

## COUGH

Cough, as a leading symptom, would certainly be in the top 10 of reasons for seeing a GP.

A cough in a child seems to cause more concern, even when it has not been present very long, whereas in adults it is usually a persistent cough that prompts the patient to seek help.

It is often forgotten that a cough is a natural reflex that serves to keep the airways clear of debris and mucous congestion and without it we would probably be in serious trouble.

The important questions are why do we cough, what medical conditions are the main causes, should we worry about it and what, if anything can be done about it.

Some authorities categorise coughs as either **acute** coughs, lasting up to 3 weeks, **sub-acute** coughs, lasting from 3-8 weeks, and **chronic** coughs, lasting for more than 8 weeks. This may be a useful distinction when considering how doctors approach the problem

### Coughs in children

Children seem to cough more readily than adults. They may have a stronger cough reflex or it may be that their airways, being small, or more easily obstructed, giving weight to the idea that a cough is, to some extent, protective. Nonetheless, a cough can be distressing particularly at night, interfering with sleep. Parents also tend to worry that a cough may indicate a chest infection. For these reasons, parents feel under pressure to 'do something' and may be encouraged by the array of OTC preparations for all sorts of different coughs.

The truth is that most coughs in children are not serious and that, unfortunately, there is little evidence that cough suppressants actually work. However, doctors do understand that giving a medicine can be seen as a token of care and may make everyone feel better about the situation, even though the use of them may not be 'scientific'

The vast majority of coughs in children are due to viral infections such as colds, what doctors call *upper respiratory tract infections*. Some of these infections may be bacterial rather than viral and then there is possible scope for antibiotic therapy. In practice, it is difficult to be sure which type of infection is involved, but if the child has a persistent or very high fever it may be safer to prescribe antibiotics. However, if a child has a cough which is not in any way out of the ordinary, is not particularly poorly, and has had the cough for less than 3 weeks, it may be better to accept the situation.

There are some other conditions which can cause difficult coughs in children.

### Children with allergic tendencies

Children who have allergic tendencies, and are described by doctors as *atopic*, are particularly prone to coughs. Quite often there is a family history of asthma, eczema or hay fever. The typical cough is worse at night, can last for weeks, but occurs in a child who is otherwise fairly well. Nasal discharge and catarrhal congestion are also common features, and sometimes a wheeze may be noted. The cough is

commonly worse in winter and although it is tempting to attribute this to the effects of winter respiratory infections, there are also grounds to link the cough to higher levels of house dust in centrally heated homes which are less ventilated in winter, given that these children are more likely to show a higher level of dust allergy.

Treatment of the cough in these children is not easy. Cough medicines and antibiotics are often unhelpful and it may be necessary to resort to the use of an inhaler. These are normally used in asthma but seem to help this type of cough and are worth trying if the cough is very troublesome, assuming it possible to get the child to accept this form of treatment.

Anti-histamine medicines, given either just at night or at both ends of the day, can also be helpful, presumably because of the decongestant and anti-allergy effect.

### Croup

This is a particular type of cough which occurs mainly in children under the age of 5 years and most commonly in 2 year olds. The vast majority of cases are caused by a viral infection and antibiotics are, therefore, unhelpful. Croup is neither very rare nor very common and the incidence is said to be higher in autumn and early winter. The condition often causes considerable concern because it develops quite quickly, is different to other coughs (usually describes as like a barking seal), and can lead to the child waking in the night, distressed by the cough and with some associated slight breathing difficulty and noisy breathing. Typically, the condition starts with features of a cold and then the child, after being put to bed on the first night, is awakened by the typical cough.

Croup is caused by swelling and increased secretions involving the lining of the larynx (voice box) and trachea (main breathing tube) causing temporary narrowing of the airway. During an attack there is often a *stridor* present which is a kind of wheezing noise arising from the lower throat. This is different from the wheezing of asthma which arises from the chest and lungs.

The duration of an episode of croup is usually quite short, normally 2-3 days, with symptoms at their worst on the first night. In the daytime the cough may improve only to appear again on the second or possibly third night, but less severely.

Most children do not require or benefit from any specific treatment. The most important thing is to comfort the child and perhaps sit them up and give them a drink, after which they will often settle down and go back to sleep. If they have a temperature then Paracetamol or Ibuprofen will help, as will the removal of thick clothing, heavy blankets or quilts. Traditional advice is get the child to inhale steam by boiling a kettle in the room, or sitting them in the bathroom with a hot bath or shower. The scientific evidence for the benefits of this is lacking. A single dose of a steroid tablets has been shown to help in severe cases but the response takes a few hours and the benefits are difficult to judge. Very rarely, a severe case occurs when there is marked breathing difficulty and the child ends up in A&E. Other treatment options exist in hospital for these severe cases but probably the majority of cases that are seen in hospital would settle anyway and the main factors involved are parental anxiety and concern.

## Inhaled foreign bodies

Young children often put small objects in their mouth and inevitable they will sometimes swallow or perhaps more seriously, inhale an object if it is small. If the incident is observed or there is a choking reflex then the diagnosis will be suspected. However, cases are reported where there is no choking and the condition may present as a persistent cough or chest infection with the cause not initially considered. This is something which is just worth bearing in mind if a child presents with an unexplained persistent cough and is a reason to consider chest X-ray.

## Pertussis (whooping cough)

This used to be a very common cause of cough in children but, due to the vaccination programme, has become increasingly rare. However, the odd case still occurs and is characterised by recurring spasms of coughing usually with a noticeable whoop and also associated with retching and vomiting. The cough can last for many weeks and is difficult to treat, which is why it is important to continue vaccinating children.

## Coughs in Adults

Cough is also a very common symptom in adults and the leading cause of an acute cough (lasting less than 3 weeks) is the same as in children, namely upper respiratory infections, mainly viral, including colds. However, the range of conditions causing persistent coughs (lasting 3 weeks or longer) is slightly different and there is also the small chance that the cough may be due to a serious underlying illness.

Although it is important to re-iterate that most coughs do not have a serious cause there are certain symptoms which should not be ignored and usually merit further investigations, particularly in adults. These include abnormal breathlessness, coughing up blood, loss of weight and feeling generally ill, with or without a temperature.

Many smokers have a chronic cough, as do people suffering from the commonest smoking-related disease, now called COPD (chronic obstructive pulmonary disorder, which includes the conditions which were formerly referred to as chronic bronchitis and emphysema). Although cough is a common symptom in these conditions, sufferers are actually less likely to complain to a doctor or to seek treatment, perhaps because they almost expect to have a cough. Patients are more likely to seek advice and treatment if they don't expect to have a cough

The situation which create most difficulty tends to involve an adult complaining of a persistent cough, lasting for longer than 3 weeks and often longer than 8 weeks, who does not report any of the serious symptoms described above, has tried the usual simple remedies and may even have received antibiotics for a presumed initial infection, but is still coughing. It is not a rare event to encounter individuals who have had a cough for months and have become increasingly exasperated, desperate to find an

explanation or remedy for the symptom. There may be an expectation that there should indeed be a solution to the problem which is, after all, 'just a cough'. Unfortunately, the symptom often proves quite difficult to treat and certainly doctors do not have recourse to a 'super cough medicine' which is somehow superior to those medicines which are available to buy.

What follows is a summary of the factors which seem to be important in causing people to have chronic coughs.

#### The prolonged effects of a respiratory infection

We can all understand that a cough will often develop during the course of a respiratory infection and possibly last for 2-3 weeks. Beyond this we start to get frustrated. Unfortunately, it does seem to be the case that, sometimes, a cough which develops during what is, clearly, an initial infection of some sort, just seems to go on and on, perhaps for a few months. It is not clear why this happens. It is possible that some infections may cause temporary damage to the cough reflex and that this then takes a long time to correct itself. In many cases there is nothing to suggest continuing active infection and the individual may, otherwise, feel well. Treatment with antibiotics is often disappointing. Assuming that there is no other cause for the cough, it may be necessary simply to accept the situation in the expectation that the cough will eventually settle down.

#### Asthma and related disorders

As in children, this is an important area and probably lies at the root of many chronic coughs. Straightforward asthma is not difficult to detect but some people seem to present with what is described as cough-variant asthma, where cough rather, than wheezing, is the main symptom. There is also a condition called eosinophilic bronchitis which is fairly recently-described and is associated with a chronic cough. Although the disorder is not fully understood, it seems to involve an allergic reaction taking place in the airways to some inhaled material (in dust form). The condition shares some features with asthma and may respond to the same type of treatment, but there are some differences and the relationship to asthma may not be recognised.

These conditions share a feature called bronchial hyper-reactivity which is a bit like the airways equivalent of itching and irritation in skin conditions. The end result is often a cough which is the normal response of the airways to this 'irritation'.

Treatment with inhalers usually works best for coughs of this type, the ones containing a steroid generally being the most effective. Fortunately, these inhalers are safe to use on a regular basis and do not seem to have the problems associated with oral steroids

#### Post-nasal drip

This is a term used by doctors to describe a nasal condition, probably, in most cases, allergic, where there is nasal congestion and increased catarrhal secretions. These secretions may be associated with a persistently runny nose, but also, more importantly, a steady trickle of catarrhal secretions from the space at the back of the nose down into the throat. This process often seems to induce a cough which

may be chronic and is, presumably, a mechanism to prevent these secretions from entering the bronchial passages. Coughs which are thought to be due to this process may respond to decongestant medication (eg antihistamines) or to nasal inhalers, particularly steroid inhalers. Treatment may need to be given on a long-term basis.

#### Acid Reflux

Many people suffer from acid reflux, particularly from middle-age onwards. Heartburn is the most common associated symptom but it is not often appreciated that the condition can be cause of an irritating and persistent cough. It is actually quite easy to see how acid secretions, which are very irritating to all areas other than the lining of the stomach, could trigger a cough if there is contact with the site of the cough reflex in the lower throat. There is evidence that acid reflux may be the main factor in 30-40% of chronic coughs and in patients who are thought to have this problem have a reasonable chance of benefiting from medication to reduce gastric acidity. However, experience suggests that it may take some time, perhaps a month or two, before improvement occurs, and again, treatment may need to be long-term. Some patients fail to respond to medication and research suggests that anti-reflux surgery may be worth considering, although, of course, this will require careful balancing of risks and benefits.