



JAUNDICE 2



*PHYSIOLOGICAL &
PATHALOGICAL JAUNDICE*



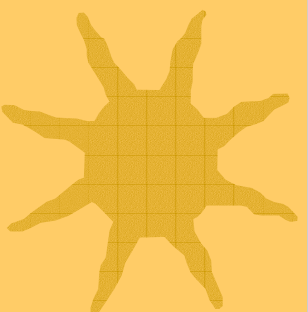
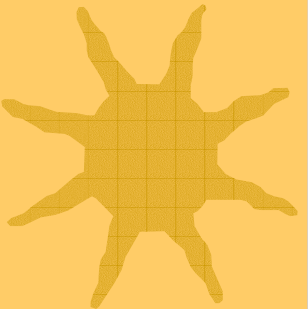
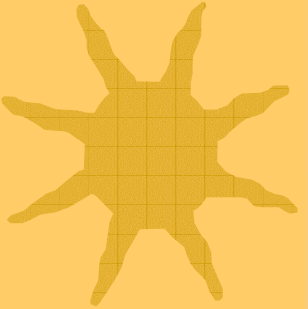
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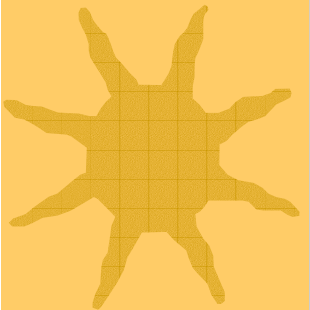
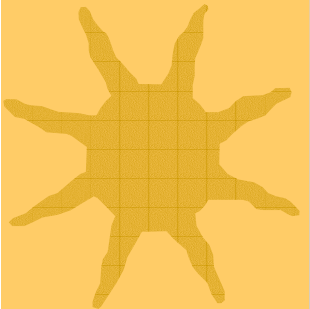
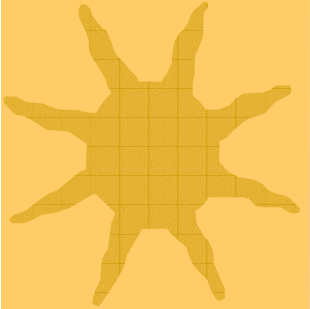
31ST MARCH 2006

JAUNDICE





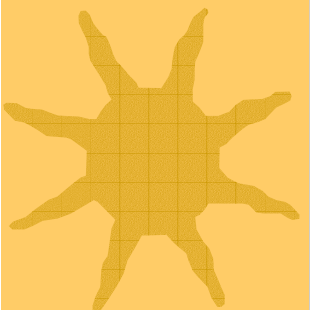
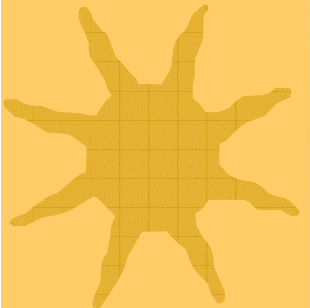
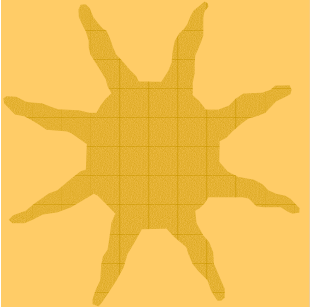
OUTCOMES



- To understand what Jaundice is.
- To understand what Bilirubin is.
- To identify the difference between pathological and physiological jaundice.
- Management and treatment of Jaundice



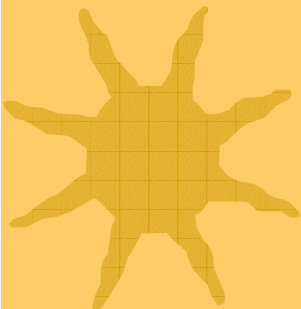
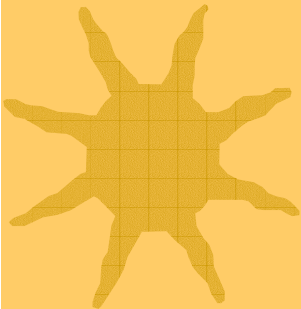
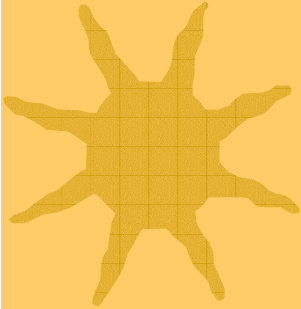
What is Jaundice



- **Neonatal jaundice**
- **Definition**
- Neonatal **jaundice** is the term used when a newborn has an excessive amount of bilirubin in the blood. Bilirubin is a yellowish-red pigment that is formed and released into the bloodstream when red blood cells are broken down. Jaundice comes from the French word *jaune*, which means yellow; thus a jaundiced baby is one whose skin colour appears yellow due to bilirubin.



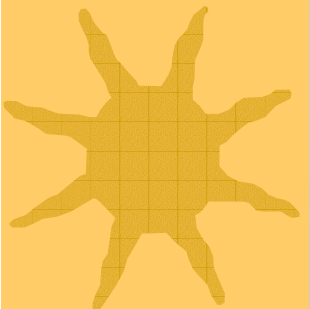
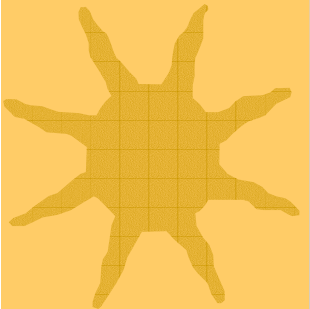
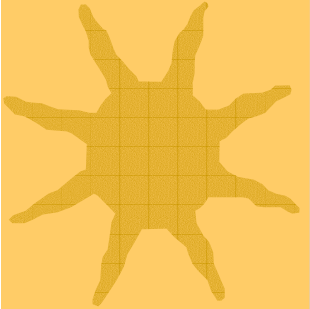
Predisposing causes of Jaundice



- A newborn baby has a haemoglobin (Hb) level of 18-19g/dl. This is necessary during fetal life to facilitate oxygen carrying capacity.
- As soon as the baby is born and able to breathe oxygen the high Hb level is not needed and starts to drop.
- In the first week of life the baby's Hb will drop to about 11g/dl and this breakdown of the foetal RBC's may cause bilirubin to exceed the plasma carrying capacity of the blood.
- Therefore causing Physiological JAUNDICE



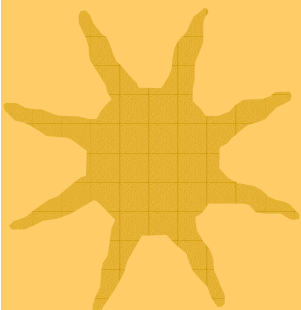
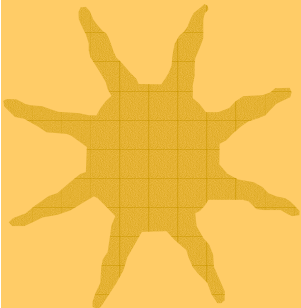
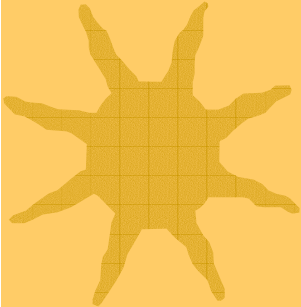
What is BILIRUBEN?



- Bilirubin is a product of haemoglobin break-down. Haemoglobin is contained in the red blood cells and it's most important function is to carry oxygen to the tissues.
- When a red blood cell reaches the end of it's life, the reticuloendothial system takes it out of circulation.
- This consists of the liver and spleen.



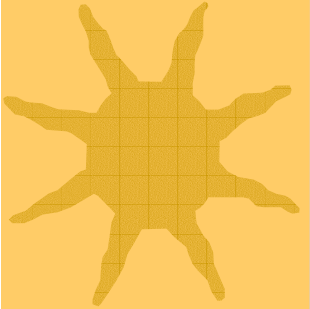
What is BILIRUBEN?



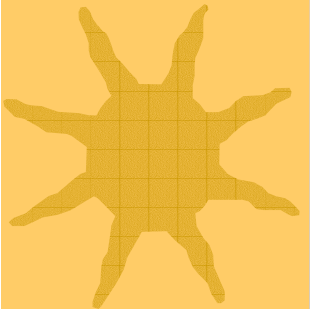
- The haemoglobin is broken down into its two constituents: Haem and Globin.
- The globin is a protein which is re-used by the body.
- The Haem is an iron compound and so can't be re-used. It is broken down to be excreted.
- Bilirubin is a product of this last process and the accumulation in the blood causes yellow staining on the skin: JAUNDICE.
- Bilirubin can cross the blood/brain barrier and stain the basal ganglia. The staining is permanent, Damage irreversible, which is why high SBR is so dangerous



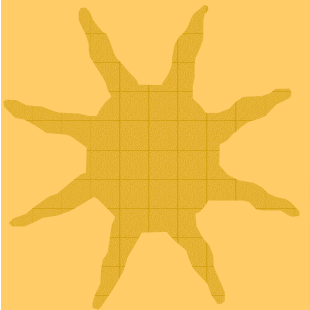
Types of Jaundice



- Physiological Jaundice



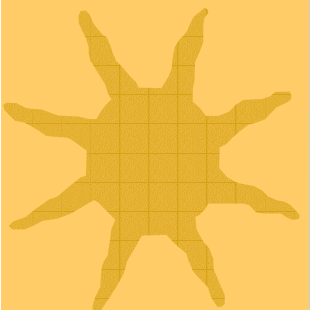
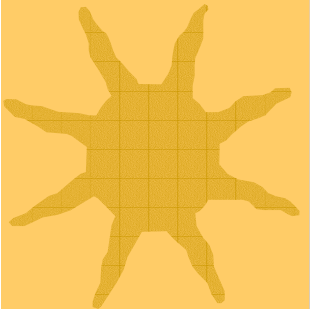
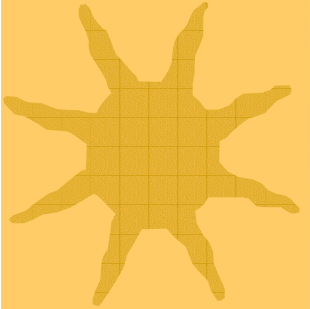
- Pathological Jaundice





Types of Jaundice

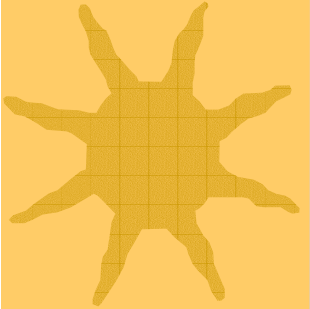
Physiological



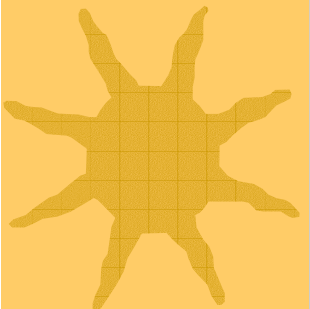
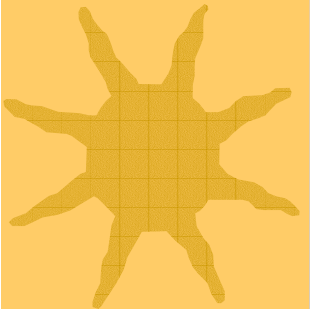
- This occurs in the first few days after birth and will have cleared by day 10
- It occurs because of physiological changes taking place during the transition from intrauterine to neonatal life
- It is the consequence of:
immature liver enzymes, high red cell mass



Other Factors which may increase Physiological Jaundice

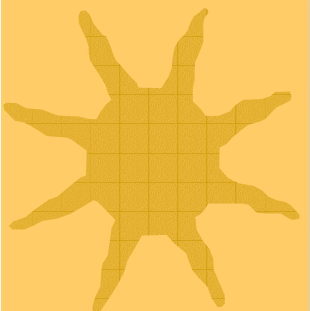
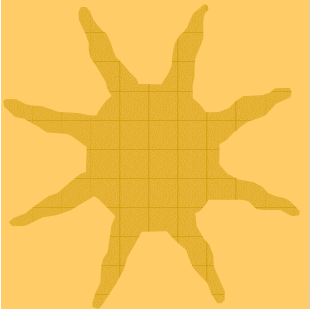
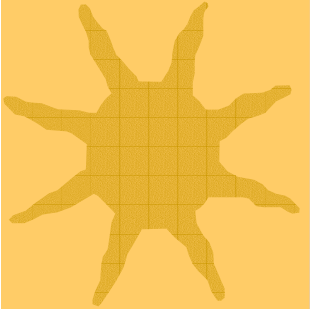


- Prematurity
- Bruising
- Polycythemia
- Breast feeding





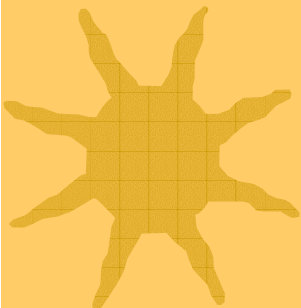
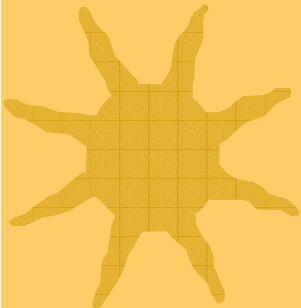
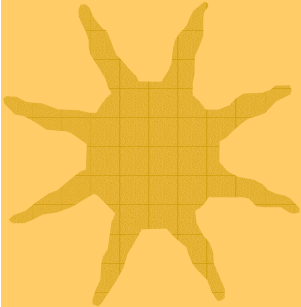
Types of Jaundice Pathological



- This refers to jaundice that arises from factors that alter the usual process involved in bilirubin metabolism in the liver
- It is significant in the first 24hrs of life especially if there is Rhesus incompatibility
- It may persist more than 2 weeks in some conditions when the baby will be jaundice all over and may appear a muddy yellow colour



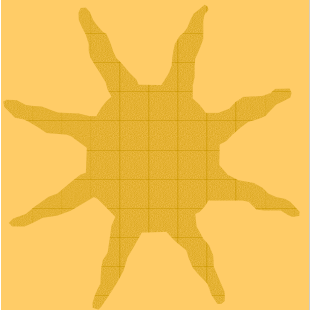
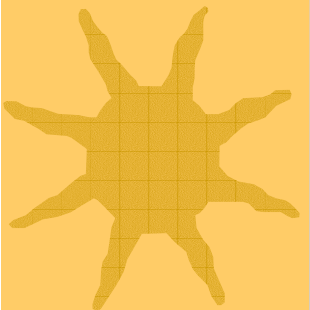
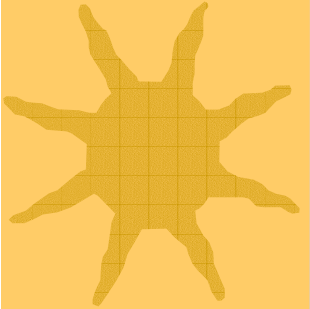
Pathological Jaundice



- This includes :-
- Group incompatibility (Haemolytic Disease of the Newborn)
Rhesus factor, ABO incompatibility
- Hypoxemia
- Sepsis
- Endocrine or metabolic disorders and bile duct obstruction
- hypoglycaemia



Management of Jaundice



- The aim of the management of Jaundice is to prevent bilirubin encephalopathy (kernicterus) developing as a result of high levels of serum bilirubin.



Management of Jaundice

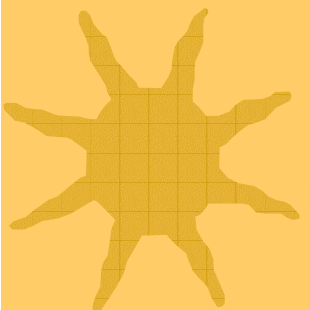
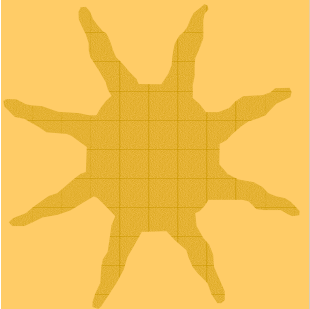
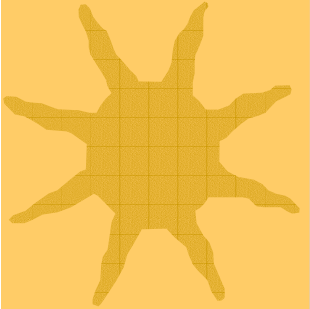
Start investigations if:-

- Jaundice is significant in the first 24hrs
- Jaundice persists after 10 days
- If the SBR is above 250 μ mol/l or less in preterm babies
- If Jaundice is present in a baby who is already ill





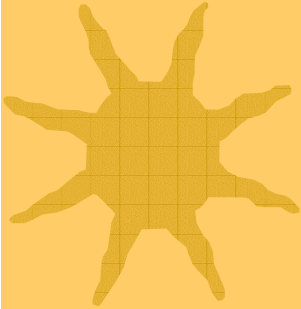
Management of Jaundice



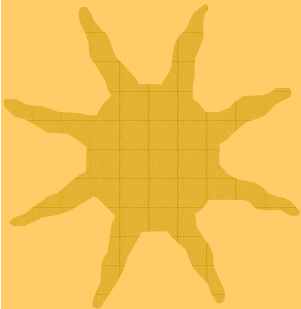
- Ascertain mothers blood group for compatibility and rhesus antibody status. Coombes antibody status should be obtained from mothers notes.
- Check baby's blood group for Rhesus status, and Hb in case the jaundice is caused by haemolysis causing anaemia
- Check baby for Infection



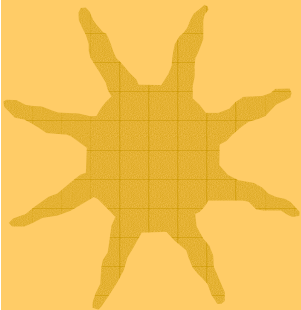
Management of Jaundice



- If the baby's SBR is above the treatment line (depending on which charts your unit uses) Photo therapy can commence.



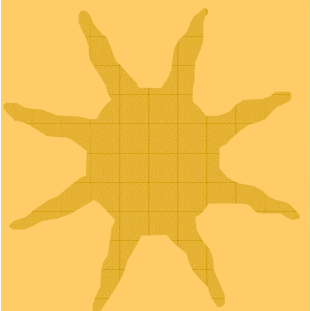
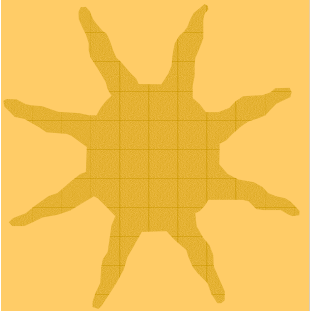
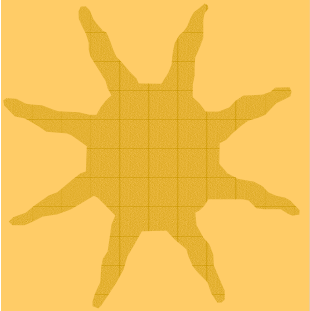
- You may need to increase the baby's fluid depending on you units policy. (you need to be familiar with unit policy)



- Indomethacin dislodges Biliruben from it's plasma binding site so increases SBR



JAUNDICE

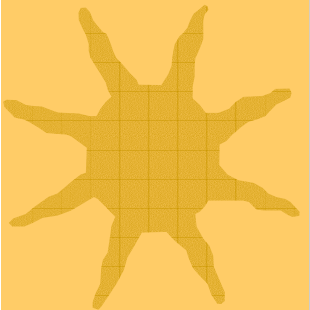
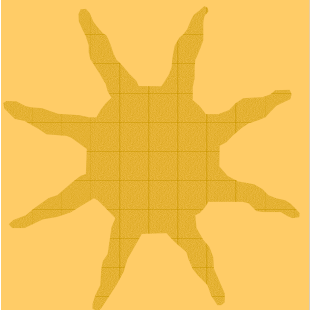
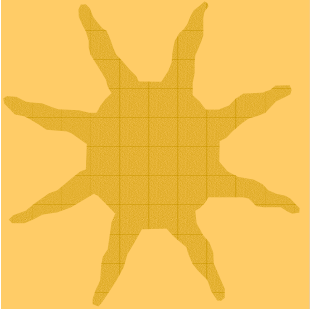


- You may require I.V. access.
- You may need to pass an Ng/Og tube.
- Once Phototherapy has commenced you need to take an SBR at regular intervals the frequency depending on how high it is.





Management of Jaundice



- If the therapy that is being given isn't reducing the SBR you may need to consider an Exchange Transfusion. The decision to exchange transfuse is not just determined by the level but by the rate of which the increase, which is why it is so important to plot SBR result on a time/SBR level graph
- Generally Jaundice reduces by following the procedures already mentioned
- Therefore after a few days of treatment, the jaundice will subside and the treatment can be discontinued.



JAUNDICE

