

# Vegan diets in children may bring heart benefits but pose growth risks

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Children on vegan diets have a healthier cardiovascular profile and less body fat than their omnivore peers, but the diets may affect growth, bone mineral content and micronutrient status, according to researchers from UCL and the Children's Memorial Health Institute in Warsaw.

The peer-reviewed study, published in the *American Journal of Clinical Nutrition*, also found that [children](#) following vegetarian diets had a lower risk of nutritional deficiencies compared to the omnivores, but a less healthy cardiovascular profile.

For the study, 187 healthy five- to 10-year-olds in Poland were recruited in 2014-2016. Of those, 63 children were vegetarians, 52 vegans and 72 omnivores. The team then collected data on growth, body composition, cardiovascular risk, and micronutrient status in vegetarian or vegan children and compared them to the group of children who consumed meat in their diet.

The omnivores were selected so that they closely matched the vegetarians and vegans in terms of

their sex, age, maternal education and place of residence (rural/urban). The average duration of exposure to meatless diets was 5.3 years for vegans and 5.9 years for vegetarians.

After considering children's family circumstances, patterns of early nutrition and growth, and [physical activity](#), the team concluded that the vegan and [vegetarian diets](#) may play a causal role in the differences to [health outcomes](#) among children.

Professor Jonathan Wells (UCL Great Ormond Street Institute of Child Health), who steered the study, said: "We know that people are increasingly being drawn to plant-based diets for several reasons, including promoting animal welfare and reducing our impact on the climate. Indeed, a global shift towards plant-based diets is now recognized to be crucial for preventing climate breakdown, and we strongly support this effort.

"We also know that until now research into the health impact of these diets on children has been largely limited to assessments of height and weight and conducted only in vegetarian children. Our study provides a substantial insight into the health outcomes in children following vegetarian and vegan diets."

The study found that children following vegan diets were on average 3 cm shorter, had 4–6% lower bone [mineral content](#) and were more than three times more likely to be deficient in vitamin B-12 than the omnivores. At the same time, they also had 25% lower levels of low-density lipoproteins (LDL)—the unhealthy form of cholesterol and lower levels of body fat.

First author, Dr. Małgorzata Desmond (UCL and the Children's Memorial Health Institute, Warsaw) explained: "We found the vegans had higher intakes of nutrients that indicated an 'unprocessed' type of plant-based diet, which is in turn linked to lower body fat and better cardiovascular risk profile.

On the other hand, their lower intakes of protein, calcium, and vitamins B12 and D may explain their less favorable bone mineral and serum vitamin concentrations.

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Provided by University College London

"We were initially surprised by the poor cardiovascular health profile of the vegetarian children, but their dietary data showed that they were eating a relatively processed type of plant-based diet, with less healthy levels of fiber and sugars compared to the vegans. So, we are learning that just eating plant-based diets is no guarantee of health, we still need to select healthy foods."

The team highlighted the necessity for supplementary vitamin B12 and vitamin D on plant-based diets and that more needs to be done to raise awareness of this among families of vegetarian and vegan children.

Co-author, Professor Mary Fewtrell (UCL Great Ormond Street Institute of Child Health) explained: "Maximizing bone health in children is recommended with the aim of reducing future osteoporosis and fracture risk.

"We found that [vegan](#) children had lower bone mass even after accounting for their smaller body and bone size. This means they may enter adolescence, a phase when bone-specific nutrient needs are higher, with a bone deficit already established. If such deficits are caused by a [diet](#) that persists into adolescence, this might increase the risk of adverse [bone](#) outcomes later in life."

Professor Wells added: "Our research shows that we need to provide more advice to the public as to how they can eat healthily on plant-based diets. This is particularly relevant for children, as they may have higher nutrient needs while they are growing. We aim to conduct further research, to help maximize the [health](#) benefits of plant-based diets in children."

**More information:** Ma?gorzata A Desmond et al, Growth, body composition, and cardiovascular and nutritional risk of 5- to 10-y-old children consuming vegetarian, vegan, or omnivore diets, *The American Journal of Clinical Nutrition* (2021). [DOI:](#)

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