

Corticosteroid Therapy in Respiratory Disease

What are corticosteroids?

Corticosteroids are medications which are similar to cortisone, a hormone which is produced in the body by the adrenal glands. Cortisone is essential to the body for fighting injury, infection and other diseases. Corticosteroids are very different from the *anabolic steroids* used by some athletes to improve muscle bulk and performance.

Corticosteroids act against inflammation and are used to help control many different inflammatory diseases. For example, they may be used to treat inflammation in the bowel (colitis), in the joints (arthritis), in the skin (dermatitis) and in the lungs (asthma and other lung disorders). Corticosteroids are sometimes used in higher doses to suppress the immune system, for example to help prevent rejection of organ transplants.

Asthma is caused by inflammation of the air passages and is the main lung condition where corticosteroids are used. Sometimes they can also be helpful in chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema. Corticosteroids are also useful in the treatment of other lung diseases such as sarcoidosis and long-term inflammatory conditions such as alveolitis (inflammation of the lung tissue itself).

How are corticosteroids given?

These medications may be given by mouth (tablets), by injection, or by inhalation using an inhaler, nebuliser or dry powder device.

Corticosteroids taken by mouth are called oral corticosteroids. Prednisolone (SoloneTM, PanafcorteloneTM, PredsoloneTM) is the most commonly used oral corticosteroid. Other examples include dexamethasone (DexmethsoneTM) and cortisone acetate (CortateTM).

Inhaled corticosteroids include;

- fluticasone (in FlixotideTM, SeretideTM, BreoTM)
- budesonide (in PulmicortTM, SymbicortTM)
- beclomethasone (in QvarTM)
- ciclesonide (in AlvescoTM).

These are preferred for asthma and COPD because they act directly on the airways and have fewer side effects.

Inhaled medication must reach the small air passages in the lungs to be effective and this requires the correct use of the inhaler. Your doctor or pharmacist is able to advise you on the correct method for use.

How do corticosteroids work?

The most important action of corticosteroid medications is to reduce inflammation. Inflammation of the inner lining of the bronchial tubes in the lung is the major cause of asthma symptoms. Regular daily use of inhaled corticosteroids is very effective for preventing asthma symptoms and flare-ups.

Inflammation is also present in the lungs of people with COPD, where it causes swelling and narrowing of the airways and increases mucus. Inhaled corticosteroids may be used as a regular daily treatment to help prevent flare-ups in people with severe COPD or in those people who have frequent flare-ups (exacerbations). They are also important medications for people who have both asthma and COPD.

When are oral corticosteroids used?

Prednisolone is commonly used for short periods of time during flare-ups of asthma or COPD, when there is a sudden worsening of symptoms.

In severe asthma or COPD which is difficult to control with inhaled treatment, lower doses of prednisolone may be used long-term.

Oral corticosteroids are sometimes used in other lung conditions. Corticosteroids used in this way are usually only given for a few days to a few weeks. In some long-term inflammatory conditions of the lung (e.g. alveolitis or sarcoidosis) they may be needed for longer periods. Your doctor will advise you on the most effective method for your situation.

What are the side effects of oral corticosteroids?

Corticosteroids given as tablets can be life-saving medications, and in most situations, the benefits of treatment far outweigh the possible disadvantages. Side effects of corticosteroids are more common when they are taken for prolonged periods and in high doses. However, they may still occur at lower doses and over shorter periods in some people. With due care and planning, many of the side effects can be anticipated or reduced.

With oral corticosteroids such as prednisolone, longer term side effects include weight gain, increased susceptibility to infection, slow healing, easy bruising, thinning of the bones (osteoporosis) and the slowing of growth in children. To reduce the risk of bone fracture, your doctor may prescribe medications to help strengthen your bones.

In some people, corticosteroids may increase sugar in the blood and make diabetes more difficult to control. This may lead to a change in dose of your diabetes medications.

The development of side effects may also depend on the illness for which the corticosteroids are prescribed e.g. a low dose in rheumatoid arthritis may produce side effects, whereas, the same dose in sarcoidosis may not cause any side effects.

Sometimes oral corticosteroids can have effects on mood and many people have a greater sense of well-being during treatment. On the other hand, some people may experience a depressed mood.

Corticosteroids may impair the healing of the lining of the stomach, leading to bleeding from previous ulcers. You should notify your doctor if you have ever suffered from peptic ulcers, indigestion or heart burn.

In this situation, your doctor may choose to prescribe a medication which helps to protect the stomach.

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Any information relating to medication brand names is correct at the time of printing. Lung Foundation Australia has no control or responsibility for the availability of medications, which may occasionally be discontinued or withdrawn.

Please consult your family doctor or specialist respiratory physician if you have further questions relating to the information contained in this leaflet. For details of patient support groups in Australia please call 1800 654 301.

A rare but serious side effect is damage to the hip joints when oral corticosteroids are taken in high doses for prolonged periods.

Should you have any concerns regarding possible side effects, report them to your doctor as soon as possible.

What are the side effects of inhaled corticosteroids?

Inhaled corticosteroids are preferred to corticosteroids taken by mouth because the dose required is much less and is delivered directly to the lungs. This means there are fewer side effects with inhaled corticosteroid use.

The most common side effects are hoarseness of the voice and a sore throat. The sore throat may be due to a fungal infection (thrush) or due to the propellant in the puffers. Mouth washing, gargling and spitting out after each dose, and the use of a spacer device will help avoid these problems.

High doses of inhaled corticosteroids may contribute to bone thinning (osteoporosis) and possibly also to increased blood sugar concentration in some people. Your doctor may choose to check your bone density or blood sugar if this is a concern. Some people with COPD using high doses may also have an increased risk of pneumonia.

Are there any other precautions?

When oral corticosteroids are taken for longer periods of time, they may reduce the body's own production of cortisone from the adrenal glands. It is important that oral corticosteroids are not stopped suddenly and/or without consulting a doctor. This is because it may take weeks or months for the adrenal glands to start producing cortisone again in a normal way. This can lead to a period when there is not enough cortisone in the body to fight injury, infection or other diseases. This may have serious health consequences.

Always fill your prescriptions on time so that you do not run out of medication. If you are separated from your usual oral corticosteroid tablets unexpectedly, see a doctor or pharmacist without delay.

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Lung Foundation Australia has developed additional resources for people with lung disease that you will find helpful. These can be accessed via our website, www.lungfoundation.com.au or by calling our Information and Support Centre on 1800 654 301.

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