

Newborn Critical Care Center (NCCC) Clinical Guidelines

Timing of Umbilical Cord Clamping After Birth in the Preterm and Term Infant

BACKGROUND

Historically it was common practice was to clamp the umbilical cord soon after birth. However, recent literature suggests delayed cord clamping may be beneficial for vigorous preterm and term infants. Umbilical cord milking continues to be researched but should be avoided in babies < 28 weeks' gestation due to the associated risk of brain injury. The plan for umbilical cord management should be a routine part of the pre-birth brief.

Delayed cord clamping in preterm infants is associated with less intraventricular hemorrhage of any grade, higher blood pressure and blood volume, less need for transfusion after birth and less necrotizing enterocolitis. The benefits of delayed cord clamping in healthy term infants include higher birthweight and increased iron reserves up to six months after birth (2,4). Additionally, there is some evidence that suggests an improvement in neurodevelopmental outcomes (1). Although delayed cord clamping in term infants has been associated with a slightly increased incidence of hyperbilirubinemia requiring phototherapy, the benefits outweigh the risks with the ability to monitor and treat jaundice (3,4).

Circumstances for IMMEDIATE cord clamping:

1. Maternal hemorrhage and/or hemodynamic instability
2. Abnormal placentation
3. Fetal/Neonatal perinatal depression and/or profound bradycardia
4. Placental circulation not intact

Timing of Umbilical Cord Clamping in the PRETERM Infant

- Defer cord clamping for at least **30 seconds** after birth in the preterm infant with intact placental circulation
- Initial steps of NRP (warming, drying, and stimulation) should be provided by the obstetric team while infant is still attached to the placental circuit

Timing of Umbilical Cord Clamping in the TERM Infant

- Defer cord clamping for at least **30 seconds** after birth in the term infant with intact placental circulation
- Initial steps of NRP (warming, drying, and stimulation) should be provided by the obstetric team while infant is still attached to the placental circuit

Additional Considerations

- Early cord clamping may be considered in circumstances where there is strong family desire to optimize cord blood banking
- Routine delayed cord clamping should be avoided in scenarios where safety data are limited or there is increased risk of polycythemia. Those circumstances include: multiple gestation (especially monochorionic), severe fetal intrauterine growth restriction, and abnormal umbilical artery Doppler measurements.

References:

1. Andersson, MD, Lindquist, B, Lindgren M, Stjernqvist, K, Domellof, Hellstrom-Westas, L. Effect of delayed cord clamping on neurodevelopment at 4 years of age. *JAMA Pediatr.* 2015;169(7): 631-638.
2. McDonald SJ, Middleton P, Dowswell T, Morris PS. Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes (review). *Cochrane Database of Systematic Reviews* 2013, Issue 7. Art. No.: CD004074. DOI: 10.1002/14651858. CD004074.pub3
3. Nagano N, Saito M, Sugiura T, Miyahara, F, Namba F, Ota E (2018) Benefits of umbilical cord milking versus delayed cord clamping on neonatal outcomes in preterm infants: A systematic review and meta-analysis. *PLoS ONE* 13(8): e0201528. <https://doi.org/10.1371/journal.pone.0201528>
4. Statement of Endorsement from AAP in Pediatrics June 2017 Volume 139 Issue 6 .American College of Obstetricians and Gynecologists. Delayed Umbilical Cord Clamping After Birth. Committee Opinion No. 684. Washington, DC: American College of Obstetricians and Gynecologists; January 2017. Available at: <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Delayed-Umbilical-Cord-Clamping-After-Birth>.