

# Exercise for Healthy Bones

## From National osteoporosis Foundation (NOF)

Bone is living tissue that responds to exercise by becoming stronger. You know that your muscles get bigger and stronger when you use them. Bones are similar; they get stronger and denser when you make them work. And “work” for bones means handling impact, the weight of your body, or more resistance. Currently, we know the most about two types of exercises that are important for building and maintaining bone density.

### **WEIGHT-BEARING, IMPACT EXERCISES.**

These exercises include activities that make you move against gravity while staying upright.

1. **Weight-bearing, High-Impact Exercises** are best for building bones in people who do not have low bone mass, osteoporosis or are frail. Some of these exercises include:

- Dancing
- High-impact aerobics
- Hiking
- Jogging/running
- Jumping Rope
- Stair climbing
- Tennis

2. **Weight-bearing, Low-Impact Exercises** can also help to build bones and are safer for people who cannot do high-impact exercises. Some of these exercises include:

- Elliptical training machines
- Low impact aerobics
- Stair-step machines
- Walking (treadmill/outside)

### **RESISTANCE AND STRENGTHENING EXERCISES**

These exercises include activities where you move your body, a weight or some other resistance against gravity.

- Functional movements, such as standing and rising up on your toes
- Lifting weights
- Using elastic exercise bands
- Using weight machines
- Lifting your own body weight

### **NON-IMPACT ACTIVITIES (BALANCE, FUNCTIONAL AND POSTURE EXERCISES)**

These exercises can help you to improve balance, posture, and how well you move in every day activities. These exercises can also help to increase muscle strength and decrease the risk of falls and broken bones. Some of these exercises include:

**Balance exercises.** Exercises that strengthen your legs and challenge your balance, such as Tai Chi, can decrease your risk of falls.

**Posture exercises.** Exercises that improve your posture and reduce rounded or “sloping” shoulders can help you decrease the risk of fractures, especially in the spine.

**Functional exercises.** Exercises that improve how well you move can help you in everyday activities and decrease your risk of falls and fractures. For example, if you have trouble getting up from a chair or climbing stairs, you should do these activities as exercises (try standing up and sitting down several times until you are tired).

**Yoga and Pilates** can also improve strength, balance and flexibility; however people with low bone density or osteoporosis should avoid certain positions to prevent fractures. These include forward-bending exercises. A physical therapist should be able to help you learn which exercises are safe and appropriate for you.

## NON-WEIGHT-BEARING, NON-IMPACT ACTIVITIES

These exercises can be part of a well-rounded exercise program, but do not help to build bones. If you like these activities, try to add in others that work your bones. Some of these exercises include:

- Bicycling/indoor cycling
- Deep-water walking
- Stretching and flexibility exercises
- Swimming
- Water aerobics

NOF's publication, *Boning Up on Osteoporosis* offers step-by-step instructions and illustrations for posture exercises, hip and back strengthening exercises, balance exercises and functional exercises.

If you can't do high-impact weight-bearing activities, **try lower-impact** ones. For example, try walking or stair-climbing instead of jogging. If you haven't exercised regularly for a while, check with your healthcare provider before beginning a new exercise program—particularly if you have health problems such as heart disease, diabetes or high blood pressure.

Once you have your healthcare provider's approval, **start slowly**. If you have already had spine fractures from osteoporosis, **be very careful** to avoid activities that require reaching down, bending forward, rapid twisting motions, heavy lifting and those that increase your chance of a fall.

## HOW MUCH EXERCISE SHOULD I DO?

**Weight-bearing, impact exercises** should be done for 30 total minutes on most days of the week.

Aim for 30 minutes at one time or break it up during the day. For example, 3 sessions for 10 minutes each will provide the same bone benefit as one 30-minute session.

If you can't fit 10 minutes in, spread your impact exercises throughout your day by taking the stairs or by parking farther from the store or work.

**Resistance/strengthening exercises** should be done two to three days per week.

Try to do one exercise for each major muscle group for a total of 8-12 different exercises. Some of the major muscle groups include:

- Upper back, Middle back, Lower back
- Shoulders, Upper arms, Forearms (wrists)
- Chest, Abdominals, Hips, Thighs, Calves (lower legs)

Do **one or two sets of 8 to 10 repetitions for each exercise**. For example, if you lift a weight 10 times in a row and then stop, you have completed one set of 10 repetitions. You should rest for about 30 seconds to one minute between each set.

- If you can't do 8 repetitions in a row, the weight is too heavy or resistance is too much.
- If you can do more than 10 repetitions in a row, you should probably increase the weight or resistance.
- If you have osteoporosis or are frail, you may want to do 10 to 15 repetitions of a lighter weight.
- If you're at high risk of having a fracture, you should work with a physical therapist to develop a safe exercise program.

If you don't have much time for strengthening/resistance training, do small amounts at a time. You can do just one body part each day. For example do arms one day, legs the next and trunk the next. You can also spread these exercises out during your normal day.

Balance, posture and functional exercises can be done every day. You may focus on one area more than the others. If you have fallen or lose your balance, spend time doing the balance exercises. If you are getting rounded shoulders, work more on the posture exercises. If you have trouble climbing stairs or getting up from the couch, do more functional exercises. You can also perform these exercises at one time or spread them throughout your day.

As you get started, your muscles may feel sore for a day or two after you exercise. If soreness lasts longer, you may be working too hard and need to ease up. Exercises should be done in a pain-free range of motion.

**CAUTION:** If you are frail, have had a fracture, fall frequently or have osteoporosis you should take extra caution. Certain movements like twisting of the spine, high impact aerobics or bending from the waist can be harmful. NOF recommends that before starting any exercise program, you should consult with a knowledgeable physician about your fracture risk.