Hyperbilirubinemia in the Newborn

What is hyperbilirubinemia in a newborn?

Hyperbilirubinemia happens when there is too much bilirubin in your baby's blood.

Bilirubin is made by the breakdown of red blood cells. It's hard for babies to get rid of bilirubin at first. It can build up in their blood, tissues, and fluids.

Bilirubin has a color. It makes a baby's skin, eyes, and other tissues turn yellow (jaundice). Jaundice may first appear when your baby is born. Or it may also show up any time after birth.

How to say it

HI-per-BIH-lih-ROO-bih-NEE-mee-uh

What causes hyperbilirubinemia in a newborn?

During pregnancy, the placenta removes bilirubin from your baby's blood. When a baby is born, the baby's liver takes over this job. Your baby may have too much bilirubin for many reasons.

Physiologic jaundice

During the first few days of life, babies aren't able to get rid of much bilirubin. This normal type of jaundice happens as a response to a baby's reduced ability to remove bilirubin. But it may be hard at first to tell if jaundice is being caused by another problem.

Suboptimal intake jaundice

Some babies don't feed well at first. This is common in breastfed babies, especially if it is the birth parent's first time breastfeeding. Not feeding well makes your baby dehydrated. It also causes your baby to urinate less. This makes bilirubin build up in your baby's body. Babies born between 34 to 36 weeks of pregnancy are more likely to get this problem. These babies often don't have the coordination and strength to breastfeed well. But this condition is also common in early-term newborns (37 to 38 weeks). It can also happen in any newborns who have had a difficult start, especially if they were separated from their birth parent and unable to feed often. It usually gets better once a baby learns how to breastfeed well.

Breastmilk jaundice

About 1 in 50 breastfed babies get jaundiced for a prolonged period of time. This happens later in their first week of life. It peaks at about 2 weeks of age. It can last 3 to 12 weeks. It is not dangerous, but tests may need to be done to rule out other problems that are dangerous. This issue may be caused by a substance in breastmilk. This substance may increase how much bilirubin the baby's body can reabsorb.

Jaundice from hemolysis

If your baby has Rh or ABO incompatibility, they may get this type of jaundice. This condition refers to hemolytic diseases of the newborn caused by a baby having a different blood type from the birth parent. This issue can also be from having too many broken down red blood cells from a condition like an infection. Or it may be

caused by rare problems where the red blood cells are more fragile than normal. Hemolysis is the word for the process in which the red blood cells break down and release bilirubin.

Jaundice caused by poor liver function

Jaundice can happen if your baby's liver doesn't work well. This may be because of an infection or other factors. The liver is the part of the body most responsible for getting rid of bilirubin. A problem with the liver can cause higher levels of bilirubin.

Which newborns are at risk for hyperbilirubinemia?

About 3 in 50 full-term newborns become jaundiced. So do 4 in 5 premature babies. Babies born to a birth parent with diabetes or Rh disease are more likely to have this condition. Babies who underwent a difficult birthing process that resulted in significant bruising or bleeding under the scalp are also at risk for hyperbilirubinemia.

What are the symptoms of hyperbilirubinemia in a newborn?

Symptoms can occur a bit differently in each child. They can include:

- Yellowing of your baby's skin and the whites of their eyes. This often starts on a baby's face and moves down their body.
- Poor feeding
- Lack of energy

The symptoms of this health problem may be similar to symptoms of other conditions. Make sure your child sees a healthcare provider for a diagnosis.

How is hyperbilirubinemia in a newborn diagnosed?

The timing of when your child's jaundice first starts matters. It may help their healthcare provider make a diagnosis.

- **First 24 hours.** This type of jaundice is often serious. Your child will likely need treatment right away.
- **Second or third day.** This is often physiologic jaundice. Sometimes it can be a more serious type of jaundice. It's important to be sure the baby is getting enough milk at this point.
- **Toward the end of the first week.** This type of jaundice may be from breastmilk jaundice but may be due to an infection or other rare, serious problems.
- **In the second week.** This is often caused by breastmilk jaundice but may be caused by rare liver problems.

Your child's healthcare provider may do these tests to confirm the diagnosis:

- **Direct and indirect bilirubin levels.** These levels show if bilirubin is bound with other substances by your child's liver. Normal physiologic jaundice has indirect bilirubin. Jaundice due to more serious problems can have high levels of either type of bilirubin.
- **Red blood cell counts**
- **Blood type and testing for Rh incompatibility (Coombs test)**

How is hyperbilirubinemia in a newborn treated?

Treatment will depend on your child's symptoms, age, and general health. It will also depend on how bad the condition is.

Phototherapy

Bilirubin absorbs light. High bilirubin levels often decrease when a baby is put under special blue spectrum lights. This is called phototherapy. Your child may get this treatment in the day and night. It may take several hours for it to start working. During light treatment, your baby's eyes will be protected. Your baby's healthcare provider will check your baby's temperature. They will also test your baby's bilirubin levels. This will tell if phototherapy is working.

Fiber optic blanket

A fiber optic blanket is another form of phototherapy. The blanket is usually put under your baby. It may be used alone or with regular phototherapy.

Exchange transfusion

This treatment removes your baby's blood that has a high bilirubin level. It replaces it with fresh blood that has a normal bilirubin level. This raises your baby's red blood cell count. It also lowers their bilirubin level. During the procedure, your baby will switch between giving and getting small amounts of blood. This will be done through a vein or artery in the baby's umbilical cord. It is only done in an intensive care nursery when bilirubin levels are extremely high. Your baby may need to have this procedure again if their bilirubin levels stay high.

Feeding with breastmilk

The American Academy of Pediatrics says that you should keep breastfeeding a baby with jaundice. If your baby has not been getting enough milk at the breast, you may need to supplement with pumped breastmilk or formula.

Treating any underlying cause of the condition

This may include treating an infection.

What are possible complications of hyperbilirubinemia in a newborn?

High levels of bilirubin can travel to your baby's brain. This can cause seizures and brain damage. This is called kernicterus.

What can I do to prevent hyperbilirubinemia in my newborn?

This condition can't really be prevented except in the case of suboptimal intake jaundice. Feedings should start within the first hour of life and continue at least every 2 or 3 hours, or sooner if the baby shows signs of wanting to eat. The more premature the baby, the more likely they are to need supplements of expressed milk or formula at first. For all babies, diagnosing jaundice early and getting treatment right away are key. This can stop your baby's bilirubin levels from rising to dangerous levels.

Key points about hyperbilirubinemia in the newborn

- Hyperbilirubinemia happens when there is too much bilirubin in your baby's blood.
- About 3 in 5 full-term newborns and 4 in 5 premature babies become jaundiced.
- The most common symptom is yellowing of your baby's skin and the whites of their eyes.
- The timing of when your child's jaundice first starts matters. It can help their healthcare provider make a diagnosis.

- Make sure you feed your baby early and often.
- Diagnosing jaundice early and getting treatment right away are key. This can stop your child’s bilirubin from rising to dangerous levels.

Next steps

Tips to help you get the most from a visit to your child’s healthcare provider:

- The name of the test or procedure
- The reason your child is having the test or procedure
- What results to expect and what they mean
- The risks and benefits of the test or procedure
- When and where your child is to have the test or procedure
- Who will do the procedure and what that person’s qualifications are
- What would happen if your child did not have the test or procedure
- Any alternative tests or procedures to think about
- When and how you will get the results
- Who to call after the test or procedure if you have questions or your child has problems
- How much you will have to pay for the test or procedure