

# UPDATE ON CORD BLOOD BANKING

Over the past few years the publication of evidence supporting delayed cord clamping has introduced significant issues for parents considering cord blood banking. As described in the previous article, prematurely clamping and cutting the cord and collecting cord blood are interventions which deprive the newborn baby of its own blood, blood it needs “to fill the new pulmonary circulation and other parts of the circulation which now need to be much more active such as the diaphragmatic and chest muscles, kidneys and gut ... Logically, without the additional blood, the neonate has to steal from the rest of the circulation to allow the lung circulation to fill.” (1) This makes it almost impossible to collect sufficient cord blood for banking in a cord blood bank.

There are also other reasons for believing that cord blood banking is not necessary or even desirable. The first banking of unrelated umbilical cord blood began in New York in 1993, and similar public non-profit cord blood banks were established in Paris, Milan, Dusseldorf and Sydney soon after. This was quickly followed by the establishment of private cord blood banks, including one in New Zealand that was established in 2003. (2)

In an article published in *Nature* in 2008, Michael Sullivan, a New Zealand paediatric oncologist (children’s cancer specialist) and international expert in the field, wrote “The establishment of commercial cord blood banks was controversial at the time and remains so because clinical evidence supporting autologous (using the child’s own cord blood stem cells) cord blood storage was, and still is, lacking. Indeed, in its 2004 report on the ethics of umbilical cord blood banking, the European Union Group on the Ethics of Science and New Technologies raised serious ethical concerns regarding commercial cord blood banking. The principal ethical objection is the promotion to expectant parents of the future benefits of autologous cord banking as biological insurance to treat diseases for which at present there is “no medical evidence for the validity of treatment.” (2)

Five years on, there is still a dearth of peer reviewed published medical evidence that supports the need for cord blood banking. The New Zealand College of Midwives is currently working on a draft consensus statement on “Umbilical cord blood collection and banking” which states:

*“The New Zealand College of Midwives believes that evidence of benefit for routine private cord blood collection and banking is lacking.*

*Furthermore NZCOM believes that any interference with the third stage of labour needs to be kept at a minimum to ensure best outcomes for both mother and baby. Unnecessary interference carries risk to both mother and baby.*

*The midwife should be focused on the immediate care of the mother and baby during the third stage of labour; and the management of the third stage should not be compromised by non evidence based interventions such as routine cord blood collection.*

*Early clamping of the umbilical cord for cord blood collection may be harmful to a baby. In healthy newborns, deferred cord clamping enhances placental transfusion and iron stores and reduces jaundice in babies at birth.*

*Parents wishing to collect and store their own babies cord blood privately need to receive evidence based advice and information if they are to balance the inherent risks of altering a physiological process for no medically indicated reason.” (3)*

Another significant issue is the fact that stem cell technology has developed rapidly to the point where it has made the collection and storage of cord blood “a superfluous service.” (2) At a recent meeting in Auckland a stem cell researcher stated that “we do not need stem cells from cord blood to do any of the treatment they describe as technology has moved on in relation to cultivating cells in a lab now.” (4)

It is absolutely essential that parents are given evidence-based information on cord blood banking, something they are unlikely to get from the cord blood banks. Parents also need information on the alternatives, alternatives that do not involve interfering in the natural processes of a physiological third stage.

As stated in the MSCC’s new pamphlet, *Birthing the Placenta*, in a healthy mother the process of giving birth naturally results in a complex process in which, after the mother has given birth to her baby, she continues to release surges of natural oxytocin. Skin-to-skin contact and the baby’s first breastfeed further increase the levels of oxytocin in the mother. This stimulates the uterus to continue contracting down and results in the placenta detaching from the uterine wall and being expelled along with the membranes or sac that has contained the baby throughout the pregnancy. These contractions stop or lessen any bleeding that occurs as the placenta separates from the uterus following the birth. (5)(6)

There is no place for collecting cord blood in such a scenario. As David Hutcheon pointed out cord blood banks will need to come up with other methods of collecting the stem cells.

## **References**

1. DRJ Hutcheon. “Immediate or early cord clamping vs delayed clamping.” *Journal of Obstetrics and Gynaecology*. November 2012; 32:724-729.
2. Michael Sullivan. “Banking on cord blood stem cells” *Nature Reviews/Cancer* 2008.
3. New Zealand College of Midwives. Draft 5 of Consensus Statement on “Umbilical cord blood collection and banking.” 2013.
4. Email to MSCC dated 30 April 2013.
5. Sarah J Buckley. *Gentle birth, gentle mothering*. Chapter 8. Celestial Arts. 2009.
6. Michel Odent. *Childbirth in the Age of Plastics*. Pinter & Martin 2011.