



# Paediatric update



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Welcome to our paediatric nutrition column 'Paediatric update'. In each column, Kiran Atwal, Freelance Paediatric Dietitian, will update you on new guidance, tools and current affairs. Here, Kiran covers '*Ultra-processed foods: ultra risk in children?*'

## Background

'Processed foods', 'ultra-processed foods' or 'UPF' have been capturing the media and public attention. The term 'processed foods' emerged in the 1980s, however the concept of food processing is not new. Owing to developments during the Industrial Revolution, many factories were established in the 1800s capable of mass-scale food production, transforming availability. Industrial apparatus and techniques gave rise to canned, chilled and pasteurised goods, with improved shelf-life, palatability and nutrient profiles.<sup>1</sup>

Recent developments in food classification go beyond nutrient composition, such as the NOVA Food Classification System, which is based on the degree of processing. However, some argue that excluding nutrient composition in such classifications has limitations, and newer models are needed.<sup>2</sup> Mounting evidence is linking UPF with obesity, cardiovascular disease and other negative health consequences. Overconsumption, low nutrient content and high palatability are some mechanisms of UPF that may encourage the displacement of minimally or unprocessed foods.<sup>3</sup>

## UPF aimed at young children

UPF in the diets of young children is trickier to identify due to the lack of transparency on commercial food processes. At a glance, commercial infant and toddler foods appear healthy (e.g. due to the inclusion of 'real' ingredients). However, certain varieties of cereals, biscuits and finger foods are considered UPF.<sup>4</sup> It is worth noting that infant formula is an exception, depending on the UPF classification system used, as it is a vital source of nutrition, especially where breastfeeding is not possible, requires partial replacement or is contraindicated.

## Impact of UPF on child health

Published evidence has already demonstrated the cardiometabolic risk factors related to UPF consumption in 1426 children aged 3-6 years living in Spain from the

Childhood Obesity Risk Assessment Longitudinal Study.<sup>5</sup> Higher consumption of UPF in children was positively associated with higher body mass index (BMI), waist circumference, fat mass and fasting glucose. Levels of high-density-lipoprotein (HDL) cholesterol were negatively associated with UPF. In the top tertile of energy-adjusted UPF consumption, children ate more sugar, sweets, sugary drinks, yoghurts and dairy products other than milk and cheese. The researchers also found that the Mediterranean diet was associated with improvements in fasting glucose and HDL cholesterol. Some of the possible mechanisms proposed include the nutrient composition (high energy, fat, sugar and low fibre), increased glycaemic response and delayed satiety signalling.<sup>5</sup>

## So, what next?

This is one of the first studies to find an association between UPF intake, multiple cardiometabolic risk factors and higher adiposity in children as young as 3 years, which is alarming. Nevertheless, while the researchers acknowledged some limitations of their study, it demonstrates the potential health risks of early dietary habits and UPF consumption.

Food processing is an essential aspect of the modern-day food system, making goods edible and safe. However, it is imperative to understand the threshold at which health risks are at stake. Greater evidence is needed to support an understanding of the underlying mechanisms and long-term disease outcomes in children consuming UPF. Furthermore, comprehensive national data on the current dietary habits and intake of children is urgently needed, to assess the extent of UPF consumption in the UK. Together, these insights could inform improvements to public health recommendations and initiatives to increase minimally or unprocessed food consumption, as well as improvements to regulations on the composition, labelling and marketing of UPF aimed at children to protect future health outcomes.

References: 1. Huebbe P, Rimbach G. (2020). Historical Reflection of Food Processing and the Role of Legumes as Part of a Healthy Balanced Diet. *Foods*, 9(8): 1056. 2. SACN (2023). Statement on processed foods and health. Accessed online: [www.gov.uk/government/publications/sacn-statement-on-processed-foods-and-health](http://www.gov.uk/government/publications/sacn-statement-on-processed-foods-and-health) (May 2024). 3. Pagliai G, et al. (2021). Consumption of ultra-processed foods and health status: a systematic review and meta-analysis. *Br J Nutr.*; 125(3): 308-318. 4. Grammatikaki E, Wollgast J, Caldeira S. (2021). High Levels of Nutrients of Concern in Baby Foods Available in Europe That Contain Sugar-Contributing Ingredients or Are Ultra-Processed. *Nutrients*, 13(9): 3105. 5. Khoury N, et al. (2024). Ultra-processed Food Consumption and Cardiometabolic Risk Factors in Children. *JAMA Netw Open.*; 7(5): e2411852.