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# Osteoporosis

## What is osteoporosis?

Osteoporosis is a disease in which your bones become weak and are likely to **fracture**

[<https://medlineplus.gov/fractures.html>] (break). The disease can develop when your bone mineral density

[<https://medlineplus.gov/bonedensity.html>] and bone mass decrease. It can also happen if the structure and strength of your bones change.

Osteoporosis is called a "silent" disease because it doesn't usually cause symptoms. You may not even know you have the disease until you break a bone. This could happen with any bone, but it's most common in the bones of your hip, vertebrae in the spine, and wrist.

## What causes osteoporosis?

Your bones are made of living tissue. To keep them strong, your body breaks down old bone and replaces it with new bone.

Osteoporosis develops when more bone is broken down than replaced. You lose bone mass and changes happen in the structure of your bone tissue. This can happen as you get older. Other risk factors can also lead to the development of osteoporosis or increase your chance of developing the disease.

## Who is more likely to develop osteoporosis?

Anyone can develop osteoporosis, but you are more likely to develop it if you have one or more of risk factors:

- **Your sex.** Osteoporosis is more common in women.
- **Your age.** Your risk increases as you get older. It is most common in people over age 50.
- **Your body size.** It is more common in people who are slim and thin boned.
- **Your race:**
  - White and Asian women are at highest risk.
  - African American and Mexican American women have a lower risk.
  - White men are at higher risk than African American and Mexican American men.
- **Family history.** Your risk of osteoporosis may be higher if one of your parents has osteoporosis or broke their hip.
- **Changes to hormones** [<https://medlineplus.gov/hormones.html>] . Low levels of certain hormones can increase your chance of developing osteoporosis.
- **Diet.** A diet that is low in calcium [<https://medlineplus.gov/calcium.html>] and/or vitamin D [<https://medlineplus.gov/vitaminD.html>] or does not include enough protein [<https://medlineplus.gov/dietaryproteins.html>] can raise your risk.
- **Long-term use of certain medicines**, such as:
  - Corticosteroids [<https://medlineplus.gov/steroids.html>]
  - Proton pump inhibitors (which treat GERD [<https://medlineplus.gov/gerd.html>] )
  - Medicines to treat epilepsy [<https://medlineplus.gov/epilepsy.html>]
- **Having other medical conditions**, such as:
  - Endocrine diseases [<https://medlineplus.gov/endocrinediseases.html>]
  - Certain digestive diseases [<https://medlineplus.gov/digestivediseases.html>]
  - Rheumatoid arthritis [<https://medlineplus.gov/rheumatoidarthritis.html>]

- Certain types of cancer
- HIV [<https://medlineplus.gov/hiv.html>]
- Anorexia nervosa, a type of eating disorder [<https://medlineplus.gov/eatingdisorders.html>]
- **Your lifestyle.** Certain lifestyle factors can contribute to bone loss, such as:
  - Smoking tobacco [<https://medlineplus.gov/smoking.html>]
  - Long-term heavy alcohol [<https://medlineplus.gov/alcohol.html>] use
  - Physical inactivity [<https://medlineplus.gov/healthrisksofaninactivelifestyle.html>] or prolonged periods of bedrest

## What are the symptoms of osteoporosis?

Osteoporosis usually doesn't cause symptoms. You may not know that you have it until you break a bone.

## How is osteoporosis diagnosed?

Health care providers usually diagnose osteoporosis during routine screening [<https://medlineplus.gov/healthscreening.html>] for the disease. The U.S. Preventive Services Task Force recommends screening for:

- Women over age 65
- Women of any age who have factors that increase the chance of developing osteoporosis

The Task Force does not recommend regular screening for men.

To find out if you have osteoporosis, your provider:

- Will ask about your medical history and whether you have ever broken a bone
- May do a physical exam, which could include checking for:
  - A loss of height and/or weight
  - Changes in your posture
  - Balance and gait (the way you walk)
  - Your muscle strength
- Will likely order a bone density scan [<https://medlineplus.gov/lab-tests/bone-density-scan/>]

## What are the treatments for osteoporosis?

The goals for treating osteoporosis are to slow or stop bone loss and to prevent fractures. Your provider may recommend:

- A healthy, balanced diet that includes enough calcium, vitamin D, and protein
- Lifestyle changes such as quitting smoking [<https://medlineplus.gov/quittingsmoking.html>] and limiting alcohol
- Regular physical activity [<https://medlineplus.gov/howmuchexercisedoined.html>]
- Fall [<https://medlineplus.gov/falls.html>] prevention to help prevent fractures
- Medicines, such as:
  - Medicines that slow down bone loss
  - Medicines that help rebuild bone

In addition to managing your osteoporosis, it's important to avoid activities that may cause a fracture. These can include movements that involve:


- Twisting your spine, like swinging a golf club
- Bending forward from the waist, like sit ups and toe touches

You can also help reduce the risk of breaking a bone by preventing falls.



## Can osteoporosis be prevented?

To help keep bones strong and help prevent osteoporosis, the best thing to do is to eat a healthy diet rich in calcium and vitamin D. Getting regular physical activity, limiting alcohol, and not smoking can also help.

## Start Here

- Osteoporosis [<https://www.niams.nih.gov/health-topics/osteoporosis>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/informacion-de-salud/osteoporosis>]



## Diagnosis and Tests

- Bone Density Scan [<https://medlineplus.gov/lab-tests/bone-density-scan/>]  (National Library of Medicine)  
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/densitometria-osea/>]
- Bone Mineral Density Tests: What the Numbers Mean [<https://www.niams.nih.gov/health-topics/bone-mineral-density-tests-what-numbers-mean>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/informacion-de-salud/pruebas-de-densidad-mineral-osea-lo-que-significan-los-numeros>]


## Prevention and Risk Factors

- Exercise for Your Bone Health [<https://www.niams.nih.gov/health-topics/exercise-your-bone-health>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/informacion-de-salud/haga-ejercicio-para-tener-huesos-sanos>]
- Healthy Bones at Every Age [<https://orthoinfo.aaos.org/en/staying-healthy/healthy-bones-at-every-age/>]  
(American Academy of Orthopaedic Surgeons)
- Osteoporosis [<https://www.fda.gov/consumers/womens-health-topics/osteoporosis>] (Food and Drug Administration)
- Preventing Another Broken Bone [<https://www.niams.nih.gov/health-topics/preventing-another-broken-bone>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/informacion-de-salud/prevencion-de-fracturas-adicionales>]

## Treatments and Therapies

- Bone Density: MedlinePlus Health Topic [<https://medlineplus.gov/bonedensity.html>]  (National Library of Medicine)  
Also in Spanish [<https://medlineplus.gov/spanish/bonedensity.html>]
- Osteoporosis Treatment: Medications Can Help [<https://www.mayoclinic.org/diseases-conditions/osteoporosis/in-depth/osteoporosis-treatment/ART-20046869?p=1>] (Mayo Foundation for Medical Education and Research)  
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/osteoporosis/in-depth/osteoporosis-treatment/ART-20046869?p=1>]
- Red Clover [<https://www.nccih.nih.gov/health/red-clover>]  (National Center for Complementary and Integrative Health)
- Vertebroplasty and Kyphoplasty [<https://www.radiologyinfo.org/en/info/vertebro>]  
(American College of Radiology; Radiological Society of North America)  
Also in Spanish [<https://www.radiologyinfo.org/es/info/vertebro>]

## Living With

- Calcium and Vitamin D: Important for Bone Health [<https://www.niams.nih.gov/health-topics/calcium-and-vitamin-d-important-bone-health>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/informacion-de-salud/el-calcio-y-la-vitamina-D-importantes-para-la-salud-de-los-huesos>]




## Related Issues

- Osteoporosis and Your Spine [<https://www.bonehealthandosteoporosis.org/patients/treatment/exercisesafe-movement/osteoporosis-and-your-spine/>] (Bone Health and Osteoporosis Foundation)
- Pelvic Fractures [<https://www.merckmanuals.com/home/injuries-and-poisoning/fractures/pelvic-fractures>] (Merck & Co., Inc.)  
Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/traumatismos-y-envenenamientos/fracturas/fracturas-de-la-pelvis>]
- Recovering from Fractures [<https://www.bonehealthandosteoporosis.org/patients/treatment/exercisesafe-movement/recovering-from-falls/>] (Bone Health and Osteoporosis Foundation)


## Specifics

- Glucocorticoid-Induced Osteoporosis [<https://rheumatology.org/patients/glucocorticoid-induced-osteoporosis>] (American College of Rheumatology)  
Also in Spanish [<https://rheumatology.org/patients/osteoporosis-inducida-por-glucocorticoides>]

## Genetics

- Hajdu-Cheney syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/hajdu-cheney-syndrome>]  (National Library of Medicine)
- Juvenile primary osteoporosis: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/juvenile-primary-osteoporosis>]  (National Library of Medicine)
- Osteoporosis-pseudoglioma syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/osteoporosis-pseudoglioma-syndrome>]  (National Library of Medicine)

## Videos and Tutorials

- Osteoporosis [<https://medlineplus.gov/ency/anatomyvideos/000093.htm>]  (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/anatomyvideos/000093.htm>]


## Test Your Knowledge

- Test Your Bone-Health Diet Knowledge [[https://medlineplus.gov/ency/quiz/000490\\_11.htm](https://medlineplus.gov/ency/quiz/000490_11.htm)] (Medical Encyclopedia)  
Also in Spanish [[https://medlineplus.gov/spanish/ency/quiz/000490\\_71.htm](https://medlineplus.gov/spanish/ency/quiz/000490_71.htm)]
- Test Your Osteoporosis Knowledge [[https://medlineplus.gov/ency/quiz/000360\\_6.htm](https://medlineplus.gov/ency/quiz/000360_6.htm)] (Medical Encyclopedia)  
Also in Spanish [[https://medlineplus.gov/spanish/ency/quiz/000360\\_66.htm](https://medlineplus.gov/spanish/ency/quiz/000360_66.htm)]
- What's Your Osteoporosis Risk? [[https://medlineplus.gov/ency/quiz/000506\\_1.htm](https://medlineplus.gov/ency/quiz/000506_1.htm)] (Medical Encyclopedia)  
Also in Spanish [[https://medlineplus.gov/spanish/ency/quiz/000506\\_61.htm](https://medlineplus.gov/spanish/ency/quiz/000506_61.htm)]

## Statistics and Research

- FastStats: Osteoporosis [<https://www.cdc.gov/nchs/fastats/osteoporosis.htm>] (National Center for Health Statistics)

## Clinical Trials


- ClinicalTrials.gov: Osteoporotic Fractures [<https://clinicaltrials.gov/search?cond=%22Osteoporotic+Fractures%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

## Journal Articles


### References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Improvement of medication adherence in osteoporosis through telemedicine combined with email:... [<https://www.ncbi.nlm.nih.gov/pubmed/40695493>]
- Article: A randomized controlled trial comparing romosozumab and denosumab in elderly women... [<https://www.ncbi.nlm.nih.gov/pubmed/40594305>]
- Article: Evaluation of the fracture prevention effects of teriparatide and alendronate in... [<https://www.ncbi.nlm.nih.gov/pubmed/40425867>]
- Osteoporosis -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Osteoporosis%22%5Bmajr%3Anoexp%5D+OR+%22Osteoporotic+Fractures%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+AND+%28patient+education+handout%5Bpt%5D+OR+guideline%5Bpt%5D+OR+clinical+trial%5Bpt%5D%29++NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]


## Find an Expert

- National Institute of Arthritis and Musculoskeletal and Skin Diseases [<https://www.niams.nih.gov/>]   
Also in Spanish [<https://www.niams.nih.gov/es/portal-en-espanol>]


## Children

- Kids and Their Bones [<https://www.niams.nih.gov/health-topics/kids-and-their-bones>]  
 (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/informacion-de-salud/la-salud-de-los-huesos-de-los-ninos>]



## Men

- Osteoporosis in Men [<https://www.niams.nih.gov/health-topics/osteoporosis-men>]  
 (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/health-topics/la-osteoporosis-en-los-hombres>]

## Women

- Osteoporosis [<https://womenshealth.gov/a-z-topics/osteoporosis>]  
(Department of Health and Human Services, Office on Women's Health)  
Also in Spanish [<https://espanol.womenshealth.gov/a-z-topics/osteoporosis>]
- Pregnancy, Breastfeeding, and Bone Health [<https://www.niams.nih.gov/health-topics/pregnancy-breastfeeding-and-bone-health>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)  
Also in Spanish [<https://www.niams.nih.gov/es/health-topics/embarazo-lactancia-y-salud-de-los-huesos>]

## Older Adults

- Exercising with Chronic Conditions [<https://www.nia.nih.gov/health/exercise-and-physical-activity/exercising-chronic-conditions>]  (National Institute on Aging)  
Also in Spanish [<https://www.nia.nih.gov/espanol/ejercicio/hacer-ejercicio-enfermedades-cronicas>]
- Osteoporosis in Aging: Protect Your Bones with Exercise [<https://newsinhealth.nih.gov/2017/12/osteoporosis-aging>]  
 (National Institutes of Health)  
Also in Spanish [<https://salud.nih.gov/recursos-de-salud/nih-noticias-de-salud/osteoporosis-en-el-envejecimiento>]

## Patient Handouts

- Bone mineral density test [<https://medlineplus.gov/ency/article/007197.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007197.htm>]
- Calcium, vitamin D, and your bones [<https://medlineplus.gov/ency/patientinstructions/000490.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000490.htm>]
- Exercise, lifestyle, and your bones [<https://medlineplus.gov/ency/patientinstructions/000492.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000492.htm>]
- Medicines for osteoporosis [<https://medlineplus.gov/ency/patientinstructions/000502.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000502.htm>]
- Osteoporosis [<https://medlineplus.gov/ency/article/000360.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000360.htm>]
- What causes bone loss? [<https://medlineplus.gov/ency/patientinstructions/000506.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000506.htm>]



## MEDICAL ENCYCLOPEDIA

Bone mineral density test [<https://medlineplus.gov/ency/article/007197.htm>]

Calcium, vitamin D, and your bones [<https://medlineplus.gov/ency/patientinstructions/000490.htm>]

Compression fractures of the back [<https://medlineplus.gov/ency/article/000443.htm>]

Exercise, lifestyle, and your bones [<https://medlineplus.gov/ency/patientinstructions/000492.htm>]

Hump on upper back (dorsocervical fat pad) [<https://medlineplus.gov/ency/article/003112.htm>]

Lumbar MRI scan [<https://medlineplus.gov/ency/article/007352.htm>]

Lumbosacral spine x-ray [<https://medlineplus.gov/ency/article/003807.htm>]

Medicines for osteoporosis [<https://medlineplus.gov/ency/patientinstructions/000502.htm>]

Osteoporosis [<https://medlineplus.gov/ency/anatomyvideos/000093.htm>]

Osteoporosis [<https://medlineplus.gov/ency/article/000360.htm>]

Thoracic spine x-ray [<https://medlineplus.gov/ency/article/003806.htm>]

What causes bone loss? [<https://medlineplus.gov/ency/patientinstructions/000506.htm>]

## Related Health Topics

Bone Density [<https://medlineplus.gov/bonedensity.html>]

Calcium [<https://medlineplus.gov/calcium.html>]

Fractures [<https://medlineplus.gov/fractures.html>]

Vitamin D [<https://medlineplus.gov/vitamind.html>]

## National Institutes of Health

The primary NIH organization for research on *Osteoporosis* is the National Institute of Arthritis and Musculoskeletal and Skin Diseases [<http://www.niams.nih.gov/>]

## Other Languages

Find health information in languages other than English [<https://medlineplus.gov/languages/osteoporosis.html>] on *Osteoporosis*

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