

# On-Site Solutions

## Bone Health

HOW TO KEEP YOUR BONES HEALTHY



**Bones** - they provide structure for our upright posture, movement, and protection of our organs and brain. They also store minerals that can be released to our organs if needed! But when they sustain a fracture (break), pain can be intense and recovery can last from 5-7 weeks up to 3-6 months.

### So what makes for healthy bones?

Our bones are alive: new bone is made and old bone is broken down every day. For the first 30 years of our lives, more new bone is made than old bone breaks down, so bones grow longer and gain more mass. After that, we lose slightly more bone mass than we produce. When this loss is too fast, bones become weak and brittle, a condition known as osteoporosis, which results in bones breaking more easily when they come into contact with stress or during a fall.

There are some factors that increase your risk for osteoporosis including: being a Caucasian or Asian woman, age > 70 years old, a family history of osteoporosis, low levels of physical activity, smoking, drinking too much alcohol, a diet low in calcium and vitamin D, having certain medical conditions (hormonal diseases, gastrointestinal diseases, rheumatoid arthritis, certain types of cancer) or taking certain medications.

### But here's how YOU CAN keep your bones healthy:

#### 1) Get a bone density test to see if you're at risk for osteoporosis.

For women, bone density tests (also know as DEXA scans) are usually recommended if you're 65 or older; however, you may need one sooner if you have any of the risk factors listed above. Bone density tests are preventative, and are usually covered every two years by insurance. Talk to your doctor to determine when you should undergo a DEXA scan and what you can do to prevent future bone loss if your bone density is low.

#### 2) Examine your Calcium and Vitamin D intake.

Good sources of calcium include: dairy products, almonds, broccoli, kale, sardines and soy products, such as tofu. Good sources of vitamin D include: oily fish, such as tuna and sardines, egg yolks, and fortified milk and cereals. Sunlight also contributes to the body's production of vitamin D. If you're worried about getting enough vitamin D and/or you find it difficult to get enough calcium from your diet, ask your doctor about supplements. See general recommendations on the right.

#### 3) Incorporate weight-bearing exercises.

When bones are stressed, they respond by laying down more mass. Exercises that involve having your feet on the ground - walking, jogging, dancing, tennis, pickleball, etc. help keep and increase bone mass. Strength training has also shown to prevent bone density loss due to the stress caused by the pull of the muscles and tendons on the bones. Aim to perform strength training at least 3 times per week. See back for exercise recommendations.

The recommended amounts of Calcium and Vitamin D depend on your age and gender.

### CALCIUM

#### Women

Age 50 & younger - 1,000 mg\* daily

Age 51 & older - 1,200 mg\* daily

#### Men

Age 70 & younger - 1,000 mg\* daily

Age 71 & older - 1,200 mg\* daily

\*This includes the total amount of calcium you get from food and supplements.

### VITAMIN D

#### Women and Men

Under age 50 - 400-800


international units (IU) daily\*\*

Age 50 and older - 800-1,000 IU

daily\*\*

\*\*According to the National Academy of Medicine and National Institutes of Health the safe upper limit of vitamin D is 4,000 IU per day for most adults. These recommendations are for the general healthy adult population.

 [gmler@onsitesolutionspt.com](mailto:gmler@onsitesolutionspt.com)

 (612) 860-9388

#### Resources:

- National Institute of Arthritis and Musculoskeletal and Skin Diseases
- Bone Health and Osteoporosis Foundation
- National Institute of Health Office of Dietary Supplements
- Brazilian Journal of Physical Therapy - Exercise for the prevention of osteoporosis in postmenopausal women: an evidence-based guide to the optimal prescription

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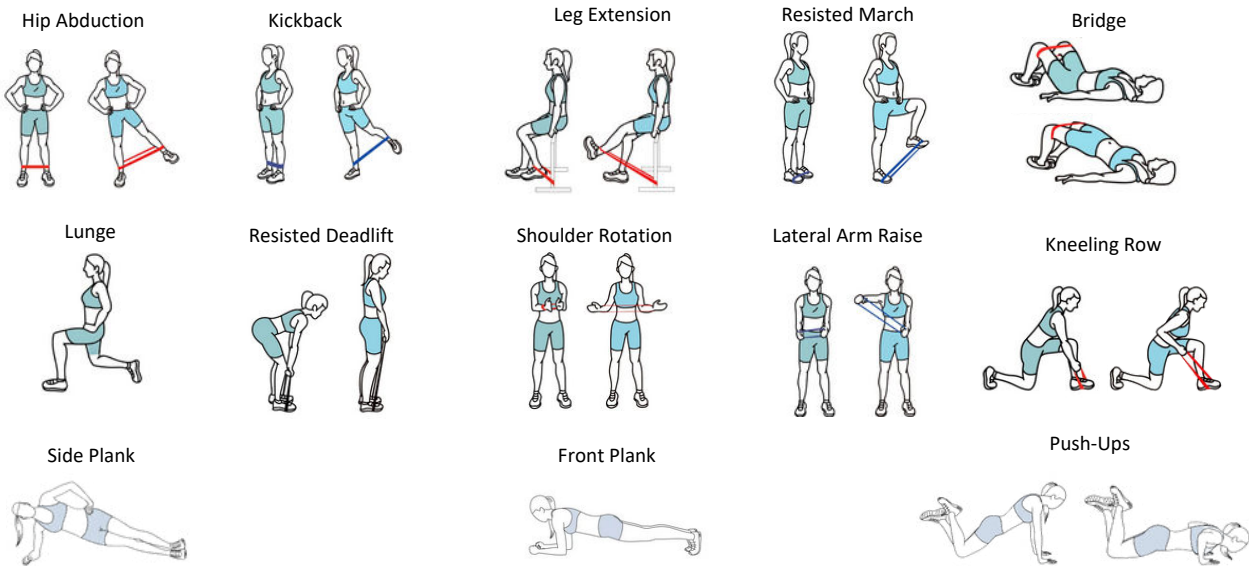
## Bone Health

### EXERCISES



Exercise Type	Frequency	Intensity	Dose	Exercise Examples
Progressive resistance training	>= 2 days per week	Start with slow and controlled movements and emphasize correct technique.	<ul style="list-style-type: none"> <li>▪ &gt;= 8 exercises targeting muscles that attach to or cross either the hip and/or the spine</li> <li>▪ At least 2 sets</li> <li>▪ 8–12 repetitions</li> <li>▪ 1–3 min rest between sets</li> </ul>	Squats, lunges, hip abduction/adduction, leg press, heel and toe raises, abdominal exercises, bent over row, wall/counter/floor push up, lateral arm raises to shoulder height.
Weight-bearing impact exercise	4–7 times per week	Moderate to high impact activities as tolerated. For sedentary individuals and those with decreased muscle strength/function, start with progressive resistance training for 6–12 weeks to strengthen leg muscles and/or introduce low impact exercises prior to performing moderate to high impact.	<ul style="list-style-type: none"> <li>▪ 50–100 jumps per session divided into 3–5 sets of 10–20 repetitions.</li> <li>▪ 1–2 min rest between sets.</li> </ul>	Multidirectional loading activities: jumping, skipping, hopping, stair climbing/step-ups or participation in weight-bearing sports (e.g., tennis, dancing, pickleball, etc).

#### Progressive Resisted Exercise Examples



#### Weight Bearing Impact Examples



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