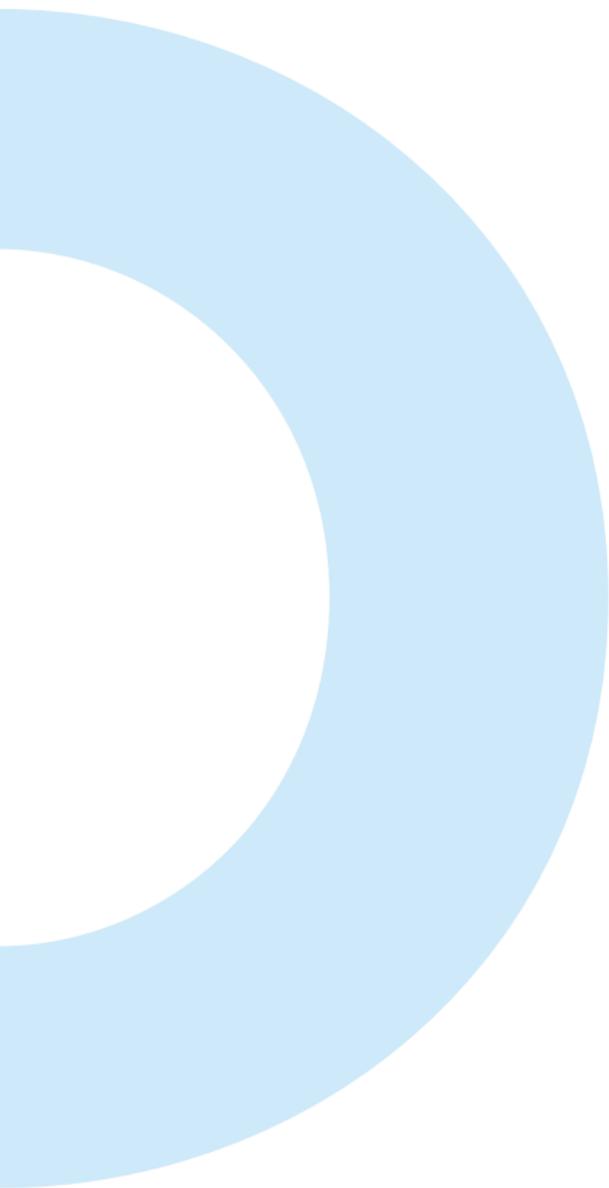


Anti-epileptic drugs and osteoporosis

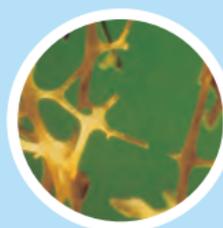


What is osteoporosis?

Osteoporosis occurs when the struts which make up the mesh-like structure within bones become thin causing them to become fragile and break easily following a minor bump or fall. These broken bones are often referred to as fragility fractures. The terms 'fracture' and 'broken bone' mean the same thing. Although fractures can occur in different parts of the body, the wrists, hips and spine are most commonly affected. It is these broken bones or fractures which can lead to the pain associated with osteoporosis. Spinal fractures can also cause loss of height and curvature of the spine.



**Strong
dense
bone**



**Fragile
osteoporotic
bone**

This leaflet covers specific information on anti-epileptic drugs. If you would like more general information on osteoporosis, please ask us for a copy of our publication

All about Osteoporosis.

How do anti-epileptic drugs affect bones and increase the risk of osteoporosis and broken bones?

Anti-epileptic drugs are used mainly for the condition called epilepsy which causes seizures, sometimes called 'fits'.

Anti-epileptic drugs are thought to affect bone density (the quantity of bone that when measured helps to indicate bone strength) by affecting the way vitamin D is broken down and used by the body.

Vitamin D helps the body absorb calcium which is a vital nutrient for bones. Most people obtain the majority of their vitamin D from exposure to sunlight. Severe vitamin D deficiency can also cause osteomalacia (softening of the bones) in adults, which is also called rickets in children.

The risk factors associated with anti-epileptic drug-induced osteoporosis include high doses of drugs, multiple drug regimes (where more than one drug is used), long-term use and staying indoors with little normal exposure to sunlight resulting in vitamin D deficiency.

Which drugs are involved?

Various studies have indicated a loss of bone density and increased risk of broken bones in people using long-term anti-epileptic drugs. The MHRA (the UK government agency that ensures medicines are acceptably safe) has reviewed the evidence (April 2009) and found that phenytoin (Epanutin), carbamazepine (Tegretol), primidone (Mysoline) and sodium valproate (Epilim) can reduce bone density which may lead to osteoporosis and an increase in fractures in certain 'at risk' groups of people. These risk factors are an inability to walk or if housebound for long periods, if too little calcium is taken in food and drink, and when there is insufficient exposure to



sunlight to produce the amount of vitamin D the body needs to absorb and use calcium in the bones. Although it is not completely understood how these anti-epileptic drugs affect bone density, there is some evidence that phenytoin, carbamazepine and primidone may stimulate an enzyme which destroys vitamin D, reducing the amount of vitamin D in the body. It is still unclear how sodium valproate decreases bone density. Research data from the studies of other or newer drugs, such as gabapentin and lamotrigine, about their effects on bone is limited and inconclusive.

What can be done?

People who have a long-term history of antiepileptic therapy may find it useful to discuss their possible risk of osteoporosis with their doctor. The doctor may feel a bone density scan is necessary to see if bone density is low. If so, and especially if there have been previous fractures and the overall risk of fracture is high, treatments may be prescribed. If not, another scan may be recommended in a few years. A daily calcium and vitamin D supplement may be useful for anyone taking anti-epileptic drugs, especially in those in the 'at risk' groups mentioned above, to help prevent bone density loss through poor absorption of calcium.

Useful contacts

Epilepsy Action

FREEPOST LS0995

Leeds LS19 7YY

Tel: 0808 800 5050 (Freephone helpline open 9am-4.30pm, Monday to Thursday, 9am-4pm on Friday)

Email: helpline@epilepsy.org.uk

www.epilepsy.org.uk

Epilepsy Society

Chesham Lane

Chalfont St Peter

Buckinghamshire SL9 0RJ

Tel: 01494 601400 (Helpline open 10am-4pm, Monday to Friday)

Email: enquiries@epilepsysociety.org.uk

www.epilepsysociety.org.uk

Factors which can help to maintain healthy bones are a well-balanced diet with adequate calcium-rich foods; regular weight-bearing exercise; avoiding smoking and keeping alcohol consumption within the recommended limits.

Join the National Osteoporosis Society today

Become a member and support the only UK-wide charity dedicated to improving the diagnosis, prevention and treatment of osteoporosis.

To join today, either call us or visit our website:

 **01761 473287**

 **www.nos.org.uk**

Our publications are free of charge but we would welcome a donation

You can support the work of the National Osteoporosis Society by making a single or regular donation:

 **01761 473111**

 **www.nos.org.uk**

For osteoporosis information and support contact our Helpline:

 **0845 450 0230**

 **nurses@nos.org.uk**

Other leaflets in this range:

- Breast cancer treatments and osteoporosis
- Clothing, body image and osteoporosis
- Coeliac disease and osteoporosis
- Complementary and alternative therapies and osteoporosis
- Complex regional pain syndrome and osteoporosis
- The contraceptive injection (Depo Provera) and osteoporosis

- Drug treatments for osteoporosis
- Exercise and osteoporosis
- Glucocorticoids and osteoporosis
- Healthy bones – facts about food
- Healthy living for strong bones
- Hip protectors and osteoporosis
- Hormone therapy in men and women and osteoporosis
- Living with broken bones (includes information on welfare benefits)
- Osteoarthritis and osteoporosis
- Osteogenesis imperfecta and osteoporosis
- Osteoporosis in children
- Parathyroid disease and osteoporosis
- Percutaneous vertebroplasty and balloon kyphoplasty and osteoporosis
- Pregnancy and osteoporosis
- Scans and tests and osteoporosis
- Thyroid disease and osteoporosis
- Transsexualism and osteoporosis
- Vibration therapy and osteoporosis



0845 130 3076 (General Enquiries)



0845 450 0230 (Helpline)



www.nos.org.uk



Camerton, Bath BA2 0PJ



National
Osteoporosis
Society

President: HRH The Duchess of Cornwall

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