

Tackling cardiovascular deaths requires urgent action in children

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Encouraging activity and improving diet in children is crucial to cut deaths from cardiovascular disease—and is the focus of an innovative school project in São Paulo, Brazil. The first results are presented today at the Brazilian Congress of Cardiology (SBC 2019).

The annual congress of the Brazilian Society of Cardiology (SBC) is held 20 to 22 September in Porto Alegre. The European Society of Cardiology (ESC) is holding scientific sessions in collaboration with the SBC as part of the ESC Global Activities programme.

"Atherosclerosis—clogged arteries—starts in childhood and is more likely with a sedentary lifestyle and unhealthy diet," said study author Dr. Karine Turke, of ABC Medical School, São Paulo. "Exposure to these behaviours throughout life increases the risk of heart attacks and strokes, so prevention should begin in childhood. Yet children are sitting more, eating processed foods, and obesity is becoming the norm."

Cardiovascular disease is the world's number one killer, causing 17.9 million deaths a year. In Brazil alone, around 370,000 lives are lost to cardiovascular diseases annually. The World Health Organization (WHO) estimates that the number of overweight or obese infants and young children rose from 32 million globally in 1990 to 41 million in 2016.² Around 3.2 million deaths each year are due to insufficient physical activity.³

The SBC Goes to School project⁴ is set to enlist 3,000 monitors

(teachers and students) to receive cardiovascular education. Monitors will then teach 63,000 students aged 6 to 18 from 210 public schools in the state of São Paulo. The first teaching is on School Heart Day, held 25 September 2019, when students will also have baseline measurements of diet and activity. This will be followed by further education and monitoring of diet and activity levels.

Cardiovascular education will address seven risk factors (physical inactivity, obesity, smoking/other drugs, dyslipidaemia, high blood pressure, diabetes, and stress) and two protective factors: healthy eating and regular physical activity. Schools are expected to promote exercise and good eating habits. Input will be provided by numerous disciplines, including cardiologists, nurses, teachers, and psychologists.

The pilot project presented today shows baseline results in the first 433 students. The median age was 13 years and 51% were male. The median time spent doing mild, moderate and vigorous physical activity over one week was 40, 60 and 60 minutes respectively. The median sitting time was 360 minutes per week.

"Physical activity is well below the level recommended by the WHO, which is 300 minutes per week for children and adolescents," said Dr. Turke. "Modern lifestyles promote interaction by mobile phone and video games. There is less security on the streets so children cannot play outside. The programme encourages less sedentary time and finding ways to move around more."

Regarding food, 53% had consumed leafy vegetables the previous day, 69% fruit, 91% carbohydrates like rice or pasta, 70% legumes, 79% meat/chicken, 42% soft drinks/sodas, 39% chocolate, 39% powdered beverage mixes, 42% sausages, and 49% candy including chocolate or any sweets.

"Many had eaten processed foods, which are easier for parents to prepare than cooking from fresh ingredients," said Dr. Turke. "Students will learn to classify foods as fresh, minimally processed, processed, and ultra-processed, and to prioritise fresh and minimally processed items."

She concluded: "Advocating the choice of healthy foods and greater activity is essential to halt the obesity crisis in Brazil and worldwide and stop needless deaths from heart attack and stroke."

Professor Dalton Précoma, scientific chair of SBC 2019, said: "The decline in death from cardiovascular disease in Brazil has plateaued, suggesting the need for novel strategies to combat these conditions. More than half of the population is overweight. To prevent [cardiovascular disease](#), children and adolescents are advised to do moderate to vigorous physical activity every day and limit sedentary time.⁵ Parents should create an environment that promotes these behaviours and be role models. Healthy lifelong eating habits must be encouraged, such as family meals, eating breakfast and limiting fast foods."

Professor Carlos Aguiar, course director of the ESC programme at SBC 2019, said: "Improving lifestyles in children is a collective responsibility. Law makers should restrict marketing of junk foods and sugary drinks to children.⁶ Schools can provide fresh drinking water and healthy foods in cafeterias and vending machines and hold regular activity breaks. Communities need parks and playgrounds. These efforts and others should go a long way to reducing cardiovascular events in the long run."

The project is being run by the Brazilian Society of Cardiology's Committee of Children and Adolescents, with support from the São Paulo Society of Cardiology, the Department of Education of the state of São Paulo, and the department of cardiology at ABC Medical School. The programme is led by Dr. Carla Lantieri, first author of the current

abstract and a cardiologist at ABC Medical School.

More information: Antonio Felipe Simão et al. I Cardiovascular Prevention Guideline of the Brazilian Society of Cardiology - Executive Summary, *Arquivos Brasileiros de Cardiologia* (2014). [DOI: 10.5935/abc.20140067](https://doi.org/10.5935/abc.20140067)

Massimo F. Piepoli et al. 2016 European Guidelines on cardiovascular disease prevention in clinical practice, *European Heart Journal* (2016). [DOI: 10.1093/eurheartj/ehw106](https://doi.org/10.1093/eurheartj/ehw106)

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