

# Difference Between Physiological and Pathological Jaundice

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## Key Difference - Physiological vs Pathological Jaundice

Yellowish discoloration of the mucosal layers of the body is defined as jaundice. In a healthy neonate, jaundice can appear because of increased [hemolysis](#) and the immaturity of the [liver](#) to rapidly metabolize the [bilirubin](#) produced during the process. This is known as physiological jaundice. Pathological jaundice can occur in any person and is a result of an ongoing pathological process that interrupts the normal bilirubin metabolism. As their names imply, **in physiological jaundice there is no underlying pathological abnormality, unlike its counterpart that is always secondary to a pathological process that affects the normal bilirubin metabolism.** This is the **key difference** between the two conditions.

## What is Physiological Jaundice?

Yellowish discoloration of the mucosal layers of the body is defined as jaundice. This discoloration is due to the accumulation of bilirubin. During the hemolysis of [red blood cells](#), [hemoglobin](#) is broken down into haem and globin components. Haem by the action of haem oxygenase is converted into biliverdin, which is then converted into [unconjugated bilirubin](#). Due to the low water solubility of unconjugated bilirubin, it is transported into the liver via blood by binding to [albumin](#). After entering the liver, unconjugated bilirubin is converted into conjugated bilirubin by attaching a water-soluble molecule to it. After that, bilirubin is released into the gut where the normal flora acts on it to produce stercobilinogen that later becomes stercobilin. Some part is excreted via the [kidney](#) as urobilin.



**Figure 01: Neonate with Physiological Jaundice**

In a healthy neonate, jaundice can appear because of increased hemolysis and the immaturity of the liver to rapidly metabolize the bilirubin produced during the process. Physiological jaundice usually appears 2-3 days after birth and gradually reaches the peak by one week. It can prevail for about 14 days before spontaneously disappearing. There is no need of doing further investigations. Occasionally phototherapy is carried out to accelerate the breakdown of bilirubin

## **What is Pathological Jaundice?**

Pathological jaundice can occur in any person and is a result of an ongoing pathological process that interrupts the normal bilirubin metabolism.

### **Causes**

- Hemolytic anemias and other red cell diseases
- Hemoglobinopathies
- Obstruction of the hepatobiliary system
- Damages to the hepatic parenchyma as in [cirrhosis](#)
- Infections such as [hepatitis B](#)

- Adverse effects of drugs

## Investigations

Biochemical studies to measure the levels of total bilirubin, indirect and direct bilirubin are required. Depending on the suspected underlying cause, clinicians may go for other appropriate investigations.



**Figure 02: Yellowish Discoloration of the Sclera in Jaundice**

## Treatment

Management varies according to the underlying pathology that gives rise to jaundice. Once the cause has been aptly treated and eliminated jaundice will disappear spontaneously.

## What is the Similarity Between Physiological and Pathological Jaundice?

- There is an increase in the level of bilirubin in both conditions.

## What is the Difference Between Physiological and Pathological Jaundice?

Physiological Jaundice vs Pathological Jaundice	
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the bilirubin produced during the process. This is known as physiological jaundice.	interrupts the normal bilirubin metabolism.
<b>Pathology</b>	
There is no underlying pathology.	There is an underlying pathology.
<b>Victims</b>	
Physiological jaundice is seen in neonates.	Pathological jaundice can occur in both adults and children.
<b>Treatment</b>	
No treatment is required.	The patient should be treated according to the underlying cause of jaundice.

## Summary - Physiological vs Pathological Jaundice

Yellowish discoloration of the mucosal layers of the body is defined as jaundice. In a healthy neonate, jaundice can appear because of increased hemolysis and the immaturity of the liver to rapidly metabolize the bilirubin produced during the process. This is known as physiological jaundice. Pathological jaundice can occur in any person and is a result of an ongoing pathological process that interrupts the normal bilirubin metabolism. Pathological jaundice is always because of a pathological process but physiological jaundice is not secondary to a pathological process. This is the principle difference between the two conditions.

### Reference:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009. Print.

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