

Apnoea and bradycardia in premature babies

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The information in this pamphlet aims to describe a common pattern of breathing seen in very premature infants.

What is apnoea?

Premature babies have an irregular breathing pattern and brief pauses in their breath are common. Apnoea is different to normal breathing patterns because it:

- lasts longer than 20 seconds
- may be associated with the baby's colour changing to pale, purplish or blue
- may be associated with a slowing heart rate or **bradycardia**.

What is bradycardia?

Babies have a much faster heart rate than adults. Premature babies may have a heart rate of 120-180 beats per minute.

Bradycardia is when the heart rate slows to less than 100 beats per minute. This often follows apnoea or periods of very shallow breathing.

Why do premature babies have apnoea?

Each day your baby's organs will continue to develop. The breathing centre in a baby's brain is also maturing with time. Babies are likely to have apnoea of prematurity until the parts of the brain controlling the drive to breathe have matured. Premature babies normally have episodes of long, deep breaths followed by periods of shallow breathing or pauses. Also, the airway of premature babies is rather floppy and sometimes contributes to apnoea by obstructing the baby's breathing. Apnoea is most common when the baby is sleeping.

Is apnoea always caused by prematurity?

No, apnoea of prematurity is by far the most common cause of apnoea in a premature infant. However, apnoea may be increased by many problems including infection, low blood sugar, seizures, high or low body temperature, brain injury or insufficient oxygen. All these will have been considered by the doctors before the diagnosis is made.

How is apnoea treated?

Several treatments are possible. Your baby may be treated with one or more of the following:

- gentle stimulation when an apnoea occurs to remind your baby to breathe
- medications that stimulate breathing. At the Women's we use caffeine citrate
- CPAP or Continuous Positive Airway Pressure. This is air or oxygen delivered under pressure through little tubes into your baby's nose
- low flow oxygen through a nasal tube
- mechanical ventilation (breathing machine). If the apnoea is severe, your baby may need help from a ventilator.

How do I know if my baby has apnoea?

If there is a risk of apnoea, your baby's breathing is monitored continuously. An alarm will sound if there is no breath for a set number of seconds.

What happens if the monitor sounds?

- False alarms often occur; so the nurse will observe your baby's breathing, watch your baby's colour and monitor your baby's heart.
- The nurse may provide stimulation if your baby needs a reminder to breathe. Most apnoeas or bradycardias are corrected by the baby or the baby will respond to simple stimulation.
- If there is a change in colour, the nurse may give your baby extra oxygen.
- If your baby still doesn't breathe, the nurse may give your baby a few breaths with a bag and mask, or extra breaths on the mechanical ventilator.

Will apnoea of prematurity go away?

As your baby gets older, breathing will become more regular. The time will vary for each baby. Usually apnoea of prematurity improves or goes away well before babies reach their due date. The caffeine used to treat apnoea is always discontinued before babies go home.

Does my baby have to stay in hospital until the apnoea goes away completely?

Most infants have stopped having apnoea before they go home. Your baby will need to remain in hospital until the apnoea has stopped.

Once apnoea goes away, will it come back?

Apnoea of prematurity is a result of immaturity. As a baby matures, the apnoea resolves and it will not return. If a baby has significant breathing pauses after apnoea goes away, it is not caused by apnoea of prematurity. All babies have irregular breathing, it is normal for them to stop breathing for a few seconds when they are asleep. This is normal. If apnoea symptoms recur it is due to some other problem and needs to be discussed with your baby's doctor. This is not common.

Is apnoea of prematurity related to Sudden Infant Death Syndrome (SIDS)?

No, these are two entirely different problems. Most babies who die of SIDS are small and **born at term** and follow a normal newborn course. Babies who have needed newborn intensive care for any reason are at a slightly higher risk of SIDS than other babies. Apnoea of prematurity does not increase a baby's risk of SIDS. Before your baby is discharged home, please ensure you are aware of and have read information on what you can do to reduce the risk of SIDS to your baby.

For more information

Your baby's doctor, nurse or care manager are available to answer your questions.

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