

Name of the test

Vitamin D (25-hydroxycholecalciferol)

Alternative name(s) of the test

25 (OH) Cholecalciferol; 25 (OH) D₃

What is this test used for?

Vitamin D is essential for formation of teeth and bones. There are two forms of vitamin D that can be measured in the blood: 25-hydroxyvitamin D and 1,25-dihydroxyvitamin D.

There are two sources of vitamin D:

Endogenous – which is produced in the skin, on exposure to sunlight;

Exogenous - which is ingested in a form of food and supplements.

These types of vitamin D are chemically slightly different from each other:

Vitamin D₂ – or ergocalciferol is in fortified foods and vitamin supplements;

Vitamin D₃ - or cholecalciferol is synthesized in the skin.

Both D₂ and D₃ forms are equally effective, when they are transformed in the liver and the kidneys to 1,25-dihydroxyvitamin D.

This test measures the level of 25-hydroxycholecalciferol in the blood.

When is the test ordered?

Vitamin D test is ordered:

- when vitamin D deficiency is suspected;
- to evaluate the effectiveness of vitamin D deficiency treatment
- when a patient has signs of rickets or osteomalacia
- before starting the treatment of osteoporosis
- to screen for vitamin D deficiency
- when some abnormalities are found in calcium or phosphorus tests
- when a person is at a higher risk of developing vitamin D deficiency, for example, older adults, children, pregnant women
- when a patient has some disorder of parathyroid gland

How is this test performed?

A blood sample is taken from a vein.

How to prepare for the test

No special preparation is needed.

Interpretation of results

The results show whether a person has vitamin D deficiency or not. However, in order to determine what caused deficiency, this test alone is not enough.

Low levels of 25-hydroxyvitamin D may be caused by not getting enough exposure to sunlight or by problems with its absorption from the intestines.

Low levels of 1,25-dihydroxyvitamin D can be caused by a kidney disease.

1,25-dihydroxyvitamin D levels may be elevated when there is excess parathyroid hormone or when there are diseases, such as sarcoidosis or some lymphomas.