

## UCB collection after vaginal deliveries and caesarean sections

During the birthing process, children are born either by vaginal delivery or by cesarean section. In relation to UCB collection, there are two main different techniques for collecting blood from the umbilical vein: in the delivery room while the placenta is still in the utero or in an adjacent room after placental delivery.

The preferred method of blood collection consists of puncturing the umbilical cord vein with an 18-gauge needle and withdrawing the blood into a sterile bag immediately after the cord is clamped and cut.

Based on data obtained in the last 10 years, no statistically significant difference has been observed for obstetrical variables or quality of cord blood collected.

The volume of UCB collected ranges from  $84.2 \pm 25.3$  ml to  $103.9 \pm 33.6$  ml in vaginal deliveries and cesarean deliveries, respectively. The higher median volume of blood collected from the placenta delivered by cesarean section seems mainly due to the different clamping time, rather than to the kind of delivery.

Although total cell number is comparable in both groups, the absolute number of stem cells (known as [CD34<sup>+</sup>](#) cells) seems to be higher in UCB collected after cesarean sections, because of the larger volume collected.

When preterm deliveries are compared to full-term deliveries, data has shown a higher percentage of stems cells (CD34<sup>+</sup> cells) in cord blood from preterm deliveries. These results indicate that hematopoietic progenitors from preterm cord blood may also be suitable for transplantation.