

EXERCISE

FOR HEALTHY BONES

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BOOST YOUR BONE HEALTH & PREVENT
BONE LOSS AT ANY AGE



W E L L N E S S S E R I E S

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Introduction: What Is “Bone Health” And Why Does It Matter?

Your bones are porous structures. They're made up of minerals like calcium and magnesium, and they perform many important functions. They protect your vital organs from damage. For example, your ribs keep your internal organs, heart, and lungs sheltered, and your skull protects your brain from injury.

Bones also keep you moving, standing, and functioning. Think about what you'd do if you didn't have leg or arm bones. It'd be pretty difficult to get something done, right? You need bones for stability.

Your bones also help repair and rebuild. There are three types of bone cells. They include: osteoblasts, which make new bone and help repair damage; osteocytes, which are mature bone cells that help continue new bone formation; and osteoclasts, which break down bone.

Your bones also store minerals such as calcium and phosphorous, which help keep your bones strong. They also release those minerals into your system when you need them for other uses.

For example, you need minerals for your heart to function and beat normally. If you don't have enough calcium or magnesium in your body to keep your heart beating, your bones will release minerals and try to correct the levels.

What happens to bones as we age?

As we age, our bones grow and change. For example, the length of a femur (your thigh bone) is much different now than when you were five years old. As we age, due to a number of factors (including activity, diet, fitness, and genetics), our bone health can deteriorate. By bone health, we generally refer to what is called “bone density.”



This is the measurement of mineral composition. More bone density means that your cells are essentially closer together and stronger. Bone loss refers to losing bone density and the space between your bone cells becoming larger. They're more porous.

If you lose bone density then you become more at risk for fractures. Unfortunately, bone loss is a natural part of getting older. Peak bone mass (or bone density) is reached around age 30. After age 30, new bone cell formation slows down. However, there are things that you can do, regardless of your age and degree of past bone loss, to slow down your future bone loss.

Why does nutrition play a role in bone health?

We mentioned that sometimes your bones are depleted when your body needs minerals and other nutrients. A diet with a good balance of calcium, magnesium, and phosphorous can ensure your body doesn't need to borrow minerals from your bones. Vitamin D is another important nutrient, as is a healthy and balanced diet. They all ensure your bones stay as strong and dense as possible.



Why does exercise play a role in bone health?

Did you know there are things that you can do right now, today, to build bone density and reduce bone loss? It's true. Strength training movements and simple exercise like walking and other weight bearing activities help you build and maintain strong bones.

Before we dive into talking about the specifics of health and fitness to reduce bone loss and maintain healthy bones, let's look at some common myths that are important to debunk.

3 Common Myths About Bone Loss

Myth #1 It Happens Only to Women

This is a myth! It is true that women are more susceptible to bone loss, especially after menopause, but men also suffer from osteoporosis. Why? One of the reasons is that women's bones are smaller. And any loss they have may be more significant to their function than an equal amount of loss in a man with larger bones.

Myth #2 You Can Replace Bone Loss

Unfortunately, you cannot replace the bone loss you've already incurred. However, you can slow down your future bone loss. Yes, your bones do go through a bone replacement process. However, as mentioned, as you age, this process slows down significantly.

That means that you can lose more than you're replacing naturally. While you cannot impact your body's bone replacement systems and process, you can change how quickly you lose bone. You can level the playing field so you're at least losing much less over time.

Myth #3 It Only Happens to Older People

Age definitely impacts your rate of bone loss, there's no doubt about that. But osteoporosis can occur to anyone at any age.



Risk Factors for Osteoporosis

Before we talk about risk factors, let's quickly define osteoporosis. It's a medical condition where your bones become brittle and fragile from loss of tissue. Fractures associated with osteoporosis commonly occur in the hips and pelvis, spine, and wrist. A hip fracture can be deadly in the elderly, and the life expectancy after a hip fracture is less than three years. It's vitally important that you keep your bones healthy and strong.



Risk factors include:

- Age
- Gender
- Ethnicity (White women and Asian women are most likely to get osteoporosis)
- Family history
- Alcoholism
- Smoking
- Anorexia nervosa or low body weight
- Asthma/allergies
- Cancer

- Cushing's disease
- Diabetes
- Kidney disease
- Hyperparathyroidism
- Hyperthyroidism
- Inflammatory bowel disease
- Lactose intolerance
- Lupus
- Liver disease
- Multiple sclerosis
- Rheumatoid arthritis
- Certain medications
- Sedentary lifestyle

Looking at this list of risk factors you'll see that some you cannot control, like gender and ethnicity, but others you have tremendous control over. So let's start taking action!

10 Things You Can Do to Stop Bone Loss Today

1) Reduce Coffee Consumption

Caffeine from coffee, but not tea, has been shown to increase bone loss in women, not men. The scientists aren't entirely sure why. One thought is that if you're drinking five cups of coffee a day, you're not drinking other things like milk or fortified beverages.

Regardless, studies consistently show that women who drink coffee have a greater risk of osteoporosis. Do you need to eliminate it from your day? No, not unless your doctor advises it or you are already struggling with severe bone loss. Instead, cut back on how much you drink. Try drinking one less cup a day this week, and one less cup a day next week until you're down to a cup, or two, a day.

2) Stop Drinking Soda

There are so many reasons to stop drinking soda. You don't need the extra calories and sugar from the beverage. It can cause inflammation, diabetes, and a host of other medical challenges.

Studies have also shown that soda with caffeine causes bone loss. The thought is that it's the phosphorous in caffeinated sodas that leaches minerals out of your bones. So, it doesn't matter if it's a diet cola or a regular cola, if it is a soda with caffeine, then it causes bone loss. It's important to note that non-caffeinated sodas like ginger ale do not cause bone loss.

3) Take A Calcium Supplement

Start taking a calcium supplement. Studies have shown that taking a calcium supplement reduces bone loss and decreases the risk of fracturing the bones in your spinal cord. How much? Premenopausal women and men should consume at least 1000 mg of calcium. After menopause, women should consume 1200 mg a day.

More is not better. Don't go over 2000 mg of calcium per day and divide your doses during the day so you're not taking more than 500mg at one time.

There are many different types of calcium supplements in your drug store. Calcium carbonate is generally considered to be the easiest for your body to absorb, and it is the least expensive form of calcium. Take your calcium supplement with a meal to prevent gastrointestinal issues. If you do have GI problems, calcium citrate is well absorbed and can be taken without food.

4) Get Some Sunshine (and/or Vitamin D)

Vitamin D helps your body absorb and process calcium. If you're taking a calcium supplement then you should probably be taking a vitamin D supplement too. Many calcium supplements now come with vitamin D so you don't have to take more supplements.

Generally speaking, most people don't get enough vitamin D. It's a vitamin that your body makes, but doesn't store. The sunshine stimulates vitamin D production in your body, but the truth is that most of us don't get enough sun exposure and there is the risk of skin cancer if you do get too much sun.

A supplement is a safe alternative. If you're under age 50 then make sure you're getting 800IU (International Units) a day. If you're over age 50 then it increases to 1000IU.

5) Reduce Stress

Stress releases the hormone cortisol into your body. Under severe "fight or flight" stress, like when you're running away from a bear, cortisol helps you survive. However, if you're under chronic stress then you're constantly releasing this hormone into your body, and it can cause systemic health problems – including heart disease, diabetes, depression, and osteoporosis.

Cortisol actually impacts your body's ability to regulate your blood sugar by influencing your pancreas and the release of insulin. It leads to insulin resistance, which raises your body's blood sugar levels. This then leads to calcium depletion and you urinate calcium. A depletion of calcium in your system causes your body to turn to your bones for replacement. You then have an increased rate of bone loss.

So, while you probably cannot remove all sources of stress from your life, you can reduce it. You can also take measures to better manage stress. You can practice deep breathing, mediate, laugh and talk with friends, get more sleep, exercise and eat healthier.

And try to take mini-vacations. Whether you spend 20 minutes a day daydreaming or reading a good book, or you take a half day (or a full day) off this month to simply spend time quietly on your own doing something relaxing, your body and your bones will benefit.

6) Improve Your Diet

Improve your diet – a simple statement for something that really isn't so simple. It's difficult to change your diet. We have habits, emotions, and traditions that surround our food decisions.

Unfortunately, things like too much sugar, trans fats, and processed food can impact your body's ability not only to manage stress, but also to thrive. We're talking about things like not getting enough vitamins and minerals.

So, for right now, let's make it as simple as possible. Take a look at your daily diet and choose one area where you can make an improvement. For example, can you exchange whole grain bread for white bread? Can you eat steel cut oats instead of sugary cereal?

Can you drink carbonated water instead of soda and juice? Can you eat leftovers from home for lunch instead of hitting the drive-thru? Small changes can make a big difference, and we're talking about your bone health here. It's important.

7) Eat Calcium-Rich Foods

Generally speaking, calcium-rich foods are foods that contain dairy like cheese and milk. However, dairy isn't the only thing that contains calcium. Dark leafy greens like kale and spinach have calcium, as does fish like salmon.

You can also eat foods that are fortified with calcium like almond or soy milk (make sure it's enriched). Breakfast cereals and nutrition and sports bars often contain added minerals and vitamins. Read your labels.



8) Have Your Bone Density Checked

At your next physical, ask your doctor to check your bone density. Your insurance may cover it as a preventative measure.

9) Check Your Vitamin D Levels (And Your Cortisol Too If You Have That Option)

While you're at the doctor, and when they run their annual blood work tests, ask to have your vitamin D levels checked. They're usually low in people, and the symptoms can be subtle. Just check to make sure you have enough to thrive.

And if you have the option with your blood work, ask to have your cortisol levels checked as well. Remember that cortisol is a stress hormone. When it's high, it causes damage to a number of systems, and you should know where your levels are.

10) Add Weight-Bearing Exercise to Your Daily Routine.

Lastly, add exercise, particularly weight-bearing exercise, to your day. What is a "weight-bearing" exercise? Walking is. You can walk, right? Can you walk more than you currently do? Probably. Most everyone can. Get a pedometer or a fitness tracker to help you set goals and take more steps each day.

Dancing, Zumba, jumping rope, running, and hiking are all weight-bearing movements. You can also perform basic strength training movements.

Because exercise is so important to not only your overall mental and physical health, but also to your bone health, we're taking a deeper look at exercises that you can add to your day in the next section.

Right now, consider which of these 10 steps you're going to embrace today. Are you going to schedule an appointment with your doctor, head to the supplement store, improve your diet or stop drinking caffeinated soda? Maybe you're ready to embrace more than one of these steps. Great! Your bones and your future self will thank you for making the change.

Weight Bearing Exercises – What to Do and How to Do It

As mentioned, there are a number of different weight-bearing exercises you can embrace and add to your day. You can begin:

- Walking
- Running
- Hiking
- Dancing
- Aerobics

These activities require little more than a pair of shoes and some time on your daily calendar. Aim to get at least 20 minutes (30 minutes would be better) of this type of exercise each day.

You can also add strength training into your day. Some options include:

- **Pushups** – Starting with your body stomach down on the floor, place your hands in line with your shoulders, tighten your core, squeeze your butt cheeks, take a deep breath and push up with your arms. Stay tight, lower to the floor, repeat.

If you're unable to do a pushup from your toes, perform them from your knees. It's the same movement, but with a bit less weight to move. Either way, you're building strength and reducing bone loss.



- **Squats** – Standing with your feet about shoulder width apart, bend your knees and push your backside back as if you were sitting in a chair. Continue lowering until your hips are parallel or just below your knees. Keep your back as upright as possible. You may hold your hands out in front of you to help keep your balance.

Keeping your knees out and angled over your feet, stand back up. This movement can be slow and controlled, or fast and controlled. The key word is controlled. Make sure you keep your knees angling over your feet and that your back is as upright as possible. This is a leg and glute movement. You should feel it in your quads and your rear end.

- **Lunges** – A lunge, like a squat, is a lower body strength training move. Standing with your feet underneath you, move one foot ahead about a foot or so. Keeping the back foot stationary, bend the knee of your back leg until it gently touches the ground. Using the strength of your front foot, push yourself back up into a standing position. Bring your feet together, step the opposite foot forward, lower until your knee gently touches the ground, push up and repeat.

These are basic strength training movements that you can do in your home every day. You might, for example, perform 10-20 of each movement and gradually increase until you can do 50 or more in one set. The important thing to remember is to stay controlled with the movement. There's no reason to increase your speed. What you want to focus on is proper form so that you get the most from the movement.

At this point you may want to add weight. You can add weight to both the lunge and the squat by simply holding weights in your hands when you perform the movement. You can also try these weight training movements.

- **Front squat** – The front squat is a basic squat like described above. Only with a front squat you're holding a barbell in front of you. Your hands are shoulder width apart, your elbows are pointed out and away from your body, and the barbell is resting on your shoulders. Keeping your back straight, lower your body into a squat and stand up. If you feel your body tipping forward, lift your elbows to help you straighten your back.

- **Back squat** – The back squat is like the front squat, only the barbell is on your back. Your hands are still just outside your shoulders and the barbell is resting on the back of your shoulders. Lower into a squat, pull down on the barbell to keep your back straight, and stand up. If you feel your back start to lean forward, pull down harder on the barbell.

If you're unable to straighten, push the barbell off your shoulders and behind you. Don't lift more than you can safely lift for 5-10 repetitions. If you start to go heavy, make sure you know how to dump the barbell, or have a spotter.

- **Deadlift** – The deadlift requires good form or you can hurt your back. It's strongly recommended that you get instruction from a trainer before attempting this movement. This movement is all about lifting with your legs, NOT YOUR BACK!

Standing with the barbell on the floor and the bar in line with your shoelaces, bend your knees, grab the barbell with both hands about shoulder width apart. Your back should be straight and your core is tight. Stand up using your legs. Think about your feet pushing the floor away from you rather than pulling the barbell up.

Keep the barbell close to your body until it's at your hips and you're standing straight. Now you can drop the barbell or lower it back down to the floor by bending your knees, using your legs, and maintaining a neutral spine.

You'll get much more from this movement if you start with a light weight and can perform many repetitions at a light weight rather than one or two lifts at a super heavy weight. This is about bone health, not about winning a weightlifting contest.

- **Thruster** – The thruster is a full body strength training movement. With your barbell or dumbbells in front of you and resting on your shoulders, lower into a squat. Stand up and as your hips begin to open, use that momentum to give your weights a bit of lift.

As you get that momentum, push the weights overhead until your arms are locked out. Lower the weights back to your shoulder, lower into a squat and repeat. Again, a low weight and the ability to perform 10-20 repetitions is more important than lifting a big weight here.

Keys for Strength Training Success

1. Start slowly, start light. Body weight is a great way to start and if you never add weight to your workout, that's just fine. You may be surprised how effective bodyweight movements are not only for strength training, weight loss, and fitness, but also how much bone density loss you can prevent. Spend five to ten minutes a day strength training and don't worry about the weights. Focus on form and repetitions.
2. Work one area of your body each day. For example, don't do back squats and deadlifts the same day. You can overdo it. This will cause muscle soreness that takes several days to recover from. Some muscle soreness is expected, but it shouldn't prevent you from being able to exercise the next day.
3. Machines are okay and so are free weights. Free weights are weights that aren't attached to something. Examples are a barbell and dumbbells. You might even use kettlebells. Remember to start light.

Dumbbells start at one pound each and generally go up in two to five-pound increments. Kettlebells usually start at eight pounds. A standard barbell is 35 pounds for women and 45 for men. The women's barbell isn't quite as long or as thick as a man's, so it's easier to get your hands around.



Ultimately, it doesn't matter if you use a men's or a women's barbell. What matters is that you know how much weight you're lifting and that you can do so safely.

Weight machines are just fine too. These are the machines that you find at your local gym. They're generally on a track or some type of pulley system. They can be safer because safeguards are put in place automatically. However, you do have to go to a gym to use them. If you were to set up your own home gym, free weights are often less expensive than buying weight machines.

Okay, you now have a nice assortment of strength training movements and weight bearing movements to work with. Find a good time of day when you can spend 20-30 minutes on your health and bone density. Walk, jog, lift weights, do squats and pushups. Listen to music, do it with friends, join a gym.

Find what works for you and get moving!

What If You're Injured, Disabled, Or Have Bone Loss Already?

Generally speaking, there is no reason why anyone shouldn't be able to move their body, reduce bone loss, and make health improvements to improve their bone health. It's important to acknowledge that many people already have a good degree of bone loss. You may also be injured or disabled.

Here are some guidelines to work with and some tips, ideas, and suggestions.

1. Always talk to your doctor. If you have fragile bones, a disability, or you're injured, always get clearance from your doctor before you begin any new fitness or health program.
2. Injured? If you're injured, don't work the injured area. If, for example, you have a torn rotator cuff, then focus on walking and bodyweight movements. Don't perform movements that use your shoulder. Work with a physical therapist to regain strength and mobility. When they clear you to return to or begin your strength training program, then you can start.
3. Disabled? Get creative. Find ways to integrate exercise into your day. There are always modifications and ways to make exercise work. Get in the water and move. Leverage the resistance of the water to strengthen your muscles and reduce bone loss. I've seen paraplegics walk on their hands, climb ropes, and lift weights.



Work with your disability. Consider talking with a trainer who is educated and skilled at modifying movements and working with adaptable athletes. You'll be surprised what you're capable of and your bone health is critically important.

4. Already have bone loss? It's important that you avoid twisting motions and high impact movements. These may cause fractures in areas that are already weakened. Stick with low impact and bodyweight movements. You can still take steps to reduce your bone loss.

Before we wrap this up, it's important to address a different type of exercise that is also good for bone health. Resistance and flexibility exercises can help keep tendons and ligaments in good health so they can support your bones to support you and stay strong.

Resistance and Flexibility Exercises to Reduce Bone Loss

Resistance exercises and flexibility exercises have the benefit of being weight bearing, as well as putting a targeted focus on muscles, tendons, and ligaments. All of these tissues support proper movement, strength, mobility, and bone health. The good news is that they're quite trendy right now, so you can find classes in your community, you can find online programs, and you can grab a DVD from your library if you want to exercise in your home.

Look for:

- Tai Chi – Chinese form of meditative exercise that uses very slow and controlled movements.
- Yoga – Often a spiritual practice, the goal for yoga is generally to control your breath, focus your mind, and adopt specific body postures for health, strength, flexibility, and relaxation.
- Stretching – There are now classes dedicated to stretching and improving mobility and flexibility. Pilates and Physio are two that you may have heard of. You may find other stretching classes or online programs in your community. For example, <https://romwod.com/> offers daily range of motion workouts.

Try to integrate either a few minutes a day focusing in flexibility and stretching, or one weekly stretching class or program.

Conclusion

Your bone health matters. It impacts not only your present health but your future health and abilities as well. If you want to be able to move freely and confidently well into old age, you have to begin paying attention to bone health now.