



Clinical Practice Procedures: Assessment/APGAR score

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Purpose	To ensure a consistent procedural approach to determining the APGAR score.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
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The **APGAR score** is an accepted and valuable method of assessing the health of the newborn in the first few minutes following birth.^[1,2] The score should be calculated for all newborns at 1 minute and 5 minutes post birth, and at 5 minute intervals thereafter if a score of less than 7 is identified.^[3]

The score assessed at 1 minute indicates how well the newborn tolerated the birthing process, while the score calculated at 5 minutes indicates how the newborn has adapted to the external environment outside of the womb.^[4]

APGAR scores can provide important information to ambulance clinicians and receiving facility staff that will inform the immediate and ongoing care requirements of the infant.

In cases where newborns are identified as requiring resuscitation following birth (refer to *CPG: Resuscitation/Resuscitation – Newborn*), the APGAR score is useful for conveying information about the newborn infant's overall status and response to resuscitation.^[3] If the need for resuscitation is recognised, it must be commenced immediately and before the 1 minute score is determined.

APGAR is determined by allocating scores to five (5) simple criteria:

- **A**ppearance (colour)
- **P**ulse (heart rate)
- **G**rimace (reflex irritability)
- **A**ctivity (muscle tone)
- **R**espiration (breathing)

Each of the 5 components has a possible score of 0–2, giving a total minimum score 0 and a maximum score of 10.

The score range that the newborn falls within indicates their level of physiological well-being at that point in time.

0–3: indicates severe distress in the newborn requiring immediate resuscitation

4–6: indicates moderate distress that requires medical attention and extreme vigilance

7–10: indicates the newborn is coping well at that point in time.

Indications

- All newborns at 1 minute and 5 minutes post delivery, and at 5 minute intervals thereafter if a score of less than 7 is identified.

Contraindications

- Nil in this setting

Complications

- Nil in this setting

Procedure – APGAR score

- Using the table provided, assign the newborn a score (0–2) for each of the five criteria.
- Add all individual scores to calculate the total APGAR score (0–10).

Resuscitation is to be immediately commenced (refer to *CPG: Resuscitation/Resuscitation – Newborn*) if the newborn presents with **any** of the following:

- Heart rate less than 100;
- Limp muscle tone;
- Slow (less than 30/min) or irregular respirations (e.g. gasping); OR
- Centrally pale or blue (cyanosed).

The table below more clearly describes the components, observation actions and possible score outcomes.^[4]

APGAR SCORE: Record at 1 and 5 minutes post delivery and at 5 minute intervals thereafter if a score less than 7 is identified.

Component	Action	Score: 0	Score: 1	Score: 2
Appearance	Look at skin colour: (This must ideally be completed with adequate lighting)	Blue or pale	Pink (with blue extremities)	Pink all over
Pulse	Count the heart rate: (Palpate the umbilical cord at the umbilicus or auscultate the heart's apex)	Absent (or less than 60 bpm)	Less than 100 bpm	More than 100 bpm
Grimace	Monitor response: (To stimulation such as vigorous drying)	No response	Grimace (facial expression only)	Grimace and cough, sneeze or vigorous cry
Activity	Look at muscle tone: (Assess movement)	Limp	Some flexion or extension of limbs	Active motion (of body and limbs)
Respiration	Count and assess respiration rate: (Observe rise and fall of the newborn's chest)	Absent	Slow or irregular	Good cry (or good rise and fall of the chest with a rate greater than 30/min)

Additional information

- A newborn's physiological condition can change suddenly and without warning. A high APGAR score at any point in time cannot be taken as reassurance that the newborn's condition will remain stable. The clinician must perform continual and regular assessments of the newborn and remain ready to apply clinical interventions as required.

Limitations of the APGAR

- The APGAR is NOT designed to make ongoing or long-term predications of a child's health, individual mortality, or adverse neurological outcomes.^[5]
- An APGAR score provides a method of gauging the newborn's physiological condition at one point in time. It contains elements that are subjective and partially dependent on the physiological maturity of the newborn.
- Some of the factors that can influence the APGAR score include:^[6]
 - A difficult birth
 - Fluid in the newborn's airway
 - Low birth weight or pre-term birth
 - Congenital anomalies
 - Individual differences in clinicians' scoring