's children.

Page Ref: 93

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.D.6. Analyze colorectal cancer as it relates to cellular regulation.

Differentiate considerations for care of clients with colorectal cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with colorectal cancer.

Exemplar 2.E Leukemia

1) A client is receiving chemotherapy for acute lymphocytic leukemia. While providing care for this client, which clinical manifestations would indicate tumor lysis syndrome? Select all that apply.

- A) Thrombocytopenia
- B) Cardiac arrhythmia
- C) Respiratory distress
- D) Changes in urine output
- E) Upper-extremity edema

Answer: B, D

Explanation: A) Tumor lysis causes a metabolic emergency. The release of intracellular contents into the circulation cause hyperkalemia, hyperuricemia, and hyperphosphatemia, which may lead to cardiac arrhythmias, renal failure, and even death. Thrombocytopenia occurs with a hematological emergency. Space-occupying lesions can cause respiratory distress and upper-extremity edema.

B) Tumor lysis causes a metabolic emergency. The release of intracellular contents into the circulation cause hyperkalemia, hyperuricemia, and hyperphosphatemia, which may lead to cardiac arrhythmias, renal failure, and even death. Thrombocytopenia occurs with a hematological emergency. Space-occupying lesions can cause respiratory distress and upper-extremity edema.

C) Tumor lysis causes a metabolic emergency. The release of intracellular contents into the circulation cause hyperkalemia, hyperuricemia, and hyperphosphatemia, which may lead to cardiac arrhythmias, renal failure, and even death. Thrombocytopenia occurs with a hematological emergency. Space-occupying lesions can cause respiratory distress and upper-extremity edema.

D) Tumor lysis causes a metabolic emergency. The release of intracellular contents into the circulation cause hyperkalemia, hyperuricemia, and hyperphosphatemia, which may lead to cardiac arrhythmias, renal failure, and even death. Thrombocytopenia occurs with a hematological emergency. Space-occupying lesions can cause respiratory distress and upper-extremity edema.

E) Tumor lysis causes a metabolic emergency. The release of intracellular contents into the circulation cause hyperkalemia, hyperuricemia, and hyperphosphatemia, which may lead to cardiac arrhythmias, renal failure, and even death. Thrombocytopenia occurs with a hematological emergency. Space-occupying lesions can cause respiratory distress and upper-extremity edema.

Page Ref: 100

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.E.5. Analyze leukemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

2) An adult client reports to the nurse an inability to tolerate usual exercise and the feeling of fatigue. The client states that these symptoms have been gradual over time. Which physical assessment findings, along with the client's verbal complaints, would indicate chronic lymphocytic leukemia (CLL)? Select all that apply.

- A) Joint pain
- B) Pallor
- C) Splenomegaly
- D) Abnormal bleeding
- E) Edema

Answer: B, C, E

Explanation: A) The symptoms for CLL are insidious and occur over time, affecting older adults. The client may exhibit splenomegaly, pallor, edema, and lymphadenopathy. Bone and joint pain with abnormal bleeding are characteristics of acute myeloid leukemia (AML), which also occurs in older clients.

B) The symptoms for CLL are insidious and occur over time, affecting older adults. The client may exhibit splenomegaly, pallor, edema, and lymphadenopathy. Bone and joint pain with abnormal bleeding are characteristics of acute myeloid leukemia (AML), which also occurs in older clients.

C) The symptoms for CLL are insidious and occur over time, affecting older adults. The client may exhibit splenomegaly, pallor, edema, and lymphadenopathy. Bone and joint pain with abnormal bleeding are characteristics of acute myeloid leukemia (AML), which also occurs in older clients.

D) The symptoms for CLL are insidious and occur over time, affecting older adults. The client may exhibit splenomegaly, pallor, edema, and lymphadenopathy. Bone and joint pain with abnormal bleeding are characteristics of acute myeloid leukemia (AML), which also occurs in older clients.

E) The symptoms for CLL are insidious and occur over time, affecting older adults. The client may exhibit splenomegaly, pallor, edema, and lymphadenopathy. Bone and joint pain with abnormal bleeding are characteristics of acute myeloid leukemia (AML), which also occurs in older clients.

Page Ref: 99

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1. Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment
Learning Outcome: 2.E.1. Analyze leukemia as it relates to cellular regulation. Describe the pathophysiology of leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

3) The nurse is teaching a class at a local community center about decreasing risk factors for cancer. Which risk factors should the nurse include in the teaching regarding leukemia? Select all that apply.

- A) Smoking
- B) Diets low in fat
- C) Exposure to infectious agents
- D) Bloom syndrome
- E) Decreased exercise

Answer: A, C, D

Explanation: A) A higher incidence of leukemia is associated with chromosomal defects such as Bloom syndrome, exposure to infectious agents, and cigarette smoking. Low-fat diets are not a risk factor for leukemia, and neither is lack of exercise.

B) A higher incidence of leukemia associated with chromosomal defects such as Bloom syndrome, exposure to infectious agents, and chemical agents used to treat previous cancer, such as alkylating agents. Low-fat diets are not a risk factor for leukemia, and neither is lack of exercise.

C) A higher incidence of leukemia is associated with chromosomal defects such as Bloom syndrome, exposure to infectious agents, and cigarette smoking. Low-fat diets are not a risk factor for leukemia, and neither is lack of exercise.

D) A higher incidence of leukemia is associated with chromosomal defects such as Bloom syndrome, exposure to infectious agents, and cigarette smoking. Low-fat diets are not a risk factor for leukemia, and neither is lack of exercise.

E) A higher incidence of leukemia is associated with chromosomal defects such as Bloom syndrome, exposure to infectious agents, and cigarette smoking. Low-fat diets are not a risk factor for leukemia, and neither is lack of exercise.

Page Ref: 99

Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.E.3. Analyze leukemia as it relates to cellular regulation. Compare the risk factors for and prevention of leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

4) The nurse is planning care for a client with acute myeloid leukemia (AML). Which diagnoses are priorities for this client to minimize the risk of complications associated with AML? Select all that apply.

- A) Risk for Infection
- B) Ineffective Thermoregulation
- C) Imbalanced Nutrition, Less than Body Requirements
- D) Fluid Volume Excess
- E) Risk for Bleeding

Answer: A, E

Explanation: A) AML results in neutropenia (decreased neutrophils = risk of infection) and thrombocytopenia (decreased platelets, which leads to increased risk of bleeding). Therefore, actions to minimize these risks are priorities when caring for clients with AML. Unlike clients with other types of leukemia, the client with AML does not have a problem with fluid shifts, edema, heat intolerance, or weight loss that would require nursing intervention.

B) AML results in neutropenia (decreased neutrophils = risk of infection) and thrombocytopenia (decreased platelets, which leads to increased risk of bleeding). Therefore, actions to minimize these risks are priorities when caring for clients with AML. Unlike clients with other types of leukemia, the client with AML does not have a problem with fluid shifts, edema, heat intolerance, or weight loss that would require nursing intervention.

C) AML results in neutropenia (decreased neutrophils = risk of infection) and thrombocytopenia (decreased platelets, which leads to increased risk of bleeding). Therefore, actions to minimize these risks are priorities when caring for clients with AML. Unlike clients with other types of leukemia, the client with AML does not have a problem with fluid shifts, edema, heat intolerance, or weight loss that would require nursing intervention.

D) AML results in neutropenia (decreased neutrophils = risk of infection) and thrombocytopenia (decreased platelets, which leads to increased risk of bleeding). Therefore, actions to minimize these risks are priorities when caring for clients with AML. Unlike clients with other types of leukemia, the client with AML does not have a problem with fluid shifts, edema, heat intolerance, or weight loss that would require nursing intervention.

E) AML results in neutropenia (decreased neutrophils = risk of infection) and thrombocytopenia (decreased platelets, which leads to increased risk of bleeding). Therefore, actions to minimize these risks are priorities when caring for clients with AML. Unlike clients with other types of leukemia, the client with AML does not have a problem with fluid shifts, edema, heat intolerance, or weight loss that would require nursing intervention.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.E.7. Analyze leukemia as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

5) A young school-age boy is admitted with newly diagnosed acute lymphocytic leukemia. The multidisciplinary team is meeting to plan care for this child and family. Which statement by the parents should receive priority in the nursing planning process?

A) "His brother is upset about the amount of time we are away from home."

B) "Can we plan a trip out of town sometime this summer?"

C) "We are afraid that he will dislodge his central line at school."

D) "How are we going to pay for his treatment?"

Answer: C

Explanation: A) Dislodging the central line is an imminent, potentially life-threatening concern. Financial worries, although a significant concern, would not take precedence over a potentially life-threatening concern. Questions about travel and other family matters should be addressed, but they are not acute issues. The impact of the illness on the client's brother is a realistic concern, but not acute or life-threatening.

B) Dislodging the central line is an imminent, potentially life-threatening concern. Financial worries, although a significant concern, would not take precedence over a potentially life-threatening concern. Questions about travel and other family matters should be addressed, but they are not acute issues. The impact of the illness on the client's brother is a realistic concern, but not acute or life-threatening.

C) Dislodging the central line is an imminent, potentially life-threatening concern. Financial worries, although a significant concern, would not take precedence over a potentially life-threatening concern. Questions about travel and other family matters should be addressed, but they are not acute issues. The impact of the illness on the client's brother is a realistic concern, but not acute or life-threatening.

D) Dislodging the central line is an imminent, potentially life-threatening concern. Financial worries, although a significant concern, would not take precedence over a potentially life-threatening concern. Questions about travel and other family matters should be addressed, but they are not acute issues. The impact of the illness on the client's brother is a realistic concern, but not acute or life-threatening.

Page Ref: 104

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Relationship Centered Care: The role of family, culture, and community in a person's development. | Nursing Process: Planning

Learning Outcome: 2.E.7. Analyze leukemia as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

6) The nurse is assisting the healthcare provider with a bone marrow aspiration and biopsy on a client who has leukemia. The client also has thrombocytopenia. Upon completing the test, which intervention is a priority for the nurse?

- A) Dispose of the equipment used, and clean the area properly.
- B) Label and refrigerate the specimen obtained by the physician.
- C) Hold pressure on the wound for approximately 5 minutes.
- D) Make certain the client understands the purpose of the test.

Answer: C

Explanation: A) The most important task for the nurse is to prevent bleeding after the biopsy. Holding pressure on the wound for 5 minutes is effective. Dealing with the specimen is accomplished by a third party or after the nurse stabilizes the client. An explanation of the test is performed before the procedure is begun. Cleaning the area is completed after the client is stable and the specimen is sent to the laboratory.

B) The most important task for the nurse is to prevent bleeding after the biopsy. Holding pressure on the wound for 5 minutes is effective. Dealing with the specimen is accomplished by a third party or after the nurse stabilizes the client. An explanation of the test is performed before the procedure is begun. Cleaning the area is completed after the client is stable and the specimen is sent to the laboratory.

C) The most important task for the nurse is to prevent bleeding after the biopsy. Holding pressure on the wound for 5 minutes is effective. Dealing with the specimen is accomplished by a third party or after the nurse stabilizes the client. An explanation of the test is performed before the procedure is begun. Cleaning the area is completed after the client is stable and the specimen is sent to the laboratory.

D) The most important task for the nurse is to prevent bleeding after the biopsy. Holding pressure on the wound for 5 minutes is effective. Dealing with the specimen is accomplished by a third party or after the nurse stabilizes the client. An explanation of the test is performed before the procedure is begun. Cleaning the area is completed after the client is stable and the specimen is sent to the laboratory.

Page Ref: 106

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.E.5. Analyze leukemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

7) The nurse is caring for a client with leukemia who is experiencing neutropenia as a result of chemotherapy. Which action should the nurse include in the plan of care for this client?

- A) Replace hand hygiene with gloves.
- B) Restrict visitors with communicable illnesses.
- C) Restrict fluid intake.
- D) Insert an indwelling urinary catheter to prevent skin breakdown.

Answer: B

Explanation: A) In the neutropenic client, visitors with communicable infections should be restricted. Fluid intake should be encouraged. Gloves may be appropriate but should never replace hand hygiene. Invasive procedures such as indwelling catheters should be avoided.

B) In the neutropenic client, visitors with communicable infections should be restricted. Fluid intake should be encouraged. Gloves may be appropriate but should never replace hand hygiene. Invasive procedures such as indwelling catheters should be avoided.

C) In the neutropenic client, visitors with communicable infections should be restricted. Fluid intake should be encouraged. Gloves may be appropriate but should never replace hand hygiene. Invasive procedures such as indwelling catheters should be avoided.

D) In the neutropenic client, visitors with communicable infections should be restricted. Fluid intake should be encouraged. Gloves may be appropriate but should never replace hand hygiene. Invasive procedures such as indwelling catheters should be avoided.

Page Ref: 106

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Planning

Learning Outcome: 2.E.7. Analyze leukemia as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

8) A nurse working in the pediatric intensive care unit (PICU) is caring for a child with leukemia. What is the most common type of leukemia in children?

- A) Chronic lymphocytic leukemia
- B) Acute lymphocytic (lymphoblastic) leukemia
- C) Acute myeloid (myeloblastic) leukemia
- D) Chronic myeloid (myelogenous) leukemia.

Answer: B

Explanation: A) Acute lymphoblastic leukemia is the most common type of leukemia in children and adolescents. The other choices are also types of leukemia, but these types of leukemia are more common in adults and are not common in children.

B) Acute lymphoblastic leukemia is the most common type of leukemia in children and adolescents. The other choices are also types of leukemia, but these types of leukemia are more common in adults and are not common in children.

C) Acute lymphoblastic leukemia is the most common type of leukemia in children and adolescents. The other choices are also types of leukemia, but these types of leukemia are more common in adults and are not common in children.

D) Acute lymphoblastic leukemia is the most common type of leukemia in children and adolescents. The other choices are also types of leukemia, but these types of leukemia are more common in adults and are not common in children.

Page Ref: 98

Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.E.6. Analyze leukemia as it relates to cellular regulation. Differentiate considerations for care of clients with leukemia across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

9) A pediatric nurse is caring for a child with acute lymphoblastic leukemia (ALL). When providing education to the child's parents regarding this disease, which topics should the nurse include? Select all that apply.

- A) ALL is characterized by abnormal proliferation of all bone marrow elements.
- B) This form of leukemia is the most common type among children and adolescents.
- C) Most cases of ALL result from the malignant transformation of B cells.
- D) Malignant lymphocytes are able to effectively maintain immunity.
- E) The onset of ALL is usually gradual.

Answer: B, C

Explanation: A) Acute lymphoblastic leukemia (ALL) is the most common type of leukemia among children and adolescents. Most cases of ALL result from the malignant transformation of B cells. The onset of ALL is usually acute and rapid. Malignant lymphocytes are immature and do not function effectively to maintain immunity. Chronic myeloid leukemia (CML) is characterized by abnormal proliferation of all bone marrow elements.

B) Acute lymphoblastic leukemia (ALL) is the most common type of leukemia among children and adolescents. Most cases of ALL result from the malignant transformation of B cells. The onset of ALL is usually acute and rapid. Malignant lymphocytes are immature and do not function effectively to maintain immunity. Chronic myeloid leukemia (CML) is characterized by abnormal proliferation of all bone marrow elements.

C) Acute lymphoblastic leukemia (ALL) is the most common type of leukemia among children and adolescents. Most cases of ALL result from the malignant transformation of B cells. The onset of ALL is usually acute and rapid. Malignant lymphocytes are immature and do not function effectively to maintain immunity. Chronic myeloid leukemia (CML) is characterized by abnormal proliferation of all bone marrow elements.

D) Acute lymphoblastic leukemia (ALL) is the most common type of leukemia among children and adolescents. Most cases of ALL result from the malignant transformation of B cells. The onset of ALL is usually acute and rapid. Malignant lymphocytes are immature and do not function effectively to maintain immunity. Chronic myeloid leukemia (CML) is characterized by abnormal proliferation of all bone marrow elements.

E) Acute lymphoblastic leukemia (ALL) is the most common type of leukemia among children and adolescents. Most cases of ALL result from the malignant transformation of B cells. The onset of ALL is usually acute and rapid. Malignant lymphocytes are immature and do not function effectively to maintain immunity. Chronic myeloid leukemia (CML) is characterized by abnormal proliferation of all bone marrow elements.

Page Ref: 98

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.E.1. Analyze leukemia as it relates to cellular regulation. Describe the pathophysiology of leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

10) A nurse is caring for a client with chronic myeloid leukemia (CML) who is neutropenic. Which interventions will the nurse implement to ensure this client's safety? Select all that apply.

- A) Teach the client to maintain good personal hygiene.
- B) Encourage the client to eat a diet low in protein.
- C) Administer granulocyte colony-stimulating factor (G-CSF) as ordered.
- D) Administer neutrophil colony-stimulating factor (N-CSF) as ordered.
- E) Administer a prophylactic gram-negative antibiotic.

Answer: A, C

Explanation: A) A client who is neutropenic has a decrease in the level of white blood cells (WBCs) and is susceptible to infection and/or disease. To ensure the safety of the client with neutropenia, the nurse will teach the client to maintain good personal hygiene, administer granulocyte colony-stimulating factor (G-CSF) as ordered, and administer a broad-spectrum antibiotic as ordered. The client should be taught to eat a diet high in protein, not low in protein.

B) A client who is neutropenic has a decrease in the level of white blood cells (WBCs) and is susceptible to infection and/or disease. To ensure the safety of the client with neutropenia, the nurse will teach the client to maintain good personal hygiene, administer granulocyte colony-stimulating factor (G-CSF) as ordered, and administer a broad-spectrum antibiotic as ordered. The client should be taught to eat a diet high in protein, not low in protein.

C) A client who is neutropenic has a decrease in the level of white blood cells (WBCs) and is susceptible to infection and/or disease. To ensure the safety of the client with neutropenia, the nurse will teach the client to maintain good personal hygiene, administer granulocyte colony-stimulating factor (G-CSF) as ordered, and administer a broad-spectrum antibiotic as ordered. The client should be taught to eat a diet high in protein, not low in protein.

D) A client who is neutropenic has a decrease in the level of white blood cells (WBCs) and is susceptible to infection and/or disease. To ensure the safety of the client with neutropenia, the nurse will teach the client to maintain good personal hygiene, administer granulocyte colony-stimulating factor (G-CSF) as ordered, and administer a broad-spectrum antibiotic as ordered. The client should be taught to eat a diet high in protein, not low in protein.

E) A client who is neutropenic has a decrease in the level of white blood cells (WBCs) and is susceptible to infection and/or disease. To ensure the safety of the client with neutropenia, the nurse will teach the client to maintain good personal hygiene, administer granulocyte colony-stimulating factor (G-CSF) as ordered, and administer a broad-spectrum antibiotic as ordered. The client should be taught to eat a diet high in protein, not low in protein.

Page Ref: 106

Cognitive Level: Analyzing

Client Need/Sub: Safe and Effective Care Environment: Safety and Infection Control

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.E.5. Analyze leukemia as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

11) A nurse is planning care for a client with leukemia. The nurse chooses "Risk for Bleeding" as the nursing diagnosis. Which interventions support this nursing diagnosis? Select all that apply.

- A) Educate client to not strain during bowel movements.
- B) Use nonelectric razor when providing grooming for client.
- C) Limit parenteral injections.
- D) Apply pressure to arterial puncture sites for 5 minutes.
- E) Encourage client to deep breathe and huff cough frequently.

Answer: A, C

Explanation: A) The client at risk for bleeding has specific interventions to which the nurse should adhere. The nurse should educate the client to not strain during bowel movements and to use an electric razor to avoid bleeding. The nurse should also limit the use of parenteral injections and apply 15 to 20 minutes of pressure to any arterial puncture sites. The nurse should discourage the client from forceful coughing to prevent further bleeding.

B) The client at risk for bleeding has specific interventions to which the nurse should adhere. The nurse should educate the client to not strain during bowel movements and to use an electric razor to avoid bleeding. The nurse should also limit the use of parenteral injections and apply 15 to 20 minutes of pressure to any arterial puncture sites. The nurse should discourage the client from forceful coughing to prevent further bleeding.

C) The client at risk for bleeding has specific interventions to which the nurse should adhere. The nurse should educate the client to not strain during bowel movements and to use an electric razor to avoid bleeding. The nurse should also limit the use of parenteral injections and apply 15 to 20 minutes of pressure to any arterial puncture sites. The nurse should discourage the client from forceful coughing to prevent further bleeding.

D) The client at risk for bleeding has specific interventions to which the nurse should adhere. The nurse should educate the client to not strain during bowel movements and to use an electric razor to avoid bleeding. The nurse should also limit the use of parenteral injections and apply 15 to 20 minutes of pressure to any arterial puncture sites. The nurse should discourage the client from forceful coughing to prevent further bleeding.

E) The client at risk for bleeding has specific interventions to which the nurse should adhere. The nurse should educate the client to not strain during bowel movements and to use an electric razor to avoid bleeding. The nurse should also limit the use of parenteral injections and apply 15 to 20 minutes of pressure to any arterial puncture sites. The nurse should discourage the client from forceful coughing to prevent further bleeding.

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Cognitive Level: Applying

Client Need/Sub: Safe and Effective Care Environment: Safety and Infection Control

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.E.7. Analyze leukemia as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

12) A client who presents with complaints of easily bruising, bleeding gums, and petechiae may be suffering from what complication of leukemia?

- A) Thrombocytopenia
- B) Anemia
- C) Hepatomegaly
- D) Neutropenia

Answer: A

Explanation: A) The manifestations of thrombocytopenia, a common complication of leukemia, include petechiae, purpura, ecchymoses, epistaxis, hematomas, hematuria, and gastrointestinal bleeding. Anemia can be a late manifestation of thrombocytopenia. Hepatomegaly is an enlarged liver. Neutropenia increases the risk of infection in clients with leukemia. However, anemia, hepatomegaly, and neutropenia do not cause bleeding.

B) The manifestations of thrombocytopenia, a common complication of leukemia, include petechiae, purpura, ecchymoses, epistaxis, hematomas, hematuria, and gastrointestinal bleeding. Anemia can be a late manifestation of thrombocytopenia. Hepatomegaly is an enlarged liver. Neutropenia increases the risk of infection in clients with leukemia. However, anemia, hepatomegaly, and neutropenia do not cause bleeding.

C) The manifestations of thrombocytopenia, a common complication of leukemia, include petechiae, purpura, ecchymoses, epistaxis, hematomas, hematuria, and gastrointestinal bleeding. Anemia can be a late manifestation of thrombocytopenia. Hepatomegaly is an enlarged liver. Neutropenia increases the risk of infection in clients with leukemia. However, anemia, hepatomegaly, and neutropenia do not cause bleeding.

D) The manifestations of thrombocytopenia, a common complication of leukemia, include petechiae, purpura, ecchymoses, epistaxis, hematomas, hematuria, and gastrointestinal bleeding. Anemia can be a late manifestation of thrombocytopenia. Hepatomegaly is an enlarged liver. Neutropenia increases the risk of infection in clients with leukemia. However, anemia, hepatomegaly, and neutropenia do not cause bleeding.

Page Ref: 106

Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1 Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment
Learning Outcome: 2.E.4. Analyze leukemia as it relates to cellular regulation. Identify the clinical manifestations of leukemia.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with leukemia.

Exemplar 2.F Lung Cancer

1) The nurse is caring for a client in a community clinic who wishes to quit smoking. The client asks the nurse, "If I quit smoking, will my risk of lung cancer be the same as a nonsmoker?"

Which is the best response by the nurse?

A) "No one knows for sure what the risk is for someone who quits smoking."

B) "Your risk of lung cancer will be equal to that of a nonsmoker."

C) "Your risk of lung cancer will decline if you quit, but it will remain higher than a nonsmoker's."

D) "Your risk of lung cancer will never drop because the damage has already been done."

Answer: C

Explanation: A) While the client's risk for lung cancer will diminish sharply upon quitting smoking, it will not drop to the level of someone who never smoked. The risk for someone who quits is known to be dramatically less than for someone who continues to smoke. Another factor when calculating risk is the client's exposure to secondhand smoke, which also increases risk.

B) While the client's risk for lung cancer will diminish sharply upon quitting smoking, it will not drop to the level of someone who never smoked. The risk for someone who quits is known to be dramatically less than for someone who continues to smoke. Another factor when calculating risk is the client's exposure to secondhand smoke, which also increases risk.

C) While the client's risk for lung cancer will diminish sharply upon quitting smoking, it will not drop to the level of someone who never smoked. The risk for someone who quits is known to be dramatically less than for someone who continues to smoke. Another factor when calculating risk is the client's exposure to secondhand smoke, which also increases risk.

D) While the client's risk for lung cancer will diminish sharply upon quitting smoking, it will not drop to the level of someone who never smoked. The risk for someone who quits is known to be dramatically less than for someone who continues to smoke. Another factor when calculating risk is the client's exposure to secondhand smoke, which also increases risk.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Factors that contribute to or threaten health. | Nursing Process: Implementation
Learning Outcome: 2.F.3. Analyze lung cancer as it relates to cellular regulation. Compare the risk factors for and prevention of lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

2) The nurse is planning care to address ineffective airway clearance for a client with lung cancer. Which interventions should the nurse include in the client's plan of care? Select all that apply.

- A) Suction the airway as needed.
- B) Help the client turn, cough, and deep breathe as needed.
- C) Provide chest percussion as ordered.
- D) Educate the client about smoking cessation.
- E) Administer pneumococcal vaccine.

Answer: A, B, C

Explanation: A) Turning, coughing, deep breathing, airway suctioning, and chest percussion can help clear secretions and improve airway clearance. Administering the pneumococcal vaccine and educating the client on smoking cessation are important in treating a client with lung cancer, but they would be aligned with a different nursing diagnosis.

B) Turning, coughing, deep breathing, airway suctioning, and chest percussion can help clear secretions and improve airway clearance. Administering the pneumococcal vaccine and educating the client on smoking cessation are important in treating a client with lung cancer, but they would be aligned with a different nursing diagnosis.

C) Turning, coughing, deep breathing, airway suctioning, and chest percussion can help clear secretions and improve airway clearance. Administering the pneumococcal vaccine and educating the client on smoking cessation are important in treating a client with lung cancer, but they would be aligned with a different nursing diagnosis.

D) Turning, coughing, deep breathing, airway suctioning, and chest percussion can help clear secretions and improve airway clearance. Administering the pneumococcal vaccine and educating the client on smoking cessation are important in treating a client with lung cancer, but they would be aligned with a different nursing diagnosis.

E) Turning, coughing, deep breathing, airway suctioning, and chest percussion can help clear secretions and improve airway clearance. Administering the pneumococcal vaccine and educating the client on smoking cessation are important in treating a client with lung cancer, but they would be aligned with a different nursing diagnosis.

Page Ref: 115

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.F.7. Analyze lung cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

3) A nurse is caring for a client recovering from a wedge resection of the left lung for a tumor. What would be appropriate goals for the nursing diagnosis of ineffective airway clearance? Select all that apply.

- A) Minimize accumulation of fluid.
- B) Participation in care by the client
- C) Maintain a patent airway.
- D) Maintain current weight.
- E) Express feelings and concerns.

Answer: A, C

Explanation: A) All of the outcomes for this client are viable, but appropriate outcomes for the diagnosis of ineffective airway clearance are maintaining a patent airway and minimizing the accumulation of fluid.

B) All of the outcomes for this client are viable, but appropriate outcomes for the diagnosis of ineffective airway clearance are maintaining a patent airway and minimizing the accumulation of fluid.

C) All of the outcomes for this client are viable, but appropriate outcomes for the diagnosis of ineffective airway clearance are maintaining a patent airway and minimizing the accumulation of fluid.

D) All of the outcomes for this client are viable, but appropriate outcomes for the diagnosis of ineffective airway clearance are maintaining a patent airway and minimizing the accumulation of fluid.

E) All of the outcomes for this client are viable, but appropriate outcomes for the diagnosis of ineffective airway clearance are maintaining a patent airway and minimizing the accumulation of fluid.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.F.7. Analyze lung cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

4) The nurse is caring for a client who is undergoing diagnostic tests to rule out lung cancer. The client asks the nurse why a computed tomography (CT) scan was ordered. What is the best response by the nurse?

A) "The doctor prefers this test."

B) "To rule out the possibility that your problems are caused by pneumonia."

C) "It is more specific in diagnosing your condition."

D) "Why are you concerned about this test?"

Answer: C

Explanation: A) Computed tomography (CT) is used to evaluate and localize tumors, particularly tumors in the lung parenchyma and pleura. It also is done before needle biopsy to localize the tumor. In addition, CT scanning can detect distant tumor metastasis and evaluate tumor response to treatment. A chest x-ray can be used to diagnose pneumonia. The client's question is valid and should not be minimized by asking why the client is having concerns about the test.

B) Computed tomography (CT) is used to evaluate and localize tumors, particularly tumors in the lung parenchyma and pleura. It also is done before needle biopsy to localize the tumor. In addition, CT scanning can detect distant tumor metastasis and evaluate tumor response to treatment. A chest x-ray can be used to diagnose pneumonia. The client's question is valid and should not be minimized by asking why the client is having concerns about the test.

C) Computed tomography (CT) is used to evaluate and localize tumors, particularly tumors in the lung parenchyma and pleura. It also is done before needle biopsy to localize the tumor. In addition, CT scanning can detect distant tumor metastasis and evaluate tumor response to treatment. A chest x-ray can be used to diagnose pneumonia. The client's question is valid and should not be minimized by asking why the client is having concerns about the test.

D) Computed tomography (CT) is used to evaluate and localize tumors, particularly tumors in the lung parenchyma and pleura. It also is done before needle biopsy to localize the tumor. In addition, CT scanning can detect distant tumor metastasis and evaluate tumor response to treatment. A chest x-ray can be used to diagnose pneumonia. The client's question is valid and should not be minimized by asking why the client is having concerns about the test.

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Cognitive Level: Applying

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.4. Communicate effectively with all members of the healthcare team, including the patient and the patient's support network. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Implementation

Learning Outcome: 2.F.5. Analyze lung cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

5) Which type of lung cancer typically spreads by local invasion?

- A) Small-cell carcinoma
- B) Adenocarcinoma
- C) Squamous cell carcinoma
- D) Large-cell carcinoma

Answer: C

Explanation: A) Squamous cell carcinoma tends to spread by local invasion. The other types of lung cancer tend to have distant metastasis early in the course of disease.

B) Squamous cell carcinoma tends to spread by local invasion. The other types of lung cancer tend to have distant metastasis early in the course of disease.

C) Squamous cell carcinoma tends to spread by local invasion. The other types of lung cancer tend to have distant metastasis early in the course of disease.

D) Squamous cell carcinoma tends to spread by local invasion. The other types of lung cancer tend to have distant metastasis early in the course of disease.

Page Ref: 109

Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.F.1. Analyze lung cancer as it relates to cellular regulation. Describe the pathophysiology of lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

6) Which individuals are more likely to develop lung cancer without a history of smoking?

A) An individual under age 50

B) An individual with a genetic abnormality on chromosome 6

C) An individual over age 50

D) An individual with a genetic abnormality on chromosome 8

Answer: B

Explanation: A) Although incidence does increase with age, age is not a risk factor for lung cancer in nonsmokers. Instead, individuals with a genetic abnormality on chromosome 6 are more likely to develop lung cancer regardless of their smoking history.

B) Although incidence does increase with age, age is not a risk factor for lung cancer in nonsmokers. Instead, individuals with a genetic abnormality on chromosome 6 are more likely to develop lung cancer regardless of their smoking history.

C) Although incidence does increase with age, age is not a risk factor for lung cancer in nonsmokers. Instead, individuals with a genetic abnormality on chromosome 6 are more likely to develop lung cancer regardless of their smoking history.

D) Although incidence does increase with age, age is not a risk factor for lung cancer in nonsmokers. Instead, individuals with a genetic abnormality on chromosome 6 are more likely to develop lung cancer regardless of their smoking history.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.2 Recognize the relationship of genetics and genomics to health, prevention, screening, diagnostics, prognostics, selection of treatment, and monitoring of treatment effectiveness, using a constructed pedigree from collected family history information as well as standardized symbols and terminology. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. |

Nursing Process: Assessment

Learning Outcome: 2.F.2. Analyze lung cancer as it relates to cellular regulation. Describe the etiology of lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

7) The client with lung cancer who presents with dysphagia likely has a tumor located where?

- A) By the trachea
- B) By the esophagus
- C) By the mediastinum
- D) By the pleura

Answer: B

Explanation: A) Signs and symptoms can provide an indication of the location of the tumor associated with lung cancer. Dull, aching chest pain occurs as the tumor spreads to the mediastinum. Pleuritic pain occurs when the pleura is invaded. Hoarseness indicates pressure on the trachea. Dysphagia indicates pressure on the esophagus.

B) Signs and symptoms can provide an indication of the location of the tumor associated with lung cancer. Dull, aching chest pain occurs as the tumor spreads to the mediastinum. Pleuritic pain occurs when the pleura is invaded. Hoarseness indicates pressure on the trachea. Dysphagia indicates pressure on the esophagus.

C) Signs and symptoms can provide an indication of the location of the tumor associated with lung cancer. Dull, aching chest pain occurs as the tumor spreads to the mediastinum. Pleuritic pain occurs when the pleura is invaded. Hoarseness indicates pressure on the trachea. Dysphagia indicates pressure on the esophagus.

D) Signs and symptoms can provide an indication of the location of the tumor associated with lung cancer. Dull, aching chest pain occurs as the tumor spreads to the mediastinum. Pleuritic pain occurs when the pleura is invaded. Hoarseness indicates pressure on the trachea. Dysphagia indicates pressure on the esophagus.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1 Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment
Learning Outcome: 2.F.4. Analyze lung cancer as it relates to cellular regulation. Identify the clinical manifestations of lung cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

8) The nurse is caring for a 72-year-old client who was just diagnosed with early stage lung cancer. What is an important independent nursing intervention that can improve the client's prognosis?

- A) Provide client teaching related to a nutritional diet
- B) Refer the client to a smoking cessation therapy group
- C) Advocate for an immediate initiation of treatment
- D) Encourage the client to form a strong support group

Answer: C

Explanation: A) Studies have indicated that delays in the time from diagnosis to initiation of treatment may affect the patient's prognosis in older adults. Delays in diagnosis and treatment should be avoided to prevent the risk of disease progression. A smoking cessation therapy group could be helpful, but at this client's age and recent diagnosis, a therapy group is not as important as initiating treatment. A nutritional diet could also be helpful, but it likely will not affect the prognosis significantly. Support groups can provide emotional support to the client, but this will not improve the client's prognosis as much as early treatment.

B) Studies have indicated that delays in the time from diagnosis to initiation of treatment may affect the patient's prognosis in older adults. Delays in diagnosis and treatment should be avoided to prevent the risk of disease progression. A smoking cessation therapy group could be helpful, but at this client's age and recent diagnosis, a therapy group is not as important as initiating treatment. A nutritional diet could also be helpful, but it likely will not affect the prognosis significantly. Support groups can provide emotional support to the client, but this will not improve the client's prognosis as much as early treatment.

C) Studies have indicated that delays in the time from diagnosis to initiation of treatment may affect the patient's prognosis in older adults. Delays in diagnosis and treatment should be avoided to prevent the risk of disease progression. A smoking cessation therapy group could be helpful, but at this client's age and recent diagnosis, a therapy group is not as important as initiating treatment. A nutritional diet could also be helpful, but it likely will not affect the prognosis significantly. Support groups can provide emotional support to the client, but this will not improve the client's prognosis as much as early treatment.

D) Studies have indicated that delays in the time from diagnosis to initiation of treatment may affect the patient's prognosis in older adults. Delays in diagnosis and treatment should be avoided to prevent the risk of disease progression. A smoking cessation therapy group could be helpful, but at this client's age and recent diagnosis, a therapy group is not as important as initiating treatment. A nutritional diet could also be helpful, but it likely will not affect the prognosis significantly. Support groups can provide emotional support to the client, but this will not improve the client's prognosis as much as early treatment.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.F.6. Analyze lung cancer as it relates to cellular regulation. Differentiate considerations for care of clients with lung cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

9) The nurse is providing discharge teaching to an older adult client with lung cancer. What changes in activities of daily living can the nurse suggest to help the older adult maintain independence?

- A) Wear shirts with buttons
- B) Use a self-leveling spoon
- C) Wear shoes with laces
- D) Use a shower chair

Answer: D

Explanation: A) Lung cancer reduces the amount of functional lung tissue, leading to activity intolerance when oxygen supply is insufficient. The nurse should teach the client ways to conserve energy, such as sitting on a shower chair while showering. Wearing slip-on shoes and shirts, not shoes with laces or shirts with buttons, can help conserve energy. Self-leveling spoons are important for individuals who have hand tremors; they do not help conserve energy when feeding.

B) Lung cancer reduces the amount of functional lung tissue, leading to activity intolerance when oxygen supply is insufficient. The nurse should teach the client ways to conserve energy, such as sitting on a shower chair while showering. Wearing slip-on shoes and shirts, not shoes with laces or shirts with buttons, can help conserve energy. Self-leveling spoons are important for individuals who have hand tremors; they do not help conserve energy when feeding.

C) Lung cancer reduces the amount of functional lung tissue, leading to activity intolerance when oxygen supply is insufficient. The nurse should teach the client ways to conserve energy, such as sitting on a shower chair while showering. Wearing slip-on shoes and shirts, not shoes with laces or shirts with buttons, can help conserve energy. Self-leveling spoons are important for individuals who have hand tremors; they do not help conserve energy when feeding.

D) Lung cancer reduces the amount of functional lung tissue, leading to activity intolerance when oxygen supply is insufficient. The nurse should teach the client ways to conserve energy, such as sitting on a shower chair while showering. Wearing slip-on shoes and shirts, not shoes with laces or shirts with buttons, can help conserve energy. Self-leveling spoons are important for individuals who have hand tremors; they do not help conserve energy when feeding.

Page Ref: 115

Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.F.6. Analyze lung cancer as it relates to cellular regulation. Differentiate considerations for care of clients with lung cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with lung cancer.

Exemplar 2.G Prostate Cancer

1) A nurse is screening a client for prostate cancer. Which assessment findings would cause the nurse to suspect that the client has prostate cancer? Select all that apply.

- A) Fatigue
- B) Upper extremity weakness
- C) Back pain
- D) Hematuria
- E) Scrotal edema

Answer: A, C, D

Explanation: A) Unfortunately, many clients with prostate cancer remain undiagnosed until the cancer is well established. Hematuria, back pain, bilateral lower extremity weakness, and fatigue are symptoms associated with prostate cancer.

B) Unfortunately, many clients with prostate cancer remain undiagnosed until the cancer is well established. Hematuria, back pain, bilateral lower extremity weakness, and fatigue are symptoms associated with prostate cancer.

C) Unfortunately, many clients with prostate cancer remain undiagnosed until the cancer is well established. Hematuria, back pain, bilateral lower extremity weakness, and fatigue are symptoms associated with prostate cancer.

D) Unfortunately, many clients with prostate cancer remain undiagnosed until the cancer is well established. Hematuria, back pain, bilateral lower extremity weakness, and fatigue are symptoms associated with prostate cancer.

E) Unfortunately, many clients with prostate cancer remain undiagnosed until the cancer is well established. Hematuria, back pain, bilateral lower extremity weakness, and fatigue are symptoms associated with prostate cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1. Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.G.4. Analyze prostate cancer as it relates to cellular regulation. Identify the clinical manifestations of prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

2) The nurse is preparing an educational program on risk factors for the development of prostate cancer. Which information will the nurse include as being the greatest risk factor for developing prostate cancer?

- A) The client's age
- B) A family history
- C) A history of a vasectomy
- D) A diet high in fat

Answer: A

Explanation: A) The greatest risk for developing prostate cancer is age. Prostate cancer affects one out of every eight men over the age of 70. Genetics, vasectomy, and a diet high in fat are also risk factors.

B) The greatest risk for developing prostate cancer is age. Prostate cancer affects one out of every eight men over the age of 70. Genetics, vasectomy, and a diet high in fat are also risk factors.

C) The greatest risk for developing prostate cancer is age. Prostate cancer affects one out of every eight men over the age of 70. Genetics, vasectomy, and a diet high in fat are also risk factors.

D) The greatest risk for developing prostate cancer is age. Prostate cancer affects one out of every eight men over the age of 70. Genetics, vasectomy, and a diet high in fat are also risk factors.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Factors that contribute to or threaten health. | Nursing Process: Implementation
Learning Outcome: 2.G.3. Analyze prostate cancer as it relates to cellular regulation. Compare the risk factors for and prevention of prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

3) While receiving discharge teaching, an adult client recovering from a prostatectomy is distressed to learn that episodes of incontinence may occur. Which should the nurse teach the client to help minimize incontinence?

- A) Proper administration of incontinence medication
- B) Steps to change the Foley catheter bag every day
- C) Fluid restriction
- D) Kegel exercises

Answer: D

Explanation: A) Urinary incontinence after surgery is not unexpected. Teaching the client Kegel exercises is the best way to help him eliminate or reduce occasions of stress incontinence.

Restricting fluids may cause further urinary problems and is not advised. Medication and Foley catheters are not appropriate long-term treatments for this complication.

B) Urinary incontinence after surgery is not unexpected. Teaching the client Kegel exercises is the best way to help him eliminate or reduce occasions of stress incontinence. Restricting fluids may cause further urinary problems and is not advised. Medication and Foley catheters are not appropriate long-term treatments for this complication.

C) Urinary incontinence after surgery is not unexpected. Teaching the client Kegel exercises is the best way to help him eliminate or reduce occasions of stress incontinence. Restricting fluids may cause further urinary problems and is not advised. Medication and Foley catheters are not appropriate long-term treatments for this complication.

D) Urinary incontinence after surgery is not unexpected. Teaching the client Kegel exercises is the best way to help him eliminate or reduce occasions of stress incontinence. Restricting fluids may cause further urinary problems and is not advised. Medication and Foley catheters are not appropriate long-term treatments for this complication.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.G.7. Analyze prostate cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

4) The nurse is planning care for a client scheduled for a prostatectomy. The client's spouse wants to know if the client will have any limitations after the surgery. Which complications is the client likely to have that should be incorporated into his plan of care? Select all that apply.

- A) Constipation
- B) Gynecomastia
- C) Impaired Urinary Elimination
- D) Risk for Falls
- E) Sexual Dysfunction

Answer: C, E

Explanation: A) Following a prostatectomy, the client is most at risk for sexual dysfunction and urinary stress incontinence. There is no reason to suspect that this client is at risk for constipation or falls. Gynecomastia is a side effect of treatment with estrogen compounds, not surgery.

B) Following a prostatectomy, the client is most at risk for pain, sexual dysfunction, and urinary stress incontinence. There is no reason to suspect that this client is at risk for constipation or falls. Gynecomastia is a side effect of treatment with estrogen compounds, not surgery.

C) Following a prostatectomy, the client is most at risk for pain, sexual dysfunction, and urinary stress incontinence. There is no reason to suspect that this client is at risk for constipation or falls. Gynecomastia is a side effect of treatment with estrogen compounds, not surgery.

D) Following a prostatectomy, the client is most at risk for pain, sexual dysfunction, and urinary stress incontinence. There is no reason to suspect that this client is at risk for constipation or falls. Gynecomastia is a side effect of treatment with estrogen compounds, not surgery.

E) Following a prostatectomy, the client is most at risk for pain, sexual dysfunction, and urinary stress incontinence. There is no reason to suspect that this client is at risk for constipation or falls. Gynecomastia is a side effect of treatment with estrogen compounds, not surgery.

Page Ref: 122-123

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.G.5. Analyze prostate cancer as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

5) A nursing instructor is teaching a group of student nurses about the risk factors for prostate cancer. Which statement will the nursing instructor include?

A) "African American men are at lowest risk for prostate cancer."

B) "Asian American and Native American men have the highest risk for developing prostate cancer."

C) "Approximately one in eight men ages 70 and older will be diagnosed with prostate cancer."

D) "A diet low in dairy increases a man's risk for developing prostate cancer."

Answer: C

Explanation: A) African Americans are at a particularly high risk for developing prostate cancer. Approximately one in eight men ages 70 and older will be diagnosed with prostate cancer. A diet high in dairy increases a man's risk for developing prostate cancer.

B) African Americans are at a particularly high risk for developing prostate cancer.

Approximately one in eight men ages 70 and older will be diagnosed with prostate cancer. A diet high in dairy increases a man's risk for developing prostate cancer.

C) African Americans are at a particularly high risk for developing prostate cancer.

Approximately one in eight men ages 70 and older will be diagnosed with prostate cancer. A diet high in dairy increases a man's risk for developing prostate cancer.

D) African Americans are at a particularly high risk for developing prostate cancer.

Approximately one in eight men ages 70 and older will be diagnosed with prostate cancer. A diet high in dairy increases a man's risk for developing prostate cancer.

Page Ref: 118

Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.G.3. Analyze prostate cancer as it relates to cellular regulation. Compare the risk factors for and prevention of prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

6) The nurse is assessing a client for symptoms of prostate cancer. Which symptoms would indicate the client is experiencing an enlarged prostate? Select all that apply.

- A) Hematuria
- B) Dysuria
- C) Weight loss
- D) Bone pain
- E) Fatigue

Answer: A, B

Explanation: A) Symptoms of an enlarged prostate include hematuria, dysuria, reduction in urinary stream, nocturia, frequency of urination, and abnormal size of prostate on digital exam. The other choices are related to metastasis and metabolic changes.

B) Symptoms of an enlarged prostate include hematuria, dysuria, reduction in urinary stream, nocturia, frequency of urination, and abnormal size of prostate on digital exam. The other choices are related to metastasis and metabolic changes.

C) Symptoms of an enlarged prostate include hematuria, dysuria, reduction in urinary stream, nocturia, frequency of urination, and abnormal size of prostate on digital exam. The other choices are related to metastasis and metabolic changes.

D) Symptoms of an enlarged prostate include hematuria, dysuria, reduction in urinary stream, nocturia, frequency of urination, and abnormal size of prostate on digital exam. The other choices are related to metastasis and metabolic changes.

E) Symptoms of an enlarged prostate include hematuria, dysuria, reduction in urinary stream, nocturia, frequency of urination, and abnormal size of prostate on digital exam. The other choices are related to metastasis and metabolic changes.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1. Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.G.4. Analyze prostate cancer as it relates to cellular regulation. Identify the clinical manifestations of prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

7) A client with prostate cancer is being discharged from the hospital. Which educational topic is inappropriate for this client?

- A) Provide information on doses of complementary herbs.
- B) Teach the client and his family methods of pain control.
- C) Stress the importance of keeping client appointments with healthcare providers.
- D) Provide the client and the client's family information on support groups.

Answer: A

Explanation: A) When providing discharge instructions to the client with prostate cancer, the nurse will teach the client and his family methods of pain control and stress the importance of keeping client appointments with healthcare providers. The nurse will also provide the client and his family information on support groups. The nurse does not have authorization to provide information on doses of complementary herbs.

B) When providing discharge instructions to the client with prostate cancer, the nurse will teach the client and his family methods of pain control and stress the importance of keeping client appointments with healthcare providers. The nurse will also provide the client and his family information on support groups. The nurse does not have authorization to provide information on doses of complementary herbs.

C) When providing discharge instructions to the client with prostate cancer, the nurse will teach the client and his family methods of pain control and stress the importance of keeping client appointments with healthcare providers. The nurse will also provide the client and his family information on support groups. The nurse does not have authorization to provide information on doses of complementary herbs.

D) When providing discharge instructions to the client with prostate cancer, the nurse will teach the client and his family methods of pain control and stress the importance of keeping client appointments with healthcare providers. The nurse will also provide the client and his family information on support groups. The nurse does not have authorization to provide information on doses of complementary herbs.

Page Ref: 122

Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.G.7. Analyze prostate cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

8) Which hormone(s) is (are) believed to have a role in the development of prostate cancer?

- A) Prolactin
- B) Endorphins
- C) Estrogens
- D) Androgens

Answer: D

Explanation: A) Androgens are hormones synthesized in the testes and adrenal cortex in males that promote expression of male sex characteristics. They are believed to have a role in the development of prostate cancer. Estrogens, endorphins, and prolactin have not been linked to the development of prostate cancer.

B) Androgens are hormones synthesized in the testes and adrenal cortex in males that promote expression of male sex characteristics. They are believed to have a role in the development of prostate cancer. Estrogens, endorphins, and prolactin have not been linked to the development of prostate cancer.

C) Androgens are hormones synthesized in the testes and adrenal cortex in males that promote expression of male sex characteristics. They are believed to have a role in the development of prostate cancer. Estrogens, endorphins, and prolactin have not been linked to the development of prostate cancer.

D) Androgens are hormones synthesized in the testes and adrenal cortex in males that promote expression of male sex characteristics. They are believed to have a role in the development of prostate cancer. Estrogens, endorphins, and prolactin have not been linked to the development of prostate cancer.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.G.1. Analyze prostate cancer as it relates to cellular regulation. Describe the pathophysiology of prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

9) What is the primary reason that prostate cancer rarely metastasizes to the bowel?

- A) The capsular artery supplies blood to the bowel before the prostate.
- B) The inferior vesical artery supplies blood to the bowel before the prostate.
- C) The rectourethral fistula acts as a physical barrier to metastasis.
- D) The Denonvilliers fascia acts as a physical barrier to metastasis.

Answer: D

Explanation: A) Despite its proximity to the rectum, metastasis to the bowel is uncommon in prostate cancer, because a tough sheet of tissue, the Denonvilliers fascia, acts as an effective physical barrier between the bowel and prostate. A rectourethral fistula may develop as a result of treatment for prostate cancer. The inferior vesical artery and capsular artery provide blood to the prostate but not the bowel.

B) Despite its proximity to the rectum, metastasis to the bowel is uncommon in prostate cancer, because a tough sheet of tissue, the Denonvilliers fascia, acts as an effective physical barrier between the bowel and prostate. A rectourethral fistula may develop as a result of treatment for prostate cancer. The inferior vesical artery and capsular artery provide blood to the prostate but not the bowel.

C) Despite its proximity to the rectum, metastasis to the bowel is uncommon in prostate cancer, because a tough sheet of tissue, the Denonvilliers fascia, acts as an effective physical barrier between the bowel and prostate. A rectourethral fistula may develop as a result of treatment for prostate cancer. The inferior vesical artery and capsular artery provide blood to the prostate but not the bowel.

D) Despite its proximity to the rectum, metastasis to the bowel is uncommon in prostate cancer, because a tough sheet of tissue, the Denonvilliers fascia, acts as an effective physical barrier between the bowel and prostate. A rectourethral fistula may develop as a result of treatment for prostate cancer. The inferior vesical artery and capsular artery provide blood to the prostate but not the bowel.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.G.1. Analyze prostate cancer as it relates to cellular regulation. Describe the pathophysiology of prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

10) What approach is appropriate for interpreting the prostate-specific antigen (PSA) level as a diagnostic factor for prostate cancer?

- A) A PSA level higher than 4.0 ng/mL indicates prostate cancer.
- B) A PSA level lower than 4.0 ng/mL indicates prostate cancer.
- C) A fluctuating PSA level indicates prostate cancer.
- D) An abnormal PSA level alone is not enough to diagnose prostate cancer.

Answer: D

Explanation: A) The National Cancer Institute used to consider a PSA level of 4.0 ng/mL or lower to be normal, but men with normal PSA levels may still have prostate cancer. PSA levels above 4.0 ng/mL or PSA levels that fluctuate could be an indication of prostate cancer, but it could also indicate prostatitis or urinary tract infection. Therefore, PSA levels must be interpreted in conjunction with the patient's health history and other diagnostic tests to confirm a diagnosis of prostate cancer.

B) The National Cancer Institute used to consider a PSA level of 4.0 ng/mL or lower to be normal, but men with normal PSA levels may still have prostate cancer. PSA levels above 4.0 ng/mL or PSA levels that fluctuate could be an indication of prostate cancer, but it could also indicate prostatitis or urinary tract infection. Therefore, PSA levels must be interpreted in conjunction with the patient's health history and other diagnostic tests to confirm a diagnosis of prostate cancer.

C) The National Cancer Institute used to consider a PSA level of 4.0 ng/mL or lower to be normal, but men with normal PSA levels may still have prostate cancer. PSA levels above 4.0 ng/mL or PSA levels that fluctuate could be an indication of prostate cancer, but it could also indicate prostatitis or urinary tract infection. Therefore, PSA levels must be interpreted in conjunction with the patient's health history and other diagnostic tests to confirm a diagnosis of prostate cancer.

D) The National Cancer Institute used to consider a PSA level of 4.0 ng/mL or lower to be normal, but men with normal PSA levels may still have prostate cancer. PSA levels above 4.0 ng/mL or PSA levels that fluctuate could be an indication of prostate cancer, but it could also indicate prostatitis or urinary tract infection. Therefore, PSA levels must be interpreted in conjunction with the patient's health history and other diagnostic tests to confirm a diagnosis of prostate cancer.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.2. Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.1 Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Integration of knowledge from nursing and other disciplines. | Nursing Process: Assessment

Learning Outcome: 2.G.5. Analyze prostate cancer as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with prostate cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

11) The nurse is caring for a 42-year-old male client who was recently diagnosed with prostate cancer. What characteristic of the prostate cancer does the nurse need to be aware of for a client of this age compared to older men with prostate cancer?

- A) The cancer will likely be more aggressive for the younger client.
- B) The cancer will likely grow more slowly in the younger client.
- C) The cancer will likely be more responsive to treatment in the younger client.
- D) The cancer will likely not metastasize as quickly in the younger client.

Answer: A

Explanation: A) Research has found that prostate cancers that are diagnosed at a younger age tend to be more aggressive, and metastasis may have already occurred, given the advanced disease state at the time of diagnosis. Evidence has not yet shown whether prostate cancer grows more slowly in younger clients or responds to treatment better in younger clients.

B) Research has found that prostate cancers that are diagnosed at a younger age tend to be more aggressive, and metastasis may have already occurred, given the advanced disease state at the time of diagnosis. Evidence has not yet shown whether prostate cancer grows more slowly in younger clients or responds to treatment better in younger clients.

C) Research has found that prostate cancers that are diagnosed at a younger age tend to be more aggressive, and metastasis may have already occurred, given the advanced disease state at the time of diagnosis. Evidence has not yet shown whether prostate cancer grows more slowly in younger clients or responds to treatment better in younger clients.

D) Research has found that prostate cancers that are diagnosed at a younger age tend to be more aggressive, and metastasis may have already occurred, given the advanced disease state at the time of diagnosis. Evidence has not yet shown whether prostate cancer grows more slowly in younger clients or responds to treatment better in younger clients.

Page Ref: 121

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.2. Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.G.6. Analyze prostate cancer as it relates to cellular regulation.

Differentiate considerations for care of clients with prostate cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

12) A 73-year-old man was just diagnosed with stage II prostate cancer. The client's wife hears the word "cancer" and immediately begins crying. She says, "How long does he have to live?" Which response by the nurse is appropriate?

A) "Don't worry about how long he will live. Just live every day to the fullest and enjoy the time you have left together."

B) "If we treat the cancer aggressively with surgery and radiation, he should live several more years."

C) "Prostate cancer is usually aggressive in older men, so he may only have a short time to live."

D) "Older men who are diagnosed with prostate cancer usually die from causes other than the cancer."

Answer: D

Explanation: A) In an older man with a lower stage of cancer at diagnosis, the cancer is likely slow-growing, and he is more likely to die from other preexisting comorbidities than from the cancer itself. Therefore, the nurse cannot predict how long the client may live after diagnosis. Prostate cancer is usually aggressive in younger men, not older men. Early-stage prostate cancer in older men may not be treated aggressively. Instead, the healthcare team may take a more conservative "watchful waiting" approach, depending on other health conditions. It is not within the nurse's scope of practice to suggest aggressive treatment strategies. The nurse should not dismiss the client's or client's family's concerns by telling them to not worry.

B) In an older man with a lower stage of cancer at diagnosis, the cancer is likely slow-growing, and he is more likely to die from other preexisting comorbidities than from the cancer itself. Therefore, the nurse cannot predict how long the client may live after diagnosis. Prostate cancer is usually aggressive in younger men, not older men. Early-stage prostate cancer in older men may not be treated aggressively. Instead, the healthcare team may take a more conservative "watchful waiting" approach, depending on other health conditions. It is not within the nurse's scope of practice to suggest aggressive treatment strategies. The nurse should not dismiss the client's or client's family's concerns by telling them to not worry.

C) In an older man with a lower stage of cancer at diagnosis, the cancer is likely slow-growing, and he is more likely to die from other preexisting comorbidities than from the cancer itself. Therefore, the nurse cannot predict how long the client may live after diagnosis. Prostate cancer is usually aggressive in younger men, not older men. Early-stage prostate cancer in older men may not be treated aggressively. Instead, the healthcare team may take a more conservative "watchful waiting" approach, depending on other health conditions. It is not within the nurse's scope of practice to suggest aggressive treatment strategies. The nurse should not dismiss the client's or client's family's concerns by telling them to not worry.

D) In an older man with a lower stage of cancer at diagnosis, the cancer is likely slow-growing, and he is more likely to die from other preexisting comorbidities than from the cancer itself. Therefore, the nurse cannot predict how long the client may live after diagnosis. Prostate cancer is usually aggressive in younger men, not older men. Early-stage prostate cancer in older men may not be treated aggressively. Instead, the healthcare team may take a more conservative "watchful waiting" approach, depending on other health conditions. It is not within the nurse's scope of practice to suggest aggressive treatment strategies. The nurse should not dismiss the client's or client's family's concerns by telling them to not worry.

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Cognitive Level: Applying

Client Need/Sub: Psychosocial Integrity

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.G.6. Analyze prostate cancer as it relates to cellular regulation.

Differentiate considerations for care of clients with prostate cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with prostate cancer.

Exemplar 2.H Sickle Cell Disease

1) Parents of a newborn infant are concerned that their baby may have sickle cell disease. The nurse reviews the medical record and finds that both parents have the sickle cell trait. Which is the best response for the nurse to give the parents?

- A) "Since neither of you actually has sickle cell disease, your baby is not at risk."
- B) "Your baby has the disease, as you both carry the trait."
- C) "We are required to test all babies for sickle cell disease."
- D) "Have you talked to a genetic counselor about your concerns?"

Answer: C

Explanation: A) In the United States, newborn screening for sickle cell disease is mandatory. Therefore, the nurse can assure the parents that the baby will be tested so they know for sure if the baby has sickle cell disease. Because both parents only have sickle cell trait, the baby has a 25% chance of having sickle cell disease.

B) In the United States, newborn screening for sickle cell disease is mandatory. Therefore, the nurse can assure the parents that the baby will be tested so they know for sure if the baby has sickle cell disease. Because both parents only have sickle cell trait, the baby has a 25% chance of having sickle cell disease.

C) In the United States, newborn screening for sickle cell disease is mandatory. Therefore, the nurse can assure the parents that the baby will be tested so they know for sure if the baby has sickle cell disease. Because both parents only have sickle cell trait, the baby has a 25% chance of having sickle cell disease.

D) In the United States, newborn screening for sickle cell disease is mandatory. Therefore, the nurse can assure the parents that the baby will be tested so they know for sure if the baby has sickle cell disease. Because both parents only have sickle cell trait, the baby has a 25% chance of having sickle cell disease.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Implementation

Learning Outcome: 2.H.5. Analyze sickle cell disease as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

2) A nurse educator is teaching a group of parents how to prevent a sickle cell crisis in the child with sickle cell disease. What precipitating factors that could contribute to a sickle cell crisis should the nurse teach the parents? Select all that apply.

- A) Increased fluid intake
- B) High altitudes
- C) Fever and infection
- D) Emotional or physical stress
- E) Warm temperatures

Answer: B, C, D

Explanation: A) Fever, stress, and altitude are some of the precipitating factors that contribute to a sickle cell crisis. Increased fluid intake is recommended for a child with sickle cell disease and will not contribute to a sickle cell crisis. Cold temperatures, not warm temperatures, are a trigger for sickle cell crisis.

B) Fever, stress, and altitude are some of the precipitating factors that contribute to a sickle cell crisis. Increased fluid intake is recommended for a child with sickle cell disease and will not contribute to a sickle cell crisis. Cold temperatures, not warm temperatures, are a trigger for sickle cell crisis.

C) Fever, stress, and altitude are some of the precipitating factors that contribute to a sickle cell crisis. Increased fluid intake is recommended for a child with sickle cell disease and will not contribute to a sickle cell crisis. Cold temperatures, not warm temperatures, are a trigger for sickle cell crisis.

D) Fever, stress, and altitude are some of the precipitating factors that contribute to a sickle cell crisis. Increased fluid intake is recommended for a child with sickle cell disease and will not contribute to a sickle cell crisis. Cold temperatures, not warm temperatures, are a trigger for sickle cell crisis.

E) Fever, stress, and altitude are some of the precipitating factors that contribute to a sickle cell crisis. Increased fluid intake is recommended for a child with sickle cell disease and will not contribute to a sickle cell crisis. Cold temperatures, not warm temperatures, are a trigger for sickle cell crisis.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.H.2. Analyze sickle cell disease as it relates to cellular regulation.

Describe the etiology of sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

3) The nurse is assigned to care for a client with sickle cell disease who is being admitted with splenic sequestration crisis. Which room would be the most appropriate for this client?

- A) Private room
- B) Semi-private room
- C) Contact-isolation room
- D) Airborne-isolation room

Answer: A

Explanation: A) Splenic sequestration can be life-threatening, and there is profound anemia. The client should not be placed in a room with any other client who might have an infectious illness, so a semi-private room is not appropriate. A private room is appropriate for this client. The client is not contagious; therefore, neither airborne nor contact isolation is necessary.

B) Splenic sequestration can be life-threatening, and there is profound anemia. The client should not be placed in a room with any other client who might have an infectious illness, so a semi-private room is not appropriate. A private room is appropriate for this client. The client is not contagious; therefore, neither airborne nor contact isolation is necessary.

C) Splenic sequestration can be life-threatening, and there is profound anemia. The client should not be placed in a room with any other client who might have an infectious illness, so a semi-private room is not appropriate. A private room is appropriate for this client. The client is not contagious; therefore, neither airborne nor contact isolation is necessary.

D) Splenic sequestration can be life-threatening, and there is profound anemia. The client should not be placed in a room with any other client who might have an infectious illness, so a semi-private room is not appropriate. A private room is appropriate for this client. The client is not contagious; therefore, neither airborne nor contact isolation is necessary.

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Cognitive Level: Applying

Client Need/Sub: Safe and Effective Care Environment: Safety and Infection Control

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.H.1. Analyze sickle cell disease as it relates to cellular regulation.

Describe the pathophysiology of sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

4) A client in sickle cell crisis reports taking a recent skiing trip that caused a respiratory infection from the cold weather. The client reports a pain level of 8 on a pain scale from 1 to 10. Which nursing diagnosis is a priority for this client?

- A) Fluid Volume Excess
- B) Risk for Self-Mutilation
- C) Knowledge Deficit
- D) Acute Pain

Answer: D

Explanation: A) The priority for this client would be pain. The client has reportedly been skiing, which would be in an area of high altitude, which is contraindicated for someone with sickle cell. This client appears to have a knowledge deficit about self-care. This diagnosis, however, does not take priority. There is no evidence from the information given that the client has fluid volume excess or is at risk for self-mutilation.

B) The priority for this client would be pain. The client has reportedly been skiing, which would be in an area of high altitude, which is contraindicated for someone with sickle cell. This client appears to have a knowledge deficit about self-care. This diagnosis, however, does not take priority. There is no evidence from the information given that the client has fluid volume excess or is at risk for self-mutilation.

C) The priority for this client would be pain. The client has reportedly been skiing, which would be in an area of high altitude, which is contraindicated for someone with sickle cell. This client appears to have a knowledge deficit about self-care. This diagnosis, however, does not take priority. There is no evidence from the information given that the client has fluid volume excess or is at risk for self-mutilation.

D) The priority for this client would be pain. The client has reportedly been skiing, which would be in an area of high altitude, which is contraindicated for someone with sickle cell. This client appears to have a knowledge deficit about self-care. This diagnosis, however, does not take priority. There is no evidence from the information given that the client has fluid volume excess or is at risk for self-mutilation.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.H.7. Analyze sickle cell disease as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

5) A client is admitted to the emergency department in a sickle cell crisis. The nurse assesses the client and documents the following clinical findings: temperature 102°F, O₂ saturation of 89%, and complaints of severe abdominal pain. Based on the assessment findings, which intervention is the greatest priority?

- A) Apply oxygen per nasal cannula at 3 L/minute.
- B) Assess and document peripheral pulses.
- C) Administer morphine sulfate 10 mg IM.
- D) Administer Tylenol 650 mg by mouth.

Answer: A

Explanation: A) Hypoxia is often the cause of a sickle cell crisis from the clumping of damaged RBCs, which creates an obstruction and hypoxia distal to the clumping. Administering the oxygen will improve the pain and increase the oxygen saturation of body tissues. Therefore, applying the oxygen should be the first action by the nurse. Although the temperature is elevated and will increase oxygen demands in the body by increased basal metabolic activity, administering Tylenol is not the first action the nurse should take, because a sickle cell crisis is caused by oxygen deprivation in tissues, not by the fever. Morphine sulfate is a narcotic for pain, but it should be given after the oxygen is started, since the symptoms are caused by hypoxia. The morphine will decrease the pain and decrease metabolic oxygen needs by decreasing basal metabolic rates; therefore, supply is increased and demand is increased. Full body assessment, including peripheral pulses, is significant to identify the location of the potential obstruction, but this is secondary to treating the hypoxia that is known to be present from the sickling of the cells during sickle cell crisis.

B) Hypoxia is often the cause of a sickle cell crisis from the clumping of damaged RBCs, which creates an obstruction and hypoxia distal to the clumping. Administering the oxygen will improve the pain and increase the oxygen saturation of body tissues. Therefore, applying the oxygen should be the first action by the nurse. Although the temperature is elevated and will increase oxygen demands in the body by increased basal metabolic activity, administering Tylenol is not the first action the nurse should take, because a sickle cell crisis is caused by oxygen deprivation in tissues, not by the fever. Morphine sulfate is a narcotic for pain, but it should be given after the oxygen is started, since the symptoms are caused by hypoxia. The morphine will decrease the pain and decrease metabolic oxygen needs by decreasing basal metabolic rates; therefore, supply is increased and demand is increased. Full body assessment, including peripheral pulses, is significant to identify the location of the potential obstruction, but this is secondary to treating the hypoxia that is known to be present from the sickling of the cells during sickle cell crisis.

C) Hypoxia is often the cause of a sickle cell crisis from the clumping of damaged RBCs, which creates an obstruction and hypoxia distal to the clumping. Administering the oxygen will improve the pain and increase the oxygen saturation of body tissues. Therefore, applying the oxygen should be the first action by the nurse. Although the temperature is elevated and will increase oxygen demands in the body by increased basal metabolic activity, administering Tylenol is not the first action the nurse should take, because a sickle cell crisis is caused by oxygen deprivation in tissues, not by the fever. Morphine sulfate is a narcotic for pain, but it should be given after the oxygen is started, since the symptoms are caused by hypoxia. The morphine will decrease the pain and decrease metabolic oxygen needs by decreasing basal metabolic rates; therefore, supply is increased and demand is increased. Full body assessment, including peripheral pulses, is significant to identify the location of the potential obstruction, but this is secondary to treating the hypoxia that is known to be present from the sickling of the cells during sickle cell crisis.

D) Hypoxia is often the cause of a sickle cell crisis from the clumping of damaged RBCs, which creates an obstruction and hypoxia distal to the clumping. Administering the oxygen will improve the pain and increase the oxygen saturation of body tissues. Therefore, applying the oxygen should be the first action by the nurse. Although the temperature is elevated and will increase oxygen demands in the body by increased basal metabolic activity, administering Tylenol is not the first action the nurse should take, because a sickle cell crisis is caused by oxygen deprivation in tissues, not by the fever. Morphine sulfate is a narcotic for pain, but it should be given after the oxygen is started, since the symptoms are caused by hypoxia. The morphine will decrease the pain and decrease metabolic oxygen needs by decreasing basal metabolic rates; therefore, supply is increased and demand is increased. Full body assessment, including peripheral pulses, is significant to identify the location of the potential obstruction, but this is secondary to treating the hypoxia that is known to be present from the sickling of the cells during sickle cell crisis.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.H.5. Analyze sickle cell disease as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

6) The nurse is planning care for a young child who is admitted with sickle cell crisis. The parents are with the child, and neither has much information about the disease. When planning care for this family, the nurse will set which goal with this family?

A) The child will drink adequate amounts of fluid each day.

B) The child will play outside in the sun.

C) The family will not have the child vaccinated.

D) The family will plan vacations in high-altitude areas.

Answer: A

Explanation: A) For the client with sickle cell disease, dehydration can lead to life-threatening consequences. The client's oral intake should be adjusted as necessary to keep the child well hydrated. Teach clients and parents how to monitor intake and output, and provide client teaching regarding fluid management. Playing outdoors in the sun can lead to dehydration, which can precipitate a crisis. Oxygen supply at high altitudes is too low for the client with sickle cell disease. The family should be taught to select low-altitude areas for vacation. Infection and illnesses with fever will increase the body's demand for oxygen, so it is important for the family to keep up with the child's immunization schedule.

B) For the client with sickle cell disease, dehydration can lead to life-threatening consequences. The client's oral intake should be adjusted as necessary to keep the child well hydrated. Teach clients and parents how to monitor intake and output, and provide client teaching regarding fluid management. Playing outdoors in the sun can lead to dehydration, which can precipitate a crisis. Oxygen supply at high altitudes is too low for the client with sickle cell disease. The family should be taught to select low-altitude areas for vacation. Infection and illnesses with fever will increase the body's demand for oxygen, so it is important for the family to keep up with the child's immunization schedule.

C) For the client with sickle cell disease, dehydration can lead to life-threatening consequences. The client's oral intake should be adjusted as necessary to keep the child well hydrated. Teach clients and parents how to monitor intake and output, and provide client teaching regarding fluid management. Playing outdoors in the sun can lead to dehydration, which can precipitate a crisis. Oxygen supply at high altitudes is too low for the client with sickle cell disease. The family should be taught to select low-altitude areas for vacation. Infection and illnesses with fever will increase the body's demand for oxygen, so it is important for the family to keep up with the child's immunization schedule.

D) For the client with sickle cell disease, dehydration can lead to life-threatening consequences. The client's oral intake should be adjusted as necessary to keep the child well hydrated. Teach clients and parents how to monitor intake and output, and provide client teaching regarding fluid management. Playing outdoors in the sun can lead to dehydration, which can precipitate a crisis. Oxygen supply at high altitudes is too low for the client with sickle cell disease. The family should be taught to select low-altitude areas for vacation. Infection and illnesses with fever will increase the body's demand for oxygen, so it is important for the family to keep up with the child's immunization schedule.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.H.7. Analyze sickle cell disease as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

7) The nurse is caring for a client who was admitted to a medical-surgical unit in sickle cell crisis. Which medication should the nurse expect to administer to this client?

- A) Acetaminophen (Tylenol)
- B) Ibuprofen (Advil)
- C) Meperidine (Demerol)
- D) Hydroxyurea

Answer: D

Explanation: A) Hydroxyurea decreases production of abnormal blood cells and leads to a lesser amount of pain being experienced. Meperidine is not used for pain control for clients in sickle cell crisis because it can cause seizures. Acetaminophen or ibuprofen is used for mild pain, but they would not be effective for the severe pain experienced by a client in sickle cell pain crisis.

B) Hydroxyurea decreases production of abnormal blood cells and leads to a lesser amount of pain being experienced. Meperidine is not used for pain control for clients in sickle cell crisis because it can cause seizures. Acetaminophen or ibuprofen is used for mild pain, but they would not be effective for the severe pain experienced by a client in sickle cell pain crisis.

C) Hydroxyurea decreases production of abnormal blood cells and leads to a lesser amount of pain being experienced. Meperidine is not used for pain control for clients in sickle cell crisis because it can cause seizures. Acetaminophen or ibuprofen is used for mild pain, but they would not be effective for the severe pain experienced by a client in sickle cell pain crisis.

D) Hydroxyurea decreases production of abnormal blood cells and leads to a lesser amount of pain being experienced. Meperidine is not used for pain control for clients in sickle cell crisis because it can cause seizures. Acetaminophen or ibuprofen is used for mild pain, but they would not be effective for the severe pain experienced by a client in sickle cell pain crisis.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.H.5. Analyze sickle cell disease as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

8) The nurse is providing care to a 3-year-old client who is receiving treatment for sickle cell disease. The client is at risk for infection. Which medication does the nurse expect to administer to this client?

- A) Acetaminophen
- B) Penicillin
- C) Morphine sulfate
- D) Tamoxifen

Answer: B

Explanation: A) Prophylactic penicillin is often prescribed to children between the ages of 2 months and 5 years of age who are diagnosed with sickle cell disease because of the increased risk for infection. Morphine and acetaminophen may be given for the pain the client experiences during a sickle cell crisis. Tamoxifen is a medication used to treat breast cancer.

B) Prophylactic penicillin is often prescribed to children between the ages of 2 months and 5 years of age who are diagnosed with sickle cell disease because of the increased risk for infection. Morphine and acetaminophen may be given for the pain the client experiences during a sickle cell crisis. Tamoxifen is a medication used to treat breast cancer.

C) Prophylactic penicillin is often prescribed to children between the ages of 2 months and 5 years of age who are diagnosed with sickle cell disease because of the increased risk for infection. Morphine and acetaminophen may be given for the pain the client experiences during a sickle cell crisis. Tamoxifen is a medication used to treat breast cancer.

D) Prophylactic penicillin is often prescribed to children between the ages of 2 months and 5 years of age who are diagnosed with sickle cell disease because of the increased risk for infection. Morphine and acetaminophen may be given for the pain the client experiences during a sickle cell crisis. Tamoxifen is a medication used to treat breast cancer.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Pharmacological and Parenteral Therapies

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Planning

Learning Outcome: 2.H.5. Analyze sickle cell disease as it relates to cellular regulation.

Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

9) A pediatric nurse is educating the client with sickle cell disease and the client's family regarding the genetic implications of the disease. Which information is inappropriate for the nurse to share with the client's family?

A) If both parents have the trait, then with each pregnancy, the risk of having a child with the disease is 50%.

B) The disorder is transmitted as an autosomal recessive genetic defect.

C) The sickle cell gene may have originated to protect against lethal forms of malaria.

D) In African Americans, sickle cell disease occurs in 1 of every 365 births.

Answer: A

Explanation: A) In educating the client and the client's parents regarding sickle cell disease, the nurse will state that the disorder is transmitted as an autosomal recessive genetic defect. If both parents have the trait, then with each pregnancy, the risk of having a child with the disease is 25%, not 50%. The sickle cell gene may have originated to protect against lethal forms of malaria. In African Americans, sickle cell disease occurs in 1 of every 365 births.

B) In educating the client and the client's parents regarding sickle cell disease, the nurse will state that the disorder is transmitted as an autosomal recessive genetic defect. If both parents have the trait, then with each pregnancy, the risk of having a child with the disease is 25%, not 50%. The sickle cell gene may have originated to protect against lethal forms of malaria. In African Americans, sickle cell disease occurs in 1 of every 365 births.

C) In educating the client and the client's parents regarding sickle cell disease, the nurse will state that the disorder is transmitted as an autosomal recessive genetic defect. If both parents have the trait, then with each pregnancy, the risk of having a child with the disease is 25%, not 50%. The sickle cell gene may have originated to protect against lethal forms of malaria. In African Americans, sickle cell disease occurs in 1 of every 365 births.

D) In educating the client and the client's parents regarding sickle cell disease, the nurse will state that the disorder is transmitted as an autosomal recessive genetic defect. If both parents have the trait, then with each pregnancy, the risk of having a child with the disease is 25%, not 50%. The sickle cell gene may have originated to protect against lethal forms of malaria. In African Americans, sickle cell disease occurs in 1 of every 365 births.

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.H.2. Analyze sickle cell disease as it relates to cellular regulation.

Describe the etiology of sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

10) An emergency department nurse is caring for a child in sickle cell crisis. The nurse suspects the etiology of the crisis as being thrombotic in nature because of which clinical manifestations? Select all that apply.

- A) The client has profound pallor and fatigue.
- B) The client is in extreme pain.
- C) The client has profound hypotension and shock.
- D) The client has a fever.
- E) The client's chest CT reveals a pulmonary infarct.

Answer: B, D

Explanation: A) A thrombotic sickle cell crisis is manifested by extreme pain and fever. The client in profound hypotension and shock likely has splenic sequestration as the etiology, not thrombosis. The client with a pulmonary infarct likely has acute chest syndrome, not thrombosis. The client with profound pallor and fatigue likely is in an aplastic crisis, not thrombosis.

B) A thrombotic sickle cell crisis is manifested by extreme pain and fever. The client in profound hypotension and shock likely has splenic sequestration as the etiology, not thrombosis. The client with a pulmonary infarct likely has acute chest syndrome, not thrombosis. The client with profound pallor and fatigue likely is in an aplastic crisis, not thrombosis.

C) A thrombotic sickle cell crisis is manifested by extreme pain and fever. The client in profound hypotension and shock likely has splenic sequestration as the etiology, not thrombosis. The client with a pulmonary infarct likely has acute chest syndrome, not thrombosis. The client with profound pallor and fatigue likely is in an aplastic crisis, not thrombosis.

D) A thrombotic sickle cell crisis is manifested by extreme pain and fever. The client in profound hypotension and shock likely has splenic sequestration as the etiology, not thrombosis. The client with a pulmonary infarct likely has acute chest syndrome, not thrombosis. The client with profound pallor and fatigue likely is in an aplastic crisis, not thrombosis.

E) A thrombotic sickle cell crisis is manifested by extreme pain and fever. The client in profound hypotension and shock likely has splenic sequestration as the etiology, not thrombosis. The client with a pulmonary infarct likely has acute chest syndrome, not thrombosis. The client with profound pallor and fatigue likely is in an aplastic crisis, not thrombosis.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.H.4. Analyze sickle cell disease as it relates to cellular regulation. Identify the clinical manifestations of sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

11) A nurse is planning care for a client with sickle cell disease and chooses "Acute Pain" as the nursing diagnosis. Which intervention is inappropriate for the nurse to include in this plan of care?

- A) Administer prescribed analgesic medications around the clock.
- B) Place client in position of comfort.
- C) Use heat or cold packs as tolerated.
- D) Support the client's joints and extremities with pillows.

Answer: C

Explanation: A) The client with sickle cell disease who is in a sickle cell crisis will likely have extreme pain. To aid in caring for this client, the nurse will administer prescribed analgesic medications around the clock, place the patient in position of comfort, and support the client's joints and extremities with pillows. The use of heat or cold packs is contraindicated in the sickle cell client.

B) The client with sickle cell disease who is in a sickle cell crisis will likely have extreme pain. To aid in caring for this client, the nurse will administer ordered analgesic medications around the clock, place the patient in position of comfort, and support the client's joints and extremities with pillows. The use of heat or cold packs is contraindicated in the sickle cell client.

C) The client with sickle cell disease who is in a sickle cell crisis will likely have extreme pain. To aid in caring for this client, the nurse will administer ordered analgesic medications around the clock, place the patient in position of comfort, and support the client's joints and extremities with pillows. The use of heat or cold packs is contraindicated in the sickle cell client.

D) The client with sickle cell disease who is in a sickle cell crisis will likely have extreme pain. To aid in caring for this client, the nurse will administer ordered analgesic medications around the clock, place the patient in position of comfort, and support the client's joints and extremities with pillows. The use of heat or cold packs is contraindicated in the sickle cell client.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.H.7. Analyze sickle cell disease as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

12) Which race is at highest risk of inheriting sickle cell disease?

- A) African American
- B) Caucasian
- C) Hispanic
- D) Asian

Answer: A

Explanation: A) Sickle cell disease is most common among people of African descent. An estimated 1 in 13 African Americans carries one abnormal hemoglobin gene, and 1 in 365 African American newborns are born with two Hb S genes.

B) Sickle cell disease is most common among people of African descent. An estimated 1 in 13 African Americans carries one abnormal hemoglobin gene, and 1 in 365 African American newborns are born with two Hb S genes.

C) Sickle cell disease is most common among people of African descent. An estimated 1 in 13 African Americans carries one abnormal hemoglobin gene, and 1 in 365 African American newborns are born with two Hb S genes.

D) Sickle cell disease is most common among people of African descent. An estimated 1 in 13 African Americans carries one abnormal hemoglobin gene, and 1 in 365 African American newborns are born with two Hb S genes.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.2 Recognize the relationship of genetics and genomics to health, prevention, screening, diagnostics, prognostics, selection of treatment, and monitoring of treatment effectiveness, using a constructed pedigree from collected family history information as well as standardized symbols and terminology. | NLN Competencies:

Relationship Centered Care: Factors that contribute to or threaten health. | Nursing Process: Assessment

Learning Outcome: 2.H.3. Analyze sickle cell disease as it relates to cellular regulation.

Compare the risk factors for and prevention of sickle cell disease.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with sickle cell disease.

Exemplar 2.I Skin Cancer

1) During a routine physical examination of a client's lungs, the nurse notes a pink papule that is flat and erythematous with surface crusting on the client's upper chest. The nurse should notify the physician of this finding because the nurse suspects the papule might indicate what?

- A) Squamous cell carcinoma
- B) Basal cell carcinoma
- C) Actinic keratosis
- D) Malignant melanoma

Answer: B

Explanation: A) Superficial basal cell carcinoma is often found on the trunk, and it manifests as a papule or plaque that is flat, pink, erythematous, and crusting. Squamous cell carcinoma is most often found on parts that are exposed to the sun, such as the face and hands. It usually appears as a small, firm, red nodule that may bleed as it grows. Malignant melanoma manifests as black, brown, or multicolored nodules or plaques. Actinic keratosis is a precancerous condition. The lesion appears as a shiny, rough macule.

B) Superficial basal cell carcinoma is often found on the trunk, and it manifests as a papule or plaque that is flat, pink, erythematous, and crusting. Squamous cell carcinoma is most often found on parts that are exposed to the sun, such as the face and hands. It usually appears as a small, firm, red nodule that may bleed as it grows. Malignant melanoma manifests as black, brown, or multicolored nodules or plaques. Actinic keratosis is a precancerous condition. The lesion appears as a shiny, rough macule.

C) Superficial basal cell carcinoma is often found on the trunk, and it manifests as a papule or plaque that is flat, pink, erythematous, and crusting. Squamous cell carcinoma is most often found on parts that are exposed to the sun, such as the face and hands. It usually appears as a small, firm, red nodule that may bleed as it grows. Malignant melanoma manifests as black, brown, or multicolored nodules or plaques. Actinic keratosis is a precancerous condition. The lesion appears as a shiny, rough macule.

D) Superficial basal cell carcinoma is often found on the trunk, and it manifests as a papule or plaque that is flat, pink, erythematous, and crusting. Squamous cell carcinoma is most often found on parts that are exposed to the sun, such as the face and hands. It usually appears as a small, firm, red nodule that may bleed as it grows. Malignant melanoma manifests as black, brown, or multicolored nodules or plaques. Actinic keratosis is a precancerous condition. The lesion appears as a shiny, rough macule.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.1. Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment
Learning Outcome: 2.I.4. Analyze skin cancer as it relates to cellular regulation. Identify the clinical manifestations of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

2) The nurse is teaching a group of community members about preventing skin cancer. Which participant would be at the greatest risk for skin cancer?

A) A 25-year-old lifeguard at the community pool who wears sunscreen

B) A baby underneath a large beach umbrella

C) A 60-year-old farmer who wears a cap when working

D) A teenager who wears a ski outfit when skiing

Answer: C

Explanation: A) The older adult client has had more years of living to increase the risk of skin cancer from exposure to the sun. In addition, the farmer wears a cap, but no mention is made of protectant sunscreens or long-sleeved shirts and pants. The lifeguard, baby, and teenager have lesser risk because there are physical barriers to the sun identified in each option: sunscreen, umbrella, and ski outfit.

B) The older adult client has had more years of living to increase the risk of skin cancer from exposure to the sun. In addition, the farmer wears a cap, but no mention is made of protectant sunscreens or long-sleeved shirts and pants. The lifeguard, baby, and teenager have lesser risk because there are physical barriers to the sun identified in each option: sunscreen, umbrella, and ski outfit.

C) The older adult client has had more years of living to increase the risk of skin cancer from exposure to the sun. In addition, the farmer wears a cap, but no mention is made of protectant sunscreens or long-sleeved shirts and pants. The lifeguard, baby, and teenager have lesser risk because there are physical barriers to the sun identified in each option: sunscreen, umbrella, and ski outfit.

D) The older adult client has had more years of living to increase the risk of skin cancer from exposure to the sun. In addition, the farmer wears a cap, but no mention is made of protectant sunscreens or long-sleeved shirts and pants. The lifeguard, baby, and teenager have lesser risk because there are physical barriers to the sun identified in each option: sunscreen, umbrella, and ski outfit.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.I.3. Analyze skin cancer as it relates to cellular regulation. Compare the risk factors for and prevention of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

3) A dark-skinned client tells the nurse of plans to bask in the sun on an upcoming vacation. The nurse questions the client about sunscreen use. Which response indicates the client needs further education?

A) "I don't need sunscreen because I am dark-skinned already."

B) "I will avoid the sun between the peak hours of 10 a.m. and 4 p.m."

C) "I can still experience sun damage despite my dark skin tones."

D) "The melanocytes in my skin provide me with increased protection from the sun."

Answer: A

Explanation: A) While the melanocytes in darker skin offer increased protection, the risk for skin cancer remains and sunscreen should be worn. The other client responses are correct.

B) While the melanocytes in darker skin offer increased protection, the risk for skin cancer remains and sunscreen should be worn. The other client responses are correct.

C) While the melanocytes in darker skin offer increased protection, the risk for skin cancer remains and sunscreen should be worn. The other client responses are correct.

D) While the melanocytes in darker skin offer increased protection, the risk for skin cancer remains and sunscreen should be worn. The other client responses are correct.

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Cognitive Level: Analyzing

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.I.3. Analyze skin cancer as it relates to cellular regulation. Compare the risk factors for and prevention of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

4) The nurse is caring for an older adolescent client diagnosed with malignant melanoma. Which nursing diagnoses would be appropriate when planning this client's care? Select all that apply.

- A) Impaired Skin Integrity
- B) Risk for Compromised Human Dignity
- C) Anxiety
- D) Risk for Acute Confusion
- E) Disturbed Body Image

Answer: A, C, E

Explanation: A) Any client will likely experience anxiety and impaired skin integrity related to the diagnosis of skin cancer. The client will not likely have compromised human dignity or a risk for acute confusion. Disturbed body image could be an issue, especially for an adolescent client.

B) Any client will likely experience anxiety and impaired skin integrity related to the diagnosis of skin cancer. The client will not likely have compromised human dignity or a risk for acute confusion. Disturbed body image could be an issue, especially for an adolescent client.

C) Any client will likely experience anxiety and impaired skin integrity related to the diagnosis of skin cancer. The client will not likely have compromised human dignity or a risk for acute confusion. Disturbed body image could be an issue, especially for an adolescent client.

D) Any client will likely experience anxiety and impaired skin integrity related to the diagnosis of skin cancer. The client will not likely have compromised human dignity or a risk for acute confusion. Disturbed body image could be an issue, especially for an adolescent client.

E) Any client will likely experience anxiety and impaired skin integrity related to the diagnosis of skin cancer. The client will not likely have compromised human dignity or a risk for acute confusion. Disturbed body image could be an issue, especially for an adolescent client.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Basic Care and Comfort

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.I.7. Analyze skin cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

5) The nurse is talking to a group of young adults about decreasing the risk for skin cancer. A young woman asks the nurse about the safety of ultraviolet light tanning salons. Which response by the nurse is most appropriate?

A) "Using tanning beds without clothing contaminates skin and leads to infections."

B) "Tanning from ultraviolet light is safer than sunshine."

C) "Using sunscreen will prevent skin cancers, even in tanning beds."

D) "Exposure to ultraviolet light used in tanning beds can cause skin cancer."

Answer: D

Explanation: A) Ultraviolet light exposure greatly increases risk of skin cancer, both basal cell and melanoma types. Direct sunlight and tanning beds both emit ultraviolet light that can cause skin damage that leads to skin cancer. The use of sunscreen can reduce the risk of cancer but not prevent it, especially in tanning beds where the ultraviolet light is intensified. That using tanning beds without clothing causes infection may or may not be true, depending on the disinfectant methods used.

B) Ultraviolet light exposure greatly increases risk of skin cancer, both basal cell and melanoma types. Direct sunlight and tanning beds both emit ultraviolet light that can cause skin damage that leads to skin cancer. The use of sunscreen can reduce the risk of cancer but not prevent it, especially in tanning beds where the ultraviolet light is intensified. That using tanning beds without clothing causes infection may or may not be true, depending on the disinfectant methods used.

C) Ultraviolet light exposure greatly increases risk of skin cancer, both basal cell and melanoma types. Direct sunlight and tanning beds both emit ultraviolet light that can cause skin damage that leads to skin cancer. The use of sunscreen can reduce the risk of cancer but not prevent it, especially in tanning beds where the ultraviolet light is intensified. That using tanning beds without clothing causes infection may or may not be true, depending on the disinfectant methods used.

D) Ultraviolet light exposure greatly increases risk of skin cancer, both basal cell and melanoma types. Direct sunlight and tanning beds both emit ultraviolet light that can cause skin damage that leads to skin cancer. The use of sunscreen can reduce the risk of cancer but not prevent it, especially in tanning beds where the ultraviolet light is intensified. That using tanning beds without clothing causes infection may or may not be true, depending on the disinfectant methods used.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.I.3. Analyze skin cancer as it relates to cellular regulation. Compare the risk factors for and prevention of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

6) A client is scheduled to have a suspected cancerous lesion removed from the arm. When planning care for this client, which outcome would be a priority?

- A) The client will make nutritional changes.
- B) The client will experience minimal pain after healing.
- C) The client will heal without signs of infection.
- D) The client will not need to make lifestyle changes.

Answer: C

Explanation: A) Following removal of a skin lesion, the nurse directs care aimed at the prevention of infection while the skin heals. The client should not experience pain after healing and will need to make lifestyle changes to prevent further occurrences of skin cancer. Nutritional changes may or may not be needed; however, prevention of infection is the priority.

B) Following removal of a skin lesion, the nurse directs care aimed at the prevention of infection while the skin heals. The client should not experience pain after healing and will need to make lifestyle changes to prevent further occurrences of skin cancer. Nutritional changes may or may not be needed; however, prevention of infection is the priority.

C) Following removal of a skin lesion, the nurse directs care aimed at the prevention of infection while the skin heals. The client should not experience pain after healing and will need to make lifestyle changes to prevent further occurrences of skin cancer. Nutritional changes may or may not be needed; however, prevention of infection is the priority.

D) Following removal of a skin lesion, the nurse directs care aimed at the prevention of infection while the skin heals. The client should not experience pain after healing and will need to make lifestyle changes to prevent further occurrences of skin cancer. Nutritional changes may or may not be needed; however, prevention of infection is the priority.

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Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: I.A.1. Integrate understanding of multiple dimensions of patient-centered care: Patient/family/community preferences, values; Coordination and integration of care; Information, communication, and education; Physical comfort and emotional support; Involvement of family and friends Transition and continuity. | AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental state, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care. | NLN Competencies: Relationship Centered Care: Effective communication. | Nursing Process: Evaluation

Learning Outcome: 2.I.7. Analyze skin cancer as it relates to cellular regulation. Apply the nursing process in providing culturally competent care to an individual with skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

- 7) The nurse is reviewing the medical records for several clients who will be seen in the clinic today. According to the ABCD rule, which client may require removal of the skin lesion?
- A) A client with a lesion that is symmetrical with an irregular border, a single color, and diameter change from 4 mm to 5 mm
 - B) A client with a lesion that is symmetrical, with a smooth border, a single color, and diameter that has stayed the same
 - C) A client with a lesion that is asymmetrical with a regular border, two colors, and diameter change from 4 mm to 3 mm
 - D) A client with a lesion that is asymmetrical with an irregular border, two colors, and diameter change from 5 mm to 7 mm

Answer: D

Explanation: A) To meet all four criteria for removal of a lesion, the lesion will be asymmetrical, have irregular borders, show color change or more than one color, and have a diameter greater than 6 mm.

B) To meet all four criteria for removal of a lesion, the lesion will be asymmetrical, have irregular borders, show color change or more than one color, and have a diameter greater than 6 mm.

C) To meet all four criteria for removal of a lesion, the lesion will be asymmetrical, have irregular borders, show color change or more than one color, and have a diameter greater than 6 mm.

D) To meet all four criteria for removal of a lesion, the lesion will be asymmetrical, have irregular borders, show color change or more than one color, and have a diameter greater than 6 mm.

Page Ref: 138

Cognitive Level: Analyzing

Client Need/Sub: Physiological Integrity: Reduction of Risk Potential

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Evaluation

Learning Outcome: 2.I.5. Analyze skin cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

8) The nurse is caring for a client who has recently been diagnosed with skin cancer. The client is tearful and states, "How did I get skin cancer? I don't believe in tanning!" Which response by the nurse is indicated at this time?

- A) "Can you tell me more about your feelings?"
- B) "This is unusual, as skin cancer normally only occurs in sunbathers."
- C) "Sun exposure can happen as we carry out our daily activities."
- D) "We frequently never find out why cancer strikes."

Answer: C

Explanation: A) Sun exposure occurs as we carry out our daily activities, such as riding in the car, going in and out of buildings, and playing or working outside. The client is asking for information; the other options do not provide adequate or correct information.

B) Sun exposure occurs as we carry out our daily activities, such as riding in the car, going in and out of buildings, and playing or working outside. The client is asking for information; the other options do not provide adequate or correct information.

C) Sun exposure occurs as we carry out our daily activities, such as riding in the car, going in and out of buildings, and playing or working outside. The client is asking for information; the other options do not provide adequate or correct information.

D) Sun exposure occurs as we carry out our daily activities, such as riding in the car, going in and out of buildings, and playing or working outside. The client is asking for information; the other options do not provide adequate or correct information.

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Cognitive Level: Applying

Client Need/Sub: Health Promotion and Maintenance

Standards: QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.3.

Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN

Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.I.3. Analyze skin cancer as it relates to cellular regulation. Compare the risk factors for and prevention of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

9) A nurse working in an outpatient dermatology clinic is caring for a client who has been diagnosed with a lentigo maligna. Which statement is inappropriate for the nurse to include in the client's teaching plan?

- A) The lesion is also called Robertson freckle.
- B) The lesion is a precursor to melanoma.
- C) The lesion is a tan or black patch on the skin that looks like a freckle.
- D) The lesion grows slowly, becoming mottled, dark, thick, and nodular.

Answer: A

Explanation: A) A lentigo maligna, also called a Hutchinson freckle, is a precursor to melanoma. The lesion is a tan or black patch on the skin that looks like a freckle. The lesion grows slowly, and becomes mottled, dark, thick, and nodular.

B) A lentigo maligna, also called a Hutchinson freckle, is a precursor to melanoma. The lesion is a tan or black patch on the skin that looks like a freckle. The lesion grows slowly, and becomes mottled, dark, thick, and nodular.

C) A lentigo maligna, also called a Hutchinson freckle, is a precursor to melanoma. The lesion is a tan or black patch on the skin that looks like a freckle. The lesion grows slowly, and becomes mottled, dark, thick, and nodular.

D) A lentigo maligna, also called a Hutchinson freckle, is a precursor to melanoma. The lesion is a tan or black patch on the skin that looks like a freckle. The lesion grows slowly, and becomes mottled, dark, thick, and nodular.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Implementation

Learning Outcome: 2.I.1. Analyze skin cancer as it relates to cellular regulation. Describe the pathophysiology of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

10) A client presents to the primary care clinic for an annual physical. The nurse caring for the client notes that the client's healthcare provider uses the ABCD mnemonic to assess suspicious skin lesions. What does the "D" in ABCD represent?

- A) Diameter of lesion greater than 8 mm
- B) Distance of lesion to an additional lesion
- C) Diameter of lesion greater than 6 mm
- D) Depth of lesion

Answer: C

Explanation: A) The ABCD rule is used to assess suspicious lesions:

Asymmetry (One half of the nevus does not match the other half.)

Border irregularity (Edges are ragged, blurred, or notched.)

Color variation or dark black color

Diameter greater than 6 mm (size of a pencil eraser)

B) The ABCD rule is used to assess suspicious lesions:

Asymmetry (One half of the nevus does not match the other half.)

Border irregularity (Edges are ragged, blurred, or notched.)

Color variation or dark black color

Diameter greater than 6 mm (size of a pencil eraser)

C) The ABCD rule is used to assess suspicious lesions:

Asymmetry (One half of the nevus does not match the other half.)

Border irregularity (Edges are ragged, blurred, or notched.)

Color variation or dark black color

Diameter greater than 6 mm (size of a pencil eraser)

D) The ABCD rule is used to assess suspicious lesions:

Asymmetry (One half of the nevus does not match the other half.)

Border irregularity (Edges are ragged, blurred, or notched.)

Color variation or dark black color

Diameter greater than 6 mm (size of a pencil eraser)

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Cognitive Level: Understanding

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. | Nursing Process: Assessment

Learning Outcome: 2.I.5. Analyze skin cancer as it relates to cellular regulation. Summarize diagnostic tests and therapies used by interdisciplinary teams in the collaborative care of an individual with skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

11) What is the most common cause of skin cancer?

- A) Exposure to melanin
- B) UV radiation from sunlight
- C) Damage from chemicals
- D) Inflammation from psoriasis

Answer: B

Explanation: A) Exposure to UV radiation from sunlight is a major cause of skin cancer. Tanning beds are another dangerous form of UV exposure. Melanin is a naturally-occurring skin pigment. Exposure to melanin itself does not cause skin cancer. Although damage from chemicals may lead to skin cancer, it is not a common case of skin cancer. Inflammation from psoriasis is not directly linked to skin cancer.

B) Exposure to UV radiation from sunlight is a major cause of skin cancer. Tanning beds are another dangerous form of UV exposure. Melanin is a naturally-occurring skin pigment. Exposure to melanin itself does not cause skin cancer. Although damage from chemicals may lead to skin cancer, it is not a common case of skin cancer. Inflammation from psoriasis is not directly linked to skin cancer.

C) Exposure to UV radiation from sunlight is a major cause of skin cancer. Tanning beds are another dangerous form of UV exposure. Melanin is a naturally-occurring skin pigment. Exposure to melanin itself does not cause skin cancer. Although damage from chemicals may lead to skin cancer, it is not a common case of skin cancer. Inflammation from psoriasis is not directly linked to skin cancer.

D) Exposure to UV radiation from sunlight is a major cause of skin cancer. Tanning beds are another dangerous form of UV exposure. Melanin is a naturally-occurring skin pigment. Exposure to melanin itself does not cause skin cancer. Although damage from chemicals may lead to skin cancer, it is not a common case of skin cancer. Inflammation from psoriasis is not directly linked to skin cancer.

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Cognitive Level: Remembering

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.1. Demonstrate knowledge of basic scientific methods and processes. | AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings. | NLN Competencies: Relationship Centered Care: Factors that contribute to or threaten health. | Nursing Process: Assessment
Learning Outcome: 2.I.2. Analyze skin cancer as it relates to cellular regulation. Describe the etiology of skin cancer.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.

12) The nurse is assessing a 78-year-old client who was recently diagnosed with skin cancer. The physician has mentioned including topical treatments in the patient's treatment plan. What other assessments may the nurse need to conduct to help guide the physician when deciding whether to use topical treatments for this client?

- A) An assessment for coagulation disorders
- B) An assessment for dementia
- C) An assessment for cardiovascular disease
- D) An assessment for diabetes

Answer: B

Explanation: A) For older clients with skin cancer, the use of topical treatments may be an option, but the presence and levels of arthritis and dementia need to be considered prior to prescribing this treatment. Comorbidities such as cardiovascular disease, coagulation disorders, and diabetes should be considered before planning surgical interventions for older clients with skin cancer.

B) For older clients with skin cancer, the use of topical treatments may be an option, but the presence and levels of arthritis and dementia need to be considered prior to prescribing this treatment. Comorbidities such as cardiovascular disease, coagulation disorders, and diabetes should be considered before planning surgical interventions for older clients with skin cancer.

C) For older clients with skin cancer, the use of topical treatments may be an option, but the presence and levels of arthritis and dementia need to be considered prior to prescribing this treatment. Comorbidities such as cardiovascular disease, coagulation disorders, and diabetes should be considered before planning surgical interventions for older clients with skin cancer.

D) For older clients with skin cancer, the use of topical treatments may be an option, but the presence and levels of arthritis and dementia need to be considered prior to prescribing this treatment. Comorbidities such as cardiovascular disease, coagulation disorders, and diabetes should be considered before planning surgical interventions for older clients with skin cancer.

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Cognitive Level: Applying

Client Need/Sub: Physiological Integrity: Physiological Adaptation

Standards: QSEN Competencies: III.A.2. Describe EBP to include the components of research evidence, clinical expertise and patient/family values. | AACN Essential Competencies: IX.1

Conduct comprehensive and focused physical, behavioral, psychological, spiritual, socioeconomic, and environmental assessments of health and illness parameters in patients, using developmentally and culturally appropriate approaches. | NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care. |

Nursing Process: Assessment

Learning Outcome: 2.I.6. Analyze skin cancer as it relates to cellular regulation. Differentiate considerations for care of clients with skin cancer across the lifespan.

MNL LO: Demonstrate understanding of the concept of cellular regulation in the care of a patient with skin cancer.