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Paget's Disease of Bone

Also called: Osteitis deformans

What is Paget's disease of bone?

Paget's disease of bone is a chronic bone disorder. Normally, there is a process in which your bones break down and then regrow. In Paget's disease, this process is abnormal. There is excessive breakdown and regrowth of bone. Because the bones regrow too quickly, they are bigger and softer than normal. They may be misshapen and easily fractured [<https://medlineplus.gov/fractures.html>] (broken). Paget's usually affects just one or a few bones.

What causes Paget's disease of bone?

Researchers do not know for sure what causes Paget's disease. Environmental factors may play a role. In some cases, the disease runs in families, and several genes have been linked to the disease.

Who is at risk for Paget's disease of bone?

The disease is more common in older people and those of northern European heritage. If you have a close relative who has Paget's, you are much more likely to have it.

What are the symptoms of Paget's disease of bone?

Many people do not know that they have Paget's, because it often has no symptoms. When there are symptoms, they are similar to those of arthritis [<https://medlineplus.gov/arthritis.html>] and other disorders. The symptoms include:

- Pain [<https://medlineplus.gov/pain.html>] , which may be due to the disease or to arthritis, which can be a complication of Paget's
- Headaches [<https://medlineplus.gov/headache.html>] and hearing loss [<https://medlineplus.gov/hearingdisordersanddeafness.html>] , which can happen when Paget's disease affects the skull
- **Pressure on the nerves**, which can happen when Paget's disease affects the skull or spine
- **Increased head size, bowing of a limb, or curvature of the spine**. This can happen in advanced cases.
- **Hip pain**, if Paget's disease affects the pelvis or thighbone
- **Damage to the cartilage of your joints**, which may lead to arthritis

Usually, Paget's disease gets worse slowly over time. It does not spread to normal bones.

What other problems can Paget's disease of bone cause?

Paget's disease can lead to other complications, such as:

- Arthritis, because the misshapen bones can cause increased pressure and more wear and tear on the joints
- Heart failure [<https://medlineplus.gov/heartfailure.html>] . In severe Paget's disease, the heart has to work harder to pump blood to affected bones. Heart failure is more likely if you also have **hardening of the arteries** [<https://medlineplus.gov/atherosclerosis.html>] .
- Kidney stones [<https://medlineplus.gov/kidneystones.html>] , which can happen when the excessive breakdown of the bone leads to extra calcium in the body

- Nervous system problems [<https://medlineplus.gov/neurologicdiseases.html>] , since the bones can cause pressure on the brain, spinal cord, or nerves. There may also be reduced blood flow to the brain and spinal cord.
- Osteosarcoma, cancer of the bone [<https://medlineplus.gov/bonecancer.html>]
- Loose teeth, if Paget's disease affects the facial bones
- Vision loss [<https://medlineplus.gov/visionimpairmentandblindness.html>] , if Paget's disease in the skull affects the nerves. This is rare.

How is Paget's disease of bone diagnosed?

Your health care provider may use many tools to make a diagnosis:

- A medical history, which includes asking about your symptoms
- A physical exam
- An x-ray [<https://medlineplus.gov/xrays.html>] of the affected bones. Paget's disease is almost always diagnosed using x-rays.
- An alkaline phosphatase blood test [<https://medlineplus.gov/lab-tests/alkaline-phosphatase/>]
- A bone scan

Sometimes the disease is found by accident when one of these tests is done for another reason.

What are the treatments for Paget's disease of bone?


To avoid complications, it is important to find and treat Paget's disease early. The treatments include:

- **Medicines.** There are several different medicines to treat Paget's disease. The most common type is bisphosphonates. They help reduce bone pain and stop or slow down the progress of the disease.
- **Surgery** is sometimes needed for certain complications of the disease. There are surgeries to
 - Allow fractures (broken bones) to heal in a better position
 - Replace joints such as the knee [<https://medlineplus.gov/kneereplacement.html>] and hip [<https://medlineplus.gov/hipreplacement.html>] when there is severe arthritis
 - Realign a deformed bone to reduce the pain in weight-bearing joints, especially the knees
 - Reduce pressure on a nerve, if enlargement of the skull or spine injuries effects the nervous system

Diet and exercise do not treat Paget's, but they can help to keep your skeleton healthy. If you do not have kidney stones, you should make sure to get enough calcium [<https://medlineplus.gov/calcium.html>] and vitamin D [<https://medlineplus.gov/vitamind.html>] through your diet and supplements. Besides keeping your skeleton healthy, exercise can prevent weight gain and maintain the mobility of your joints. Talk with your health care provider before you start a new exercise program. You need to make sure that the exercise does not put too much stress on the affected bones.

NIH: National Institute of Arthritis and Musculoskeletal and Skin Diseases

Start Here

- Paget's Disease of Bone [<https://orthoinfo.aaos.org/en/diseases--conditions/pagets-disease-of-bone>] (American Academy of Orthopaedic Surgeons)
- Paget's Disease of Bone [<https://rheumatology.org/patients/pagets-disease-of-bone>] (American College of Rheumatology)
- Paget's Disease of Bone [<https://www.niams.nih.gov/health-topics/pagets-disease-bone>]  (National Institute of Arthritis and Musculoskeletal and Skin Diseases)

Symptoms

- Paget's Disease of Bone: Symptoms and Causes [<https://www.mayoclinic.org/diseases-conditions/pagets-disease-of-bone/symptoms-causes/syc-20350811?p=1>] (Mayo Foundation for Medical Education and Research)



Diagnosis and Tests

- Alkaline Phosphatase [<https://medlineplus.gov/lab-tests/alkaline-phosphatase/>]  (National Library of Medicine)


Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/fosfatasa-alcalina/>]

- Bone Scan [<https://www.mayoclinic.org/tests-procedures/bone-scan/about/pac-20393136?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/tests-procedures/bone-scan/about/pac-20393136?p=1>]
- Paget's Disease of Bone: Diagnosis and Treatment [<https://www.mayoclinic.org/diseases-conditions/pagets-disease-of-bone/diagnosis-treatment/drc-20350816?p=1>] (Mayo Foundation for Medical Education and Research)

Genetics

- Inclusion body myopathy with early-onset Paget disease and frontotemporal dementia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/inclusion-body-myopathy-with-early-onset-paget-disease-and-frontotemporal-dementia>]  (National Library of Medicine)
- Paget disease of bone: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/paget-disease-of-bone>]  (National Library of Medicine)

Clinical Trials


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

Journal Articles

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

- Article: Standard and advanced echocardiographic study of patients with Paget's disease of... [<https://www.ncbi.nlm.nih.gov/pubmed/40342188>]
- Article: Influence of Ethnicity and Deprivation on Occurrence of Paget'S Disease in... [<https://www.ncbi.nlm.nih.gov/pubmed/39443368>]
- Article: Causes of Musculoskeletal Pain in Paget's Disease of Bone. [<https://www.ncbi.nlm.nih.gov/pubmed/39349622>]
- Paget's Disease of Bone -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Osteitis+Deformans%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+2+Years%22+%5Bedat%5D+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

- Find a Rheumatologist [<https://my.rheumatology.org/rheumatology-provider-directory>] (American College of Rheumatology)
- Find an Endocrinologist [<https://www.endocrine.org/patient-engagement/find-an-endocrinologist-directory>] (Endocrine Society)
- 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>]

Patient Handouts

- ALP - blood test [<https://medlineplus.gov/ency/article/003470.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003470.htm>]
- ALP isoenzyme test [<https://medlineplus.gov/ency/article/003497.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003497.htm>]
- Paget disease of the bone [<https://medlineplus.gov/ency/article/000414.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000414.htm>]



MEDICAL ENCYCLOPEDIA

ALP - blood test [<https://medlineplus.gov/ency/article/003470.htm>]

ALP isoenzyme test [<https://medlineplus.gov/ency/article/003497.htm>]

Bone scan [<https://medlineplus.gov/ency/article/003833.htm>]

Paget disease of the bone [<https://medlineplus.gov/ency/article/000414.htm>]

National Institutes of Health

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

MedlinePlus links to health information from the National Institutes of Health and other federal government agencies.

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