An intergenerational life-course approach to address early childhood obesity and adiposity: the Healthy Life Trajectories Initiative (HeLTI)

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Abstract

Background **Interactions between genes and early-life exposures during conception, fetal life, infancy, and early childhood have been shown to affect an individual's health later in life. Maternal undernutrition and obesity, gestational diabetes, and impaired growth in utero and in early life are associated with adiposity and overweight and obesity in childhood, which are risk factors for poor health trajectories and non-communicable diseases. In Canada, China, India, and South Africa, 10–30% of children aged 5–16 years are overweight or obese.**

Methods **The application of developmental origins of health and disease principles offers a novel approach to prevention of overweight and obesity and reduction of adiposity by delivering integrated interventions across the life course, starting before conception and continuing through early childhood. The Healthy Life Trajectories Initiative (HeLTI) was established in 2017 through a unique collaboration between national funding agencies in Canada, China, India, South Africa, and WHO. The aim of HeLTI is to evaluate the effect of an integrated four-phase intervention starting preconceptionally and continuing through pregnancy, infancy, and early childhood on reducing childhood adiposity (fat mass index) and overweight and obesity, and optimising early child development, nutrition, and other healthy behaviours.**

Findings **Approximately 22 000 women are being recruited in Shanghai (China), Mysore (India), Soweto (South Africa), and across various provinces of Canada. Women who conceive (an expected 10 000) and their children will be followed up until the child reaches the age of 5 years.**

Interpretation **HeLTI has harmonised the intervention, measures, tools, biospecimen collection, and analysis plans for the trial to be run across four countries. HeLTI will help establish whether an intervention aimed at addressing maternal health behaviours, nutrition, and weight; providing psychosocial support to reduce maternal stress and prevent mental illness; optimising infant nutrition, physical activity, and sleep; and promoting parenting skills can reduce the intergenerational risk of excess childhood adiposity and overweight and obesity across diverse settings.**

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Contributors

All authors are lead investigators of the project in their respective countries and contributed to the study design and set up of the studies. All authors contributed to the abstract and approved the final approved version.

Declaration of interests

We declare no competing interests.

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