

Glucocorticoids and osteoporosis

PATIENT INFORMATION

What are glucocorticoids?

Glucocorticoids (steroids) are potent drugs used to damp down inflammation in conditions such as asthma and arthritis. They are also sometimes prescribed in adrenal or pituitary disease, where they are used to replace the body's natural steroid. The most commonly used glucocorticoids are prednisolone and dexamethasone. In many diseases, glucocorticoids can be life-saving, and doctors only recommend them when they are really needed. However, they can have serious side-effects, including an increased risk of developing osteoporosis or thinning of the bones.

What is osteoporosis?

Bone is a living part of our body, and it is constantly being broken down and rebuilt. Normally, the amount of bone broken down is carefully balanced by the amount of bone built up again. However, when more bone is broken down than is replaced, the bones become thinner and more fragile, and therefore more likely to break (fracture). This is the condition called osteoporosis.

How might glucocorticoid treatment affect me?

Treatment with glucocorticoid tablets, whilst being helpful in treating your condition, also decreases the rate at which the bone-building cells work and reduces their survival, causing bone loss and increasing the risk of developing osteoporosis. The risk of osteoporosis depends on the dose of glucocorticoids and the length of treatment. The exact dose needed to cause osteoporosis is not yet clear, but research suggests that doses of around 5 mg prednisolone or more per

day, when taken for several months, may cause increased bone loss. Inhaled glucocorticoids appear to be safer than oral glucocorticoids. People vary in the amounts of bone they lose, but up to 40% of those who have to take high doses of glucocorticoids long-term eventually develop fractures as a result.

Am I at risk of getting osteoporosis?

Certain groups of people are more at risk of developing osteoporosis. These include women after the menopause (particularly women who have had an early menopause before, say, 45 years), the elderly, and men who have too little testosterone (the male hormone). These people are at even greater risk of developing osteoporosis when they are being treated with glucocorticoids. Those who have already sustained a fracture or broken bone after a minor injury are also at greater risk of having a fracture while taking glucocorticoids.

Preventing and treating osteoporosis – what you and your doctor can do

To reduce the risk of osteoporosis, your doctor will keep your dose of glucocorticoids as low as possible, and reduce and stop the treatment if appropriate. However, reducing too quickly or stopping altogether can be dangerous and you should not reduce the dose or stop taking glucocorticoids unless you are advised by your doctor to do so. Glucocorticoids taken in an inhaler for asthma, or in a cream applied to the skin for conditions such as eczema, rather than as tablets, means that much smaller doses can be used, and this reduces the risk of osteoporosis.



The Bone
and Tooth
Society



The National
Osteoporosis
Society



Royal College
of Physicians



There are also some steps that you can take that are likely to be beneficial for your bone health:

- ▶ Eat a healthy diet containing lots of calcium-rich foods, such as milk, cheese and yoghurt. Aim for 700 mg of calcium per day (the amount in one pint of milk).
- ▶ Smoking and large amounts of alcohol are bad for your bones. Ask your doctor for advice on stopping smoking.
- ▶ Keep alcohol intake within the recommended safe limits (21 units per week for women and 28 units per week for men – 1 unit is half a pint of beer or 1 glass of wine or spirits).
- ▶ If you are able to, try to take 30 minutes regular weight-bearing exercise such as walking, jogging or keep fit at least three times each week. **But**, if you have broken a bone recently, talk to your doctor before starting an exercise programme and ask whether you need drug treatment to prevent further fractures.

The treatments that are used to prevent and treat osteoporosis when it is caused by glucocorticoids are the same as those used for other types of osteoporosis. Treatment may be advised immediately you start steroids; since bone loss is greatest in the first six months of glucocorticoid treatment, it is important to have treatment to prevent osteoporosis right from the beginning. Alternatively, your doctor may want you to have a DXA scan to check how strong your bones are before deciding whether you should have treatment. The scan is painless and non-invasive and involves lying on a couch for a few minutes.

Your doctor may prescribe ...

Bisphosphonates – These drugs can be used by men and women, and are suitable for both prevention and treatment of osteoporosis associated with glucocorticoid treatment. Because they are very poorly absorbed, they have to be taken on an empty stomach, and a period of time left before eating or drinking anything. Each drug is taken in a slightly different way, so it is important to read the instructions on the leaflet that comes with the pills. If they are not taken in exactly the right way, they are more likely to

cause indigestion and they may pass through your body without being absorbed and so will not help to protect your bones.

Calcium (with or without vitamin D) – Most people who are on glucocorticoid treatment will benefit from extra calcium, unless they regularly get plenty in their diet. Elderly people who do not get out of doors will also need vitamin D to help them absorb calcium.

Hormone replacement therapy – HRT may be suitable for some postmenopausal women. Men with low levels of sex hormones may be given testosterone.

Other treatments – If none of these treatments are suitable for you, your GP may refer you to a specialist for advice and other types of treatment to try to protect your bones.

The good news is ...

With appropriate advice and treatment, it should be possible to minimise bone loss while you are taking glucocorticoids. Even if you have already developed one or more fractures as a result of glucocorticoid treatment, much can still be done to reduce further bone loss, prevent future fractures and improve your quality of life. Talk to your doctor and contact the National Osteoporosis Society for more information.

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- ▶ Never stop or reduce your glucocorticoid treatment unless your doctor tells you to do so.
- ▶ Eat a high calcium diet, stop smoking, moderate your alcohol intake and, if you are able to, take regular weight-bearing exercise. If you are taking oral glucocorticoid treatment, ask your doctor if you also need treatment to prevent osteoporosis.
- ▶ If you have drug treatment to help prevent osteoporosis, take it regularly, as prescribed.
- ▶ Some medications are poorly absorbed – take them exactly as your doctor recommends and as the instructions indicate.

The National Osteoporosis Society can be contacted on 01761 471771.

Helpline 0845 4500230.