

## Jaundice

### Overview

The word jaundice comes from the French word *jaune* which means yellow, describing the colour of the skin, conjunctiva, mucous membranes, sclera and whites of the eyes, of a patient who is suffering from jaundice.

Jaundice is a symptom as opposed to a condition. If jaundice is present it means there is an excessive amount of the chemical, bilirubin, in the blood. Bilirubin is a natural by product from the normal breakdown of red blood cells in the body and under normal circumstances it gets excreted in the bile by the liver.



### What is Bilirubin?

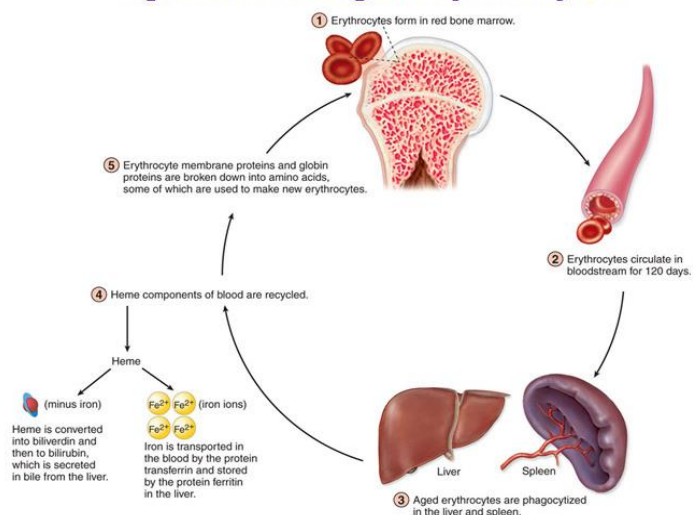
Red blood cells or erythrocytes, contain a ferrous or iron containing protein called haemoglobin. Haemoglobin carries oxygen around the body in the blood. When red blood cells come to the end of their life cycle, they are broken down in the spleen. This process is known as catabolism. The iron aspect of haemoglobin is recycled and the chemical left is bilirubin. The bilirubin is then taken to the liver via the blood, and secreted into bile, which is then eliminated into the intestine to be excreted from the body. Bilirubin is responsible for the yellow colour of urine, the brown colour of faeces and also the yellow colour of bruises.

### What Causes Jaundice?

The build up of bilirubin in the blood can be caused by a number of conditions. Types of jaundice are classified by where the disruption in removal of bilirubin occurs.

- ❖ **Pre hepatic jaundice** – the disruption occurs before the bilirubin has been transported from the blood to the liver. The main cause of pre hepatic jaundice are conditions which cause an increased rate of haemolysis or blood cell breakdown such as haemolytic anaemia, malaria or sickle cell anaemia.
- ❖ **Intrahepatic jaundice or hepatocellular jaundice** – the disruption occurs inside the liver. Causes are conditions that affect liver function, such as viral hepatitis, cirrhosis, fatty liver and liver cancer.
- ❖ **Post hepatic jaundice or obstructive jaundice** – the disruption prevents the bile and thus the bilirubin contained in it from draining into the biliary system and being excreted. Causes of post hepatic jaundice are gallstones, cancer or inflammation of the bile ducts which create a blockage in the bile duct system.
- ❖ **Neonatal Jaundice** – more than half of all new born babies suffer from jaundice. This is caused by destruction of all the blood cells containing prenatal haemoglobin which is different from the haemoglobin in the baby's blood after being born. The ability of the neonate to process and eliminate bilirubin is also limited due to the immaturity of the liver. Neonatal jaundice does not normally last longer than a week or two.

### Aged or Damaged Erythrocytes



## Symptoms

The main symptom is the characteristic yellowing of the skin, the whites of the eyes and the mucous membranes. Other symptoms include very dark urine, yellowing of faeces, and itching, which may become so severe the patient scratches the skin raw and has trouble sleeping. In extreme cases, the itching has been known to cause suicide. Other symptoms may be related to the condition that is actually causing the jaundice.

## Treatment

In adults, treatment is aimed at identifying and treating the condition that is causing the jaundice. Blood tests and scans can pinpoint what type of jaundice the patient is suffering from. The patient can then have surgery to remove a gallstone or take antiviral drugs or antibiotics for infection.

In new born babies, treatment may not be needed, or a few days of light therapy, known as phototherapy, can help. This exposes the baby to blue band light, which breaks the pigment down. If bilirubin reaches dangerous levels, a type of blood transfusion called an exchange transfusion may be needed.



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