

Delayed cord clamping explained



What delayed cord clamping means

The umbilical cord connects the fetus to the placenta and contains two arteries and one vein. Before birth, the placenta performs gas exchange and supplies oxygenated blood through the umbilical vein. After birth, the lungs expand, pulmonary blood flow rises, and the newborn begins the transition to independent circulation.

Delayed cord clamping allows the cord to remain intact for a defined period rather than being clamped within the first few seconds. During this interval, contractions of the uterus and changes in pressure between the placenta and newborn support placental transfusion-the transfer of residual placental blood to the baby. The newborn may receive additional red blood cells, plasma, stem cells, and circulating volume.

The term does not describe one universally fixed interval. A delay of approximately 30-60 seconds is common in professional guidance and hospital protocols, particularly for vigorous newborns. The World Health Organization recommends that clamping not occur earlier than one minute after birth when the newborn does not require immediate positive-pressure ventilation. Some teams wait longer when mother and baby are stable.

Benefits for term newborns

In term infants, delayed clamping increases neonatal hemoglobin concentration shortly after birth and improves iron stores during early infancy. Adequate iron is important for erythropoiesis-the production of red blood cells-and for neurological development. The improvement in iron status can persist for several months and may be particularly relevant where infant iron deficiency is common.

The additional circulating volume may also support a smoother cardiovascular transition immediately after delivery. Blood continues to return from the placenta while the newborn's lungs aerate and pulmonary circulation becomes established. This physiologically sequenced transition is one reason delayed clamping is often described as allowing time for the baby to adapt outside the uterus.

Delayed clamping does not guarantee that an infant will avoid anemia or developmental concerns. Iron status is also influenced by gestational age, birth weight, maternal iron stores, feeding, growth rate, blood loss, and medical conditions. Parents should still follow routine guidance on infant feeding, iron supplementation when clinically indicated, and pediatric screening. Decisions about supplementation should be made with a qualified healthcare professional rather than based on cord-clamping timing alone.

Why timing can matter for preterm infants

Preterm infants have lower circulating blood volume, smaller iron reserves, and greater vulnerability to hemodynamic instability. They are also more likely to undergo blood sampling and intensive care interventions. For a stable preterm newborn, delayed cord clamping can improve early blood pressure and circulating volume and may reduce the need for red-cell transfusion.

Evidence reviewed by professional organizations also associates delayed clamping in preterm infants with lower rates of intraventricular hemorrhage, meaning bleeding within or around the brain's ventricular system, and necrotizing enterocolitis, a serious inflammatory intestinal disorder. The magnitude of benefit varies across studies, populations, gestational ages, and

clinical practices, so it should not be interpreted as complete prevention.

Very preterm babies may need thermal support, respiratory assessment, or stabilization immediately after birth. Some hospitals can begin these measures beside the birthing parent while the cord remains intact; others may need to move the infant to a resuscitation platform. Evidence and practice concerning intact-cord resuscitation continue to evolve. Umbilical cord milking, in which blood is manually pushed toward the infant, is not equivalent to passive delayed clamping and may be unsuitable for extremely preterm infants. It should only be considered under specialist protocols.

Possible trade-offs and safety considerations

Because delayed clamping transfers more red blood cells, newborn hemoglobin and hematocrit may be higher. A small increase in the likelihood of jaundice requiring phototherapy has been reported in term infants. Jaundice results from bilirubin accumulation as red blood cells are broken down. Maternity services using delayed clamping should have systems for newborn jaundice assessment, bilirubin testing when appropriate, and timely treatment.

Polycythemia, an unusually high red-cell concentration, is sometimes raised as a concern. Although laboratory hematocrit may be higher after delayed clamping, available clinical guidance does not indicate a consistent rise in symptomatic polycythemia. Clinicians assess the baby's overall condition rather than interpreting cord timing in isolation.

For the birthing parent, delayed clamping has not been shown to meaningfully increase the postpartum hemorrhage risk in routine circumstances. Nonetheless, severe bleeding, cardiovascular instability, or the need for urgent obstetric treatment takes priority. Cord management should never obstruct active management of a maternal emergency, neonatal resuscitation, or safe care of the third stage of labor.

When earlier clamping may be needed

Delayed clamping is generally intended for newborns who are sufficiently stable for a brief wait. Earlier clamping may be appropriate if the baby requires immediate resuscitation that cannot safely be provided at the bedside,

particularly when effective ventilation must begin without delay. Local equipment, staffing, and neonatal expertise influence what can be done while the cord remains intact.

Maternal emergencies may also require rapid action. Examples include severe hemorrhage, hemodynamic instability, suspected placental abruption, or another complication requiring urgent intervention. Placental or cord problems that interrupt blood flow-such as cord avulsion or acute cord compression-can eliminate the expected benefit of waiting. In these situations, the clinical team must respond to the immediate risk.

A cord around the baby's neck, known as a nuchal cord, does not automatically require immediate clamping. It can often be loosened or managed with techniques that allow the baby to be born while remaining connected. Multiple pregnancy, significant fetal growth restriction, abnormal placental circulation, and some congenital conditions require individualized planning. The relevant obstetric and neonatal specialists can explain how the specific pregnancy affects the recommendation.

What to expect during vaginal or cesarean birth

After a vaginal birth, a stable newborn can often be placed on the parent's abdomen or chest while the cord remains intact. Drying, warmth, observation, and skin-to-skin contact can begin during the delay. The cord may continue pulsating, but pulsation alone is not always used to decide when to clamp. Once the planned interval has passed, a clinician applies clamps and the cord is cut. Cutting the cord is painless because it contains no sensory nerves.

Delayed clamping is also possible during many cesarean births. The surgical and neonatal teams maintain warmth, assess the baby, and coordinate cord timing while continuing maternal care. Practical details may differ because of the sterile field, operating-room temperature, placental position, bleeding, or the baby's need for support. Plans for placenta delivery during cesarean remain under the obstetric team's control and are distinct from the brief delay before cord clamping.

Delayed cord clamping is also separate from delayed placenta delivery. Clamping concerns the newborn's connection to the placenta; placental delivery concerns

separation and removal of the placenta during the third stage of labor. One does not necessarily dictate how the other must be managed.

Planning, preferences, and cord blood collection

If delayed clamping matters to you, discuss it during antenatal care and include it in your birth preferences. Ask what interval the hospital commonly uses, whether practices differ for term and preterm births, and whether newborn stabilization can be performed with the cord intact. A preference is helpful, but it should allow clinicians to adapt if maternal or neonatal circumstances change unexpectedly.

Families considering public or private cord blood banking should raise this before labor. Delayed clamping leaves less blood in the placenta and may reduce the volume available for collection. In some cases, both may still be attempted, but obtaining an adequate banking sample cannot be guaranteed. Immediate clinical needs and safe newborn care take precedence over collection.

You can also ask how delayed clamping will be documented and how jaundice monitoring is handled after birth. If your baby is premature or has a known medical concern, request a conversation with the neonatal team. Shared decision-making should combine your values with the best available evidence, the baby's condition, maternal safety, and the resources available at the birth setting.