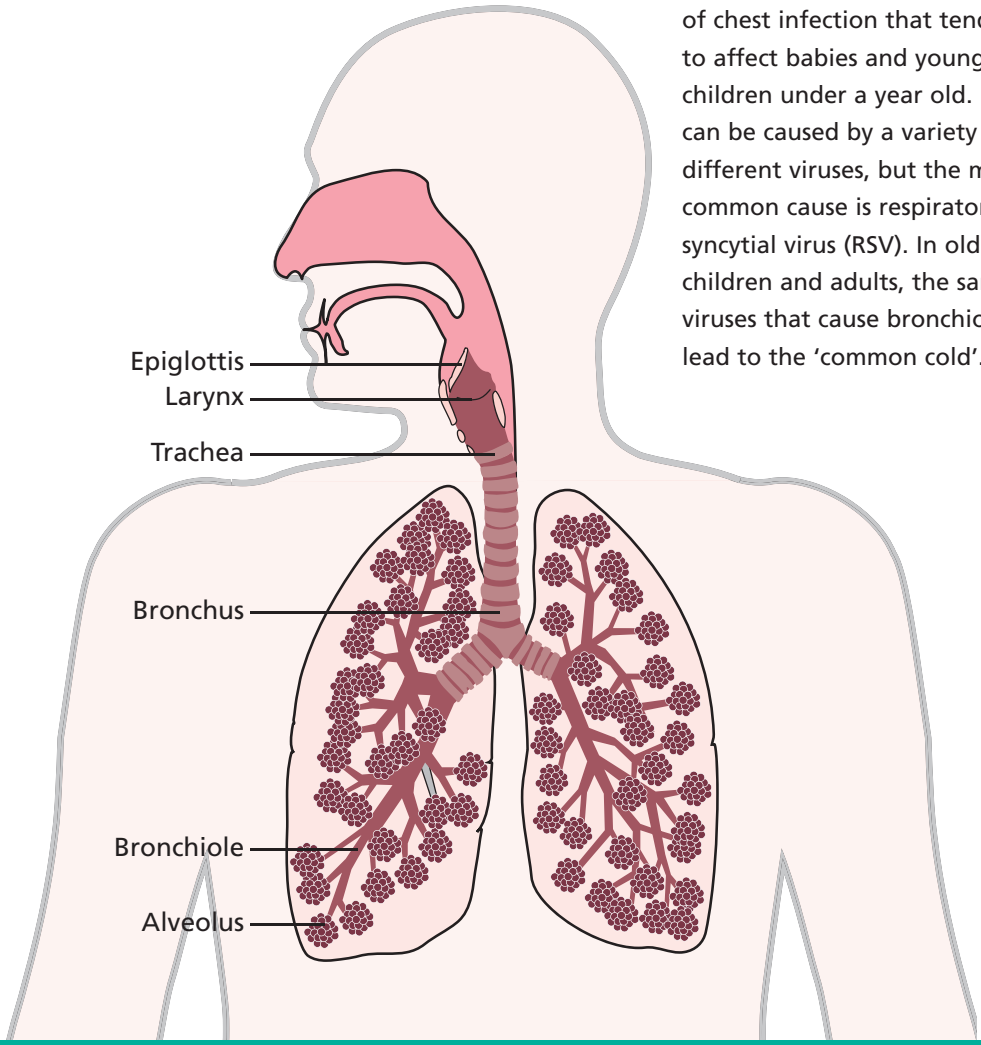
Bronchiolitis

Information for families

Great Ormond Street Hospital
for Children NHS Foundation Trust

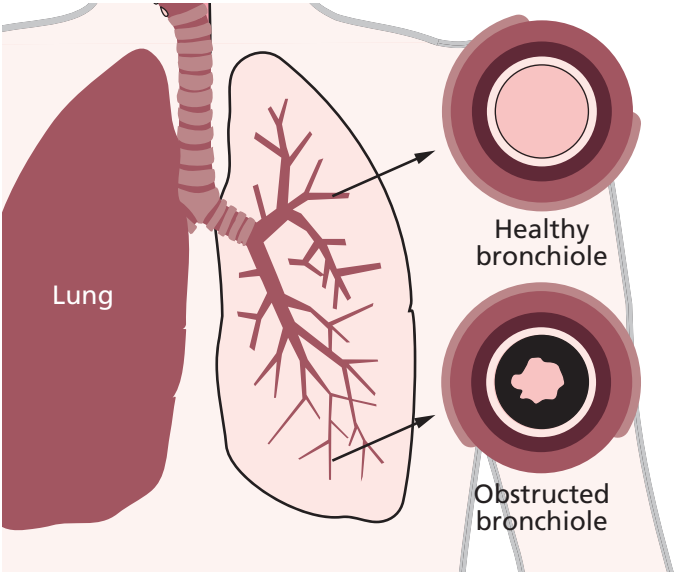
This information sheet from Great Ormond Street Hospital (GOSH) explains the causes, symptoms and treatment of bronchiolitis and where to get help. Although many bronchiolitis infections get better without treatment, a small number of children will need treatment in hospital, occasionally in the intensive care unit.

Bronchiolitis is a common type of chest infection that tends to affect babies and young children under a year old. It can be caused by a variety of different viruses, but the most common cause is respiratory syncytial virus (RSV). In older children and adults, the same viruses that cause bronchiolitis lead to the 'common cold'.



What causes bronchiolitis?

Respiratory viruses, which cause coughs and colds as well as bronchiolitis, are highly contagious and are spread via 'droplet infection'. This means that the virus is passed on through droplets breathed, sneezed or coughed out or picked up directly from the skin or hard surfaces such as door handles and toys. Regular hand washing, as well as staying away from people who are ill when your child is very young, can be helpful but may not always prevent infection as respiratory viruses are very common.



What are the signs and symptoms of bronchiolitis?

The symptoms of bronchiolitis are similar to a common cold and include a blocked or runny nose, a cough and a mildly raised temperature.

Bronchiolitis affects the bronchioles which are the smaller breathing tubes that branch off the bronchi. They produce more mucus than usual and become inflamed and swollen, leading to a cough and a runny nose. In more severe cases, the tubes become clogged up with mucus which causes breathing problems.

In some babies, the breathing problems may present as breathing fast, with in-drawing of the muscles around the rib cage, and in rare cases, very young babies with bronchiolitis may stop breathing for brief periods (apnoea).

The illness usually starts with a mild runny nose or cough, gets worse over three to five days or so, and then slowly gets better, usually lasting about 10 to 14 days in total.

Who is affected by bronchiolitis?

Bronchiolitis most commonly occurs in the UK during the winter months (October to March). It is usually a mild illness and will get better on its own but in some children it can be more serious. Around two per cent of children with bronchiolitis will need to be admitted to hospital and up to 10 per cent of these children will require admission to intensive care for help with breathing.

Children are more likely to require hospital/intensive care treatment for bronchiolitis if they:

- are under three months old
- were born with a heart defect
- have lung disease
- were born prematurely (too soon)
- have a weakened immune system – either because of a problem they were born with (congenital) or because of medicine they are taking for another problem

However, many children requiring an intensive care admission will not fall into any of these groups.

How is bronchiolitis diagnosed?

In many cases, there is no need to seek medical advice unless your child is very young or has other medical conditions. However, you should always seek urgent medical advice if your child is struggling to breathe, is difficult to wake or has a blue or pale tinge to their skin, lips or nails.

There are no specific diagnostic tests for bronchiolitis. Doctors will usually take a medical history of what symptoms are present and when they started. They will ask you to describe their breathing symptoms – for instance, a wet sounding or chesty cough, runny nose, difficulty breathing and apnoea (stopping breathing for a few seconds).

If your child is admitted to hospital, the doctors there will usually take a sample of the mucus from their nose to send to the laboratory. This is to find out the precise virus that is causing the symptoms. The team may also measure the amount of oxygen in your child's blood (oxygen saturation) expressed as a percentage. Monitoring involves putting a small probe which looks like a sticky plaster around your child's hand or foot, then displaying a number on a screen like the image below.

If the number is low (below 92 per cent), this means that there is not enough oxygen in your child's blood to travel to the body's tissues and organs. The doctors will need to give your child some treatment to make this better.

How is bronchiolitis treated at home?

As bronchiolitis is caused by a virus, antibiotics will not be effective. There are some things you can do to ease the symptoms and help your child feel a little better. For example, keep your child upright as much as possible – this will make breathing and feeding easier. Make sure that they are in a safe position and unable to fall. A car seat is useful for periods when they are awake. You can tilt the head of their cot upwards to make breathing easier – remember to raise the cot legs on blocks or put a pillow under the mattress. Never put a pillow or cushion under your child's head as this is unsafe.

You should also give your child small amounts of fluid frequently as it is important to stop your child becoming dehydrated. As long as your baby is drinking about half of their normal fluid intake, they should be safe to stay at home. If they are drinking less than this you should take them to a doctor. Keep an eye on how many wet nappies they are making, as a reduction in this can be a sign of dehydration.

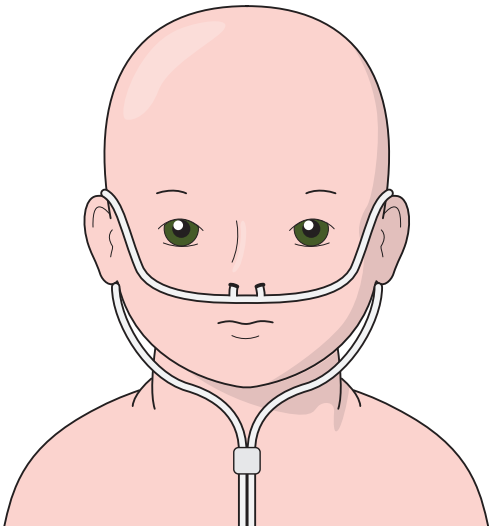
There are various commercial products available such as vapour rubs and humidifiers which some people find helpful. You can also get saline (salt water) drops from your pharmacist to put inside the nostrils, which help to keep the nose clear for breathing and feeding.

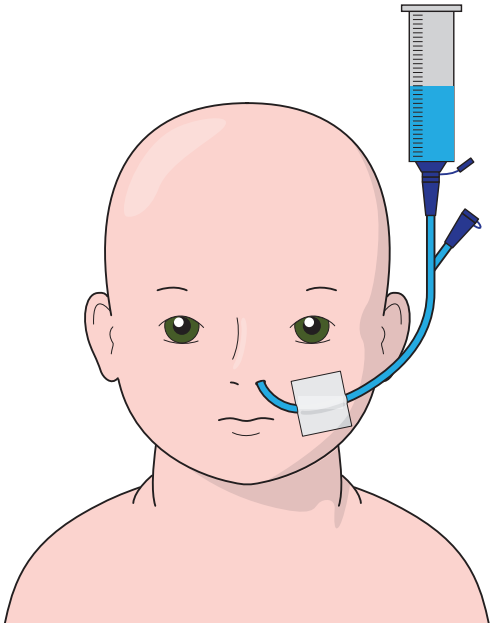
Admission to hospital with bronchiolitis

Around 2 in 100 infants with bronchiolitis will need to spend some time in hospital during the course of their illness. This is usually for one of two reasons: they need oxygen treatment to keep their oxygen saturations above 92 per cent or they cannot manage to feed from the breast or a bottle because of a blocked nose or difficulty breathing.

There are two main treatments that you commonly see in hospital wards for bronchiolitis:

- **Nasal cannula oxygen** – This is when oxygen is delivered through a set of small prongs (short plastic tubes) which sit just inside the nostrils. It may also be useful for nurses looking after your baby to suck out mucus from inside the nostrils to keep them clear.
- **Naso-gastric feeding** – If your baby has been admitted to the hospital ward because they are not feeding well, nurses and doctors may insert a plastic feeding tube into their mouth or nose, which passes down the oesophagus (foodpipe) into the stomach so that they can give their usual milk feeds to them this way. If you are breastfeeding, they will ask you to express milk to put down the tube, or if you are using formula milk then your normal formula feeds can be used.





On rare occasions if a baby has severe difficulty in breathing, or is vomiting, doctors may decide to stop giving feeds altogether for a short period, and in this case they will give fluids via an intravenous drip.

In the majority of cases, with this supportive care, babies will recover from the virus on their own, and once they are able to maintain oxygen saturations above 92 per cent without additional oxygen and take bottle or breast feeds, they will be allowed back home to recover. It is important to know that the wet sounding cough can persist for many weeks or months after recovery from bronchiolitis, and that this is not usually anything to worry about.

Admission to the Intensive Care or High Dependency Unit with bronchiolitis

Very few children require intensive care for bronchiolitis but there are two main reasons why they might need to be admitted:

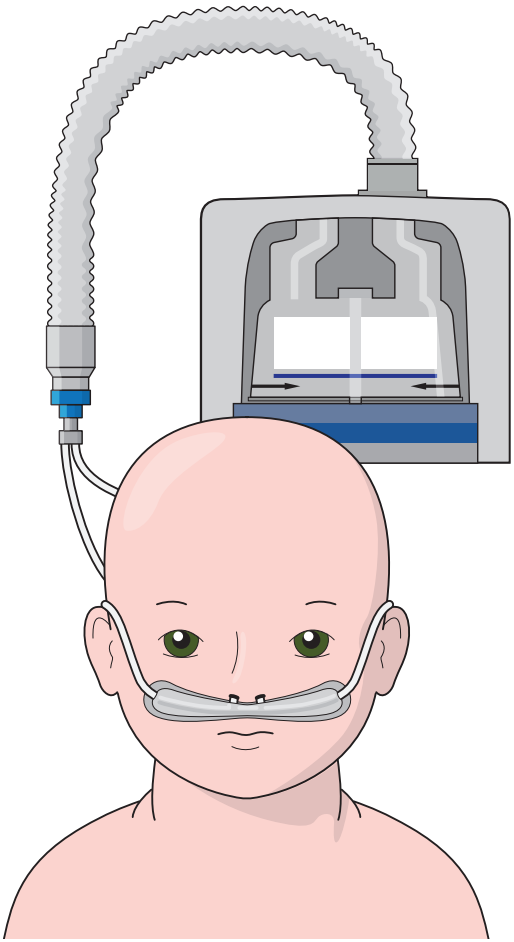
- Despite receiving oxygen and help with feeding, their oxygen saturations stay low or they are developing such severe breathing problems that the effort to breathe is exhausting them
- They have 'apnoea', that is, short periods during which they stop breathing

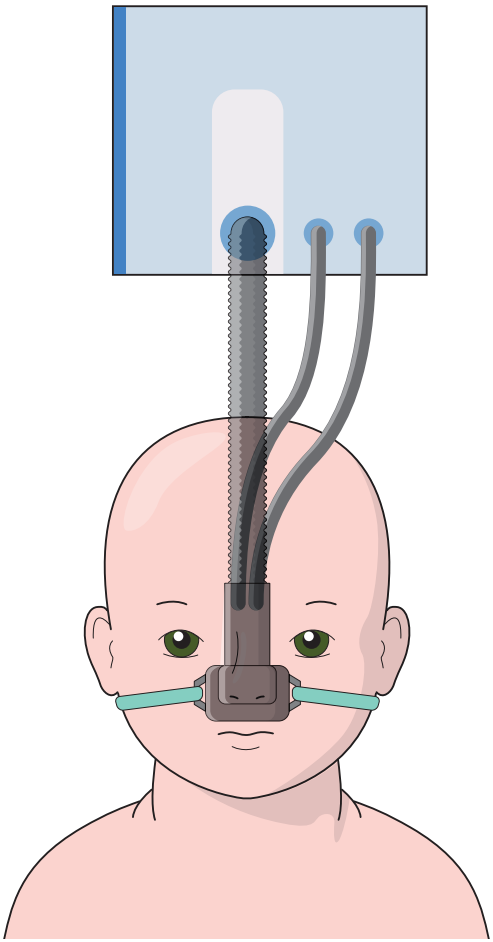
How is bronchiolitis treated in the intensive care/high dependency unit?

The team will support your child through their illness in a number of ways.

Breathing support

- **High flow oxygen** – This is a mixture of air and oxygen delivered at a high flow to try to help open your child's airways so that the lungs can add oxygen to their blood. It is given through a set of prongs (short plastic tubes) inserted just inside the nostrils.
- **Continuous Positive Air Pressure (CPAP)** – This is also a mixture of air and oxygen delivered at a high pressure through prongs or a face mask. The pressure of the mixture opens up your child's airways.





- **Intubation and ventilation** – If your child is exhausted or not getting enough oxygen despite having tried high flow oxygen or CPAP, doctors may suggest putting them on to a ventilator or 'breathing machine'. They may also suggest this if your child is stopping breathing frequently or for long periods.

  The ventilator will do your child's breathing for them while they are unwell, reducing the effort needed to breathe and increasing the amount of oxygen reaching the lungs.

  The doctors will pass a breathing tube into your child's airway through their mouth or nose, which is connected to the ventilator. They will give them some medicines to make them sleepy so that they do not feel any discomfort, and as well as some medicines to reduce or stop them from moving. As the breathing tube passes into their airway, your child will not be able to cry or make noises whilst they are on the machine.

- **High frequency oscillation** – This is a different type of machine which might be suggested if your child's oxygen saturations remain low. The ventilator pushes oxygen into and out of your child's lungs through the same tube, but it is delivered in very short, fast breaths. This machine is very noisy and the doctors will have to give your child medicines to stop them moving at all while they are having this kind of breathing support.

Other treatments given during a stay in intensive care/high dependency unit

- **Antibiotics** – Although bronchiolitis is caused by a virus, which is not treatable by antibiotics, some children admitted to intensive care will be given a course of antibiotics. This will treat any bacterial chest infection the doctor suspects is occurring alongside bronchiolitis.
- **Fluids and feeding** – Around the time of admission, the doctors will start your child on intravenous fluids rather than milk feeds, while they are deciding which type of breathing support will be most suitable for your child. Once your child is stable with breathing support, the nurses may pass a naso-gastric tube into one nostril and down the foodpipe to the stomach so that they can give milk feeds.
- **Nebulisers** – These are medicines which may help your child to breathe more easily while in hospital. Hypertonic saline is a salt and water solution which can loosen the thick mucus in the lungs so it can be cleared more easily. Adrenaline nebulisers can help widen the narrowed airways for short periods of time.
- **Physiotherapy** – A physiotherapist will usually visit your child while they are in intensive care to give chest physiotherapy. This helps loosen the mucus from your child's airway so it can be cleared more easily.

Getting better after an intensive care stay

Once the doctors think that your child is starting to recover from the virus, they will start to 'wean' the amount of work the breathing machine is doing. When they are happy that your child can breathe well without the help of the breathing machine, they will try removing the breathing tube. If your child continues to breathe well without support, the staff will start to plan discharge from intensive care.

As bronchiolitis can last up to three weeks, it is likely that your child will be transferred back to your local hospital to continue recovering. Your child may still need oxygen delivered through nasal prongs for a week or two and will need help to start feeding from the breast or bottle again. Gradually, your local hospital will reduce the amount of oxygen being delivered to your child as they recover. Your child will be able to return home when they are breathing and feeding well again.

What is the outlook for children who have had bronchiolitis?

Bronchiolitis is an infectious, self-limiting disease – that is, it usually gets better with few or no long term effects. With supportive treatment, the outlook is very good. The majority of children who have bronchiolitis, even the most severe of cases, will make a full recovery without any after effects.

It is extremely rare for children to die from bronchiolitis, and the mortality rate is much less than 1 per cent, even in children who need hospital treatment. The majority of children who die from the disease are those with heart or lung conditions, and those who were born prematurely and are still very young when they become infected.

Some children who have been hospitalised with bronchiolitis may have recurrent episodes of wheeziness with coughs and colds while they are young. They may benefit from using inhalers, although this does not necessarily mean that they will go on to be diagnosed with asthma.

After a child has had severe bronchiolitis, they are likely to have a cough for several weeks or even months afterwards. This is nothing to worry about usually, although it is understandable to be concerned, especially if your child has been in intensive care.

Further information and support

The **British Lung Foundation** offers support to anyone affected by a lung disease. Call their helpline on 03000 030 055 or visit their website at www.blf.org.uk

Notes

Ref: 2015F1533
Compiled by staff from the Neonatal Intensive Care Unit
in collaboration with the Child and Family Information Group

Great Ormond Street Hospital for Children NHS Foundation Trust
Great Ormond Street
London WC1N 3JH

www.gosh.nhs.uk