

Newborn jaundice

Newborn jaundice is when a baby has a high level of bilirubin in the blood. Bilirubin is a yellow substance that the body creates when it replaces old red blood cells. The liver helps break down the substance so it can be removed from the body in the stool.

High levels of bilirubin make your baby's skin and whites of the eyes look yellow. This is called jaundice.

Causes

It is normal for a baby's bilirubin level to be a bit higher after birth.

When the baby is growing in the mother's womb, the placenta removes bilirubin from the baby's body. The placenta is the organ that grows during pregnancy to feed the baby. After birth, the baby's liver starts doing this job. It may take some time for the baby's liver to be able to do this efficiently.

Most newborns have some yellowing of the skin, or jaundice. This is called "physiological jaundice." It is often most noticeable when the baby is 2 - 4 days old. Most of the time it does not cause problems and goes away within 2 weeks.

Two types of jaundice may occur in newborns who are breastfed. Both types are most often harmless.

- Breastfeeding jaundice is seen in breastfed babies during the first week of life. It is more likely to occur when babies do not nurse well or the mother's milk is slow to come in.
- Breast milk jaundice may appear in some healthy, breastfed babies after day 7 of life. It is likely to peak during weeks 2 and 3 but may last at low levels for a month or more. The problem may be due to how substances in the breast milk affect the breakdown of bilirubin in the liver. Breast milk jaundice is different than breastfeeding jaundice.

Severe newborn jaundice may occur if your baby has a condition that increases the number of red blood cells that need to be replaced in the body, such as:

- Abnormal blood cell shapes
- Blood type mismatch between the mother and baby
- Bleeding underneath the scalp (cephalohematoma) caused by a difficult delivery
- Higher levels of red blood cells, which is more common in small-for-gestational-age babies and some twins
- Infection
- Lack (deficiency) of certain important proteins, called enzymes

Things that make it harder for the baby's body to remove bilirubin may also lead to more severe jaundice, including:

- Certain medicines
- Infections present at birth, such as rubella, syphilis, and others
- Diseases that affect the liver or biliary tract, such as cystic fibrosis or hepatitis
- Low oxygen level (hypoxia)
- Infections (such as sepsis)
- Many different genetic or inherited disorders

Babies who are born too early (premature) are more likely to develop jaundice than full-term babies.

Symptoms

Jaundice causes a yellow color of the skin. The color sometimes begins on the face and then moves down to the chest, belly area, legs, and soles of the feet.

Sometimes, infants with a lot of jaundice may be very tired and feed poorly.

Exams and Tests

Doctors, nurses, and family members will watch for signs of jaundice at the hospital and after the newborn goes home.

Any infant who appears jaundiced should have bilirubin levels measured right away. This can be done with a blood test.

Many hospitals check total bilirubin levels on all babies at about 24 hours of age. Hospitals use probes that can estimate the bilirubin level just by touching the skin. High readings need to be confirmed with blood tests.

Tests that will likely be done include:

- Complete blood count
- Coomb's test
- Reticulocyte count

Further testing may be needed for babies who need treatment or whose total bilirubin levels are rising more quickly than expected.

Treatment

Treatment is not needed most of the time.

When treatment is needed, the type will depend on:

- The baby's bilirubin level
- How fast the level has been rising
- Whether the baby was born early (babies born early are more likely to be treated at lower bilirubin levels)
- How old the baby is

A baby will need treatment if the bilirubin level is too high or is rising too quickly.

A baby with jaundice needs to be kept well hydrated with breast milk or formula.

- Feed the baby often (up to 12 times a day) to encourage frequent bowel movements. These help remove bilirubin through the stools.
- Ask your doctor before giving your newborn extra formula.

Some newborns need to be treated before they leave the hospital. Others may need to go back to the hospital when they are a few days old. Treatment in the hospital usually lasts 1 to 2 days.

Sometimes special blue lights are used on infants whose levels are very high. These lights work by helping to break down bilirubin in the skin. This is called phototherapy.

- The infant is placed under artificial light in a warm, enclosed bed to maintain a constant temperature.
- The baby will wear only a diaper and special eye shades to protect the eyes.
- The American Academy of Pediatrics recommends that breastfeeding be continued through phototherapy, if possible.

- Rarely, the baby may have an intravenous (IV) line to deliver fluids.

If the bilirubin level is not too high or is not rising quickly, you can do phototherapy at home with a fiberoptic blanket, which has tiny bright lights in it. You may also use a bed that shines light up from the mattress.

- You must keep the light therapy on your child's skin and feed your child every 2 to 3 hours (10 to 12 times a day).
- A nurse will come to your home to teach you how to use the blanket or bed, and to check on your child.
- The nurse will return daily to check your child's weight, feedings, skin, and bilirubin levels.
- You will be asked to count the number of wet and dirty diapers.

In the most severe cases of jaundice, an exchange transfusion is required. In this procedure, the baby's blood is replaced with fresh blood. Giving babies with very bad jaundice intravenous immunoglobulin may also be effective at reducing bilirubin levels.

Outlook (Prognosis)

Newborn jaundice is not harmful most of the time. For most babies, jaundice will get better without treatment within 1 to 2 weeks.

Very high levels of bilirubin can damage the brain. This is called kernicterus. However, the condition is almost always diagnosed before levels become high enough to cause this damage.

For babies who need treatment, the treatment is very often effective.

Possible Complications

Rare, but serious complications from high bilirubin levels include:

- Cerebral palsy
- Deafness
- Kernicterus – brain damage from very high bilirubin levels

When to Contact a Medical Professional

All babies should be seen by a health care provider in the first 5 days of life to check for jaundice.

- Infants who spend less than 24 hours in a hospital should be seen by age 72 hours.
- Infants who are sent home between 24 and 48 hours should be seen again by age 96 hours.
- Infants who are sent home between 48 and 72 hours should be seen again by age 120 hours.

Jaundice is an emergency if the baby has a fever, has become listless, or is not feeding well. Jaundice may be dangerous in high-risk newborns.

Jaundice is generally NOT dangerous in babies who were born full term and who do not have other medical problems. Call the infant's health care provider if:

- Jaundice is severe (the skin is bright yellow)
- Jaundice continues to increase after the newborn visit, lasts longer than 2 weeks, or other symptoms develop
- The feet, especially the soles, are yellow

Prevention

In newborns, some degree of jaundice is normal and probably not preventable. The risk of serious jaundice can often be

reduced by feeding babies at least 8 to 12 times a day for the first several days and by carefully identifying infants at highest risk.

All pregnant women should be tested for blood type and unusual antibodies. If the mother is Rh negative, follow-up testing on the infant's cord is recommended. This may also be done if the mother's blood type is O+, but it is not needed if careful monitoring takes place.

Careful monitoring of all babies during the first 5 days of life can prevent most complications of jaundice. This includes:

- Considering a baby's risk for jaundice
- Checking bilirubin level in the first day or so
- Scheduling at least one follow-up visit the first week of life for babies sent home from the hospital in 72 hours

Alternative Names

Jaundice of the newborn; Neonatal hyperbilirubinemia; Bili lights - jaundice

References

Buescher JJ, Bland H. Care of the newborn. In: Rakel RE, ed. Textbook of Family Medicine. 8th ed. Philadelphia, PA: Saunders Elsevier; 2011:chap 22.

Watchko JF. Neonatal indirect hyperbilirubinemia and kernicterus. In: Gleason CA, Devaskar SU. Avery's Diseases of the Newborn. 9th ed. Philadelphia, PA: Elsevier Saunders; 2011:chap 79.

Maheshwari A, Carlo WA. Digestive system disorders. In: Kliegman RM, Behrman RE, Jenson HB, Stanton BF, eds. Nelson Textbook of Pediatrics. 19th ed. Philadelphia, PA: Saunders Elsevier; 2011:chap 96.