Intermountain® Healthcare

Exchange Transfusion in a Newborn

What is it?

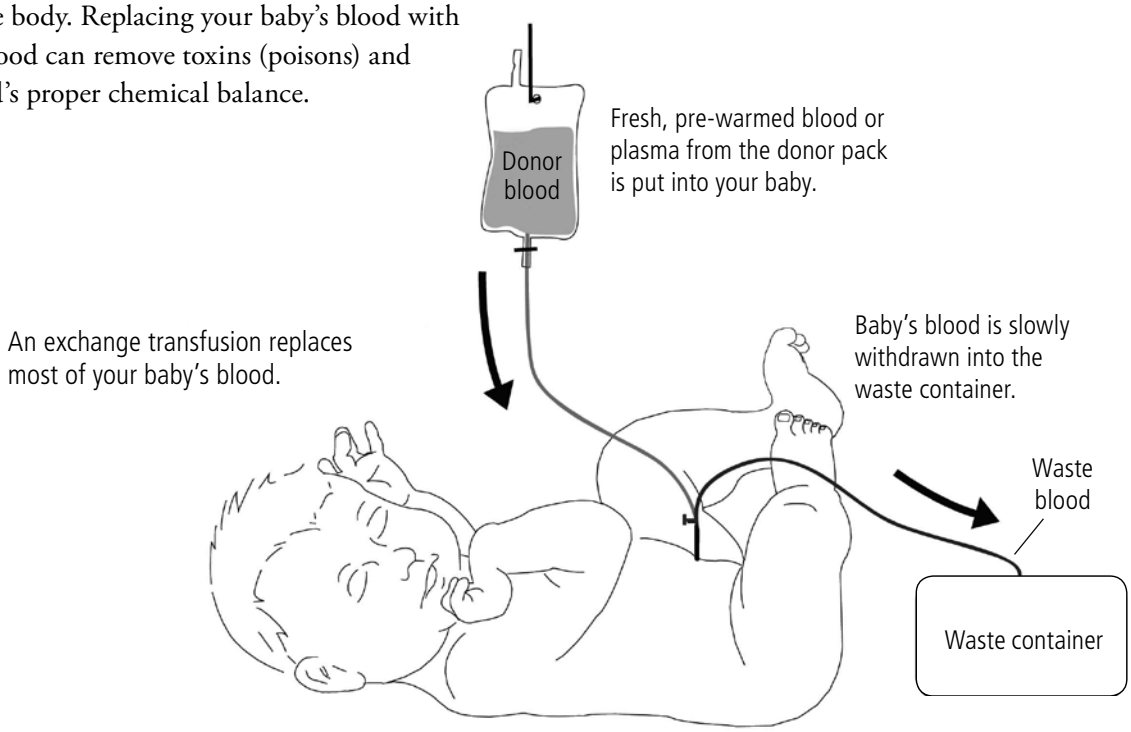
An exchange transfusion is a procedure to replace most of your baby's blood with blood from a donor. The donor blood comes from a blood bank. The blood is tested to make sure it is correct for your baby. For example, the blood is tested to make sure it is the right blood type for your baby. The donor blood is also tested for hepatitis, HIV, and other diseases carried in the blood. Only blood that has passed these and other screening tests can be used.

Why does my baby need it?

An exchange transfusion is done for many different reasons. In newborns, exchange transfusions are often used to treat severe jaundice and Rh disease (hemolytic disease) when other treatments haven't worked or aren't likely to work. Exchange transfusions are also used to treat the effects of certain drugs, or a serious chemical imbalance in the body. Replacing your baby's blood with fresh, healthy blood can remove toxins (poisons) and restore the blood's proper chemical balance.

How is it done?

Blood is usually exchanged through an **IV (intravenous)** line placed in the baby's vein. The baby is placed on a flat bed with a heater over it. Then a doctor or nurse puts a small catheter (tube) into the baby's umbilical vein (a vein in the "belly button"). Another catheter may go into the umbilical artery. The catheters are then connected to a transfusion set with two lines: one goes to a pack of donor blood, the other goes to a waste container. In cycles lasting a few minutes each, the baby's blood is slowly withdrawn, and fresh, pre-warmed blood is put into your baby. The exchange usually takes 1 to 2 hours. It may need to be done more than once.



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Talking with your doctor about this treatment

The following table lists the most common potential benefits, risks, and alternatives for this treatment. Other benefits and risks may apply in your child's unique medical situation. The conversation you have with your child's healthcare provider is the most important part of learning about these risks and benefits. Don't be afraid to ask questions. It's important to have all your questions before you agree to a recommended treatment.

Potential benefits	Risks and potential complications	Alternatives
An exchange transfusion can restore a safer balance in your baby's blood. In many cases, an exchange transfusion can lower the chance of brain damage and other problems, and may save your baby's life.	• **Infection,** either from bacteria introduced through the IV, or from an undetected virus in the donor's blood • **Blood vessel problems,** such as a blood clot, air embolism (bubble), or spasm in an artery — all of which may limit blood flow and hurt organs and tissues • **Bleeding** outside of a blood vessel • **Decreased platelet count,** with increased risk of bleeding • **Chemical imbalances** in the blood and tissues • **Heart and respiratory problems** • **Temperature problems**—becoming too hot or cold • **Necrotizing enterocolitis** (NEC), a bowel disease • **Shock**	In many cases, there is no alternative to an exchange transfusion, since other possible treatments have been unsuccessful or have little chance of success.

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