



Nutrition and Exercise

Osteoporosis

Educational Materials

NIH Osteoporosis and Related Bone Diseases
National Resource Center

Exercises for Strong Back and Hips



If you have osteoporosis, you might be wondering whether you should exercise at all. The following exercises can safely strengthen your back, hip, and abdominal muscles as well as help maintain flexibility. However, you must check with your doctor or physical therapist before embarking on your own exercise program to ensure that you don't place undue stress on your bones.

Although data is limited regarding the type of exercise most beneficial to the skeleton, we do know that exerting stress (from gravity or muscular contraction) on bones with the greatest incidence of fracture from osteoporosis (spine, hip, and wrist) strengthens these bones. The exercises described here have been designed to exert appropriate force or stress on the spine through dynamic and isometric contraction of the back, abdominal and hip muscles.

The following exercises have been designed for maximum effectiveness and ease in performance and have been tested on more than 1,000 men and women between the ages of 18 and 85. The majority of women had no complaints of discomfort or soreness, and there were no injuries.

It is important to begin only one set of each exercise, and to perform all the exercises comfortably. If at any time pain is experienced, the exercise should be discontinued and a physician should be consulted. Most injuries result from an exercise being performed too quickly. Therefore, each repetition should be a very deliberate, controlled effort.

The suggested 30-second rest between sets may be need to be increased depending upon the fitness level of the patient. If an individual is too fatigued with only a 30-second rest, increase the rest period to between 1 and 2 minutes. Please note "desired maximum" is the recommended schedule for maintenance of strength gained as the patient

progresses from the first set of each exercise. After the desired maximum has been attained, light weights may be added to the arms and legs to increase resistance.

Once the desired maximum is reached for each exercise, the program should take no more than ½ hour to complete. It is recommended that the exercises be performed at least three times per week and as much as six times per week.

EXERCISES

Note: Those patients who have not previously been involved in an exercise program should check with their physician before starting this or any exercise program.

1. PELVIC TILT

Position: Lying on the back, arms on floor with hands next to hips, knees bent and slightly apart, feet flat on the floor.

Action: Begin by pressing the waist into the floor, then slowly lifting the vertebrae off the floor, starting with the lower back, then the middle and, finally, the upper back. Hold lift for 10 seconds, pressing the buttocks together tightly, then roll down one vertebra at a time, starting with the upper back, the middle, and finally the lower back. Desired maximum: 3 sets of repetitions each with a 30-second rest between sets.

Purposes: Build strength in hip and low back muscles.

2. LEG & ARM LIFT

Position: Lying prone, legs together, right arm stretched out on the floor over the head, left arm relaxed on the floor by the left hip.

Action: Slowly lift head, right and left arms and left leg off the floor. Hold for 5 seconds, then release. Desired maximum: 3 sets of 8 each with a 30-second rest between sets.

Purposes: Strengthen back, hip and muscles.

3. CHEST LIFT I*

Position: Lying prone, legs slightly apart, chin on the floor, hands next to hips with palms turned upward.

Action: Slowly lift the head and chest off the floor as high as possible, pressing the palms toward the ceiling and keeping the feet and thighs on the floor. Hold for 5 seconds, then release. Desired maximum: 3 sets of 8 with a 30-second rest between sets.

Purposes: Strengthen back, hip and arm muscles.

4. CHEST LIFT II*

Position: As in Chest Lift I, but place the tops of hands such that they are resting on either side of the middle back.

Action: Slowly lift elbows, chest and head from the floor as high as possible, keeping the feet and thighs on the floor. Hold the arch for 5 seconds, then release. Desired maximum: 3 sets of 8 each with a 30-second rest between sets.

Purposes: Strengthen back and hip muscles.

5. CHEST LIFT III*

Position: Same as in Chest Lift I, but with hands behind the head.

Action: Slowly lift head and chest from the floor as high as possible, keeping the feet and thighs in contact with the floor. Desired maximum: 3 sets of 8 each with a 30-second rest between sets.

Purposes: Strengthen back and hip muscles.

***This is a progression of exercise sets. Begin with Chest Lift I. The patient should not progress to Chest II until she is able to perform comfortably all 3 sets of 8 repetitions each.**

6. DIAGONAL LIFT

Position: Lying on the right side, right knee bent, resting the weight of the upper trunk on the right forearm. The left leg is extended back and the left arm is reaching forward as far as possible, chest and head rotated toward the floor.

Action: Lift the head, chest, left arm and leg together, using the right arm to help press the chest up. Hold 10 seconds, then release. Desired maximum: 3 sets of 8 each with a 30-second rest between sets.

Purposes: Strengthen all back muscles. Strengthen muscles of the shoulder and hip.

7. ISOMETRIC HEAD PRESS

Position: Sitting in an upright chair, hands placed on the back of the head (**not neck**) with fingers laced.

Action: Resisting with hands, slowly press the head back against the hands while opening the elbows and looking toward the ceiling. Hold for 5 seconds. Desired maximum: 1 set of 8 repetitions.

Purposes: Strengthen the muscles of the neck and middle back region.

Editor's Note: This fact sheet was authored by Christine Snow Harter, PhD, an exercise physiologist and Associate Director of the Musculoskeletal Research Laboratory Aging Study Unit at the VA Medical Center, Palo Alto, California.

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Strategies for Osteoporosis

Guidelines for Safe Movement



Keeping active is one of the best ways to maintain bone health. A person who has had an osteoporotic fracture may avoid routine or new activities for fear of experiencing another fracture. However, experts recommend that people with osteoporosis continue to be active and involved in activities at home, work and in the community.

By practicing proper posture and learning the correct way to move (called *body mechanics*), you can protect your bones while remaining physically active. One of the most important concepts in body mechanics and posture is *alignment*, which refers to the relationship of the head, shoulders, spine and hips to each other. Proper alignment puts less stress on the spine and ensures good posture. A slumped, head-forward posture puts harmful stress on the spine, as does bending forward or twisting your spine.

For the person with osteoporosis, general muscle strength and flexibility is especially important. Keeping active helps maintain muscle tone, reflexes and balance. Follow these guidelines to move safely throughout your day.

Properly align your spine:

Stand with your back against a wall with your heels 2 inches from the wall.

Tighten your abdominal muscles and flatten your back against the wall.

Lift your breastbone, keep your head up and look straight ahead.

Bring your shoulders back towards the wall. There should be a small hollow at the small of your back.

Maintaining this position, move away from the wall and check your posture in a full length mirror from the front and side.

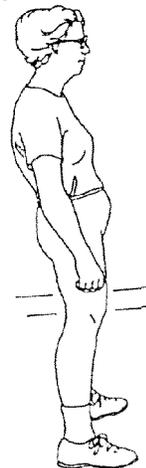
Wear comfortable, supportive shoes with cushioned soles.

Standing:

Keep your head high, chin in, shoulder blades slightly “pinched.” Maintain the natural arch of your lower back as you flatten your stomach. Your feet should point straight ahead with your knees lined up over your second toe. If you are standing in one place for any length of time, put one foot up on a stool or in an open cupboard. Switch feet periodically.



Right



Wrong

Sitting

When sitting, use a rolled towel or pillow to support your lower back. The support should be thick enough to cushion your lower back and maintain the normal arch. Keep your head, back and hips in alignment, and keep your hips and knees at the same level. If your feet do not rest flat on the floor, use a small footstool. When reading, do not lean over your work, but maintain the natural curve of your back. At a desk, prop up a clipboard so it slants towards you like a drafting table. Use a footstool or foot rest when seated for long periods of time. To stand up from the chair, move your hips forward to the front of the chair and use your leg muscles to lift yourself up.



Right



Wrong

Walking

Walk with your chin in, head held high and shoulder blades slightly “pinched.” Your feet should point straight ahead, not out to one side. Your knees should be lined up over where your 2nd toe is in your shoe. You may need to turn the knee outward consciously in order to line your foot up properly. Do not let your knees lock back as you bring your weight over your foot, but keep them slightly bent. Keep hips, knees and toes properly lined up when climbing stairs as well.



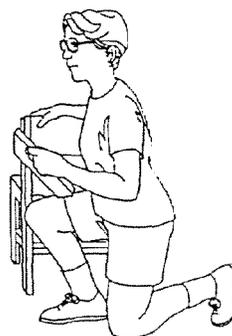
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Bending and Lifting

To pick up an item, stand with your feet flat and about shoulder-width apart from one another. Both arms should touch your ribs or thighs unless you are using one hand for support. Maintaining your lower back curve, squat, kneel or sit in a chair. Keep one foot flat on the floor to keep equal force at the hip, knee and ankle. Bring the item close to your body at waist level. Gently breathe in while using your leg and thigh muscles to lift the object and straighten up. When you reach an upright position, exhale. Never lift objects, packages or babies weighting more than ten pounds.



Right



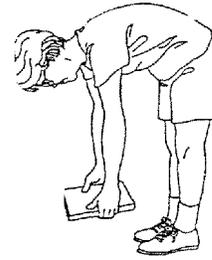
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To tie your shoes or dry your feet, sit in a chair, place your foot on a footstool or box, maintain proper back alignment and lean forward from the hips to tie or dry. When carrying groceries, request that the bags be packed light. Divide heavy items into separate bags and hold bags close to your body. You may also use a cart with wheels to transport bags from the store to home or from the car into the house. When unpacking, place packages on a chair or counter top instead of the floor.

Consider using a fanny pack instead of a heavy pocketbook.

Pushing or Pulling

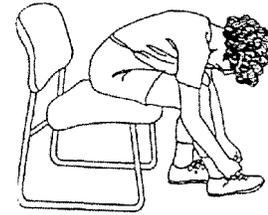
Housework can involve strenuous physical exertion. For the person with osteoporosis, proper body mechanics when doing chores is essential. To protect your back from injury, consider these movements for vacuuming, mopping or sweeping floors, cleaning the bathtub, or gardening. For vacuuming type activities, maintain proper alignment by imagining your upper arms strapped to your chest from shoulders to elbows so they cannot move. Always face your work directly to keep from twisting your back. Keep your feet apart with one foot in front of the other. Shift your weight from one leg to the other to move the vacuum, broom, mop or rake back and forth. Lean forward from the hips and bend at the knees instead of the waist. Avoid polishing floors to a high gloss, which makes them slippery. If you wish to scrub a spot on the floor on your hands and knees that's fine as long as you can move up and down from the floor easily and safely. Putting yourself in an "all fours" position is a way to protect your back when gardening as well. In the bathroom, use a scrub brush or sponge on a long handle so you can scrub in an upright or kneeling position to keep your back straight.



Wrong



Right



Wrong



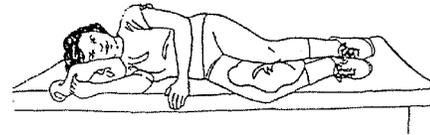
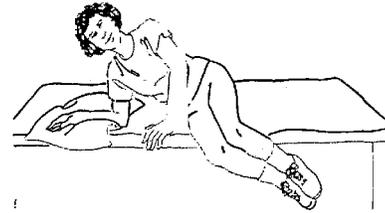
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Lying Down in Bed or Getting Out of Bed

Sit on the edge of the bed. Lean toward the head of the bed supporting your body with both hands. As you lower yourself toward the mattress, bring your legs and feet onto the bed. When lying in bed on your side, use pillows between your knees and under your head to keep your spine aligned or roll onto your back keeping your knees bent and moving your head, shoulders and hips together. To get out of bed reverse these steps. Keep both arms in front of you. Breathe in and roll onto your side. Use your hands to raise your upper body as you move your legs over the side of the bed in one motion. Sit on the edge of the bed for a moment before standing up.



Safe Reaching

Use both arms together to avoid twisting your spine. Don't reach for a shelf higher than you can easily reach with both arms. Stand on a safety step stool with high handrails or use a reaching device, but only lift lightweight objects. Reorganize work areas so items that are used regularly are stored at waist or eye level.

Coughing or Sneezing

Develop the habit of supporting your back with one hand whenever you cough or sneeze. Place your hand behind your back or on your knee. This protects the spine and intervertebral discs (the tough cushions of cartilage between the vertebrae that act as shock absorbers) from damage caused by a sudden bend forward.



Right

Wrong

Wrong

Don'ts for Safe Movement

Don't walk or exercise on slippery surfaces.

Don't wear "scuffs" or "mules" (backless bedroom slippers) or shoes with slippery soles.

Don't slouch when standing, walking or sitting at a desk.

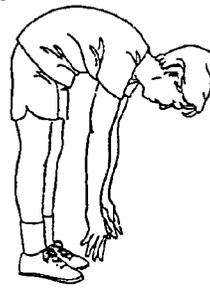
Don't sit in a deep, cushioned chair or couch that causes you to sink into it. Use upright chairs with arms. Place your feet on a footstool if they don't rest flat on the floor.

Don't move too quickly.

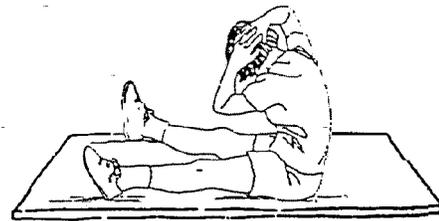
Don't engage in sports or activities that require twisting the spine or bending forward from the waist, such as conventional sit-ups, toe touches or swinging a golf club.

Don't force yourself to complete a task or exercise if you feel short of breath, are in pain or are fatigued.

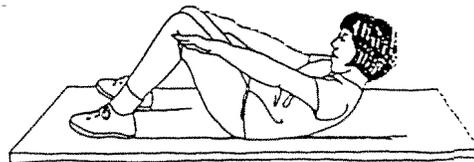
Don't take to your chair or bed for extended periods of time. Inactivity is one of the worst things for osteoporosis.



No



No



No

Do's for Safe Movement

Always pay attention to proper posture.

Lift your breastbone.

Keep your head erect and look forward.

Keep your shoulders back, lightly "pinch" shoulder blades.

Tighten your abdominal muscles and buttocks.

Whenever possible, walk or climb the stairs.

When walking stairs, always use the handrail.

Always bend from the hips and knees, not from the waist.

Almost every activity can be adapted to meet your age, ability, lifestyle and strength. Therefore, you may wish to speak with your doctor, a physiatrist or physical therapist about your special concerns regarding safe movement and posture before practicing any of these movements, posture exercises or activities in the video.

1999

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Calcium & Vitamin D: Important at Every Age



The foods we eat contain a variety of vitamins, minerals and other important nutrients that help keep our bodies healthy. Two nutrients in particular—calcium and vitamin D—are needed for strong bones.

Vitamin D

Vitamin D is needed for the body to absorb calcium. Without enough vitamin D, we can't form enough of the hormone calcitriol (known as the active vitamin D), causing insufficient calcium absorption from the diet. In this situation, the body must take its calcium from its stores in the skeleton, which weakens existing bone and prevents the formation of strong, new bone.

You can get vitamin D safely in two ways: through the skin and from the diet. Vitamin D is formed naturally in the body after exposure to sunlight. Fifteen minutes in the sun is plenty of time to manufacture and store all of the vitamin D you need. Experts recommend a daily intake of between 400 and 800 International Units (IU) of vitamin D, which also can be obtained from supplements or vitamin D-rich foods such as egg yolks, saltwater fish and liver. Do not take more than 800 IU per day unless prescribed by your doctor since massive doses up to and over 5,000 IU of vitamin D may be harmful.

The Role of Calcium

Calcium is needed for our heart, muscles and nerves to function properly and for blood to clot. Inadequate calcium significantly contributes to the development of osteoporosis. Many published studies show that low calcium intake throughout life is associated with low bone mass and high fracture rates. National nutrition surveys have shown that many women and young girls consume less than half the amount of calcium recommended to grow and maintain healthy bones. To find out how much calcium you need, see the accompanying *Recommended Calcium Intakes* chart. See the *Selected Calcium-Rich Foods* list to learn how easily you can include more calcium in your diet without adding much fat.

However, calcium alone cannot prevent osteoporosis and is not a substitute for medication that may be needed to curb excessive bone loss.

Calcium Culprits

While a balanced diet aids calcium absorption, high levels of protein and sodium (salt) in the diet also are thought to increase calcium excretion through the kidneys. Excessive amounts of these substances should be avoided, especially in those who have low calcium intake. Lactose intolerance also can lead to inadequate calcium intake. Those who are lactose intolerant have insufficient amounts of the enzyme lactase that is needed to break down the lactose found in dairy products. In order to include dairy products in the diet, dairy foods can be taken in small quantities or treated with lactase drops, or lactase can be taken as pills. There are even some milk products on the market that already have been treated with lactase.

RECOMMENDED CALCIUM INTAKES*

AGE	AMOUNT OF CALCIUM
Infants	
birth - 6 mths.	210 mg
6 mths. - 1 year	270 mg
Children/Young Adults	
1 - 3 years	500 mg
4 - 8 years	800 mg
9 - 18 years	1,300 mg
Adult Women & Men	
19 - 50 years	1,000 mg
50 +	1,200 mg
Pregnant or Lactating	
18 years or younger	1,300 mg
19 - 50 years	1,000 mg

* Source: National Academy of Sciences, 1997

Calcium Supplements

If you have trouble getting enough calcium in your diet, you may need to take a calcium supplement. The amount of calcium you will need from a supplement depends on how much calcium you obtain from food sources. There are several different calcium compounds from which to choose, such as calcium carbonate and calcium citrate, among others.

It is necessary for the calcium tablet to disintegrate in order to be absorbed by the body. If you are unsure whether a tablet will break down, you can test how well it disintegrates by placing it in six ounces of vinegar or warm water, stirring occasionally for 30

minutes. If the tablet has not almost completely disintegrated in this time, it probably will not do so in your stomach.

All calcium supplements are better absorbed when taken in small doses (500mg or less) several times throughout the day. In many individuals, calcium supplements are better absorbed when taken with food.

A Complete Osteoporosis Program

Remember, a calcium-rich diet is only one part of an osteoporosis prevention or treatment program. Like exercise, getting enough calcium is a strategy that helps strengthen bones at any age. But these approaches may not be enough to stop bone loss caused by lifestyle, medications or menopause. It is important to speak to your doctor to determine the need for an osteoporosis medication in addition to diet and exercise.

Selected Calcium-Rich Foods

Food Item	Serving Size	Calcium (mg)	Fat (g)	Calories
Milk				
Whole	8 oz.	290	8.9	156
1% milk	8 oz.	300	2.6	102
2% milk	8 oz.	297	4.7	121
Skim milk	8 oz.	302	0.4	86
Yogurt				
Plain fat-free (w/added milk solids)	8 oz.	487	0.4	136
Plain low-fat (w/added milk solids)	8 oz.	447	3.7	155
Fruit low-fat	8 oz.	338	2.8	243
Frozen, vanilla, soft serve	½ cup	103	4.0	114
Cheese				
American Cheese	1 oz.	174	8.9	106
Cheddar Cheese	1 oz.	204	9.4	114
Cottage Cheese, 1% low-fat	1 cup	138	2.3	164
Mozzarella Cheese, part skim	1 oz.	183	4.5	72
Muenster Cheese	1 oz.	203	8.5	104
Parmesan Cheese, grated	1 tbsp.	69	1.5	23
Ricotta Cheese, part skim	1/2 cup	337	9.8	171
Ricotta Cheese, whole milk	1/2 cup	257	16.1	216
Ice Cream, Vanilla				
Low Fat	1/2 cup	91.7	2.8	91.7
High Fat	1/2 cup	86.6	12	178
Fish and Shellfish				
Sardines, canned in oil, drained, including bones	3.75oz.	351	10.5	191
Salmon, pink, canned, including bones	3 oz.	181	5.1	118
Shrimp, canned, drained	3 oz.	50	1.7	102

Food Item	Serving Size	Calcium (mg)	Fat (g)	Calories
Vegetables				
Bok Choy, raw (Chinese cabbage)	1 cup	74	0	9
Broccoli, cooked, drained, from raw	1 cup	71.6	0.6	23.6
Broccoli, cooked, drained, from frozen	1 cup	94	0.2	50
Soybeans, mature, boiled	1 cup	261	12	254
Collards, cooked, drained, from raw	1 cup	226	0.6	49
Turnip greens, cooked, drained, from raw (leaves and stems)	1 cup	197	0.3	29
Tofu				
Tofu	½ cup	204*	5.6	97
Orange (navel)	1 whole	56	0.1	65
Orange Juice, fortified with calcium	8oz.	300	0.1	100
Dried Figs	10	270	2.2	477
Almonds (Dry Roasted)	1 oz.	75	15	169
Sesame Seeds, kernels, toasted	1 oz.	37	13.6	161
Sunflower Seeds, dried	1 oz.	33	14.1	162

* The calcium content of tofu may vary depending on processing methods. Tofu processed with calcium salts can have as much as 300 mg per 4 oz. Often, the label or the manufacturer can provide more specific information.

- Note: You also may increase the calcium in foods by following these suggestions:
1. Add nonfat powdered milk to all soups, casseroles, and drinks.
 2. Buy juices, cereals and breads that are fortified with calcium.
 3. Replace whole milk and cream with skim and lowfat milk in recipes
 4. Replace sour cream with yogurt in recipes.
 5. Some bottled waters contain calcium, so check the labels for more information.

Source: USDA Nutrient Data Laboratory, 2000

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Exercise for Your Bone Health



Exercise is vital at every age for healthy bones and is an important part of an osteoporosis prevention and treatment program. Not only will exercise improve your bone health, but it also increases muscle strength, coordination, balance and leads to better overall health.

Why Exercise?

Like muscle, bone is living tissue that responds to exercise by becoming stronger. Young women and men who exercise regularly generally achieve greater peak bone mass (maximum bone density and strength) than those who do not. We have until about age 30 to reach peak bone mass. After that time, we can begin to lose bone. Women and men older than age 30 can help prevent bone loss with regular exercise.

The Best Bone Building Exercise

The best exercise for your bones is weight-bearing exercise. This is exercise that forces you to work against gravity, such as walking, hiking, jogging, stair climbing, tennis and dancing. Some examples of nonweight-bearing exercises are swimming or bicycling. However, these exercises, as well as many weight-bearing exercises, have excellent cardiovascular benefits.

Exercise Tips

If you have health problems, such as heart trouble, high blood pressure, diabetes or obesity, or if you are over age 40, check with your doctor before you begin a regular exercise program. The optimal goal is 30 minutes to an hour at least four times per week.

Listen to your body. When starting an exercise routine, you may have some muscle soreness and discomfort at the beginning, but this should not be painful or last more than 48 hours. If it does, you may be working too hard and need to ease up. STOP exercising if you have any chest pain or discomfort, and see your doctor before your next exercise session.

If you have osteoporosis, it is important that you consult with your doctor to learn which activities are safe for you. If you have low bone mass, experts recommend that you protect the spine by avoiding exercises or activities that flex, bend or twist the spine. Furthermore, you should avoid high-impact exercise in order to lower the risk of breaking a bone. You also might want to consult with an exercise specialist to learn the proper progression of activity, how to stretch and strengthen muscles safely and how to correct poor posture habits. An exercise specialist should have a degree in exercise physiology, physical education, physical therapy or a similar specialty. Be sure to ask if he or she is familiar with the special needs of patients with osteoporosis.

A Complete Osteoporosis Program

Remember, exercise is only one part of an osteoporosis prevention or treatment program. Like a calcium-rich diet, exercise is a strategy that helps strengthen bones at any age. But these approaches may not be enough to stop bone loss caused by lifestyle, medical conditions or menopause. It is important to speak with your doctor about medications that can help keep your bones strong.

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General Information on Bone Health and Osteoporosis

- Fast Facts on Osteoporosis (R302)
- Osteoporosis Overview (R106)
- The Diagnosis (R203)
- What Is Bone? (R304)
- Exercise for Your Bone Health (R303)
- Calcium: Important at Every Age (R301)
- How to Find a Doctor (R201)
- Exercise and Bone Health (R707)
- Nutrition and the Skeleton (R708)

Special Topics on Bone Health and Osteoporosis

- Once is Enough: A Guide to Preventing Future Fracture (R616)
- Coping with Chronic Pain (R202)
- Fall Prevention (R205)
- Wrist Fractures (R204)
- After the Vertebral Fracture (R206)
- Recovery from Hip Fracture (R207)
- Falls & Related Fractures: The Risk of Undiagnosed Osteoporosis (R613)
- Fitness & Bone Health: The Skeletal Risk of Overtraining (R614)
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- Gastrointestinal Disorders and Bone Health (R612)
- Peak Bone Mass in Women (R701)
- The Skeletal Effects of Anorexia Nervosa (R709)
- Weightlessness, Bed Rest and Immobilization: Factors Contributing to Bone Loss (R608)

Information for Specific Populations

- Kids and Their Bones: A Guide for Parents (NIH02-5186)
- Bone Basics for Kids (R401)
- Bone Basics for Teens (R402)
- Bone Basics for Young Women (R403)
- Bone Basics for Midlife Women (R404)
- Bone Basics for Older Women and Men (R405)
- Bone Basics for Men of All Ages (R406)
- African American Women and Osteoporosis (R607)
- Asian American Women and Osteoporosis (R601)
- Latino Women and Osteoporosis (R602)
- Men and Osteoporosis (R615)
- Female Athletes and Bone Health (R606)
- What People with Lupus Need to Know About Osteoporosis (R801)
- What People with Rheumatoid Arthritis Need to Know About Osteoporosis (R802)
- What People with Anorexia Nervosa Need to Know About Osteoporosis (R803)

Information on Bone Health and Osteoporosis in Spanish

- Huesos sanos para los adolescentes (Bone Basics for Teens) (R402S)
- Huesos sanos para los hombres y mujeres de edad avanzada (Bone Basics for Older Men and Women) (R405S)
- Las caídas y las fracturas asociadas: el riesgo de no diagnosticar osteoporosis (Falls & Related Fractures: The Risk of Undiagnosed Osteoporosis) (R613S)
- Los huesos de las mujeres de edad madura (Bone Basics for Mid-Life Women) (R404S)
- Los huesos de los hombres de todas las edades (Bone Basics for Men of All Ages) (R406S)

Large Print Osteoporosis Materials

- Fast Facts on Osteoporosis (R508)
- Bone Basics for Older Women and Men (R509)
- Calcium and Vitamin D (R510)
- Exercise for Your Bone Health (R507)
- Talking With Your Doctor About Osteoporosis (R504)
- Falls & Related Fractures: The Risk of Undiagnosed Osteoporosis (R511)
- Fall Prevention for Older Adults (R501)

Information on Bone Health and Osteoporosis in Asian Language(s)

Bone Health and Osteoporosis: A Guide for Asian Women Aged 50 and Older

- Chinese (R901C)
- Korean (R901K)
- Vietnamese (R901V)
- English (R901)

Related Bone Diseases Fact Sheets

- Information for Patients about Paget's Disease of Bone (P110)
- Fast Facts on Osteogenesis Imperfecta (I101)
- Information for Patients about Hyperparathyroidism (P112)
- Information for Patients about Fibrous Dysplasia (P111)
- Information for Patients about Osteopetrosis (P117)

Health Professional Packet

- If you are a health professional and need osteoporosis education materials in quantities, please check here to receive master copies of four key fact sheets on osteoporosis, calcium, exercise and bone density testing.

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