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Body

Is organic food healthier? What the two best-known reviews say

The Stanford review (2012), the Newcastle review (2014), pesticide residues and how to choose wisely even on a limited budget

3 November 2026 / 5 min read

Translated from the Albanian original by the editors.



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Organic food is produced without synthetic pesticides and chemical fertilisers, without genetically modified organisms and, for animals, under stricter rules on feed, space and antibiotics. In our markets we see more and more products labelled "bio" or "organic", often at a higher price. The question is: what do we get for that price?

The Stanford review, 2012

In 2012 a group of Stanford University researchers led by Crystal Smith-Spangler analysed over 200 studies comparing organic and conventional foods. They found no strong differences in vitamin content. However, organic produce was less likely to have detectable pesticide residues (about 30 per cent lower risk), and organic chicken and pork were less likely to carry bacteria resistant to some antibiotics. The researchers noted that most residues in conventional foods were within permitted safety limits.

The Newcastle review, 2014

In 2014 a group led by Marcin Barański analysed 343 studies on crops. They found that organic produce had higher concentrations of some antioxidants, lower levels of cadmium, a toxic metal, and far fewer pesticide residues. This review attracted much attention, but was also criticised for how some studies were selected and analysed.

> *Organic food is not a medicine. But fewer pesticide residues are a real difference, especially for children.*

What we do not know

There are very few studies that have followed people for years to see whether those who eat organic are healthier. Some observational studies have found links with lower risk of certain diseases, but people who eat organic usually also have healthier lifestyles overall, which makes it hard to separate the effect of the food.

Pesticides in the body

One thing that seems clear is that organic food lowers the amount of synthetic pesticide residues in the body. In 2019 Carly Hyland and colleagues followed four American families who ate non-organic food for six days and then entirely organic food for six days. After switching to organic food, the levels of several pesticides and their breakdown products in urine fell on average by about 60 per cent. But this does not tell us whether the earlier levels were harmful to health, because most were within the permitted limits.

Two large studies on cancer

Two large observational studies have given different results. In 2014 Kathryn Bradbury and colleagues analysed about 620,000 middle-aged British women and found no overall reduction in cancer risk among those who regularly ate organic food, with the exception of one type of lymphoma. In 2018 Julia Baudry and colleagues in France found among

about 69,000 adults that the most frequent consumers of organic food had a slightly lower risk of cancer. In both studies, people who eat organic food also differ in many other habits.

A broad review

In 2017 Axel Mie and colleagues published a broad review for the European Parliament on the effects of organic food and farming on human health. They concluded that organic food has markedly lower pesticide residues and probably less cadmium, and that organic farming uses fewer antibiotics in animals, which may help against antibiotic resistance. But they also acknowledged that direct evidence of health benefits for consumers is still limited and that more research is needed.

The cost to the land

The question is not only about personal health. In 2012 Verena Seufert, Navin Ramankutty and Jonathan Foley compared in the journal *Nature* the yields of organic and conventional farming. On average, organic yields were about a quarter lower, although the difference varied a great deal by crop and farming method. This means that more land may be needed to produce the same amount of food. On the other hand, organic farming usually uses fewer chemicals and may be kinder to the soil and to insects.

The European label

In the European Union, products sold as organic must follow common rules, currently set out in Regulation (EU) 2018/848, and carry a green logo with stars in the shape of a leaf. These rules restrict synthetic pesticides and chemical fertilisers, ban genetically modified organisms and set standards for animal welfare. Farmers are checked by certification bodies. In countries outside the EU, including in our region, rules and controls may differ, so it is worth checking who has certified the product and what the label actually guarantees, since words like "natural" or "farm fresh" are not protected terms.

How to choose wisely

- **More important than organic or not is eating plenty of fruit and vegetables.** Their benefits are far greater than the risk from pesticide residues.
- **Wash fruit and vegetables well** under running water; peel them when it makes sense.
- **If your budget is limited,** choose organic for produce eaten with the skin that

usually has more residues, such as apples, strawberries or spinach.

- **Buy at the local market**, where you can ask the producer how they grow their produce.
- **For children and pregnant women**, you may consider lower pesticide residues an extra reason to choose organic when you can.

Sources

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