

Profile

Carlos A Monteiro: pioneer of research on ultra-processed foods

The world has witnessed many research giants in nutrition. Carlos A Monteiro, Emeritus Professor of Nutrition and Public Health at the School of Public Health, University of São Paulo (USP), Brazil, and Founder of the USP Center for Epidemiological Studies in Health and Nutrition, is easily among them. In 2009, Monteiro and his team coined the term ultra-processed foods (UPFs) and went on to develop the Nova food classification system, which groups foods according to their processing. Nova paved the way for robust, comparative research on the health impacts of UPFs. Many studies have since been done on this topic. "This research was only possible because we created the system to identify this type of food", notes Monteiro.

With an illustrious academic career spanning 50 years, Monteiro's initial focus was on issues such as the prevalence and determinants of undernutrition, stunting, and anaemia in Brazil. Later, he investigated obesity, diabetes, and other diet-related chronic diseases, particularly the causes of their increasing prevalence in the country. To identify dietary changes that could explain the rise in obesity and other chronic diseases in Brazil, his group analysed household food purchase surveys done every 5–10 years. They found a moderate decline in purchases of staple foods, such as rice, beans, wheat flour, milk, and eggs, as well as a sharp decline in culinary ingredients such as cooking oil, salt, and sugar. However, they noted that these staples were not being replaced by traditional processed foods (such as bread, cheese, and preserves), but by ready-to-consume products made from food-derived substances—many of which were intended for industrial use only—and food additives. "These products had the potential to replace staple foods and home cooking while maximising industry profits. We called them ultra-processed foods and hypothesised that their increasing consumption could explain Brazil's obesity and diabetes rise", Monteiro says. The profits from UPFs "are generated by the use of very cheap ingredients—such as starches, sugars, oils and fats, protein isolates, and additives—that together mimic real food and appeal to consumers because of their convenience and, at times, lower prices", he explains.

A long-time collaborator, Boyd Swinburn, Professor of Population Nutrition and Global Health in the School of Population Health, University of Auckland, New Zealand, says Monteiro's "outstanding attribute is his inquiring intellect" and the Nova classification system is his "crowning achievement". Swinburn comments that "Carlos has been the paradigm's leading thinker, gathering the evidence, considering and responding to the criticisms, and demonstrating through his work with the Brazilian Government that specifically naming UPFs has real value in

dietary guidelines, policy development, and understanding the causes of obesity and many NCDs".

Monteiro was born and raised in São Paulo. His father was a small business owner, and his mother cared for the family and home, while also supporting his father's business. "My family was a low-income family, and I was the first person in my family to go to college", he says. To help family finances, he began working in various jobs at the age of 13 years and studied in the evenings. After medical school at USP, a residency in preventive medicine inspired him to pursue a master's degree in the field and later earn his PhD in nutrition and public health at USP. "I was always concerned with social injustice, and nutrition was a way to combine this interest in medicine with attempting to reduce social inequalities", he explains. That focus has stayed with him through his career.

Recently, Monteiro has led a new *Lancet* Series on UPFs and human health. Commenting on this work, he says, "Many chronic diseases are evolving in an epidemic way, so not just obesity and diabetes, but also colon cancer, Crohn's disease, and depression. In paper 1, we demonstrate that a key determinant of this pandemic is the displacement of traditional diets based on conventional foods, dishes, and meals by an ultra-processed diet." Paper 2 examines policy options for countries to address the issue. "This displacement of traditional diets is not completed yet in most countries in the world, and it can be prevented", he explains. In the final Series paper, "we raise the fact that the main obstacles to these policies to prevent chronic diseases by reducing consumption of UPFs are very powerful transnational corporations. We discuss how to reduce the power of these companies and how to regulate them. Regulation is key."

Over the next few years, Monteiro will dedicate his time to NutriNet Brazil, a large cohort study on diet and chronic diseases that his team set up in 2020. It is the first cohort to use a validated dietary assessment tool aligned with the Nova system (the Nova24h recall). "We are following more than 100 000 people. With this cohort, we'll be able to study both the harmful effects of exposure to the ultra-processed dietary pattern and what is particularly good in the traditional Brazilian diet", he explains.

As for the *Lancet* Series, Monteiro hopes it will prompt health authorities and policy makers to rethink food and nutrition policies. "They don't necessarily need totally different policies, but what they need to do is see if their policies and guidelines are responding to the evidence we now have on UPFs. We'd like to see all countries in the world considering the evidence in all their policies, including school meal programmes, fiscal policies, and marketing regulation", he says.

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