TEST

Apgar score

The Apgar score is a quick assessment of a newborn's condition shortly after birth.

WHAT IT MEASURES
Heart rate, breathing, muscle tone, reflex response, and colour

SAMPLE
None; bedside observation

FASTING NEEDED?
No

HOW LONG IT TAKES
Seconds, at one and five minutes after birth

RESULTS IN
Immediately; no laboratory processing

USED FOR
Monitoring newborn transition and response to support

MAIN LIMITATION
Cannot diagnose asphyxia or predict an individual child's outcome

Overview

The Apgar score is a quick check of how a newborn is adjusting immediately after birth. A midwife, nurse, doctor, or other trained birth professional usually records it at one minute and five minutes after birth.

The name comes from Dr Virginia Apgar, who developed the scoring system. It is also remembered through five features: Appearance, Pulse, Grimace, Activity, and Respiration.

Each feature receives 0, 1, or 2 points. The points are added to give a total between 0 and 10. A lower score means the baby needs closer assessment and may need immediate support. It does not identify the cause.

The Apgar score is not designed to diagnose oxygen deprivation, often called birth asphyxia. It also cannot predict an individual child's long-term health, intelligence, development, or disability.

Why the test is ordered

The score provides a standard way to describe a newborn's condition during the first minutes after birth. It helps the birth team record how well the baby's heart rate, breathing, movement, reflex response, and colour are changing.

The one-minute score describes the baby's early transition from life inside the uterus. The five-minute score can help show whether the baby is improving naturally or responding to support.

Care does not wait for the first Apgar score. If a baby is not breathing well or has a low heart rate, the team begins newborn resuscitation immediately. Resuscitation means providing measures such as warmth, airway positioning, breathing support, or chest compressions when needed.

Who should have the test

An Apgar assessment is routinely recorded for newborns after birth, including babies born by vaginal birth or caesarean section. It can also be recorded after births outside hospital when a trained professional is present.

If the five-minute score remains below 7, the team may repeat it every five minutes for up to 20 minutes while continuing assessment and treatment. This repeated scoring helps document changes. It does not replace monitoring of heart rate, oxygen level, breathing, and other clinical signs.

How to prepare

No preparation is needed. The test does not involve fasting, blood collection, medicines, or special equipment.

You do not need to change anything during pregnancy or labour because of the Apgar score. Medicines and events during labour may affect the result, but this is considered when the birth team interprets it.

What happens during the test

A trained professional observes the baby and checks five areas:

Each area receives up to two points. The assessment takes only seconds and usually happens while the baby is being dried, kept warm, or receiving any needed care.

The test does not require separating the baby from you when the baby is well. Routine skin-to-skin contact may usually continue while the assessment is made.

- Appearance: the colour of the skin, lips, and body
- Pulse: the baby's heart rate
- Grimace: the response to stimulation, such as facial movement or a cry
- Activity: muscle tone and movement
- Respiration: breathing effort and the strength of the cry

Understanding your results

The total score ranges from 0 to 10. It is a description of the baby at one moment, not a pass-or-fail result.

In general:

The five-minute score and the direction of change often provide more useful information than the one-minute score alone. For example, a low one-minute score that improves by five minutes may reflect a short period of adjustment or a response to support.

A score of 10 is not required for a healthy baby. Many newborns have bluish hands and feet during the first minutes after birth, which can reduce the colour score even when breathing and circulation are otherwise reassuring.

There is no laboratory reference range. The scoring scale does not vary by laboratory, sex, or pregnancy status. Interpretation does vary with gestational age, medicines, treatment already given, and the baby's overall clinical condition.

- 7 to 10: the baby is usually adjusting well
- 4 to 6: the baby may need support and closer assessment
- 0 to 3: the baby needs immediate assessment and resuscitation measures as appropriate

What affects the results

Several factors can lower or alter an Apgar score without showing that the baby experienced oxygen deprivation.

Premature babies may have less muscle tone, weaker reflex responses, and thinner skin because of their gestational age. This can lower the score even when their condition is

appropriate for their stage of development.

Medicines given to the mother during labour may temporarily affect the baby's breathing, alertness, or muscle tone. Examples include opioid pain medicines, general anaesthetic medicines, and magnesium sulfate. The effect depends on the medicine, timing, and clinical circumstances.

Other influences include:

Visual assessment of colour is especially limited. When oxygen levels are a concern, a pulse oximeter-a sensor placed on the skin-is more useful than colour alone.

A recent transfusion, kidney function, exercise, and fasting do not normally affect this test. These factors matter for some blood tests but are not relevant to a bedside Apgar assessment.

- Resuscitation or breathing support already being provided
- Congenital conditions affecting the heart, lungs, muscles, or nerves
- Infection, low body temperature, or difficult birth
- Differences between observers when judging colour, tone, or reflex response
- Recording the score earlier or later than the stated time
- Difficulty judging skin colour across different skin tones

Accuracy and limitations

The Apgar score is useful for describing a newborn's immediate condition, but it is not a precise diagnostic test. Two trained observers may occasionally assign different points, particularly for colour, muscle tone, or response to stimulation.

A low score can suggest that a baby needs help, but it can say "yes" to concern when there was no significant oxygen deprivation. Prematurity, medicines, infection, congenital conditions, or a difficult transition after birth can all produce a low score.

The score can also miss problems. A baby may have an apparently reassuring total while still needing evaluation for abnormal oxygen levels, low blood sugar, infection, or another condition. The total can hide one concerning component, such as breathing difficulty, among stronger scores in other areas.

No Apgar threshold by itself proves birth asphyxia or brain injury. When those concerns exist, clinicians use other information, such as umbilical cord blood gases, oxygen monitoring, heart-rate monitoring, neurological examination, placental findings, and the baby's progress

over time.

The score also cannot reliably predict an individual child's future development. Persistently very low scores may be associated with greater concern across groups of babies, but they do not determine what will happen to one child.

Risks and complications

The Apgar assessment is painless and does not cause complications. It is based mainly on observation and brief physical stimulation.

Any treatment provided at the same time has its own reasons, benefits, and risks. Those treatments are not part of the score itself.

What happens next

A baby with a reassuring score usually continues routine newborn care, such as warmth, skin-to-skin contact, feeding support, and standard observations.

A lower score leads to immediate reassessment and whatever support the baby needs. The team may repeat the score and monitor breathing, heart rate, oxygen level, temperature, or blood sugar. Further tests are chosen according to the baby's condition rather than the Apgar number alone.

After going home, the Apgar score does not usually require special follow-up by itself. Questions about feeding, movement, growth, or development can be raised during routine newborn and child health appointments.

Seek emergency help if a baby has blue or grey lips or tongue, severe difficulty breathing, a seizure, is unresponsive, or cannot be woken. These are urgent symptoms regardless of the earlier Apgar score.

Common questions

Is the Apgar test painful?

No. It is mainly an observation. The professional may briefly stimulate the baby to assess the reflex response, but there is no needle or sample collection.

Why was my baby's Apgar score repeated?

A score may be repeated when the five-minute result is below 7. Repeated scores document

whether the baby's condition is changing while assessment and support continue.

Does a low Apgar score mean brain damage?

No. A low score does not diagnose brain damage or show its cause. Prematurity, medicines, breathing difficulties, infection, and other factors can lower the score. The healthcare team considers the full clinical picture.

Is an Apgar score of 9 normal?

A score of 9 is generally reassuring. A baby may lose one colour point because the hands and feet remain bluish during the first minutes after birth.

Can a baby have a good score and still be unwell?

Yes. The score is a brief assessment and may not detect every problem. Ongoing newborn examinations and monitoring are still important.

Does a caesarean birth affect the score?

It can. Anaesthetic medicines, gestational age, and the baby's transition after birth may influence breathing or muscle tone. A caesarean birth does not automatically mean the score will be low.

Sources

- American College of Obstetricians and Gynecologists and American Academy of Pediatrics. The Apgar Score . Committee Opinion No. 644. Obstetrics & Gynecology . 2015;126:e52-e55
- American Heart Association. Part 5: Neonatal Resuscitation . 2020 American Heart Association Guidelines for CPR and Emergency Cardiovascular Care. Circulation . 2020;142(Suppl 2):S524-S550
- National Institute for Health and Care Excellence. Intrapartum care . NICE guideline NG235
- MedlinePlus Medical Encyclopedia. Apgar score . US National Library of Medicine
- American Academy of Pediatrics. The Apgar Score . Pediatrics . 2015;136(4):819-822