

Osteoporosis and epilepsy

Some people who take epilepsy medicines are at risk of decreased bone mineral density.¹ This information looks at why this happens, how you can protect your bones, and where you can find more information.

What is bone mineral density?

Bone mineral density (BMD) is a measure that shows the strength of your bones at a given time. Up to the age of 18 - 20 years, your bones increase in density and become stronger, bigger and heavier.² This is possible by an ongoing process of growth and repair. By the time you reach middle-age, you will gradually lose bone strength, which could lead to a condition called [osteoporosis](#). Osteoporosis is common in women over the age of 70, who take epilepsy medicines.³ If you have osteoporosis, your bones are more likely to break.

Am I at risk of having osteoporosis?

There are lots of different risk factors, including:

- Reduced exposure to sunlight⁴
- Having an overactive thyroid gland⁵
- Having a family history of osteoporosis⁶
- Being a heavy drinker or smoker⁷
- Having taken epilepsy medicines for a long time.⁸

Some epilepsy medicines that can affect your bones

In 2009, the Medicines, Healthcare Products Regulatory Authority (MHRA) advised that people taking the following older epilepsy medicines long-term were at risk of osteoporosis or broken bones:⁹

¹ Antiepileptics: adverse effects on bone Drug Safety Update - GOV.UK. Available at: <https://www.gov.uk/drug-safety-update/antiepileptics-adverse-effects-on-bone> [Accessed May 17, 2016].

² NIH (2015) Kids and their bones: a guide for parents [online] Available at http://www.niams.nih.gov/health_info/bone/bone_health/juvenile/default.asp [Accessed 14 July 2016]

³ Irani, TS, Abdulla, AJ, (2013) The effect of anti-epileptic drugs on bone mineral density and fracture risk in older people: A systematic review. *Age Aging* (2013) 42 (supple 2): ii5-ii6.No.31

⁴ National Osteoporosis Society (2013) *The sunlight campaign* [online] Available at <http://www.nos.org.uk/page.aspx?pid=535> Accessed 8 August 2016]

⁵ NHS Choices (2012) Osteoporosis [Online] Available at <http://www.nhs.uk/conditions/osteoporosis/pages/introduction.aspx> [Accessed 9 June 2016]

⁶ NHS Choices (2012) Osteoporosis [Online] Available at <http://www.nhs.uk/conditions/osteoporosis/pages/introduction.aspx> Accessed 23 May 2013

⁷ NHS Choices (2012) Osteoporosis [Online] Available at <http://www.nhs.uk/conditions/osteoporosis/pages/introduction.aspx> Accessed 23 May 2013

⁸ Antiepileptics: adverse effects on bone Drug Safety Update - GOV.UK. Available at: <https://www.gov.uk/drug-safety-update/antiepileptics-adverse-effects-on-bone> [Accessed May 17, 2016].

- Carbamazepine
- Phenytoin
- Primidone
- Sodium valproate

Phenobarbital can also affect bone health.

Some people take newer epilepsy medicines, such as oxcarbazepine (Trileptal), levetiracetam (Keppra)¹⁰ and gabapentin (Neurontin¹¹). Currently there is not enough information to tell us whether or not the newer epilepsy medicines affect bone mineral density.

If you are concerned about your epilepsy medicines affecting your bone health, speak to your doctor. Don't stop taking your medicines, as this could cause you to have more seizures.

Epilepsy Action has more information about [epilepsy medicines](#)

Can I check my osteoporosis risk?

The National Osteoporosis Society (NOS) has a [quiz](#) that you can use to assess your risk of developing osteoporosis¹². If your answers suggest you need to take measures to protect your bones, you will be given that information at the end of the quiz. You can also print a copy of your results to show your doctor. If you are at high risk of developing osteoporosis, your doctor may refer you for a bone density scan, known as a DEXA scan. This is brief and painless.

Managing and treating osteoporosis

Your doctor will look at all your risk factors, which will include how old you are, your sex, and the results of your DEXA scan. They might prescribe one of a number of different medicines and calcium and vitamin D supplements.¹³ See NHS Choices website for more information about treating osteoporosis: [nhs.uk](#)

You can watch a video on the NHS Choices website by Dr Pam Brown GP. Dr Brown explains about how you can keep your bones healthy.

⁹ MHRA (2009) *Drug safety advice: Antiepileptics: adverse effects on bone* [online] Available at <http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON087970#ref1>

¹⁰ Aksov, D et al (2016), Effects of Oxcarbazepine and Levetiracetam on Calcium, Ionized Calcium, and 25-OH Vitamin-D3 Levels in Patients with Epilepsy. - PubMed - NCBI. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/26792043> [Accessed May 17, 2016].

¹¹ Irani, TS, Abdulla, AJJ, (2013) The effect of anti-epileptic drugs on bone mineral density and fracture risk in older people: A systematic review. *Age Aging* (2013) 42 (supple 2): ii5-ii6.No.31

¹² National Osteoporosis Society (2013) *Health Bones Quiz* [online] available at <https://www.nos.org.uk/healthy-bones-and-risks/are-you-at-risk?> [Accessed 8 August 2016]

¹³ NHS Choices (2016) Osteoporosis treatment [online] Available at <http://www.nhs.uk/Conditions/Osteoporosis/Pages/Treatment.aspx> [Accessed 4 July 2017]

<http://www.nhs.uk/Conditions/Osteoporosis/Pages/Introduction.aspx>

About this information

This information is written by Epilepsy Action's advice and information team, with guidance and input from people living with epilepsy, and medical experts. If there is anything you would like to say about the information, please contact us at epilepsy.org.uk/feedback

Epilepsy Action makes every effort to ensure the accuracy of information but cannot be held liable for any actions taken based on this information.

Our thanks

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Your support

We hope you have found this information helpful. As a charity, we rely on donations to provide our advice and information. If you would like to make a donation, here are some ways you can do this.

[Visit epilepsy.org.uk/donate](http://epilepsy.org.uk/donate)

Text ACT NOW to 70700 (This will cost you £5 plus your usual cost of sending a text. Epilepsy Action will receive £5.)

Send a cheque payable to Epilepsy Action to the address below.

Did you know you can also become a member of Epilepsy Action from as little as £1 a month? To find out more, visit epilepsy.org.uk/join or call 0113 210 8800.

Epilepsy Action Helpline

Freephone 0808 800 5050; text 0753 741 0044; email helpline@epilepsy.org.uk;
tweet @epilepsyadvice

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