



Children's Liver  
Disease Foundation

fighting childhood  
liver disease

# Jaundice in the newborn baby



This leaflet is written for:

- Parents and parents-to-be

This leaflet aims to:

- Explain jaundice in the newborn baby
- Explain what you should do if your baby's jaundice does not go away
- Explain what you should do if baby jaundice continues beyond two weeks after birth in a full term baby and three weeks in a pre-term baby

**Jaundice continuing after this time may be a sign of liver disease, needs identifying early and treated as soon as possible.**

This leaflet forms part of Children's Liver Disease Foundation's **Yellow Alert Campaign**.

**[yellowalert.org](http://yellowalert.org)**



## What is jaundice?

Jaundice is the name given to the yellow appearance of the skin and the whites of the eyes. Jaundice is NOT a liver disease.

## Is jaundice common in newborn babies?

Yes. Jaundice is very common in newborn babies. About 90% of newborn babies will become jaundiced two or three days after birth. Jaundice reaches its peak at about four days of life and then gradually disappears in most babies by the time they are two weeks old. Jaundice does not necessarily mean your baby is ill.

Jaundice can occur within the first twenty-four hours after birth, but this is rare. If this happens it is important that a neonatologist or paediatrician (a doctor who specialises in the care of babies and children) sees your baby. Normally this will not be a problem as you will still be in hospital. If your baby is at home it is important you tell your midwife or doctor.

## What causes baby jaundice?

When your baby is in the womb the waste products are removed through the placenta. Once your baby is born their own body has to do this. It can take some time for a baby to be able to remove their waste products properly. Therefore, in the early days of your baby's life some waste products may build up in their body. One waste product is called bilirubin. If there is too much bilirubin your baby will be jaundiced.

## What is bilirubin?

The body continuously makes new red blood cells and breaks down old ones. Bilirubin is made when the old red blood cells are broken down.

## Why do babies become jaundiced?

In an adult the red blood cells last about 120 days but in a newborn baby they last for a shorter time. Newborn babies have a higher than normal number of red blood cells. Because your baby has more red blood cells which are being broken down more quickly there is more bilirubin being made. Your baby's liver removes the bilirubin from their blood. But the liver is a complicated organ and, despite a baby being full term, can take a few days to work properly. So, in the first few days of life bilirubin builds up in the blood and causes nine out of ten babies to be jaundiced.

### Should jaundice go away?

Jaundice caused by a build-up of bilirubin, as described previously, normally disappears by the time your baby is ten to fourteen days old. This may take a bit longer if the baby is premature, in which case it can take about three weeks to go away.

### Can the level of jaundice be measured?

Yes. The level of bilirubin in your baby's blood can be measured quite simply. A heel prick blood sample can be taken. This is sometimes called an "SB" or a "bili" test. This will measure the serum bilirubin level and show whether the jaundice level is getting high or even, in some cases, whether your baby has jaundice. This is not as silly as it sounds as it can be difficult to see jaundice in some babies. Sometimes a small light meter may be used to measure the jaundice level.

### Is there any treatment for jaundice?

Most babies will need no treatment at all and the jaundice will disappear by the time the baby is two weeks old. However, a small number of babies do need some treatment, depending on how much bilirubin there is in the blood. Your midwife or doctor will know from experience when this is necessary.

If the jaundice level gets too high there can be a concern that it could cause damage to your baby's brain (kernicterus) so the normal treatment is phototherapy to reduce the bilirubin level. Your baby will be placed naked, except for some eye pads, in a cot under a special blue light. Alternatively, your baby may be wrapped in a bili-blanket. The light breaks down the bilirubin. You will be encouraged to feed your baby so that your baby produces plenty of urine. Phototherapy can usually be stopped within a few days.



## Will baby jaundice harm my baby?

Baby jaundice is not usually dangerous. If there is any doubt, a blood sample will be taken to measure the bilirubin to make certain there is no risk to your baby. Phototherapy should be started well before any dangerous level is reached.

## Why do some babies remain jaundiced?

Baby jaundice normally clears by the time your baby is two weeks old. However, sometimes it lasts longer. There can be a number of reasons why jaundice continues:

- Your baby may have been born early. In premature babies jaundice may take up to three weeks to clear.
- Your baby may have a condition in which the blood cells break down more quickly than is normal for babies. This is often recognised very soon after the baby is born, or even during pregnancy, and further treatment may be necessary. Your baby will be seen by a blood specialist called a paediatric haematologist.
- Jaundice may continue occasionally in babies who are entirely well and are being breast fed. Breast feeding may safely continue and the jaundice will fade with time. There is more information on breast feeding jaundice later in this leaflet.
- Your baby may have an infection or other illness.
- Your baby may have a thyroid gland that is not working properly. This is usually tested as part of a blood test which is carried out on all babies between 5 and 8 days old, called the Guthrie Test.
- Your baby may have a problem with their liver. This is rare.

## Jaundice in the newborn baby

### Is there anything else I can do?

Yes, you should check the colour of your baby's stools (poo) and urine:

- The urine of a newborn baby should be colourless.

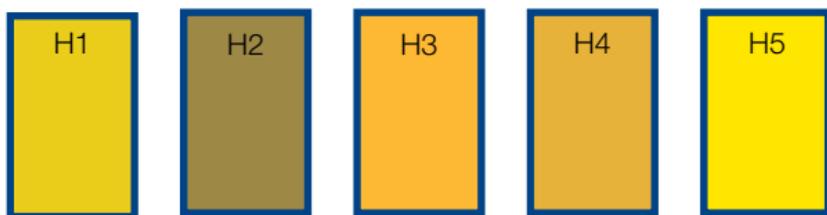
If your baby's urine is persistently yellow then this can indicate liver disease and you should tell your doctor, midwife or health visitor, whether or not there is jaundice too.

- The stools of a breast fed baby should be green / daffodil yellow.
- The stools of a bottle fed baby should be green / English mustard yellow.

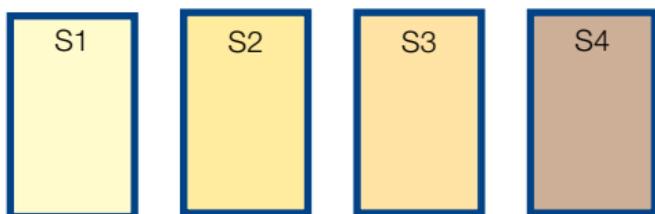
Check your baby's stool colour against the stool colour chart below. If the colour of the stools is the same as in B then you should tell your doctor, midwife or health visitor, whether or not there is jaundice too.

**Always tell your doctor, midwife or health visitor if your baby's stool colour is in the suspect stool group, no matter the age of your baby.**

### Healthy Stools



### Suspect Stools



Digital printing or photocopying of this stool chart will alter them.  
Use only items supplied by CLDF.



## Why is the stool and urine colour important?

Normal baby jaundice is caused by a build-up of unconjugated **bilirubin**. When red blood cells are broken down **unconjugated bilirubin** is made. The liver processes the **unconjugated bilirubin** by adding a “sugar” which changes the bilirubin to **conjugated bilirubin**.

Babies with liver disease can also have jaundice. This jaundice, however, is caused by a build-up of **conjugated bilirubin**. The conjugated bilirubin is picked up by the blood and is passed around the body causing jaundice. It also causes the urine to be yellow as the kidneys try to get rid of the conjugated bilirubin, which is water soluble. Yellow urine in a baby is not normal and the baby should be investigated for liver disease. That’s why it’s important to check the urine colour.

The stool colour may also give an indication of liver disease. If there is a blockage or inflammation in the liver or the biliary drainage system it may prevent the bile from draining from the liver. This will mean that the stool will not be as coloured as normal and appear pale or even the colour of putty. Any baby, at whatever age, with pale stools or stools which appear “fatty” in texture should be investigated for liver disease. That’s why it’s important to check the stool colour.

In some cases there can be an intermittent obstruction and the stools can be alternately paler and darker.

## What should be done if my baby’s jaundice does not go?

The golden rules are:

- If jaundice continues beyond 14 days of age in a full-term baby or 21 days in a premature baby then this should be investigated.
- If your baby’s stools and urine are not the right colour then this should be investigated at whatever age — you don’t need to wait until the baby is two or three weeks old.

## Jaundice in the newborn baby

A **split bilirubin** blood test should be carried out. This test may need to be done at your local hospital.

This blood test measures the ratios of the conjugated and unconjugated bilirubin levels in your baby's blood. **If the conjugated fraction is greater than 20% of the total bilirubin your baby should be referred to a specialist unit as this indicates that the cause is a liver disease and needs further investigation.**

Just to be clear — a serum bilirubin test (sometimes called SB or bili test) measures the total amount of the bilirubin and will show the level of jaundice but does not show whether the cause is liver disease or not. A split bilirubin test will indicate whether the cause is liver disease. It is important that this test is done.

**Note:** A baby can have normal baby jaundice and jaundice caused by liver disease at the same time.

### **I've been told my baby is feeding well, growing and looks well so the jaundice can't be caused by liver disease. Is this true?**

Sadly no, it's a common mistake that people make. In the early stages of liver disease a baby can look and seem entirely well and can be feeding exceptionally well. The best way to make sure is to look at the stools and urine and have a split bilirubin test.

### **I've been told my baby has breast milk jaundice. What does this mean?**

Some babies who are breast fed may have jaundice which continues. In this case the blood levels will be normal except for a raised total bilirubin. The stools and urine colour will be normal too. Breast milk jaundice is harmless and will gradually disappear. In a small number of cases it can take a few months to totally disappear.

Quite frequently parents are reassured that the cause of prolonged jaundice is breast milk jaundice without testing. The majority of babies will have breast milk jaundice but a very few will have liver disease jaundice — or even both. However, it is important that a diagnosis of breast milk jaundice is made after a split bilirubin test is and not before.



## **My baby has been tested and given a diagnosis of breast milk jaundice. What should happen now?**

Our experience is that most parents want to be reassured that their baby's bilirubin level is returning to normal. We suggest that the serum bilirubin level is measured weekly until the bilirubin level returns to normal. In cases where the jaundice takes a long time to reduce, the tests can be carried out further apart, provided the trend is for the bilirubin level to be reducing.

## **My baby has been referred to a specialist unit. Is there any help for me and my family?**

Yes, from Children's Liver Disease Foundation (CLDF).

- CLDF has a leaflet called **'Baby jaundice and liver disease'** which gives you more information on the next steps. You can download this from CLDF's website - [childliverdisease.org](http://childliverdisease.org) or order a copy from CLDF. Our contact details are on this leaflet.
- CLDF has a wide range of information available to families, friends and healthcare professionals. We also have a mailing list so you can receive regular information and updates. You can speak to our Health Information Manager by calling CLDF on 0121 212 3839.
- CLDF has a family service. The Families Officer is available to listen to and help families, relatives, friends and young people. You can contact by calling 0121 212 6023 or email [families@childliverdisease.org](mailto:families@childliverdisease.org).
- Children's Liver Disease Foundation is the UK's leading organisation taking action against the effects of childhood liver disease and has four major areas of work:
  - Funding pioneering research to give children with liver disease a future.
  - Giving emotional support to families and young people affected by childhood liver disease.
  - Providing information on childhood liver disease.
  - Being the collective voice for parents and young people affected by childhood liver disease and ensuring their needs and views are heard at all levels.

Donation, Regular Gift & Gift Aid  
Declaration Form

To make a one-off gift or set up a direct debit gift  
online, go to [childliverdisease.org](http://childliverdisease.org)

I'd like to make a gift to CLDF

How much? £10  £20  Other £ .....

I enclose a cheque made payable to  
Children's Liver Disease Foundation

I wish to pay by card — **MASTERCARD / VISA / DEBIT CARD**  
(delete as appropriate)

Card No.

Expiry Date ..... /..... /.....

Name on Card .....

Security Number: ..... (back of card)

I'd like to make a regular gift by direct debit to CLDF

How much? £5  £10  £20  £25  £50  other £ .....

How often?  monthly  quarterly  half-yearly  annually

My bank details:

Bank name: .....

Branch name: .....

My bank address: .....

.....

..... Postcode: .....

My bank sort code:

My bank account number: .....

Please pay to Children's Liver Disease Foundation, account no.  
00181442, sort code: 12-05-65

Starting on ..... /..... /..... until further notice.

My signature: .....



## Donation, Regular Gift & Gift Aid Declaration Form

### Are you a UK taxpayer? Yes / No

If yes, please give your gift under Gift Aid.

This means that CLDF can claim the basic rate of tax you have already paid on the amount you are donating.  
It will not cost you anything.

In order to qualify you must have paid enough UK income or capital gains tax to cover all your charitable donations. Other taxes such as Council Tax or VAT do not apply. We will confirm all gift aid details in your acknowledgement letter.

Yes, please treat this and any future donations as given under gift aid

Date: .....

### About you:

First name: ..... Surname: .....

Title: Mr / Mrs / Ms / Miss / .....

My address is: .....

.....

.....Postcode: .....

Home telephone: .....

Mobile: .....

Home email: .....

Work email: .....

To claim gift aid we are required to have your full name and address including postcode.

Please return your completed form to CLDF, address below.  
Thank you.

**Children's Liver Disease Foundation**  
**36 Great Charles Street**  
**Birmingham**  
**B3 3JY**



## Jaundice in the newborn baby

- Two children a day are diagnosed with a liver disease. For most the cause is unknown.
- Children of all ages get liver disease through no fault of their own or their parents. 50% of diagnoses are in babies, but 20% are in childhood and a staggering 30% are in adolescence.

**Children's Liver Disease Foundation helps families to pick up the pieces, cope with the diagnosis and support them and their child as they grow up with their liver condition and take it into adulthood.**

© Children's Liver Disease Foundation March 2005.  
Updated: December 2007; May 2010; April 2012; August 2013.

This leaflet is for information purposes only. Of necessity it has been prepared for general application. In each individual case professional medical or other advice should be obtained before acting on anything contained herein as no responsibility can be accepted by Children's Liver Disease Foundation.



Join the conversation...

Follow @tweetcldf

Find us on Facebook – search CLDF

Scan with your  
smartphone to  
visit CLDF's  
website



Children's Liver  
Disease Foundation

fighting childhood  
liver disease

Children's Liver Disease Foundation  
36 Great Charles Street  
Birmingham, B3 3JY

Tel: 0121 212 3839

[childliverdisease.org](http://childliverdisease.org)

email: [info@childliverdisease.org](mailto:info@childliverdisease.org)

Registered Charity Number: 1067331

# Children's Liver Disease Foundation is the UK's leading organisation taking action against the effects of childhood liver disease.

It provides free of charge:

- A huge selection of literature and online animations on the working of the liver available in print and online
- Information packs for a wide range of audiences, including young people, parents/carers, GP practices, schools and nurseries, friends and relatives
- Families and young peoples' teams providing services in person, online, facebook, text and phone
- Developing services for adults diagnosed with a liver disease in childhood
- Website – [childliverdisease.org](http://childliverdisease.org)
- Young people's website – [cldf-focus.org](http://cldf-focus.org)
- National event programme for families and young people to meet, share and have fun
- Secure online message board – [childliverdisease.org/forum](http://childliverdisease.org/forum)

Around 75% of CLDF's annual income is derived from voluntary donations. Please help us to continue to support young people, families and adults diagnosed in childhood by making a donation. You can do this online or by completing the donation form in this leaflet. Even better, a regular direct debit gift will enable us to plan our work more fully.

**Thank you.**

Children's Liver Disease Foundation  
36 Great Charles Street  
Birmingham  
B3 3JY

0121 212 3839

[info@childliverdisease.org](mailto:info@childliverdisease.org)



Join the conversation...

Follow @tweetcldf

Find us on Facebook – search CLDF

Scan with your  
smartphone  
and visit CLDF's  
Yellow Alert  
website



Children's Liver  
Disease Foundation

fighting childhood  
liver disease

Registered Charity No. 1067331