

Classification of infants on the basis of risk

5-1 How can infants be classified on the basis of risk?

All newborn infants can be classified into 1 of 3 groups:

1. Well infants.
2. High-risk infants.
3. Sick infants.

To decide which group an infant falls into, the history must be reviewed and the infant examined.

5-2 What is a well infant?

A well (or low-risk) infant has all of the following features:

- Born at term
- Weight appropriate for gestational age and not wasted
- The history of the pregnancy, labour, delivery and the post delivery period are normal.
- The vital signs are normal and the infant appears normal on examination.

Infants that do not have all of the above features are either high-risk infants or sick infants. Well infants only require routine level I care. This can be provided in a clinic or at home.

5-3 What is a high-risk infant?

A *high-risk* infant is an infant that *appears well* but has a much greater chance than most infants of developing a clinical problem, such as hypothermia, hypoglycaemia, apnoea, infection, etc. in the newborn period.

High-risk infants appear clinically well on examination.

High-risk infants appear well but have an increased risk of complications.

5-4 Which infants should be regarded as high risk?

An infant that appears well but has any of the following features should be regarded as high risk and, therefore, likely to develop a problem during the newborn period:

1. Infants that are born preterm or post term.
2. All low birth weight infants.
3. Infants who are underweight or overweight for gestational age.
4. Wasted infants.
5. Infants who have a low 1 minute Apgar score (i.e. need resuscitation after birth).
6. Infants who are born to mothers with a complicated pregnancy, labour or delivery.
7. Infants who have had one or more clinical problems since delivery.
8. Infants who were sick but have now recovered.

A high-risk infant often falls into more than one of the above categories.

5-5 What should you do for a high-risk infant?

1. It is essential to **identify the clinical problem** that the infant is at risk of developing, so that the problem can be anticipated.
2. Every effort should then be made to **prevent this problem occurring**.

3. If this is not possible then the infant must be carefully **monitored** so that the problem can be identified as soon as it develops. This allows for early treatment.
4. Once the problem occurs, it must be **treated** as early as possible.
You should aim at **anticipating and preventing** problems in high-risk infants, so as to avoid having to treat them. High-risk infants usually do not need immediate treatment.

It is important to anticipate problems in high-risk infants so that steps can be taken to prevent these problems occurring.

This stepwise process of identifying a possible problem, taking steps to prevent it, monitoring the infant for early signs of the problem, and finally having to treat the problem only if the earlier steps fail, forms the basis of good patient care.

5-6 What is a sick infant?

A sick infant does not appear well and has *abnormal clinical signs*. The infant may previously have been well or may previously have been identified as a high-risk infant.

Therefore, if a well or high-risk infant develops one or more abnormal clinical signs, or the infant appears ill, then it is reclassified as a *sick* infant.

The most important clinical signs that indicate that an infant is sick are:

1. **Heart rate.** The infant may have a:
 - Tachycardia (a heart rate more than 160 beats per minute)
 - Bradycardia (a heart rate less than 120 beats per minute)
2. **Respiration rate and pattern.** Abnormal signs are:
 - Slow, shallow, irregular respiration
 - Rapid respiration (tachypnoea) more than 60 breaths per minute
 - Grunting, recession or gasping
 - Apnoea
3. **Colour.** The infant may be:
 - Pale
 - Plethoric (very red)
 - Cyanosed. Centrally or peripherally
 - Severely jaundiced
4. **Temperature.** The infant may be hypothermic (cold) or pyrexial (hot).
5. **Activity.** The infant may be:
 - Lethargic and respond poorly to stimulation
 - Hypotonic and less active than before
 - Feeding poorly
 - Jittery with abnormal movements or fits

You should recognise these most important or *vital signs* that are usually monitored routinely in a sick or high-risk infant. The sick infant may also be recognised by other, less common but abnormal signs on clinical examination, e.g. bleeding, oedema, abdominal distension, loose stools.

The recognition of a sick infant is one of the most important clinical skills that nurses and doctors must learn.

Infants that have a congenital abnormality but are otherwise well are often grouped together with sick infants when management is planned.

5-7 What are the causes of a sick infant?

Of the many causes of a sick infant, the most important are:

1. Infection.
2. Hypoxia.
3. Hypothermia
4. Hypoglycaemia.
5. Acute blood loss.
6. Anaemia.
7. Trauma.
8. Marked hyperbilirubinaemia.
9. Intraventricular haemorrhage.