



# Multivitamins: benefits & risks for health

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In the food supplement aisle, we find dozens of products packed with different vitamins and minerals. So-called “multivitamins” offer to supplement our diet and support our health and well-being. But are these products necessary? Do they keep us healthy? And how are they regulated? In this article, we’ll cover common questions about multivitamins, explain what they are, how they are regulated and how to know when to supplement.

## What is a multivitamin?

“Multivitamins” are food supplements that combine different [vitamins](#) and [minerals](#). They aim to fill nutritional gaps in the diet and are commonly taken in the form of pills, tablets, capsules, or liquids. Multivitamins are available in a range of doses and formulations, for example, covering the nutritional needs of children, women, men, or the elderly. They can be bought in pharmacies, herbal stores, supermarkets, and from online retailers.

In Europe, multivitamins are legally considered “food supplements”, a category which includes any food product containing concentrated amounts of vitamins, minerals and/or other substances with a nutritional or physiological effect.<sup>1</sup> The term “multivitamins” covers products with very different compositions as they can include additional ingredients, such as fatty acids, amino acids, enzymes, probiotics, herbs, and botanical extracts.

In this article, we will focus on multivitamins that contain only vitamins and minerals.

## Are multivitamins important for health?

Multivitamins aim to prevent or correct micronutrient deficiencies or to support the proper intake of nutrients when the diet alone is not enough to provide them.<sup>2</sup>

For people who follow a healthy and balanced diet – one that includes all the main food groups in sufficient amounts – multivitamins are unlikely to have any positive health effects. In some cases, they may increase the likelihood that people take more than the safe levels of a micronutrient and cause negative health effects.<sup>3</sup> This is the case for some vitamins, for example very high doses of vitamin A or prolonged supplementation (more than 6 months) with vitamin B6 can be harmful. Other vitamins such as vitamin C or vitamin B12 are excreted easily from the body, so these are less likely to pose a health risk. For more information on individual vitamins and minerals, foods, functions and how much you need, [visit our micronutrients resource](#).

Multivitamins should never replace a healthy diet: they can only “supplement” and not substitute. For the general population the evidence is clear: regularly choosing a variety of [nutrient-dense](#) foods is the best way to get the nutrition we need and support our long-term health.<sup>4</sup>

## When to take a multivitamin?

Vitamin and mineral supplements can be useful for people who cannot or are not getting specific nutrients from their diet. Specific cases include:

- **Low dietary intake.** People who exclude certain food groups or can't eat certain foods due to medical conditions (like allergies) are at higher risk of nutrient deficiencies. For example, vegans and vegetarians are often recommended to supplement [vitamin B12](#). Similarly, [Vitamin D](#) supplements are recommended for people who have dark skin or are living in countries that don't get a lot of sun, as it can be hard to get enough from food alone.
- **Pregnancy and breastfeeding.** During pregnancy and breastfeeding, more of certain vitamins and minerals like [folate](#) and [iron](#), are needed and it may be hard to get enough from diet alone. Usually, prenatal vitamins are recommended on top of a balanced diet to make sure mother and baby get enough of key nutrients.
- **Ageing.** As we age, our bodies become less efficient at absorbing certain vitamins and minerals and we may experience difficulties eating enough food due to low appetite or dental problems. This puts the elderly at a higher risk of deficiency of certain vitamins and minerals such as [calcium](#), [vitamin D](#), and [vitamin B12](#).
- **After bariatric surgery.** People who have undergone this procedure may have difficulty eating the amount of food they need to get all the required nutrients.
- **Health conditions that impair nutrient absorption.** People who have medical conditions that affect the absorption of nutrients (such as Crohn's disease, chronic alcohol consumption, and so on) are more prone to deficiencies and may benefit from supplements. Some medications, if taken for long periods, can also put us at risk of deficiencies and increase the need for certain vitamins and minerals.

If you suspect that you may be not getting enough nutrients from your diet, a registered dietitian/nutritionist or GP will be able to check your vitamin and mineral levels and provide individualised and safe advice for you. Supplementation should always be done under the supervision of a healthcare professional who can determine whether a deficiency exists and recommend the appropriate products and dosages.

# Will multivitamins help with tiredness/colds/muscle aches?

## What can they help with?

There's no clear proof that taking food supplements can bring any health benefits for people who don't have a nutritional deficiency.<sup>5,6</sup> In fact, science has previously debunked many popular myths linking food supplements to specific health effects, such as the claim that [vitamin C](#) supplements help prevent colds, or that [magnesium](#) reduces muscle cramps.<sup>7,8</sup>

Only health claims that have been approved by the European Commission can be listed on the packaging. Beware of food supplements that imply any health benefits in their advertisement, such as multivitamins for the "hair and nails" or for "memory and concentration". These general statements concern the vitamins and minerals contained in the supplement and are not necessarily specific to the effects of the supplement itself.<sup>9</sup>

Even if nutrition may be a piece of the puzzle, symptoms like tiredness or muscle aches can be caused by a variety of other lifestyle factors such as illness, stress, poor sleep, or even intensive physical exercise. It is unlikely that multivitamins alone will improve these symptoms. If they are proven to be caused by a nutrient deficiency, the treatment should be done under the advice of a health professional and target the specific nutrients that are lacking.

Despite having a similar appearance, food supplements should not be confused with medicine. Multivitamins are a type of food product which means they can't be used to prevent, cure or treat a disease and should never be taken as a substitute for medical treatment.

## Who approves multivitamins in Europe?

In Europe, the [EU Food Supplements Directive](#) regulates all food supplements. This directive contains the list of vitamins and minerals allowed to be used in food supplements and how they should be labelled. The label must include the name of the vitamins and minerals as well as how much they contain expressed as a percentage of the daily dietary reference value (for example, iron 4.2 mg, 38 %). The European Food Safety Authority (EFSA) evaluates the scientific evidence on the safety of the food supplement and the efficacy of the nutrition source.

Because multivitamins are considered a type of food (and not a medical product), producers, suppliers, or distributors are responsible for making sure that the supplements they sell are safe. They must also make sure that their products are labelled properly and do not make unauthorised claims about health benefits.

Each European country has its own [national food safety authority](#) responsible for approving and monitoring if food supplements sold within their territory comply with European and national legislation. However, the regulatory approaches differ between countries with some enforcing stricter controls than others. For example, some national authorities require that producers notify them before putting a food supplement on the market, while others don't. They may also differ in the substances they consider foods or medicinal products.<sup>10</sup>

The European Commission also has rules in place to protect consumers against the health risks of food supplements and keeps a list of substances suspected or known to be dangerous.<sup>1</sup> However, many

others, including different herbs, plant extracts and bioactive compounds, can still be added to multivitamins even if there is not a lot of scientific evidence on health benefits or potential side effects. Many plant species contain active substances that may not be safe for some people or if consumed in high amounts, which can happen with concentrated extracts. For substances like these, EU countries each have their own guidelines and regulations.<sup>10</sup>

## **Are multivitamins metabolised/absorbed in the same way as micronutrients contained in foods?**

Our bodies are capable of absorbing vitamins and minerals from synthetic sources. However, the extent to which we can absorb specific multivitamin products is less clear. Nutrient absorption depends on different individual factors, such as our genetics or nutritional status, as well as the supplement formulation and how we take it (e.g., with specific foods, on an empty stomach, etc.). Supplements can be placed on the market without clinical trials and scientific documentation proving their efficacy which makes it hard to answer these questions.<sup>6</sup>

[Nutrient-dense](#) foods come in a rich package of nutrients and bioactive substances that promote health and nutrient absorption. When we isolate vitamins and minerals into a product, we remove the potential for positive nutritional synergies that we find in nature. To date, scientists have not found convincing evidence that food supplements can support health and prevent chronic diseases in the same way that an overall healthy diet does.<sup>4</sup>

Sometimes we may even get the opposite effect, as high amounts of certain vitamins and minerals fight each other for absorption when present together in the gut. For example, high doses of [iron](#) and [zinc](#) may reduce the absorption of [copper](#) and [calcium](#) may lower [iron](#) absorption.<sup>11,12</sup> We often find all these minerals combined in multivitamins.

## **Do multivitamins have side effects?**

Multivitamins are generally considered safe, but they're not always without side effects.<sup>13</sup> Certain vitamins and minerals can be harmful when taken in large doses and some people may be more sensitive to ingredients contained in these products. Possible side effects of food supplements include nausea or upset stomach, diarrhoea or constipation, headaches, skin rashes or itching, and interaction with certain medications.

Keep in mind that food supplements may make us exceed recommended intakes for some vitamins and minerals, which is unlikely to happen when we get them from diet alone. With long-term use, this may lead to serious health problems.<sup>5</sup>

When taking multivitamins make sure to read the information and follow the recommended daily use to avoid exceeding safe intakes. Particularly if you have any medical conditions, are pregnant or breastfeeding, or taking any medications, it's recommended that you consult with a healthcare professional before taking multivitamins.

## References

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