

PedsCases Podcast Scripts

This is a text version of a podcast from Pedscases.com on the “**APGAR Scoring System**.” These podcasts are designed to give medical students an overview of key topics in pediatrics. The audio versions are accessible on iTunes or at www.pedcases.com/podcasts.

APGAR Scoring System

Developed by Brieanne Rogers and Dr. Chloe Joynt for PedsCases.com.
February 23, 2015

You are a 3rd year medical student and have been paged to meet your preceptor in Delivery Suite 3 for the delivery of a term newborn. Knowing that you will be assessing the baby after delivery, you quickly go over APGAR scoring and resuscitation measures in your head. You remember that APGAR scores are used to assess the health of a newborn immediately after birth. You recall that the APGAR scoring system has 5 categories with which the baby can be scored on a scale of 0-2 for each and that the APGAR score can be taken at 1,5 and 10 minutes after the delivery of the baby.

What are the 5 assessment categories of the APGAR scoring system?
What are the criteria for the 0-2 scoring in each category? (fill in empty table)

APGAR Score	0	1	2	1 min	5 min	10 min
Heart Rate	Absent	Under 100	Over 100			
Respirations	Absent	Slow irregular	Good cry			
Muscle Tone	Limp	Some flexion	Active			
Reflex	None	Grimace	Cough/Sneeze			
Color	Blue/Pale	Body pink limbs blue	Pink			
			Total /10			

*see reference below

Your preceptor, Dr. Apgar, is waiting in the delivery suite when you arrive. “You got here in the nick of time”, he says, and immediately you see a newborn being picked up and ran over to a weight scale for assessment. “Ok, what do we look for first?” Dr. Apgar asks you.

What do you do?

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The first thing that you want to do is observe the baby. You want to immediately check if the newborn is breathing or crying. You also want to check if the baby has good tone and assess the heart rate. Dr. Apgar confirms that if the baby is crying regularly and has good tone and heart rate, they can stay with their mother while the mother and team provide care such as drying the baby, providing warmth, and further evaluation, if necessary.

You notice that the newborn is not crying and has only a few, irregular breaths.

Dr. Apgar asks what your next plan of action is.

You are a bright student and know that there could be many reasons for this baby's irregular breathing. You decide that you should dry the baby, stimulate the baby and clear the airway. Dr. Apgar agrees with you.

The airway is cleared and you re-assess the baby. Their heart rate is below 100 and there is evident cyanosis. You become increasingly worried about this baby.

"Ok, next we need to apply Positive Pressure Ventilation (PPV) and SpO₂ monitoring," Dr. Apgar states. While you are providing PPV, the 1-minute mark has elapsed and you need to take the first APGAR score.

What score do you give this baby? (fill in empty table)

APGAR Score	0	1	2	1 min	5 min	10 min
Heart Rate	Absent	Under 100	Over 100	1		
Respirations	Absent	Slow irregular	Good cry	1		
Muscle Tone	Limp	Some flexion	Active	1		
Reflex	None	Grimace	Cough/Sneeze	1		
Color	Blue/Pale	Body pink limbs blue	Pink	0		
			Total /10	4		

Even with PPV, you have noticed that the baby's heart rate has remained unchanged. It is still below 100. Dr. Apgar prepares to intubate the baby and prepares to start cardiac compressions. "Epi...." he starts to yell but a nurse, Mr. Sopa, steps in. "Before you start any additional interventions, you need try adjusting your PPV."

What are some adjustments you can make to the ventilation?

Think MRSOPA!

Mask adjustment

Reposition airway

Suction mouth and nose

Open mouth

Pressure increase

Airway alternative (including intubation and laryngeal mask airway)

If that still doesn't work, then you are correct in starting additional resuscitation measures such as CPR, intubation and appropriate medications.

Thankfully Mr. Sopa helped your team with the PPV adjustments and the child responded well. "What an experience! Thanks for helping us out Mr. Sopa." Dr. Apgar exclaimed.

The 5 and 10-minute marks have now passed and you calculate the final APGAR scores for the child. The current heart rate is 140 and the respiration rate is 50 and regular with a good cry. The baby is active and moving all limbs. His body and face are pink but his hands are still a little blue at 5 minutes. At 10 minutes, he is with his mother and is pink all over.

APGAR Score	0	1	2	1 min	5 min	10 min
Heart Rate	Absent	Under 100	Over 100	1	2	2
Respirations	Absent	Slow irregular	Good cry	1	2	2
Muscle Tone	Limp	Some flexion	Active	1	2	2
Reflex	None	Grimace	Cough/Sneeze	1	2	2
Color	Blue/Pale	Body pink limbs blue	Pink	0	1	2
			Total /10	4	9	10

Dr. Apgar then proceeded to explain a bit more about the APGAR scoring and we reviewed what just happened. "The first APGAR score is usually unreliable and inaccurate. You have a great experience of why this is- when we noticed that this baby was in immediate distress, we had to first attend to resuscitation measures rather than taking the score. Therefore this score also often relies on distracted personal recall. The five minute APGAR score is much more reliable and a better tell of how the baby is doing." You and Dr. Apgar chat a few more minutes until Dr. Apgar gets called into another delivery suite. You follow him and apply your new knowledge on APGAR scores!

*Reference Table: Newborn Resuscitation Algorithm
2010 American Heart Association