

# More research needed on diet and environmental influences on childhood asthma

January 24 2011

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Asthma is one of the world's most common chronic diseases, affecting as many as 300 million people. It is estimated that by 2025 there could be an additional 100 million people with the disease. This rapid increase in asthma is most likely due to changing environmental or lifestyle factors, and over the last 15 years, changing diet has emerged as a promising contributor. Two studies published in the in the February 2011 issue of the *Journal of the American Dietetic Association* explore the possible relationship between nutrition and asthma. Researchers review the rationale for investigating associations between diet and asthma, discuss the potential for dietary intervention to complement conventional asthma treatment, and summarize the recent data suggesting that diet may influence the development of asthma.

Investigators from the University of Aberdeen, UK, review three dietary factors that have been hypothesized to explain the increase in [asthma](#) – a changing antioxidant intake, an increasing ratio of n-6 to n-3 polyunsaturated fatty acid (PUFA) consumption and changing vitamin D status. Although there is insufficient clinical evidence for the use of nutritional supplements to complement conventional asthma treatments, the authors note that ongoing studies may change this picture. They also review a small number of studies of maternal diet during pregnancy that suggest that dietary modification during pregnancy might reduce the incidence of childhood asthma.

According to Graham Devereux, MD, PhD, "The generally weak observational and very limited intervention data suggest that whilst there are associations between diet and asthma, the nature of the associations (with PUFA, antioxidants, nutrients, food), the timing (antenatal, infancy, childhood, adulthood), and the therapeutic potential of the associations are far from clear." He continues, "Future studies should consider the use of dietary intervention to increase the intake of nutrients highlighted by birth cohorts (vitamin E, PUFA, vitamin D, zinc) in order to capture the complexity of dietary nutrient intake. If shown to be efficacious, such a dietary intervention could be the basis for a low cost, safe public health intervention to rapidly reduce the prevalence of asthma in children and ultimately adults, with obvious beneficial consequences for the wellbeing of individuals and society as a whole. Until the results of ongoing and planned trials are available, the practical consequences of research linking diet with asthma are minimal, and based on the available evidence, people with asthma, pregnant women, parents, and children should not be advised to change or supplement their diet in order to treat or reduce the risk of developing asthma."

In a study published in the same issue a multi-institutional team of researchers in Greece examined associations between salty snack consumption and TV or video game viewing and asthma symptoms in young adolescents. While noting that although both factors have been implicated in asthma development, results have been conflicting. In their cross-sectional study of 700 children 10-12 years old, living in and around Athens, Greece, they found that there was a 4.8 times higher risk of having asthma symptoms when salty snacks were consumed more than 3 times per week. This association was even more prominent in children who watch TV or play video games more than 2 hours per day.

The authors also found that children who consumed a "Mediterranean diet" were less likely to have asthma symptoms, consistent with previous

studies evaluating the association between the Mediterranean diet and asthma in children. The Mediterranean [diet](#) has a high content of vegetables, fresh fruits, cereals and olive oil, with a high intake of beta-carotene, vitamins C and E and various important protective substances like selenium, flavonoids and polyphenols with marked antioxidant activity.

Lead investigators Demosthenes Panagiotakos, PhD, Associate Professor, Department of [Nutrition](#) – Dietetics, Harokopio University, and Kostas Priftis, MD, PhD, Assistant Professor, School of Medicine, University of Athens, Greece, conclude, "Since the prevalence of asthma is quite high in industrialized populations, and has continued to increase during the past years, future interventions and public health messages should be focused on changing these behaviors from the early stages of life, by informing parents, guardians, teachers and any other person that could teach children a healthier lifestyle."

**More information:** Articles:

"Diet and asthma: Nutritional implications from prevention to treatment" by Keith Allan, MSc, and Graham Devereux, MD, PhD

"Salty-snack eating, television or video-game viewing, and asthma symptoms among 10- to 12-year- old children: The PANACEA study" by Fotini Arvaniti, RD, MSc, Kostas N. Priftis, MD, PhD, Anastasios Papadimitriou, MD, PhD, Panagiotis Yiallourous, MD, Maria Kapsokefalou, PhD, Michael B. Anthracopoulos, MD, PhD, and Demosthenes B. Panagiotakos, MD, PhD

Both appear in the *Journal of the American Dietetic Association*, Volume 111 Issue 2 (February 2011)

Provided by Elsevier

Citation: More research needed on diet and environmental influences on childhood asthma (2011, January 24) retrieved 27 April 2024 from <https://medicalxpress.com/news/2011-01-diet-environmental-childhood-asthma.html>

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