

# Bone Health

Eastern Highlands Health District



# Outline

What Bones  
Do For you

Physical Activity  
and Nutrition

Medical Screening  
and Treatments

# Starter Question

How much calcium do female adults under 65 y/o need?

1000 mg

1200 mg

500 mg

2000 mg



# Starter Question

How much calcium does a 65 year old female need?

The correct answer:

1200 mg daily

Calcium needs change over a life time and are different for genders





# Fun Facts about Bones

- There are 206 bones in the adult human body
- In the hand and wrist there are a total of 54 bones
- The smallest and lightest bone in the human body is the stapes in the inner ear
- Bone is a living tissue



# What Bones Do for You

- **Support and hold up your body.** Without bones your body would be a squishy blob on the ground.
- **Help you move.** Muscles work together with bones to move your body around.
- **Protect your organs.** Some bones shield your organs from injury. For example, your ribs protect your heart and lungs, and your skull protects your brain.
- **Make blood cells.** Some types of bone have a jelly-like material inside called **bone marrow**. New blood cells are made inside the bone marrow.
- **Store energy.** Some types of bone, like the leg bones, contain cells that store fat and release it when your body needs energy.
- **Store minerals and vitamin D.** Bones can store **minerals** like calcium and phosphorus, and vitamin D, and release them when your body needs them.

# Why Bone Health is Important

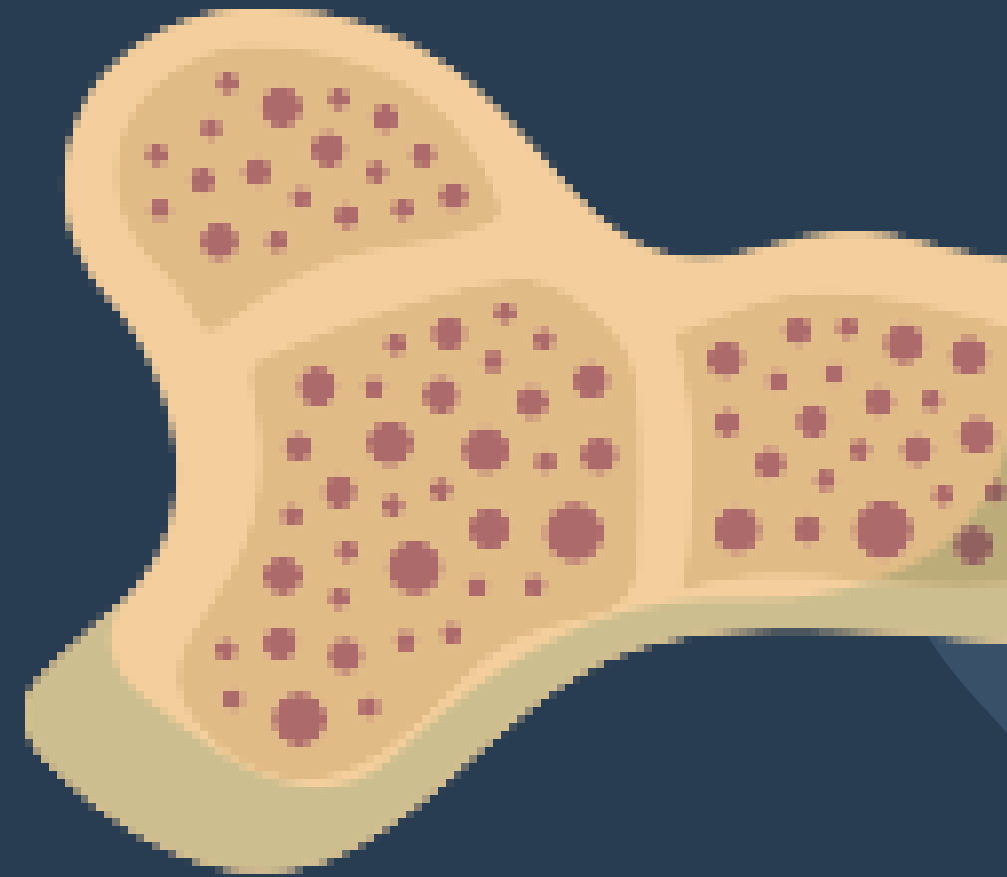
Bones may begin to weaken earlier in life if you do not have a healthy diet and the right kinds of physical activity. Many people already have weak bones and don't know it. Weak bones break more easily. Weaker spinal bones may lose to reduced height potentially causing problems with balance . ([NIH](#))



A bone mineral density (BMD) test measures calcium and other minerals in bone. Bones containing more minerals are denser, so they tend to be stronger and less likely to break.

Bones can become less dense as we age or if we develop certain medical conditions. When too much bone is lost, osteoporosis can develop. Osteoporosis causes bones to become weak and brittle, which increases the risk of fractures.

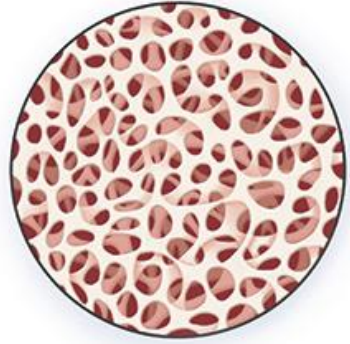
# Bone Mineral Density Test



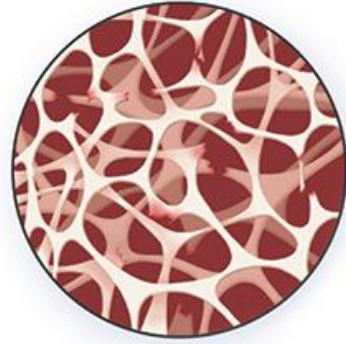


# Osteoporosis

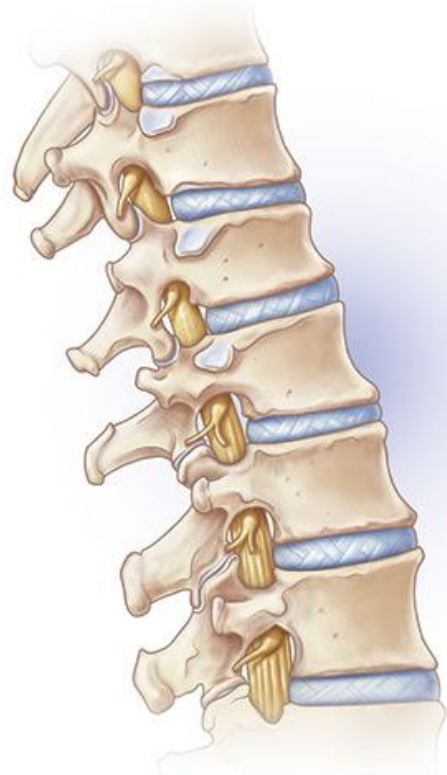
High bone density  
*Healthy*



Low bone density  
*Osteoporosis*



Healthy spine



Spine with  
osteoporosis



Compression fracture

# Osteoporosis



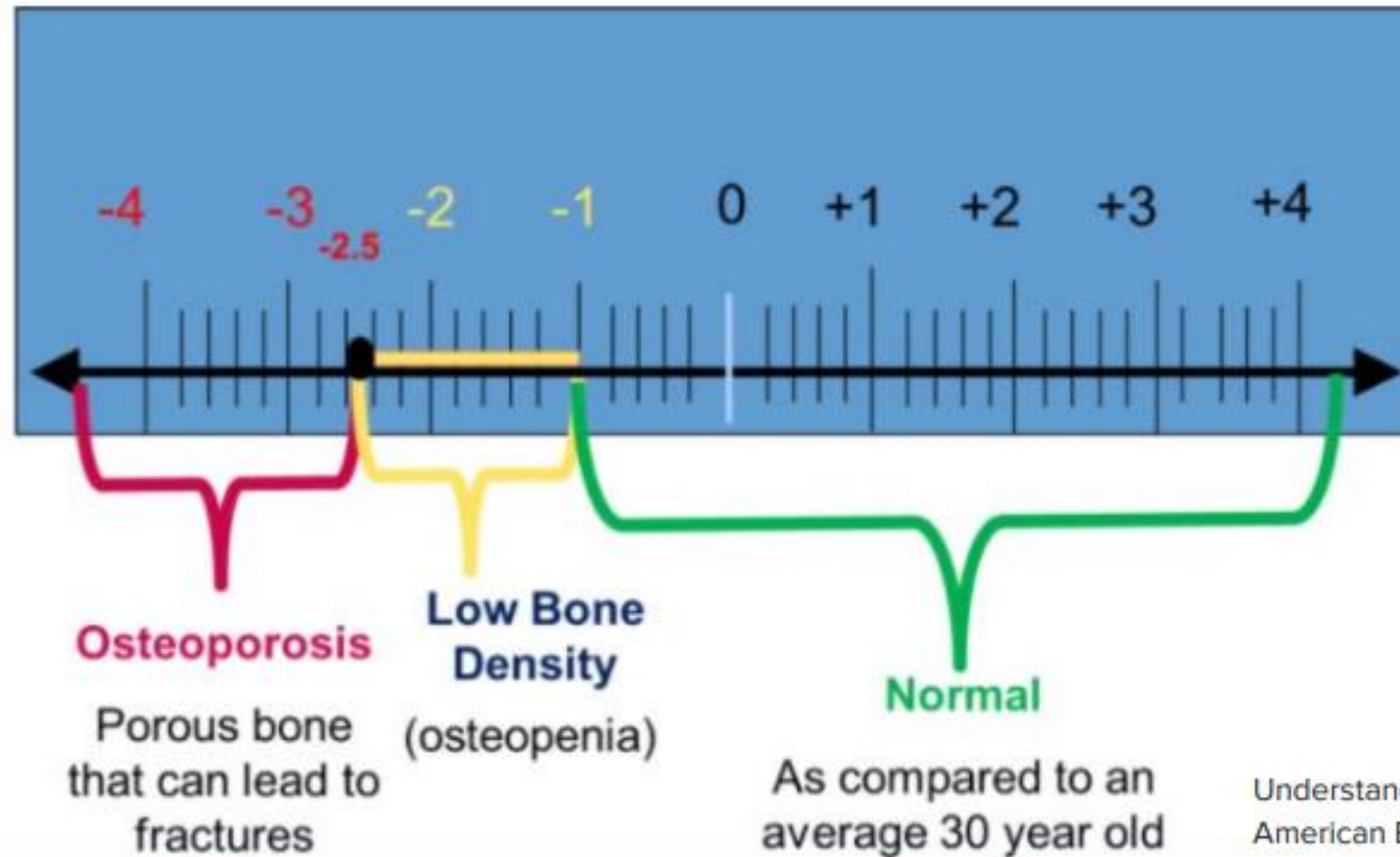
# Who Should get a Bone Density Scan

- Women 60 years and old
- Women 50-64 years who have certain risk factors, like a hip fracture
- Men 70 years and older



# Understanding the Bone Mineral Density Test Results

- Based off your DXA scan, you could get these results.



Understanding Bone Density Results.  
American Bone Health. 2020.

# High Risk Groups

Some groups in the population are at greater risk of not getting enough vitamin D, for some it may be recommended that these people should take a daily 10 microgram (400IU) vitamin D supplement all year round.

These groups are:

people who are not often outdoors, for example if they are frail, housebound or living in a care home

people who usually wear clothes that cover up most of their skin when outdoors people with dark skin such as those of African, African-Caribbean or south Asian origin

**If you think this may be you talk to your medical provider**



# Osteoporosis Treatment



- Vitamin and mineral supplements
- Medications:
- Alendronate (Fosamax), a weekly pill.
  - Risedronate (Actonel, Atelvia), a weekly or monthly pill.
  - Ibandronate, a monthly pill or quarterly intravenous (IV) infusion.
  - Zoledronic acid (Reclast), an annual IV infusion.
  - Exercise

# Preventing Bone Loss

Exercise and making sure you get enough calcium and vitamin D in your diet are usually all you'll need to prevent osteoporosis. Your provider will help you find a combination of treatments that's best for you and your bone health.





# How Much Calcium Do You Need?



**Table 1: Recommended Dietary Allowances (RDAs) for Calcium [1]**

Age	Male	Female	Pregnant	Lactating
0–6 months*	200 mg	200 mg		
7–12 months*	260 mg	260 mg		
1–3 years	700 mg	700 mg		
4–8 years	1,000 mg	1,000 mg		
9–13 years	1,300 mg	1,300 mg		
14–18 years	1,300 mg	1,300 mg	1,300 mg	1,300 mg
19–50 years	1,000 mg	1,000 mg	1,000 mg	1,000 mg
51–70 years	1,000 mg	1,200 mg		
71+ years	1,200 mg	1,200 mg		



# Great Sources of Calcium

Dairy

Green leafy vegetables

canned fish

Oj fortified with  
calcium

Nuts

fortified cereals

# Calcium Rich Non-Dairy Foods (per cup serving)



Winter squash-acorn 90mg, butternut 84mg,

Young green soybeans called edamame-98mg

Canned sardines(single serving can) with bones-569mg

Canned or fresh salmon with bones (6OZ)-340mg

Almonds (20)-60mg

Sweet potato(1 large) 40mg

Okra-88.32mg

# Calcium-rich Greens

Collard greens-84-mg

Mustard greens-64mg

Turnips-39mg

Kale-53mg

Bok choy-76mg

Spinach-30mg

Broccoli-41mg





Bok Choy

Bok Choy 6 cups baby bok choy chopped (about 420 mg) 1 green apple small slices ( 6 mg)  $\frac{1}{2}$  red onion diced (10 mg) 2 Tbsp. sesame oil 1 Tbsp. sesame seeds (75 mg) About  $\frac{1}{4}$  cup with vegetable broth Heat oil in pan, sauté onion, then apple slices. Add bok choy. Drizzle with broth just to keep it from sticking. Top with sesame seeds.

Makes 2 cups, 255 mg of calcium per cup

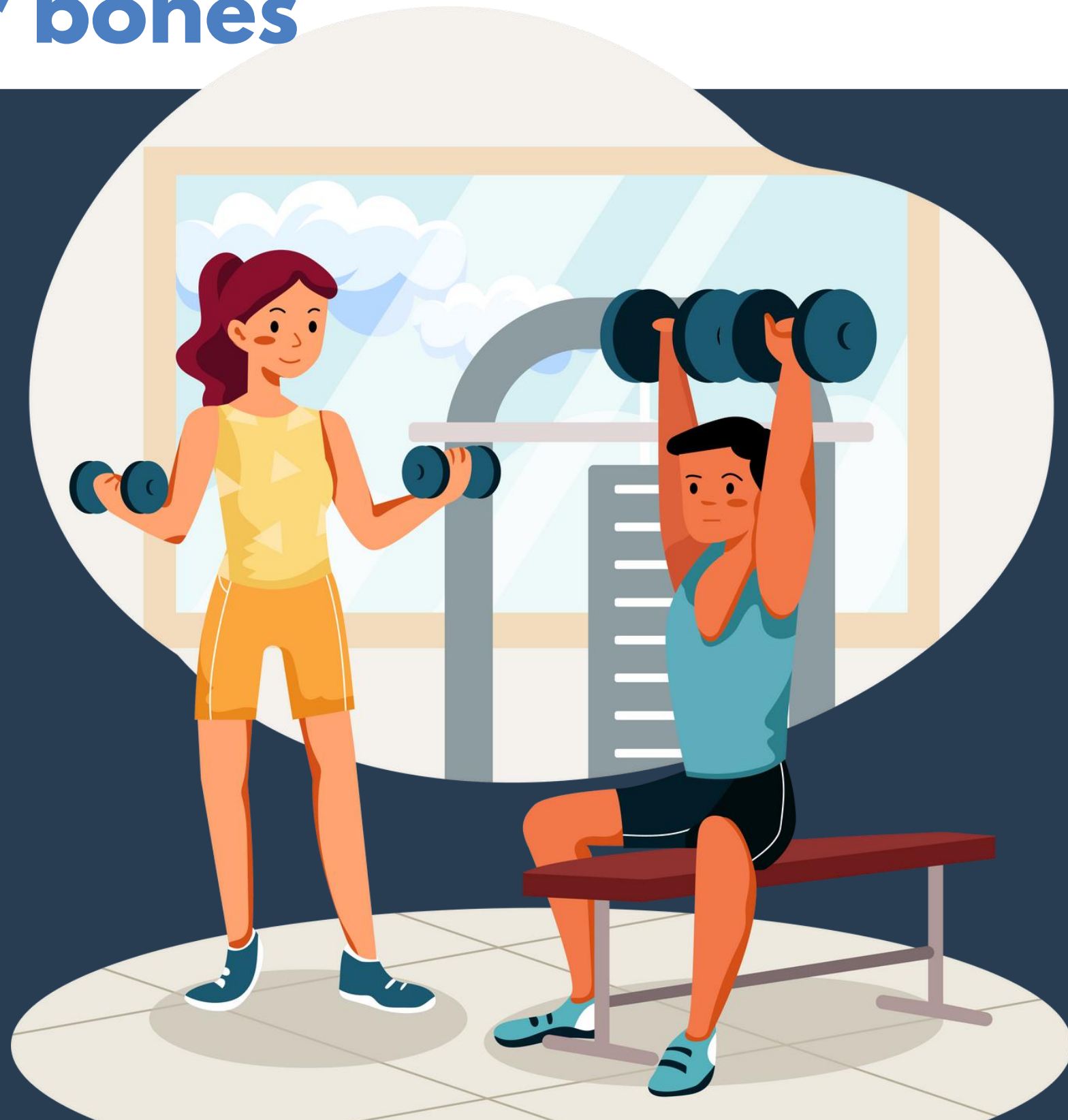
Remember to Talk to Your Medical  
Provider Before Starting any Vitamin or  
Mineral Supplement

# Physical Activity



- Builds strong bones
- Strengthens both muscles and bones in children and adults
- Prevents bone loss in adults
- Makes bone denser and replaces old bone with new bone
- Improves balance and coordination
- Helps prevent falls and fractures
- Helps prevent osteoporosis

# Which exercises are best for bones



Weight-bearing exercises.

These exercises produce a force on bones that makes them work harder.

- Brisk walking (3 to 4 miles per hour).
- Jogging or running.
- Tennis, badminton, ping pong, pickleball, and other racket sports.
- Climbing stairs.
- Dancing.

Resistance training exercises

- Weight machines.
- Free weights.
- Resistance bands.
- Use of your own body weight (such as pushups or pullups).

# Things to avoid or reduce:

- [Smoking](#)
- [Alcohol](#)
- [Salt](#)
- [Caffeine](#)
- [Sitting for long periods of time](#)





[Boost Your Bone Density](https://www.youtube.com/watch?v=5SGSoEtyhHw)

[https://www.youtube.com/  
watch?v=5SGSoEtyhHw](https://www.youtube.com/watch?v=5SGSoEtyhHw)

To get credit for the Be Well Program go to  
this survey [BONES](#)

# Questions

# Resources

[NIH News in Health](#)

[Living Your Best Life with Healthy Bones](#)

[Cleveland Clinic](#)