

Glucocorticoids and Osteoporosis

Consumer Leaflet



Osteoporosis is a condition in which the bones become fragile and brittle, leading to a higher risk of fractures. This factsheet is about how taking glucocorticoids can increase the risk of osteoporosis in some people, how you can find out if you are at risk, and what you can do to keep your bones as healthy as possible while you are taking glucocorticoids.

What are glucocorticoids?

Glucocorticoids (sometimes called corticosteroids, steroids or cortisone) are drugs that reduce inflammation. They are used to treat many medical conditions, including asthma and arthritis. The most commonly prescribed glucocorticoids are prednisolone and dexamethasone. Glucocorticoids are very effective drugs, but because they can cause thinning of the bones (osteoporosis), it is important to be aware of ways that you can protect your bone health while you are taking them.

How do glucocorticoids affect the bones?

Bone is a very active tissue – older bone is constantly removed by bone resorbing cells and is replaced with new bone, made by bone forming cells. This process keeps the skeleton strong and in good repair. Glucocorticoids act mainly by slowing down the cells that form new bone. As a result, the bones may gradually lose some of their strength and become more prone to fracture after a minor bump or fall¹. Glucocorticoids also interfere with the absorption of calcium in the intestine, and the way that the kidneys manage calcium². They may also reduce the levels of hormones and other factors that are important for maintaining bone health, such as vitamin D³.

Do all glucocorticoids affect the bones?

This depends on the way in which it is taken, the dose, how often, and for how long. Glucocorticoid tablets are usually at a

higher dose than glucocorticoids in asthma ‘puffers’ or in skin creams, and are therefore more likely to affect the bones. However, using an asthma puffer frequently over a long period can also increase the risk of osteoporosis⁴. Glucocorticoids given by injection into a vein or muscle may also affect the bones if the injections are frequent. Injections given directly into the joint to treat arthritis are not thought to affect the bones significantly⁵.

Does the risk of osteoporosis depend on the dose of glucocorticoid?

Yes. People taking glucocorticoids at higher doses (7.5mg or more per day) for at least three months are at higher risk of osteoporosis and fracture. Lower doses (2.5mg-7.5mg daily) may increase the risk of fracture in some people, as well as tablets that are taken for short periods (less than three months), but on several different occasions⁶.

I’m taking glucocorticoids – how do I find out if I’m at risk of osteoporosis?

Talk to your doctor. You may need to have a bone mineral density test to find out how strong your bones are, particularly if you already have other risk factors for osteoporosis. You are more at risk of osteoporosis if you:

- Are a woman who has been through the menopause
- Have had a fracture after a minor bump or fall
- Are over 50 and have other risk factors for osteoporosis – your doctor will be able to advise



Most people won't know that they have osteoporosis until they have had a fracture after a minor bump or fall. This is why it's important to have a bone mineral density test if you have risk factors for osteoporosis.

Will I need to take drugs to protect my bones while I'm taking glucocorticoids?

If you are taking glucocorticoids for at least three months, your doctor may recommend that you also start a treatment that protects your skeleton from the effects of glucocorticoids on bone. Often, your doctor will refer you for a bone density test to find out how strong your bones are before deciding whether you also need treatment to prevent osteoporosis.

What else can I do to protect my bones while on glucocorticoids?

Everyone should invest in their bone health to maintain a healthy skeleton throughout life. The most important things to be aware of when you are taking glucocorticoids (and at any time of life) are:

- Calcium - adults need 1000mg to 1300mg of calcium per day. Dairy foods are the richest source. The Healthy Bones Australia website has an easy tool to help you find out if you are getting enough calcium: www.healthybonesaustralia.org.au
- Vitamin D - expose your skin to sunlight for a short period every day. Information about safe sun exposure can be found on Osteoporosis Australia's website: www.osteoporosis.org.au
- Exercise - 30 minutes, at least three times per week. Weight-bearing (impact) and resistance (weights)

exercises are best for bones. More information can be found on Osteoporosis Australia's website: www.osteoporosis.org.au

References

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Tips for people taking glucocorticoids:

- Don't stop taking your glucocorticoid medication unless told to do so by your doctor
- Eat a calcium-rich diet, get a little sunshine and take regular exercise if it is safe to do so
- Don't smoke and keep your alcohol intake low
- If you are also taking osteoporosis medication, take it regularly, and exactly as directed by your doctor. Tell your doctor if you are experiencing any side effects from your medication