HEALTH BASICS

Bili lights

Bili lights are special blue lights used to lower high bilirubin levels in newborn babies.

WHAT IT IS
Blue-light treatment that helps newborns remove bilirubin

WHERE IT COMES UP
Newborn jaundice care in hospitals or at home

WHY IT MATTERS
Lowers the risk of bilirubin-related brain injury

WHAT IT IS NOT
Not a disease or tanning treatment

WHO TO ASK
Your baby's newborn care team

HOW IT IS CHECKED
Blood or skin bilirubin measurement

Overview

"Bili lights" is an informal name for phototherapy , a treatment used for some newborn babies with jaundice. Jaundice means that the skin or whites of the eyes look yellow because a substance called bilirubin has built up in the blood.

Bilirubin is made when the body breaks down old red blood cells. A newborn's liver may take several days to become efficient at processing it. This makes mild jaundice common during the first week after birth.

Bili lights are not a disease or a diagnosis. They are a medical treatment used when a baby's bilirubin level reaches a treatment threshold. The threshold is not one fixed number. It is based on factors including the baby's age in hours, the number of weeks of pregnancy at birth, the bilirubin result, and certain medical risk factors.

Phototherapy may be given using overhead lamps, a light-emitting mattress, or a flexible light pad sometimes called a bili blanket . Treatment often happens in a hospital. Home phototherapy may be suitable for selected babies when the care team can arrange the right equipment, monitoring, and follow-up.

How it works

Phototherapy uses a specific range of blue or blue-green visible light. It is not ultraviolet light, and it does not work by warming or tanning the baby.

Bilirubin normally has to be processed by the liver before it can leave the body. Light changes bilirubin in the skin into forms that are easier for the body to remove in urine and stool. This lowers the amount circulating in the blood.

For conventional overhead treatment, the baby usually wears only a diaper so that enough skin receives the light. The eyes are covered to protect them from the bright light. A bili blanket or light pad rests against the skin and may allow more holding or feeding, depending on the equipment and treatment plan.

The care team may measure the amount of light reaching the baby. They also check the baby's temperature, feeding, hydration, and bilirubin level. Blood testing is generally used when treatment decisions need an accurate result. A device placed briefly against the skin can estimate bilirubin, but its usefulness may be limited during or soon after phototherapy.

Treatment continues until the bilirubin has fallen enough that stopping is considered safe. How long this takes differs from baby to baby. Some babies need only a short course, while others need longer treatment or more than one light source.

Why it matters for your health

Most newborn jaundice settles without treatment. Phototherapy is used when the bilirubin level is high enough that waiting could allow it to rise further.

At very high levels, bilirubin can enter brain tissue. This can cause acute bilirubin encephalopathy , meaning early brain dysfunction caused by bilirubin. Permanent injury is called kernicterus . These complications are uncommon, but they are the main reason bilirubin is measured and treated promptly when needed.

Phototherapy lowers bilirubin without using medicine and reduces the chance that more intensive treatment will be needed. In rare, severe situations, a baby may require an exchange transfusion , a hospital procedure that replaces small amounts of the baby's blood to remove bilirubin quickly.

The yellow colour of the skin does not reliably show the exact bilirubin level. Skin tone, lighting, the baby's age, and where the yellow colour appears can all affect what you see. Treatment decisions therefore use a measured bilirubin level rather than appearance alone.

Feeding is also important. Milk intake helps the baby pass bilirubin in stool. Babies receiving

phototherapy are usually encouraged to continue breastfeeding or formula feeding. The care team may suggest a feeding plan if the baby is sleepy, feeding poorly, losing more weight than expected, or showing signs of dehydration.

What can go wrong

Phototherapy is generally well tolerated, but it still requires monitoring.

Possible issues during treatment include:

A rare grey-brown skin colour known as bronze baby syndrome can occur, usually in babies who also have a problem with bile flow or liver function. The care team will assess unexpected colour changes rather than assuming they are caused by the lights.

Bilirubin can rise again after phototherapy stops. This is called rebound hyperbilirubinemia . Whether a repeat bilirubin check is needed, and when, is based on factors such as how early treatment began, the baby's age at birth, the bilirubin level when treatment stopped, and whether red blood cells are breaking down faster than usual.

Phototherapy may not lower bilirubin as expected if the light exposure is inadequate or if an underlying condition is continuing to produce bilirubin. Related conditions include blood-group incompatibility, bruising or bleeding under the scalp, infection, red blood cell disorders, and some liver or metabolic conditions. These are separate medical problems; they are not caused by bili lights.

Seek prompt medical advice if your baby becomes more yellow, is increasingly difficult to wake for feeds, feeds poorly, or has fewer wet diapers than expected. These concerns need assessment even if a follow-up visit is already arranged.

Call emergency services if your baby has a seizure, stops breathing, becomes very limp or unusually stiff, repeatedly arches the neck or back, or cannot be woken. A high-pitched, unusual cry with marked sleepiness or poor feeding also needs urgent assessment. Do not wait for a routine bilirubin appointment when severe symptoms are present.

- Changes in body temperature
- Increased fluid loss
- Loose or more frequent stools
- A temporary skin rash
- Interrupted holding, feeding, or sleep
- Eye covers moving out of position during overhead treatment

What you can do

If phototherapy is recommended, ask for the baby's bilirubin result and the treatment threshold being used. It can also help to ask whether the level is rising, stable, or falling.

Useful questions include:

Keep a record of bilirubin results, treatment times, feeding instructions, and follow-up appointments. Tell the care team if your baby is difficult to feed or is producing fewer wet or dirty diapers.

Use home phototherapy only with equipment supplied or approved by the newborn care service. Follow instructions about positioning, skin exposure, treatment time, and testing. Contact the service if the equipment stops working or you cannot keep the baby under the light as directed.

Do not use sunlight, tanning beds, decorative blue lights, or ordinary household lamps as substitutes. Their light intensity and wavelength are not controlled, and sunlight can cause overheating or sunburn.

There is nothing you can do during pregnancy to ensure that a newborn will not need phototherapy. If it is recommended, it does not mean that you caused the bilirubin rise.

- Why is phototherapy recommended now?
- How and when will bilirubin be checked again?
- Can treatment pause for feeding, holding, or skin-to-skin contact?
- What feeding support is available?
- Is a repeat test needed after the lights stop?
- What follow-up is arranged after discharge?

Common questions

Does phototherapy hurt?

The light itself should not hurt. Blood sampling can cause brief discomfort, and some babies dislike wearing eye covers or spending time away from normal holding. The care team can explain how comfort and contact will be supported.

Can I hold or feed my baby?

Often, yes. Short breaks may be possible for feeding, changing, and cuddling. However, effective treatment depends on enough time and skin exposure under the light. Follow the

plan given for your baby rather than stopping treatment on your own.

Does my baby need eye protection?

Eye covers are generally used with overhead phototherapy. They may not be required with some enclosed light pads because the light is directed at covered skin. The team operating the equipment will decide what protection is needed.

Will the yellow colour disappear immediately?

Not always. The measured bilirubin level may fall before the skin colour fully returns to normal. Visual colour alone should not be used to decide whether treatment has worked.

Can jaundice return after the lights stop?

The bilirubin level can rise again. A small rise does not always mean that more treatment is needed. Follow-up testing is arranged when the baby's clinical factors make rebound more likely.

Can phototherapy be given at home?

Sometimes. Home treatment is reserved for babies who meet local safety criteria and can receive reliable equipment, bilirubin testing, and clinical follow-up. A baby who is unwell or whose bilirubin needs to fall quickly may need hospital treatment.

Sources

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