# Modelling the potential health benefits of improving nutrition in Australian Indigenous populations

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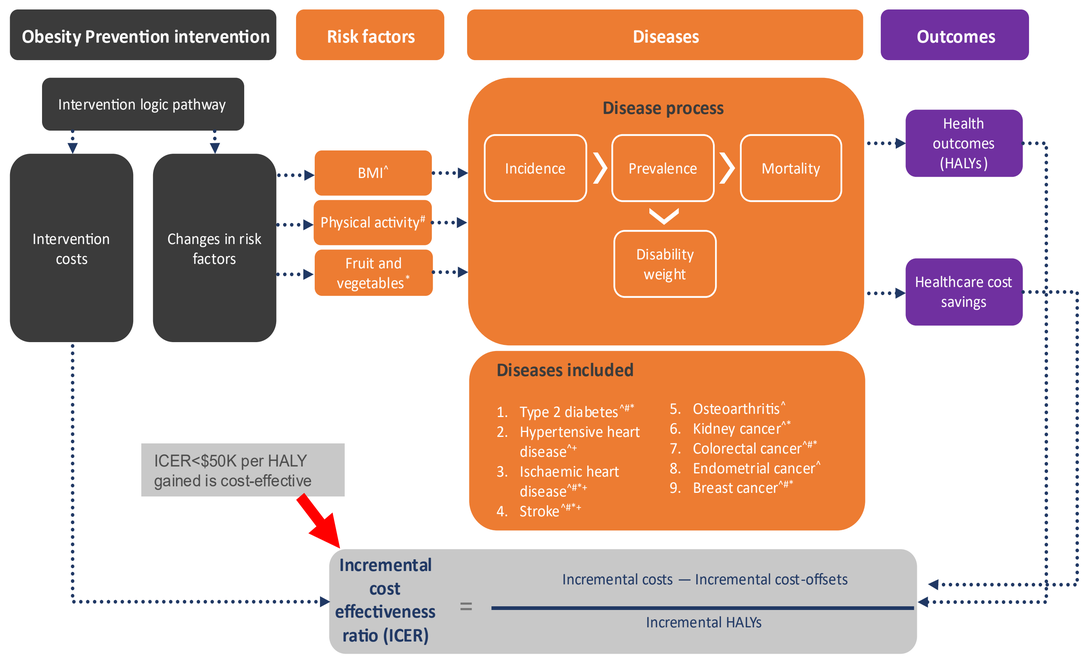
Background: Despite growth of economic evaluations in public health literature, economic evidence estimating the impact of obesity prevention measures in Indigenous populations is lacking. This research aimed to modify a well-established economic model for the Australian population (ACE-Obesity Policy) using epidemiological inputs that better reflect the prevalence of risk factors and disease outcomes experienced by Indigenous Australians living in both remote and non-remote settings. It estimates the potential lifetime health benefits of improving nutrition in the Australian Indigenous population.

Methods: The IndigenACE model simulates the 2019 Indigenous population and estimates the incidence, prevalence, and mortality of nine diet-related diseases (type 2 diabetes, stroke, ischemic heart disease, osteoarthritis, endometrial, breast, kidney, and colorectal cancer). Key modifications to the model inputs included mean body mass index in the Indigenous population and healthcare cost data from the Australian Institute of Health and Welfare (2015), adjusted for the Indigenous population. Scenario analyses estimated the potential change in disease incidence resulting from changes in sugary drink, and fruit and vegetable consumption. This, results in improvements in long-term health outcomes (Health-adjusted life years (HALYs)) and healthcare cost-savings.

## The ACE-Obesity Policy model




Results: If policies were implemented that enabled all Indigenous population to consume fruit and vegetables at recommended levels, approximately 146 HALYs would be gained with healthcare cost savings of approximately $3 million for the remote population, and 1,491 HALYs and $26 million cost savings for the non-remote population. If policy change produced a 10% reduction in sugary drinks consumption, approximately 924 HALYs would be gained with healthcare cost savings of approximately $20 million for the remote population and 2981 HALYs gained with $55 million in cost savings for the non-remote population.

Conclusions: Policies to improve nutrition would result in significant health benefits for the Indigenous population, both in remote and non-remote areas. These estimates can aid decision-makers in prioritizing and investing in preventative public health policies and health promotion initiatives.

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