

Bone health options



Type of treatment	Options	Up side and benefits	Down side
Lifestyle	Stop smoking	Probably more effective than any medication to make the bones stronger Life expectancy goes up 7 years	Smoking is addictive. You may need support, medication or nicotine replacement.
	Sensible drinking ideally 2 units or less per day	Probably more effective than any medication to make the bones stronger	Certain friendship groups may put social pressure on you to continue drinking in a hazardous or harmful way
	Activity	Regular weight bearing exercise probably more effective than any medication to make the bones stronger	Time commitment. High intensity options may be preferred by busy people. Look for enjoyable activity.
	Calcium intake	Most people can eat enough calcium containing foods to avoid needing to take calcium supplement. Check your current dietary intake of calcium on this calcium calculator: www.cgem.ed.ac.uk/research/rheumatological/calcium-calculator	No known harm
	Vitamin D from sunlight (and diet)	Protects against several types of cancer	Sufficient sunlight not available in the UK over winter or around the year in Scotland Avoid burning your skin since this increases your risk of future skin cancer
	Interventions from community physiotherapist and occupational therapist	Particularly helpful for frail people, be that as a result of immobility, illness or age. Reduces the risk of falls. Promotes activity, confidence and well being.	No known harms
Medication	Vitamin D, colecalciferol 800IU daily (20ug) (a cost effective version of this is available over the counter as valupak vitamin D 1000 iu/day (25ug))	Recommended for all children under the age of 5, pregnant women, women after the menopause and all others who are at a high risk of fracture.	No side effects or risks at this dose. Some people don't like taking pills or supplements but in the absence of sunny holidays it is really hard to get enough vitamin D for healthy bones from dietary sources
	Calcium supplements	Ensure adequate calcium and vitamin D intake: simple dietary calcium calculator Calcium intake should be ≥ 700 mg/day, ideally through dietary intake , but if below this give supplements.	There is some concern that calcium supplementation without sufficient vitamin D may slightly increase the risk of heart attacks. Calcium supplement can cause constipation.
	Bisphosphonates such as Alendronate 70mg weekly	After a fracture alendronate will prevent some further fractures. If 100 patients take it for 3 years 5 people will avoid getting another fracture. NNT 20 for 3 years, little evidence of benefit for use beyond 3 years.	Needs to be taken on an empty stomach at least 30 minutes before eating with plenty of fluid, avoid lying down for half a hour. 1 in 10,000 patients are harmed by severe jaw damage. About 1 in 4 people will have heartburn, nausea, or belly pain. However, it may not be from the medication. If the medication is the cause, the problem will go away if you stop taking it. Occasionally Alendronate can cause inflammation of the gullet. (oesophagitis, PPIs such as lansoprazole don't help this). Stop the alendronate if you get this.
	Individual benefit and risk assessment	Use this tool to assess your chances of getting benefit or side effects from alendronate. You will need either the T number from your bone density scan or your height and weight. https://osteoporosisdecisionaid.mayoclinic.org/index.php/osteo/index	See mayo clinic shared decision making tool. - Recommend consider treatment (use shared decision making tool) if fragility fracture and aged >70 , - But if fragility fracture and aged <70 use FRAX If intermediate risk on FRAX do bone density scan.
Preventative treatment for people treated with steroids. Ensure that you have enough vitamin D and calcium.	Greater than 7.5mg prednisolone per day, or over 70 years	Offer alendronate during treatment NOGG guidance will help you to decide if you need a bone density scan	See above for the downsides of treatment with bisphosphonates such as alendronate.
	2.5-7.5mg prednisolone	The osteoporosis decision aid will also help you to decide if you wish to use alendronate	