

# Children who eat more fruit and vegetables have better mental health

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Children who eat a better diet, packed with fruit and vegetables, have better mental wellbeing—according to new research from the University of East Anglia.

A new study published today is the first to investigate the association between fruit and vegetable intakes, breakfast and lunch choices, and [mental wellbeing](#) in UK school children.

It shows how eating more fruit and veg is linked with better wellbeing among secondary school pupils in particular. And children who consumed five or more portions of fruit and veg a day had the highest scores for mental wellbeing.

The study was led by UEA Health and Social Care Partners in collaboration with Norfolk County Council.

The research team say that [public health strategies](#) and [school policies](#) should be developed to ensure that good quality [nutrition](#) is available to all children before and during school to optimize mental wellbeing and empower children to fulfill their full potential.

Lead researcher Prof Ailsa Welch, from UEA's Norwich Medical School, said: "We know that poor mental wellbeing is a major issue for young people and is likely to have long-term negative consequences.

"The pressures of social media and modern school culture have been touted as potential reasons for a rising prevalence of low mental wellbeing in children and [young people](#).

"And there is a growing recognition of the importance of mental [health](#) and wellbeing in early life—not least because adolescent mental health problems often persist into adulthood, leading to poorer life outcomes and achievement.

"While the links between nutrition and physical health are well understood, until now, not much has been known about whether nutrition plays a part in children's emotional wellbeing. So, we set out to

investigate the association between dietary choices and mental wellbeing among schoolchildren."

The research team studied data from almost 9,000 children in 50 schools across Norfolk (7,570 secondary and 1,253 [primary school children](#)) taken from the Norfolk children and Young People's Health and wellbeing Survey.

This survey was commissioned by the Public Health department of Norfolk County Council and the Norfolk Safeguarding Children Board. It was open to all Norfolk schools during October 2017.

Children involved in the study self-reported their dietary choices and took part in age-appropriate tests of mental wellbeing that covered cheerfulness, relaxation, and having good interpersonal relationships.

Prof Welch said: "In terms of nutrition, we found that only around a quarter of secondary-school children and 28 percent of primary-school children reported eating the recommended five-a-day fruits and vegetables. And just under one in ten children were not eating any fruits or vegetables.

"More than one in five secondary school children and one in 10 primary children didn't eat breakfast. And more than one in 10 secondary school children didn't eat lunch.

The team looked at the association between nutritional factors and mental wellbeing and took into account other factors that might have an impact—such as [adverse childhood experiences](#) and home situations.

Dr. Richard Hayhoe, also from UEA's Norwich Medical School, said: "We found that eating well was associated with better mental wellbeing in children. And that among secondary school children in particular,

there was a really strong link between eating a nutritious diet, packed with fruit and vegetables, and having better mental wellbeing.

"We also found that the types of breakfast and lunch eaten by both primary and secondary school pupils were also significantly associated with wellbeing.

"Children who ate a traditional breakfast experienced better wellbeing than those who only had a snack or drink. But secondary school children who drank energy drinks for breakfast had particularly low mental wellbeing scores, even lower than for those children consuming no breakfast at all.

"According to our data, in a class of 30 secondary school pupils, around 21 will have consumed a conventional-type breakfast, and at least four will have had nothing to eat or drink before starting classes in the morning.

"Similarly, at least three pupils will go into afternoon classes without eating any lunch. This is of concern, and likely to affect not only academic performance at school but also physical growth and development.

"Another interesting thing that we found was that nutrition had as much or more of an impact on wellbeing as factors such as witnessing regular arguing or violence at home.

Prof Welch said: "As a potentially modifiable factor at an individual and societal level, nutrition represents an important public health target for strategies to address childhood mental wellbeing.

"Public health strategies and school policies should be developed to ensure that good quality nutrition is available to all children both before

and during [school](#) in order to optimize mental wellbeing and empower [children](#) to fulfill their full potential."

"Cross-sectional associations of schoolchildren's [fruit](#) and vegetable consumption, and meal choices, with their mental [wellbeing](#): a cross-sectional study" is published in the journal *BMJ Nutrition, Prevention & Health*.

**More information:** Cross-sectional associations of schoolchildren's fruit and vegetable consumption, and meal choices, with their mental wellbeing: a cross-sectional study, *BMJ Nutrition, Prevention & Health*, 2021. [DOI: 10.1136/bmjnph-2020-000205](https://doi.org/10.1136/bmjnph-2020-000205)

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