"Jaundice is a common condition in newborns, affecting 50-60% of full-term babies and 80% of those born prematurely."

Medical News Today: **Jaundice** is a term used to describe a **yellowish tinge to the skin and sclera (the white part of the eye)** that is caused by an excess of bilirubin in the blood (hyperbilirubinemia). It is the most common condition that requires medical attention in newborns. In most infants, jaundice presents at 2 or 3 days of age. However, in some infants, bilirubin levels may raise excessively, which can be cause for concern because bilirubin is NEUROTOXIC and can cause DEATH in newborns and kernicterus in infants who survive.

Neonatal (newborn) jaundice results from simultaneous occurrence of the following two phenomena:

i. Bilirubin production is elevated because of increased breakdown of foetal erythrocytes. This is the result of the shortened lifespan and higher mass of red blood cells in neonates.
ii. Liver excretory capacity is low → bilirubin cannot be excreted from neonates efficiently

When the baby is growing in the mother's womb, the placenta removes bilirubin from the neonates. After birth, the baby's liver starts doing this job. It may take some time for the baby's liver to be able to do this efficiently. Hence, most of the time, neonatal jaundice does not cause problems and goes away within 2 weeks after birth.

Glossary

Neurotoxic: Toxicity in the nervous system.

Neonates: a newborn baby

Transcutaneous: measured across the depth of the skin

Serum: it is the blood plasma without clotting factor, white or red blood cells

Umbilical artery: present in the umbilical cord, it carries all the deoxygenated blood out of the foetus to the mother through umbilical cord

Umbilical vein: present in the umbilical cord, it carries all the oxygenated blood from the mother to the foetus through umbilical cord

Lethargy (infant): does not eat well, does not respond to touching or does not startle from sudden movements and never seems to fully wake up

Symptoms of neonatal jaundice:

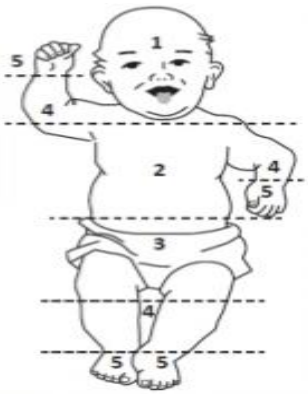
- Yellow skin
- Yellow eyes
- Sleepiness
- Poor feeding
- Brown urine
- High-pitch cry
- Vomiting

Evaluation of neonatal jaundice:

- **Transcutaneous bilirubinometer** – non-invasive approach by placing the measuring probe vertically against infant's sternum. It has sufficient diagnostic accuracy for accessing bilirubin level.

- **Serum bilirubin level** – assessed bilirubin level by blood sample.

Area of the body	Level	Range of serum bilirubin (mg/dL)
Head and neck	1	4-8
Upper trunk (above umbilicus)	2	5-12
Lower trunk and thighs (below umbilicus)	3	8-16
Arms and lower legs	4	11-18
Palms and soles	5	Above 18



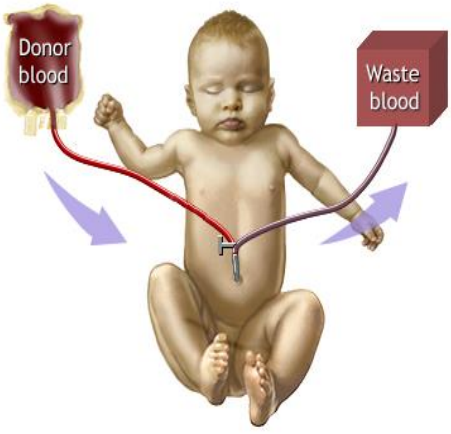
Management and treatment:

i. Monitor the bilirubin level

ii. Increased fluid intake orally (breastfeeding) – adequate amounts of breast milk increase a baby's bowel movements, which help secrete the build-up of bilirubin

iii. Phototherapy – the baby is exposed to a type of fluorescent light that is absorbed by the baby's skin. During this process, the bilirubin in the baby's body is changed into another form that can be more easily excreted in the stool and urine.

iv. Exchange transfusion via an umbilical artery or veins to remove and replace the blood in babies. Hence, removing circulating bilirubin to reduce levels and to prevent kernicterus.



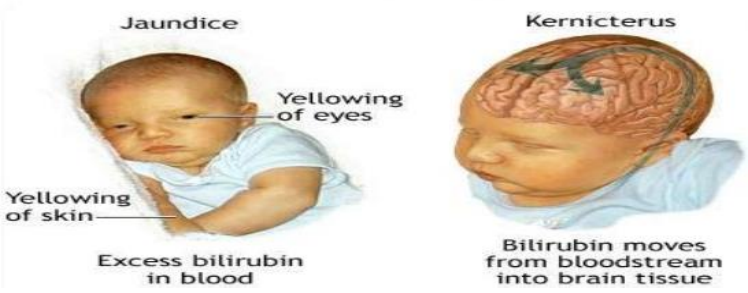
What is bilirubin?

- Bilirubin is a bile pigment that is orange-yellow colour.
- It is formed during the normal breakdown of red blood cells
- After circulating in the blood, bilirubin travels to the liver and stores in the gall bladder
- Eventually, the bile is released into the small intestine to help digests fats
- It is ultimately excreted within stool

What is kernicterus?

- A very rare type of brain damage (permanent brain damage) that occurs in a newborn with severe jaundice
- It happens when bilirubin builds up to very high levels and spreads into the brain tissues
- Symptoms;
  (i) Extreme sleepiness and lethargy
  (ii) A very high-pitched cry
  (iii) Poor muscle tone
  (iv) Fever
  (v) Hearing loss or deafness
  (vi) Learning problems and other developmental disabilities
  (vii) Problems moving the eyes

PREVENT KERNICTERUS by being AWARE of the symptoms of JAUNDICE and TREAT JAUNDICE before bilirubin levels get TOO HIGH!



If you found this article interesting, you are interested in Paediatrician (Medicine)!

Paediatricians are medical doctors who specialise in treating children. They are trained to diagnose and treat conditions that are common or unique to infants, children and teens. They also administer vaccinations, treat injuries and advise parents on proper health care for their child's age.

To be a paediatrician, you must graduate from medical school. In Malaysia, doctor can request to be registered as a paediatrician if he or she fulfils all the following requirements:

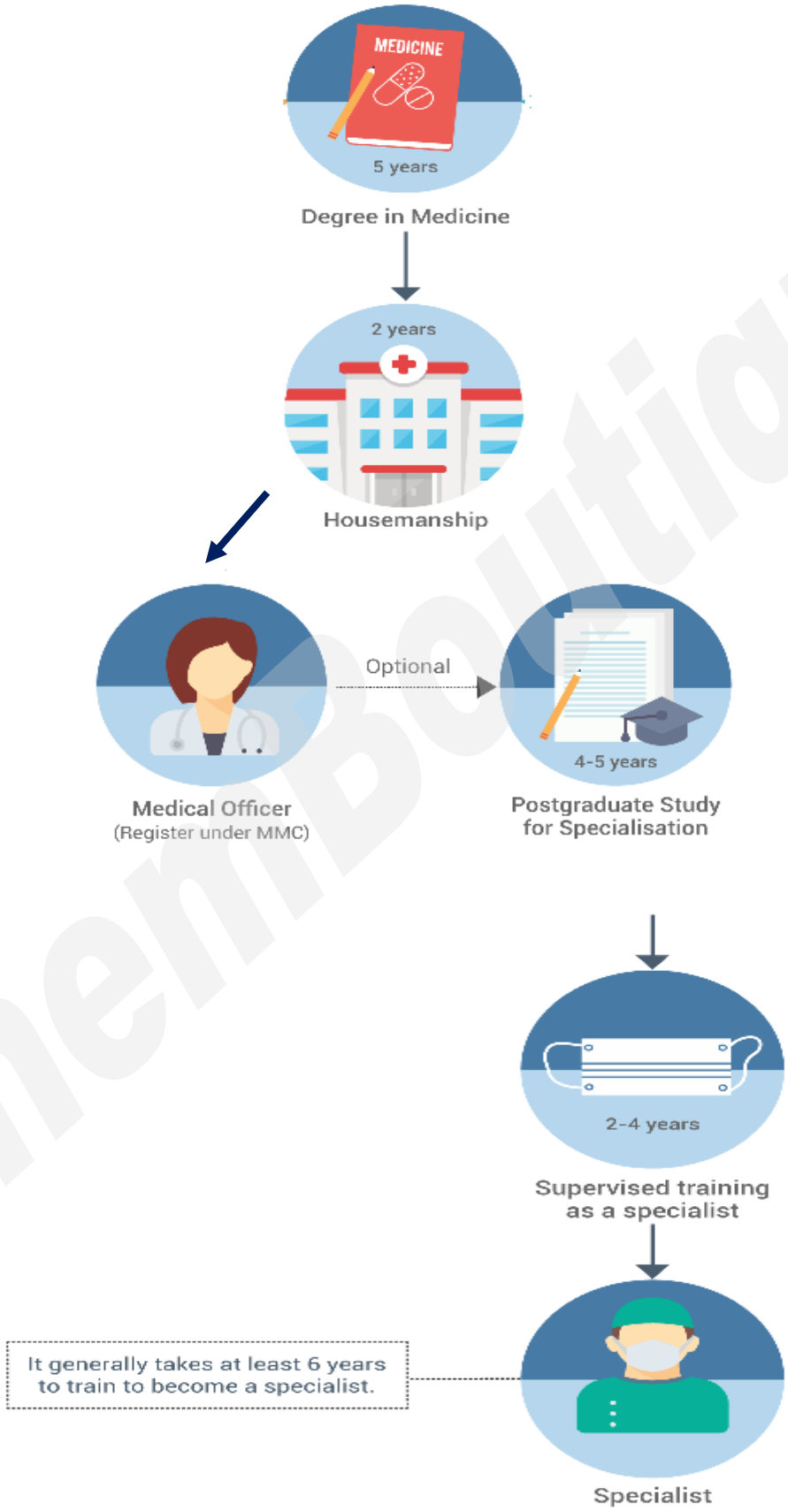
i. Fully registered with the Malaysian medical council with current Annual Practicing Certificate
ii. A recognised postgraduate qualification (recognised by the Malaysian Paediatric Specialty Committee)
    - M. Med (Paed) awarded by University Malaya, University Kebangsaan Malaysia, University Sains Malaysia and University Putra Malaysia
    - MRCP (UK)
    - MRCPCH by Royal College of Child Health (UK)
    - MRCPI (Ireland)
    - FRACP (Australia)
    - American Board of Paediatrics
iii. Completed postgraduate training in recognised centres for a minimum of four years
iv. Post qualification supervised working experience

What are the entry requirements for Medicine degrees?

Minimum of AAA/AAB/AAC/ABC in A-Level:

- Chemistry
- Biology
- Physics
- Mathematics

How does the education pathway look like (credit to: www.eduadvisor.my/medicine/)?



What are the course structure and assessment method?

It is divided into 2 parts:

(i) **Part I**: it relates to **pre-clinical training** which involves the learning of basic medical sciences, for instance anatomy, biochemistry, microbiology, pathology and pharmacology.

(ii) **Part II**: it relates to **clinical training** in hospitals, rotating various clinical disciplines such as general medicine, surgery paediatrics and internal medicine.

Top Ten Universities (2017) that specialise in Medicine

1. Harvard University
2. University of Oxford
3. University of Cambridge
4. Johns Hopkins University
5. Stanford University
6. Karolinska Institute
7. University of California, Los Angeles (UCLA)
8. Yale University
9. University College London (UCL)
10. University of California, San Francisco (UCSF)

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