

# NCC ELECTRONIC FETAL MONITORING CERTIFICATION EXAM QUESTIONS AND ANSWERS (2023-20240 VERIFIED ANSWERS)

Which of the following factors can have a negative effect on uterine blood flow?

- Hypertension
- Epidural
- Hemorrhage
- Diabetes
- All of the above - **e. All of the above**

How does the fetus compensate for decreased maternal circulating volume?

- Increases cardiac output by increasing stroke volume.
- Increases cardiac output by increasing it's heart rate.
- Increases cardiac output by increasing fetal movement.
- - **b. Increases cardiac output by increasing it's heart rate.**

Stimulating the vagus nerve typically produces:

- A decrease in the heart rate
- An increase in the heart rate
- An increase in stroke volume
- No change - **a. A decrease in the heart rate**

What initially causes a chemoreceptor response?

- Epidurals
- Supine maternal position
- Increased CO2 levels
- Decreased O2 levels
- A & C
- A & B
- C & D - **g. C & D**

The vagus nerve begins maturation 26 to 28 weeks. Its dominance results in what effect to the FHR baseline?

- Increases baseline

- Decreases baseline - b. Decreases baseline

T/F: Oxygen exchange in the placenta takes place in the intervillous space. - True

T/F: The parasympathetic nervous system is a cardioaccelerator. - False

T/F: Baroreceptors are stretch receptors which respond to increases or decreases in blood pressure. - True

T/F: There are two electronic fetal monitoring methods of obtaining the fetal heartrate: the ultrasound transducer and the fetal spiral electrode. - True

T/F: Variability can be determined with the fetoscope. - False

T/F: Because the ultrasound transducer and toco transducer are sealed units, they canbe dipped in warm water to make cleaning easier. - False

T/F: The most common artifact with the ultrasound transducer system for fetal heartrate is increased variability. - True

T/F: All fetal monitors contain a logic system designed to reject artifact. - True

T/F: The monitor should always be tested before starting a tracing, either external or internal mode and labeled a test. - True

T/F: The paper speed on the fetal monitor should always be set at 1cm/min. - False

T/F: Both internal and external monitoring methods are equally accurate means of obtaining the fetal heart rate and contraction patterns. - False

T/F: The external toco is usually placed over the uterine fundus to pick up contractions. - True

T/F: The external toco gives measurable uterine pressure. - False

T/F: The fetal spiral electrode can be placed when vaginal bleeding of unknown origin is present. - False

T/F: The ultrasound transducer is usually placed on the side of the uterus over the baby's back, as the fetal heart is heard best there. - True

T/F: The spiral electrode is used to more accurately determine the frequency, duration, and intensity of uterine contractions. - False

T/F: The heart rate from a well-applied fetal spiral electrode can only be fetal, not maternal. - False

T/F: The intrauterine catheter is used to pick up the fetal heart rate. - False

T/F: The internal spiral electrode may pick up the maternal heart rate if the baby has died. - True

T/F: Fetal arrhythmias can be seen on both internal and external monitor tracings. - True

T/F: Variability and periodic changes can be detected with both internal and external monitoring. - True

T/F: Variable decelerations are a result of cord compression. - True

T/F: The presence of FHR accelerations in the intrapartum and antepartum periods is a sign of adequate fetal oxygenation. - True

T/F: Variable decelerations are a vagal response. - True

T/F: Late decelerations have a gradual decrease in FHR (onset to nadir 30 seconds) and are delayed in timing with the nadir of the deceleration occurring after the peak of the contraction. - True

T/F: The fetal heart rate baseline can be determined during periods of marked variability. - False

T/F: Anything that affects maternal blood flow (cardiac output) can affect the bloodflow through the placenta. - True

T/F: Variable decelerations are the most frequently seen fetal heart rate deceleration pattern in labor. - True

T/F: Minimal variability is always an indicator of hypoxia and a Cesarean section is indicated. - False

What is your first intervention in management of a patient experiencing variable decelerations?

- Immediate delivery
- Change maternal position
- No treatment indicated
- Oxygen
- Stop oxytocin infusion - b. Change maternal position

Etiology of a baseline FHR of 165bpm occurring for the last hour can be:

- Maternal supine hypotension
- Maternal fever
- Maternal dehydration
- Unknown
- 1 and 2
- 1, 2 and 3
- c. 2, 3 and 4 - c. 2, 3 and 4

What is the most probable cause of recurrent late decelerations?

- Utero-placental insufficiency
- Head compression
- Cord compression
- Maternal position change - a. Utero-placental insufficiency

The most prevalent risk factor associated with fetal death before the onset of labor is:

- Low socioeconomic status
- Fetal malpresentation
- Uteroplacental insufficiency
- Uterine anomalies - **c. Uteroplacental insufficiency**

Which of the following is NOT used for antepartum fetal surveillance?

- Fetal movement counting
- Antepartum fetal heart rate testing
- Biophysical profile testing
- Maternal HCG levels - **d. Maternal HCG levels**

Which of the following conditions is not an indication for antepartum fetal surveillance?

- Gestational hypertension
- Diabetes in pregnancy
- Fetus in breech presentation
- Decreased fetal movement - **c. Fetus in breech presentation**

Which of the following does not affect the degree of fetal activity?

- Vibroacoustic stimulation
- Smoking
- Fetal position
- Gestational age - **a. Vibroacoustic stimulation**

To be considered reactive, a nonstress test must have:

- 4 fetal heart rate accelerations in a 20 minute window
- 2 fetal heart rate accelerations in a 10 minute window
- 4 fetal heart rate accelerations in a 40 minute window
- 2 fetal heart rate accelerations in a 20 minute window - **d. 2 fetal heart rate accelerations in a 20 minute window**

If a nonstress test is nonreactive after 40 minutes, the next step should be:

- Have the client go home and do fetal movement counts
- Do a biophysical profile or contraction stress test
- Repeat the nonstress test within a week
- Admit the client for delivery - **b. Do a biophysical profile or contraction stress test**

All of the following are components of a biophysical profile except:

- Contraction stress test
- Assessment of fetal breathing
- Amniotic fluid volume measurement
- Fetal movement assessment - **a. Contraction stress test**

A modified biophysical profile includes a nonstress test and:

- Contraction stress test
- Ultrasound assessment of fetal movement
- Ultrasound assessment of amniotic fluid volume
- Fetal movement counts - **c. Ultrasound assessment of amniotic fluid volume**

For a contraction stress test to be interpretable, you must have a minimum of:

- 5 contractions in a 10-minute window
- 3 contractions in a 10-minute window
- 4 contractions in a 10-minute window
- 2 contractions in a 10-minute window - **b. 3 contractions in a 10 minute window**

A negative contraction stress test is one in which:

- No contractions are seen
- There are late decelerations with > 50% of the contractions seen
- There are no fetal heart rate late decelerations with the contractions
- There is one fetal heart rate deceleration seen - **c. There are no fetal heart rate late decelerations with the contractions**

According to AWHONN, the normal baseline Fetal Heart Rate (FHR)

is A. 90-150 bpm

B. 100-170 bpm

C. 110-160 bpm

D. 120-140 bpm - C. 110-160 bpm

What are the two most important characteristics of the FHR?

- Rate and decelerations
- Variability and accelerations
- Variability and decelerations
- Rate and variability - B. Variability and accelerations

You recognize that an FHR tracing has been showing a decrease in variability for the last 45 minutes. Your first intervention should be to

- Encourage ambulation
- Administer oxygen
- Discontinue IV fluids
- Increase Pitocin rate - B. Administer oxygen

Resuscitation measures improve the baby's variability, but the FHR is still not reactive. You attempt fetal scalp stimulation (FSE) because you know that a well-oxygenated fetus will respond to FSE with a(n)

- Acceleration
- Deceleration
- Fetal movement
- Sleep pattern - A. Acceleration

You are evaluating a patient in the Prenatal Testing Department who has just completed a biophysical profile (BPP). You suspect that there could be chronic fetal asphyxia because the score is below

- 10
  - 6
- C. 8 - B. 6

When using a fetal scalp electrode (FSE), you notice an abnormally low FHR on the monitor. You should first

- Compare maternal pulse simultaneously with FHR

- Remove FSE
- Call the doctor immediately
- Turn off the monitor - **A. Compare maternal pulse simultaneously with FHR**

T/F: Umbilical cord influences that can alter blood flow include true knots, hematomas, and number of umbilical vessels. - **True**

T/F: Low amplitude contractions are not an early sign of preterm labor. - **False**

T/F: Preterm contractions are usually painful. - **False**

T/F: Corticosteroid administration may cause an increase in FHR accelerations. - **False**

T/F: Corticosteroid administration may cause an increase in FHR. - **True**

T/F: Contractions cause an increase in uterine venous pressure and a decrease in uterine artery perfusion. - **True**

As a result of the intrinsic fetal response to oxygen deprivation, increased catecholamine levels cause the peripheral blood flow to decrease while the bloodflow to vital organs increases. These flow changes along with increased

catecholamine secretions have what effect on fetal blood pressure and fetal heartrate?

- Increase BP and increase HR
- Increase BP and decrease HR
- Decrease BP and increase HR
- Decrease BP and decrease HR - **B. Increase BP and decrease HR**

All of the following might indicate a pseudosinusoidal pattern as opposed to asinusoidal pattern, except:

- Recent administration of narcotics to mother
- Accelerations in FHR



- Moderate variability
- Frequency of oscillations of two to five cycles/min - **D. Frequency of oscillations of two to five cycles/min**

All of the following are appropriate interventions for fetal tachycardia except:

- Increase maternal IV fluid rate
- Assess maternal vital signs
- Perform SVE
- Administer oxygen - **C. Perform SVE**

During a term antepartum NST (non-stress test), you notice several variable decelerations that decrease at least 15 bpm and last at least 15 sec long. Which of the following is the least likely explanation?

- True knot
- Gestational diabetes
- Umbilical cord entanglement
- Oligohydramnios - **B. Gestational diabetes**

All of the following are likely causes of prolonged decelerations except:

- Uterine tachysystole
- Prolapsed cord
- Maternal hypotension
- Maternal fever - **D. Maternal fever**

\_\_\_\_\_decelerations occur with less than 50% of contractions.

- Recurrent
- Intermittent
- Repetitive - **B. Intermittent**

\_\_\_\_\_decelerations occur with greater than or equal to 50% of contractions.

- Recurrent
- Intermittent
- Repetitive - **A. Recurrent**

All of the following could likely cause minimal variability in FHR except

- Magnesium sulfate administration
- Fetal sleep cycle
- Narcotic administration
- Ephedrine administration - **D. Ephedrine administration**

When an IUPC has been placed, Montevideo units must be \_\_\_\_ or greater for adequate cervical change to occur.

- A. 100
- B. 200
- C. 300
- D. 400 - **B. 200**

The \_\_\_\_\_ increases the heart rate and strengthens myocardial contraction through the release of epinephrine and norepinephrine.

- Sympathetic nervous system
- Parasympathetic nervous system - **A. Sympathetic nervous system**

The \_\_\_\_\_, through stimulation of the vagus nerve, reduces FHR and maintains variability.

- Sympathetic nervous system
- Parasympathetic nervous system - **B. Parasympathetic nervous system**

What would be a suspected pH in a fetus whose FHTs included recurrent late decelerations during labor?

- A. 7.10
- B. 7.26
- C. 7.32
- D. 7.41 - **A. 7.10**

What is the most common cause of sinusoidal patterns?

- Prolapsed cord
- Rh incompatibility

- Recurrent late decelerations
- Oligohydramnios - **B. Rh incompatibility**

Before \_\_\_\_ weeks of gestation, an increase in FHR that peaks at least 10 bpm above the baseline and lasts at least 10 seconds is considered an acceleration.

- 28
- 30
- 32
- D. 36 - **C. 32**

The expected response of the fetal heart rate to active fetal movement of a 31-week gestational age fetus is:

- Suppression of normal short term variability for 15 seconds
- Acceleration of at least 15 beats per minute for 15 seconds
- Acceleration followed by a 15-second deceleration of the heart rate
- Acceleration of at least 10 beats per minute for 10 seconds - **d. Acceleration of at least 10 beats per minute for 10 seconds**

The nurse notes a pattern of variable decelerations to 75 bpm on the fetal monitor. The initial nursing action is to:

- Reposition the woman
- Administer oxygen
- Increase the intravenous fluid infusion
- Stimulate the fetal scalp - **a. Reposition the woman**

The tocotransducer should be placed:

- In the suprapubic area
- In the fundal area
- Over the xiphoid process
- Within the uterus - **b. In the fundal area**

The nurse notes a pattern of decelerations on the fetal monitor that begins shortly after the contraction and returns to baseline just before the contraction is over. The correct nursing response is to:

- Give the woman oxygen by facemask at 8-10 L/min
- Position the woman on her opposite side
- Increase the rate of the woman's intravenous fluid
- Continue to observe and record the normal pattern - **d. Continue to observe and record the normal pattern**

Determining the FHR baseline requires the nurse to approximate the mean FHR rounded to increments of 5 bpm during a \_\_\_\_-minute window (excluding accelerations and decelerations).

- 2
  - 5
  - 10
- D. 20 - **C. 10**

Uterine tachysystole is observed when there are

- 5 or more contractions in 10 min
- 6 or more contractions in 10 min
- 10 or more contractions in 10 min
- 7 or more contractions in 10 min - **B. 6 or more contractions in 10 min**

Which of the following interventions would best stimulate an acceleration in the FHR?

- Provide juice to patient
- Perform vaginal exam
- Turn patient on left side
- Vibroacoustic stimulation - **B. Perform vaginal**

**exam** Scalp stimulation

Assessment of the \_\_\_\_\_ is an indirect measurement of fetal oxygenation.

- Fetal heart rate
- Fetal scalp sampling
- Uterine activity
- Direct Coombs - **A. Fetal heart rate**

T/F: Intrauterine pressure catheters (IUPCs) do not increase risk for infection when placed on patients with intact membranes. - **False**

Membranes must be ruptured for use; infection is a risk

What are abnormal fetal heart rate tracings predictive

of?

- Likelihood of spontaneous vaginal delivery
- Newborn condition at time of delivery
- Fetal acid-base abnormalities
- Fetal intrauterine growth - **C. Fetal acid-base abnormalities**

Which of the following is not an intervention that should be implemented in a patient with uterine tachysystole?

- Administer terbutaline
- Increase IV fluid rate
- Decrease or discontinue IV oxytocin
- Prepare patient for cesarean section - **D. Prepare patient for cesarean section**

Which of the following is most effective in determining the strength of a patient's contractions?

- Patient report
- Tocodynamometer tracing
- RN palpation
- Sterile vaginal exam during a contraction - **C. RN palpation**

The FHR is controlled by the

- Sympathetic nervous system
- Sinoatrial node
- Atrioventricular node
- Parasympathetic nervous system - **B. Sinoatrial node**

How do baseline heart rates differ in premature fetuses?

- They are often lower
- They are often higher
- They are less likely to have decelerations
- They experience longer accelerations - **B. They are often higher**

T/F: If etiology of fetal tachycardia is secondary to extrauterine infection, FHR will return to normal as maternal fever resolves. - **True**

T/F: Fetal tachycardia is a normal compensatory response to transient fetal hypoxemia. - True

Fetal heart rate bradycardia is defined as

- FHR <110bpm lasting 10 min or greater
- FHR <110bpm lasting 2 min or greater
- FHR <110bpm lasting 20 min or greater - **A. FHR <110bpm lasting 10 min or greater**

\_\_\_\_\_variability warrants cesarean section delivery.

- Minimal
- Moderate
- Marked
- Absent - **D. Absent**

At how many weeks gestation should FHR variability be normal in manner?

- 24 weeks
- 28 weeks
- 32 weeks
- 36 weeks - **B. 28 weeks**

A deceleration from 145bpm down to 100bpm lasting 12 minutes may be defined as a

- Prolonged deceleration

- Variable deceleration
- Late deceleration
- Baseline change - **D. Baseline change**

Reduced respiratory gas exchange from persistent decelerations may cause a rise in fetal PCO<sub>2</sub>, which leads first to \_\_\_\_\_, then \_\_\_\_\_.

- Respiratory alkalosis; metabolic acidosis
- Respiratory acidosis; metabolic acidosis
- Respiratory alkalosis; metabolic alkalosis
- Respiratory acidosis; metabolic acidosis - **B. Respiratory acidosis; metabolic acidosis**

Decreased intervillous exchange of oxygenated blood resulting in fetal hypoxia is typically present in\_\_.

- Variable decelerations
- Late decelerations
- Early decelerations
- Accelerations - **B. Late decelerations**

Place the following interventions for a sinusoidal FHR in the correct order:

- Prepare for cesarean delivery
- Place patient in lateral position
- Determine if pattern is related to narcotic analgesic administration
- Provide oxygen via face mask

A. 4, 2, 3, 1

B. 3, 1, 2, 4

C. 4, 3, 2, 1

D. 3, 2, 4, 1 - **D. 3, 2, 4, 1**

The \_\_\_\_\_ is the source of all fetal oxygenation.

- Placenta
- Umbilical cord
- Mother

- Amniotic fluid - **C. Mother**

FHTs with recurrent variable decelerations, no accelerations, and minimal variability would be categorized as

- Category I
- Category II
- Category III - **B. Category II**

FHTs with absent variability and bradycardia would be categorized as

- Category I
- Category II
- Category III - **C. Category III**

FHTs with moderate variability, no accelerations, and early decelerations would be categorized as

- Category I
- Category II
- Category III - **A. Category I**

FHTs with accelerations, no decelerations, and minimal variability would be categorized as

- Category I
- Category II
- Category III - **B. Category II**

Sinusoidal pattern is categorized as

- Category I
- Category II
- Category III - **B. Category III**

FHTs with absent variability and no accelerations or decelerations would be categorized as

- Category I
- Category II



- Category III - **B. Category II**

Absence of accelerations following fetal stimulation (i.e. scalp stimulation) is categorized as

- Category I
- Category II
- Category III - **B. Category II**

FHTs with minimal variability, absent accelerations, and a 3-minute prolonged deceleration would be categorized as

- Category I
- Category II
- Category III - **B. Category II**

FHTs with minimal variability and a baseline of 95bpm would be categorized as

- Category I
- Category II
- Category III - **B. Category II**

FHTs with a baseline of 170bpm, moderate variability, and no accelerations or decelerations would be categorized as

- Category I
- Category II
- Category III - **B. Category II**

FHTs with a baseline 135bpm, moderate variability, accelerations, and one late deceleration would be categorized as

- Category I
- Category II
- Category III - **B. Category II**

A prolonged acceleration lasts greater than \_\_\_\_\_ minutes and less than \_\_\_\_\_ minutes. A. 2; 10

B. 2; 20

C. 10; 20

D. 10; 20 - A. 2; 10

\_\_\_\_\_FHR patterns are those associated with uterine contractions.

- Periodic
- Episodic
- Recurrent
- Irregular - A. Periodic

\_\_\_\_\_FHR patterns are those that are not associated with uterine contractions.

- Periodic
- Episodic
- Recurrent
- Irregular - B. Episodic

Which of the following is not a likely cause of a sinusoidal FHR pattern?

- Chronic fetal bleeding
- Fetal hypoxia or anemia
- Triple screen positive for Trisomy 21
- Fetal isoimmunization - C. Triple screen positive for Trisomy 21

Which of the following factors is not likely to cause uteroplacental insufficiency?

- Late-term gestation
- Preeclampsia
- Gestational diabetes
- Polyhydramnios
- Maternal smoking or drug use - D. Polyhydramnios

Which of the following are considered determinants of fetal well-being?

(Select allthat apply).

- Absence of decelerations in FHR
- Palpation of fetal movement

- Presence of accelerations in FHR
  - Moderate variability in FHR
  - Presence of early decelerations in second stage - C. Presence of accelerations in FHR
- D. Moderate variability in FHR

When auscultation is used for fetal assessment during labor for a low-risk woman, the FHR should be auscultated in the first stage of labor every

- 5 min
- 15-30 min
- 60 min - B. 15-30 min

For a low-risk woman in the second stage of labor, the FHR should be auscultated every

- 5-15 min
- 30 min
- 60 min - A. 5-15 min

The normal FHR baseline

- Decreases during labor
- Fluctuates during labor
- Increases during labor - B. Fluctuates during labor

Bradycardia in the second stage of labor following a previously normal tracing maybe caused by fetal

- Hypoxemia
- Rotation
- Vagal stimulation - C. Vagal stimulation

A likely cause of fetal tachycardia with moderate variability is

- Fetal hypoxemia
- Maternal fever
- Vagal stimulation - B. Maternal fever

Reduction in FHR variability can result from

- Fetal scalp stimulation
- Medication administration
- Vaginal examination - B. Medication administration

The primary goal in treatment for late decelerations is to

- Correct cord compression
- Improve maternal oxygenation
- Maximize uteroplacental blood flow - C. Maximize uteroplacental blood flow

The most frequently observed type of FHR deceleration is

- Early
- Late
- Variable - C. Variable

Amnioinfusion may be useful in alleviating recurrent decelerations that are

- Early
- Late
- Variable - C. Variable

Findings indicative of progressive fetal hypoxemia are

- Late decelerations, moderate variability, stable baseline rate
- Prolonged decelerations recovering to baseline and moderate variability
- Loss of variability and recurrent late or variable decelerations - C.

Loss of variability and recurrent late or variable decelerations

Clinically significant fetal metabolic acidemia is indicated by an arterial cord gas pH of less than or equal to 7.10 and a base deficit of

- 3
- 6

C. 12 - C. 12

Fetal bradycardia can result during

- The sleep state