

Remember: You can live well with osteoporosis!

Boning Up on Exercise To Reduce Fracture Risk and Manage Osteoporosis (Issue #3 of 8)

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FRACTURE FACT:

Up to 30% of people who suffer an osteoporotic hip fracture will die within the first year after the fracture.



All About Weight-Bearing Exercise

What is Weight-Bearing Exercise?

Weight-bearing exercise literally means bearing the weight of your body on bones and muscles during exercise. So if you are standing, your legs and trunk are bearing the weight of your body by holding you up. The muscles have to work against the force of gravity to bear your weight in an upright position. Most weight-bearing exercises are activities you do while on your feet and legs. Your bones experience the impact of your weight and the pull of your muscles during weight-bearing exercise, and respond by becoming stronger.

Many weight-bearing exercises are also aerobic exercises. Aerobic exercise is an exercise that results in a sustained increase in heart rate and it can be low to vigorous in intensity. Some examples include jogging, walking and dancing. Aerobic exercises strengthen the heart and lungs in addition to the muscles and bones.

Not all aerobic exercise is weight bearing. For example, swimming and

cycling are aerobic exercises but they are not considered to be weight bearing. When you are swimming, the water buoys or lifts your body; and cycling is done in the seated position, which means your legs are not bearing your weight. Although swimming and cycling benefit the muscles, heart and lungs, they do not strengthen bones.

Why is Weight-Bearing Exercise Important?

A *variety* of weight-bearing exercises is often recommended for maintaining strong bones, especially the bones of the hip and spine. As the muscles pull and push your weight against gravity, the bones adapt by maintaining or increasing the amount of bone formation that is occurring relative to the amount of bone breakdown. This can prevent bone loss, and may even increase the amount of bone you have. In addition, your muscles will get stronger and your co-ordination may improve, which reduces the risk of falls. Fewer falls mean fewer fractures (broken bones).

For weight-bearing and strength training exercises to have their full effect, the

intensity, duration and amount of stress applied to the bones should increase over time. This is called “progressive” exercise.

For those who have to limit the amount of weight-bearing aerobic exercise due to other health issues, such as osteoarthritis of the knees, there are other ways to perform this type of exercise. One method is to walk, jog or dance, for example, for 10 minutes 3 times per day instead of for 30 minutes continuously. Breaking up the exercise into 10-minute chunks can minimize joint pain and is just as effective as continuous exercise. Another method is to exercise in the water (such as aqua fit). Although it is not as effective as weight bearing on land, moving against the resistance of water can strengthen muscles while placing less stress on the joints. Having stronger muscles can reduce the risk of falls and fewer falls mean fewer fractures. A combination of weight-bearing exercise on land and water exercise is also beneficial.

Individuals who are trying to reduce their risk of osteoporosis and are in good general health will be able to do much more vigorous and frequent exercise than those who have more complicated health issues or have a greater risk of fracture. Individuals whose fracture risk is moderate or high may need to participate in lower impact weight-bearing exercises.

The goal is to try to achieve at least 150 minutes of *moderate intensity* aerobic activity each week, where *moderate intensity is a 5 or 6 on the intensity scale below*.

If you are physically fit enough to work even harder, you can choose instead to exercise at a more *vigorous intensity - which is a 7 or 8 on this scale*. Doing 75 minutes per week of vigorous intensity activity is roughly equivalent to doing 150 minutes of moderate intensity activity with respect to overall health benefits.

You can do moderate or vigorous intensity aerobic activity, or a mix of the two each week.

Everyone's fitness level is different. This means that walking may feel like a moderately intense activity to you, but for others, it may feel vigorous. It all depends on you – your general health, the shape you're in, and what you feel comfortable doing. What's important is that you do physical activities that are right for you and your abilities.

Examples of Weight-Bearing Exercise

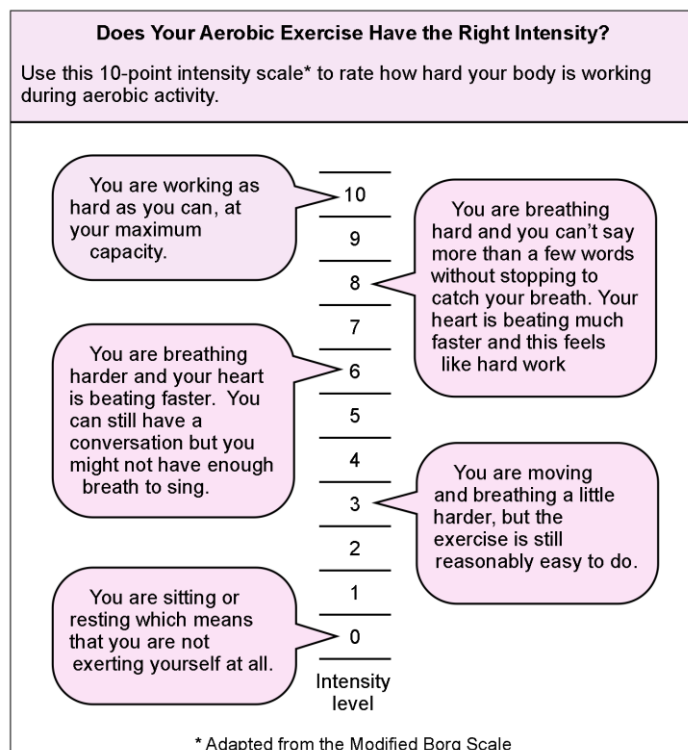
Weight-bearing exercises performed by the legs help strengthen the hip and spine. Push-ups against the floor (on the toes or knees) or against the wall in a standing position are weight-bearing exercises that load the arms with the person's body's weight. Push-ups help strengthen the bones of the wrist and arms.

Examples of simple activities that are weight-bearing include:

- walking, power walking, pole walking, hiking, stair climbing
- jogging, running
- step aerobics, dancing

Examples of sports that are weight-bearing include:

- soccer
- basketball
- volleyball
- racket sports (tennis, squash, badminton etc.)



How Should I Do Weight-Bearing Exercise?

Once you have figured out your fracture risk (low, moderate or high) with the help of your doctor, and after consulting with a physical therapist if needed, about specific exercises you should do and others you may need to avoid, use the **Table** below as a *guide* to the types of exercise you may perform, how often you should do them (frequency) and how hard you should work (intensity). Consider making a schedule that specifies when you are going to exercise and what you are going to do (including details like duration, intensity and type of exercise).

Type of Weight-Bearing Exercise (Examples)	Walking, hiking, jogging, stair climbing, step aerobics, dancing, tennis, squash, volleyball, etc.
How often should I exercise? (Frequency)	3-5 days of the week – Aim to achieve a minimum of 150 minutes per week in total
How hard should I work? (Intensity)	Exercise intensity should be <i>moderate to vigorous</i> (refer to scale above)
For how long should I exercise? (Duration)	Exercise for 20-60 minutes continuously, OR for 10 minutes at a time, 2-3 times per day
What are the benefits of this type of exercise?	Stronger muscles and bones, reduced risk of fracture (broken bones), improved heart health (fitness)

Pain

Most types of pain are an indication that something is not right. If you experience **chest** pain during exercise please STOP the exercise and tell your exercise trainer or physiotherapist what you are feeling. Make sure you seek medical attention as *soon as possible*.

If, during exercise, you experience **sharp** pain stop that exercise right away. If the pain goes away, switch to a different type of exercise or reduce the intensity of the exercise so that the sharp pain does not recur. Consult a fitness instructor, physical therapist or kinesiologist to ensure you are doing the exercise properly, or to find an alternate exercise. If the pain keeps recurring, see your doctor.

Safety

Anyone who is not accustomed to exercise, **or has recently broken a bone**, is advised to consult a doctor, physical therapist or kinesiologist before starting any type of exercise program. You are encouraged to start slowly and build up gradually – if you progress too quickly you may increase your risk of injury.

Not every exercise is for everyone. The safety of each activity above will depend on your age, fitness level and your fracture risk. It is also important to consider your past experience with the activity and your current health status.

Choose exercises that are appropriate for your fitness level, abilities and health status. When in doubt, start low and go slow! You can gradually increase the duration and intensity of your exercise to meet the recommended levels.

Coming up Next!

Regardless of which weight-bearing exercise program you adopt, it is important to combine weight-bearing exercise with some form of strength training, posture and balance training, flexibility and stretching and core exercises, which are described in our subsequent issues of COPING,

Our next issue will discuss strength training exercise. This is another important type of exercise that your bones will love, so be sure to *stay tuned!*

The Boning Up on Exercise articles come from a collaboration of experts. Initiated by a contribution of material from Jo-Ann James, a Certified Medical Exercise Specialist who is Bone Fit™ trained, an impressive team of dedicated volunteers from COPN and the Scientific Advisory Council and OC staff further developed the material into a comprehensive series of eight articles that are all being published for the first time here in COPING



Bone Fit™

Bone Fit™ is an exercise training workshop, designed for health and fitness professionals to learn effective and appropriate exercises for people with osteoporosis. The training provides knowledge and practical skills to prescribe exercise and adapt safe exercise programs to reduce the risk of fractures. Are you looking for an exercise professional to teach you the right exercises for osteoporosis? Find a Bone Fit™ trained professional in your area with our Bone Fit™ locator at: www.bonefit.ca/locator/

FUNNY BONE:

Q: Why is milk so delicious?

A: Because it has so much calci-YUM

The many benefits of milk products

Did you know that only one out of three Canadians consumes recommended servings of milk products every day? This is indeed the case, even though milk, yogurt and cheese are naturally nutritious foods that keep us healthy.

The nutrients in milk products help prevent bone health problems like osteoporosis. But the benefits don't stop there. Many studies show that milk products may help prevent other diseases such as hypertension, obesity and colon cancer.

According to *Canada's Food Guide*, adults between the ages of 19 and 50 should consume two servings of milk products every day, while adults 50 and over should include three servings of milk products in their daily diet.

This issue of COPING is sponsored by Dairy Farmers of Canada



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