

Cord blood

The term **umbilical cord** or also **placental blood** refers to the blood, that remains after birth and after cutting the umbilical cord in the placental circulation - umbilical cord and placenta. This blood contains a large amount of **hematopoietic stem cells**, that are nowadays used as transplant (HSCT - hematopoietic stem cell transplantation), similar to bone marrow.

Obtaining the blood from the umbilical cord does not disrupt the course of childbirth, it does not trouble the mother nor the child and it is not painful. In this way, the use of the blood, that would otherwise go to waste along with placenta, is enabled. Umbilical vessels under the microscope|230px Harvested cells are examined, cryopreserved and stored in liquid nitrogen. This graft is then ready for immediate use on a patient. The advantage of the cells from placental blood is their lack of immunological maturity - these grafts are generally accepted better by a host even in lower HLA compliance, they cause less complications - especially lower **GVHD** (graft versus host disease) reaction incidence. Next advantage is a lower risk of infection. Disadvantages would include limited amount of the cells, weak (GVL - graft versus leukaemia) response and prolonged time period required for engraftment.

Cord blood can be donated and used for allotransplantation - for non-related anonymous recipient, or stored for family purposes - as autologous or allogeneic transplant for a relative (in HLA-matched siblings).

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