

A newborn boy is undergoing routine examination in the delivery room. He was born via spontaneous vaginal delivery at 39 weeks gestation to a primigravid 15-year-old girl. The mother received prenatal care and had an uncomplicated pregnancy. She smoked cigarettes intermittently during her pregnancy. At 1 minute of life, the newborn's heart rate is 80/min and respirations are irregular. He has some flexion of his extremities and grimaces in response to stimulation. His arms and legs are cyanotic, but the rest of his skin is pink. Based on the current Apgar score and examination, which of the following is true?

- ☐ A. No further intervention is required.
- ☐ B. The baby has cyanotic heart disease.
- ☐ C. The baby is at high risk for cerebral palsy.
- ☐ D. The baby is at high risk for death.
- ☐ E. The baby requires positive-pressure ventilation.



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- ☐ A. No further intervention is required. [29%]
- ☐ B. The baby has cyanotic heart disease. [4%]
- ☐ C. The baby is at high risk for cerebral palsy. [9%]
- ☐ D. The baby is at high risk for death. [7%]
- ☒ E. The baby requires positive-pressure ventilation. [51%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

	Sign	0 points	1 point	2 points
A	Appearance/ color	Completely blue/pale	Body pink, extremities blue	Completely pink
P	Pulse	Absent	<100/min	>100/min
G	Grimace/ reaction	Absent	Grimace/ whimper	Cough/ sneeze/cry
A	Activity/ muscle tone	Limp	Some flexion	Active/ spontaneous
R	Respiratory effort	Absent	Slow, weak cry	Regular, good cry

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After delivery, immediate newborn care involves drying the infant, clearing secretions from the mouth and nares, and providing warmth. Apgar scores are a quick measure of overall neonatal status and response to resuscitation. They are routinely measured at 1 and 5 minutes of life. Most neonates have scores of 7-9 and require no intervention. Scores <7 may require further evaluation and resuscitation. Maternal factors that increase the risk for resuscitation include very young maternal age, history of substance abuse, and history of diabetes mellitus or hypertension.

This neonate has earned 1 point for each category, making the total score 5 of 10. Particularly concerning aspects of his examination are heart rate <100 and irregular breathing. Based on the heart rate and respiratory effort, pulse oximetry monitoring and positive-pressure ventilation should be initiated according to the neonatal resuscitation algorithm. If the heart rate drops below 60, chest compressions should be performed.

**(Choice B)** Neonates rarely earn the maximum score of 10 because acrocyanosis (blue extremities, pink body) is very common, benign, and can last for 1-2 days. In contrast, cyanosis of the face or central body should raise concern for hypoxia from respiratory or cardiac problems such as congenital heart disease.

**(Choices C and D)** Apgar scores do not correlate with prognosis as many babies who initially require positive-pressure ventilation respond well and can be admitted to the newborn nursery for routine care. The follow-up Apgar score at 5 minutes of life is helpful in assessing response to preliminary interventions. Only 1% of all neonates require extensive resuscitation at birth.

#### Educational objective:

Apgar scores are helpful in assessing the status of a neonate and response to neonatal resuscitation.

#### References:

1. [The continuing value of the Apgar score for the assessment of newborn infants.](#)
2. [The Apgar score.](#)