

From butter to humming to hopping to sleep—simple diet and lifestyle practices to keep healthy

What is the quickest and best type of exercise that I can do to prevent bone loss?

Hop like a bunny. Sound silly? Well, it's true. Studies show that hopping rather than strength training, which is also great to keep muscles strong, is the best way to keep our bones strong. Start with 30s and move up to a minute. Do this a few times a day and it might just prevent a fracture down the road! See these articles.

<https://academic.oup.com/ije/article/46/6/1847/3902973#89693296>, <https://www.studyfinds.org/minute-exercise-bone-health-women/>.

Why is this? *Think of bone as a specialized network of cells, collagen and calcium and phosphate crystals (hydroxyapatite) surrounded by blood vessels and canals that contain fluid. Imagine holding a piece of this network in your hand and rotating it to the right causing the blood and fluid in these canals to move resulting in pressure changes, which causes the shape of the bone cells to change. These cells are specialized to respond to mechanical stimuli (e.g., hopping) and trigger proteins (Wnt and beta catenin) within the bone cells to induce bone remodeling, formation and accrual.*

I heard that butter is good for bones. Is this true or am I just trying to find an excuse to eat butter? *Well, you are partly correct—in moderation of course and dependent on your health status. Yes, butter contains vitamin K2, https://www.healthline.com/nutrition/grass-fed-butter#TOC_TITLE_HDR_2, which is important for bones. In fact, vitamin K2 may even reduce your risk of fracture.*

Why is this? *Vitamin K (“K” stands for ‘Koagulation’ the Danish term for coagulation) falls into two categories—Vitamin K1 and K2. Most think of Vitamin K as the vitamin that is involved in clotting. However, Vitamin K2 (also called menaquinones) mostly produced from our gut bacteria (microbiome) is important for bone. Think of Vitamin K2 as a key that has many locks throughout the body. When K2 finds one of its locks (like that found on a protein called osteocalcin), it causes osteocalcin to bind calcium and deliver it to the bone-forming cells called osteoblasts; this facilitates the mineralization or “hardening” of bone. So, having enough—not too much or too little—Vitamin K2 has been shown to reduce fracture risk in some studies. See article: <https://www.ncbi.nlm.nih.gov/pubmed/10799384?dopt=Citation>. Also, the fact that Vitamin K2 is produced from our gut bacteria stresses the importance of maintaining a healthy diet to strengthen our microbiomes so that these bacteria keep making this bone-healthy form of Vitamin K!*

Are there any other benefits to eating butter? I always hear it's so bad for our bodies.

Actually, butter and not margarine, may help in weight loss—opposite than what one would think about butter. This is because butter contains a substance called conjugated linoleic acid,

which has been shown to help in reducing fat mass. See article:

<https://pubmed.ncbi.nlm.nih.gov/15795434/>.

Why not margarine? *I always want to caution moderation when using any fats like butter, an animal-derived saturated fat, and margarine, a vegetable-based unsaturated fat that may also contain significant amounts of trans fats, both of which can produce negative effects on health. Being an Ayurvedic Health Counselor, I am a proponent of ghee over any of these. Having said that, conjugated linoleic acid (CLA), which can be produced by gut bacteria or in laboratories, was initially identified as an anti-carcinogen but also found to possess anti-obesity properties. How CLA helps one to lose weight is unclear but research shows that this may occur by increasing one's energy expenditure by raising basal metabolic rate, improving fatty acid oxidation (fat metabolism), reducing the formation of fat cells and by increasing lean body mass. In some studies but not all, these increases in energy expenditure led to weight loss.*

I know exercise is good for weight loss, but how come I feel better after I exercise even for a little bit? *Exercise keeps the body and mind healthy and one's exercise should be commensurate with one's level of fitness. Increases in blood flow can make one feel invigorated, improve mental alertness and this may be due to improved oxygenation of the mind, heart, lungs and muscles. Exercise is also a natural way to release stress and tension throughout the body. From an Ayurvedic perspective, a mild 10-15 minute walk especially after eating one's main meal is encouraged as a way to improve digestion and overall health. Studies also show exercise (even a few minutes) can keep up mentally healthy and mentally young according to a study:*

<https://www.sciencedaily.com/releases/2020/05/200513171130.htm>).

I know that when I get a good night's sleep, I feel better. Are there any other benefits to sleeping? *Yes, many studies show that sleep can improve bone density and reduce fracture risk and when you don't get good sleep, your bones won't be happy. See:*

<https://www.everydayhealth.com/sleep/can-scrimping-on-sleep-be-bad-for-your-bones/>

Why is sleep so important for bones? *Sleep is so important for bone health and getting enough of "quality" and "dark" sleep is critical. Being a melatonin researcher, our lab has found that supplementation with melatonin alone or in combination with micronutrients (strontium citrate, Vitamin K2 and Vitamin D3) improved bone marker status in perimenopausal women and reversed bone loss in postmenopausal women while improving quality of life in both populations. Our research has also shown that melatonin can make more bone by increasing the bone-forming cells in our body called osteoblasts. The reason I mentioned "dark" sleep is because melatonin levels, which peak during the night, can be inhibited by light, including those emitted by cell phones, alarm clocks, street lights, TVs, etc. So, even though bone remodeling*

primarily occurs while we are sleeping, we want to maximize this by sleeping (not working or texting or worrying) during the night and in the dark.

With everything going on in the world, I am more stressed out than ever. How can I get a good night's rest after a stressful day? *Lavender and humming can help. Lavender has been shown in numerous studies to facilitate sleep. In fact, melatonin levels rise in response to lavender. See free article by following this bread crumb:*

[www.atyourwittsendayurveda.com/home/educational materials/lavender and melatonin](http://www.atyourwittsendayurveda.com/home/educational/materials/lavender%20and%20melatonin)

Humming (or say the letter 'M') while exhaling. Do this for 3 minutes right before bed. In yogic practice this is called bumblebee breath. Bumble bee breath is known as Bhramari, which is a breath practice (pranayama) done at night in silence to relieve stress and cerebral tension to help in alleviating anger, anxiety, and insomnia. It helps to harmonize the mind and soothe the nervous system. This practice helps to release nitric oxide, which helps you fall asleep by relaxing the mind and helps you sleep longer and deeper. Why? Nitric oxide (NO) is a molecule produced in the body from an amino acid called L-arginine. Although its time in the body is very short (less than one second), NO can produce a variety of important functions like regulating blood pressure and blood flow in the body, including the brain preventing low oxygen states (hypoxia) from occurring. This, in turn, may prevent the brain from rousing oneself to take a breath to reestablish normal pressure and oxygen levels providing one with a good night's sleep with less interruptions. There are other benefits to sleep, including reducing your risk of heart disease. See article: <https://www.sleepfoundation.org/excessive-sleepiness/health-impact/how-sleep-deprivation-affects-your-heart>.

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