Phosphorus: foods, functions, how much do you need & more

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Phosphorous is well-known for its importance in healthy and fertile soil, but just like plants, our bodies also need this mineral to thrive!

What is phosphorus?

Phosphorus is one of the major minerals, which our bodies need in relatively larger amounts to keep healthy. We can find phosphorus in a variety of foods, particularly those rich in protein.

What are the functions of phosphorus?

Phosphorus is one of the most abundant minerals in our bodies and we can find 85% of it in our bones and teeth. In fact, one of the key functions of phosphorus, together with calcium, is to form and keep our bones and teeth healthy. The remaining 15% is used in many other important functions, such as to help our bodies produce energy, keep a balanced pH, form our genetic material (DNA and RNA) and to help deliver oxygen from the red blood cells to the body. Phosphorus is also needed for the production of phospholipids, an important type of fats that make up the structure of our cells' membranes and play a key role in the good functioning of our nerve cells and brain.

functions of phosphorus

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forms and keeps strong bones and teeth

helps maintain our energy levels
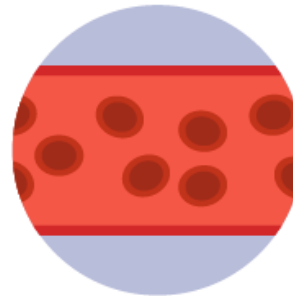
forms our genetic material (DNA & RNA)

helps form the membranes of our cells

keeps the healthy function of our brain & nervous system

helps to maintain normal acid–balance (pH)

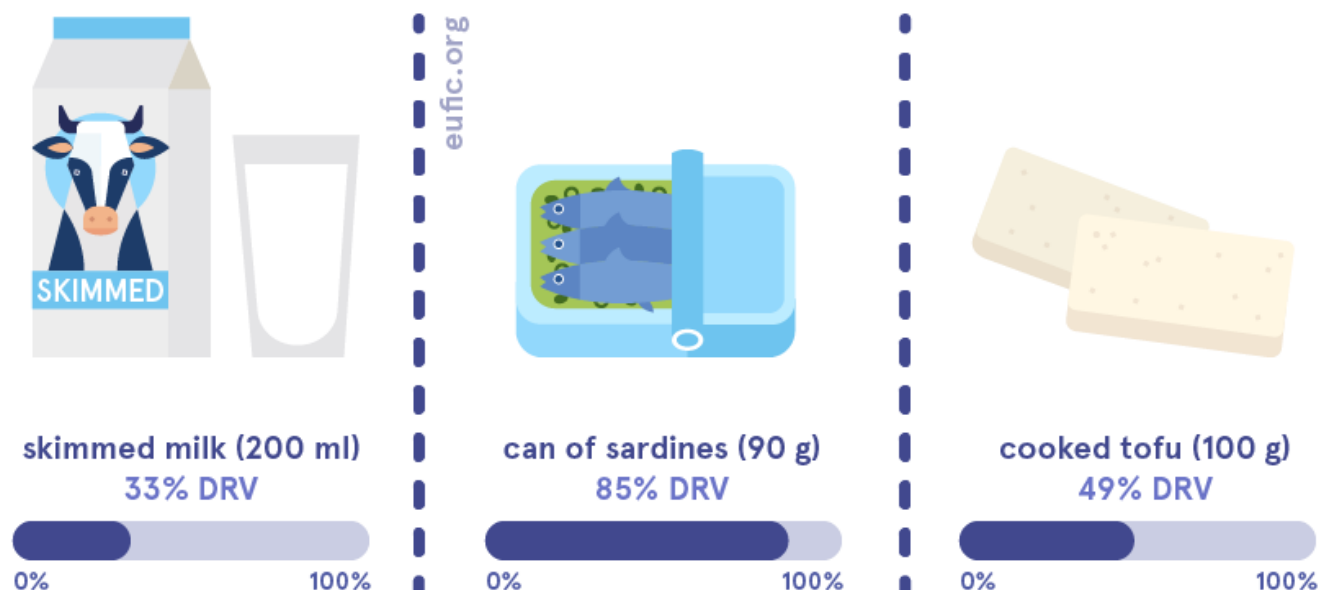**helps oxygen delivery in the body**

How much phosphorus do I need per day?

How much phosphorus you need per day changes according to your age, sex and life-stage.

The dietary reference value (DRV)* for healthy adults (over the age of 18), including during pregnancy and lactation, is 550 mg of phosphorus per day.

We can get enough phosphorus from our diets by eating a variety of foods. Following your [country's dietary guidelines](#) on a healthy and balanced diet will help you meet your needs for phosphorus.

how much phosphorus is in these foods

skimmed milk (200 ml)
33% DRV

0%   100%

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can of sardines (90 g)
85% DRV

0%   100%

cooked tofu (100 g)
49% DRV

0%   100%

* These values are based on the adequate intake (AI) estimates from the European Food Safety Authority (EFSA). They should not be interpreted as nutrient goals. To know more about DRVs in Europe [click here.](#)

What foods contain phosphorus?

Phosphorus is found in many foods, particularly those rich in protein, such as:

- milk and dairy
- meat and poultry
- fish
- grain products
- legumes.

Phosphorus is also added to foods through food additives, usually in the form of phosphate or phosphoric acid. These can be found in a variety of processed foods from baked goods to processed meat and soft drinks.

foods that contain phosphorus

Does phosphorus interact with other nutrients?

Phosphorus works together with vitamin D and calcium to grow and keep healthy bones and teeth.

Calcium and phosphorus can influence each other's balance in our bodies. For example, a diet high in calcium and low in phosphorus can reduce the absorption of phosphorus and potentially reduce the levels of the latter in the body. The contrary is also true: a diet high in phosphorus and low in calcium can reduce the absorption of calcium. Any of these two scenarios can have negative consequences on the health of our bones, making it important to have a good balance of both minerals in our diets.

In turn, vitamin D is particularly important to help our bodies absorb phosphorus from foods, as well as to help it (together with calcium) build and keep strong bones and teeth. This process also uses vitamin K, which is why we need a good balance of all these micronutrients to keep optimal bone growth and health.

What happens if I have too little phosphorus?

It's not common to have too little phosphorus in our diets since this mineral is widespread in foods.

Phosphorus deficiency is usually related to specific health conditions or metabolic disorders that lower the levels of phosphorus in the body. In severe cases, phosphorus deficiency can cause our bones to become weak and brittle, leading to rickets in adults and osteomalacia in children.

What happens if I have too much phosphorus?

Phosphorus from foods is not considered harmful since it's very unlikely that we get too much of it

through our diets alone.

High intakes of phosphorus are mainly dangerous for people who have kidney disease, as it causes the accumulation of phosphorus in the blood. Over time, this can lead to serious health consequences such as secondary hyperparathyroidism, bone loss and the accumulation of calcium in our soft tissues (such as organs, muscles and blood vessels) and consequent damage.

When should I pay extra attention to my phosphorus intake?

Phosphorus deficiency is not a risk for the general population, since most people can get the recommended amounts of phosphorus from a varied and balanced diet.

References

1. European Food Safety Authority. 2015. Scientific Opinion on Dietary Reference Values for phosphorus. EFSA Journal 2015;13(7):4185
2. [Public Health England. 2019. McCance and Widdowson's Composition of Foods Integrated Dataset.](#)