



Rickets and Osteomalacia: What You Need to Know

Rickets is a disease of growing children that affects how the growth plates of the bones develop. Rickets can cause bowing of the legs and bone pain. It can also increase a child's risk of fracture (broken bone). Click here to learn the causes and symptoms of rickets and osteomalacia in children, and how doctors diagnose and treat these conditions.

WHAT ARE RICKETS AND OSTEOMALACIA?

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Osteomalacia affects both children and adults and is a disease in which the bones don't contain enough **bone mineral** (mostly **calcium** and **phosphate**). Like rickets, osteomalacia can cause bone pain and increase the risk of fracture.

These two conditions are closely linked – usually a child with rickets will also have osteomalacia.

WHAT CAUSES RICKETS AND OSTEOMALACIA?

The most common cause of rickets and osteomalacia is **vitamin D deficiency** (not enough vitamin D). Usually, this is due to:

- A diet without enough vitamin D.
- Insufficient vitamin D production in your skin (from having darker colored skin or keeping skin covered without sufficient sun exposure, or living in northern regions of the country). This is particularly a problem during the winter months.
- Some medical conditions, such as celiac disease, can affect how a child's gut absorbs vitamin D from food.
- In a few cases, rickets is the result of rare genetic conditions which affect how the body uses vitamin D or phosphate.

WHAT ARE THE SYMPTOMS OF RICKETS AND OSTEOMALACIA?

The symptoms most commonly seen in rickets and osteomalacia are the direct result of how the condition affects bone development. Children with rickets can have bowing of the legs which worsens over time, wider wrists, and **frontal bossing** (an unusually prominent forehead). They also can have poor growth. Osteomalacia causes bone pain and can increase the risk of fracture.

HOW DO DOCTORS TREAT RICKETS AND OSTEOMALACIA?

The most common treatment for rickets and osteomalacia includes a **vitamin D supplement** and **dietary changes**. Often, calcium supplements are also prescribed. In more serious cases, surgery or braces for the limbs can help with physical deformities. For patients with rare genetic conditions causing rickets and osteomalacia, specific targeted therapies are often available.