

ACSH Explains: What Are Vitamins?



By Ruth Kava — November 1, 2017

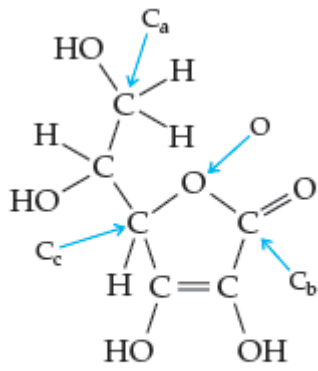


Some Sources of Vitamins via
[google.com](https://www.google.com)

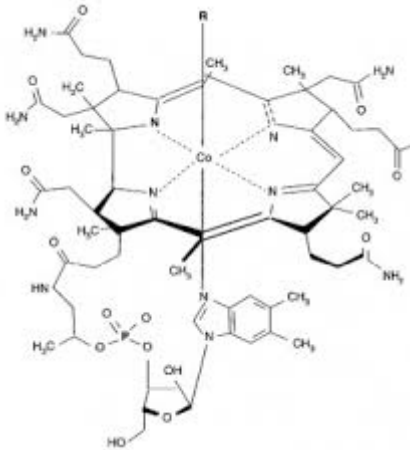
Sure, everyone ‘knows’ what vitamins are — they’re those substances in the pills you take with OJ every morning, and if you don’t, you’ll get sick. And at least some of that is true (although the supplement industry would like you to believe the part about the pills).

One thing we know for sure about vitamins is that they are organic chemicals (see my colleague Dr. Josh Bloom’s explanation of ‘organic’ [here](#) ^[1]) that are essential for life. That means that if you don’t consume a vitamin for long enough and your body is depleted of it, you will eventually get quite sick and die. On the way, you’ll get a disease from the deficiency, such as scurvy from lack of vitamin C or pellagra from a niacin deficiency.

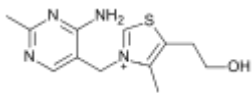
But that’s just one of the few things vitamins have in common with each other. Although you might think they’d be similar in chemical structure, that’s not even close to being true, as you can see from the examples of thiamin, vitamin C and B12 below.



Ascorbic acid (Vitamin C)



Cobalamin (Vitamin B12)



Thiamin (Vitamin B1)

The name 'vitamins' arose because the first one discovered, thiamine (also known as vitamin B1), has an amino group in its structure. Thus the term vitamin is actually a contraction of 'vital amine'. There are currently 13 compounds recognized as vitamins, both with and without amines, as shown in the table below. Both common and some of their chemical names are given:

Common Names	Chemical Names	
Vitamin A	Retinol, retinal, and some carotenoids including beta carotene	
Vitamin B1	Thiamine	

Vitamin B2	Riboflavin
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Vitamin B3	Niacin, niacinamide, Nicotinamide riboside
Vitamin B5	Pantothenic Acid
Vitamin B6	Pyridoxine, pyridoxamine, pyridoxal
Vitamin B7	Biotin
Vitamin B9	Folates
Vitamin B12	Cyanocobalamin, hydroxocobalamin, methylcobalamin, adenosylcobalamin
Vitamin C	Ascorbic Acid
Vitamin D	Cholecalciferol, Ergocalciferol
Vitamin E	Tocopherols, tocotrienols
Vitamin K	Phylloquinone, menaquinones

Although other drugs have been called 'vitamins' in popular literature or on the Internet, they are not. These fake vitamins have not passed the tests of being essential or having a unique and essential function. When non-vitamins are given the term, it is simply done to sell products such as so-called vitamin 17 or laetrile, which is actually derived from cyanide-containing apricot pits.

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Links

[1] <https://www.acsh.org/news/2017/10/30/acsh-explains-what-does-organic-really-mean-12045>