(≥56 years), higher wealth and education were associated with increased hypertension and diabetes risks.

Our findings support the recommendation that calls for setting optimum BMI for Asian populations to 18.5—23.0 kg/m^2 for health promotion and public health interventions such as leisure time physical activity. WHO cut-offs for overweight (BMI 25.0—29.9 kg/m^2) should be used to facilitate international comparisons. Future studies may explore BMI cut-offs when risk of malnutrition-related illnesses converts to risk of chronic disease for Asian populations.

https://doi.org/10.1016/j.orcp.2016.10.268

268

Food literacy as a strategy to tackle unhealthy dietary behaviours among adolescents

Rimante Ronto[2,1,*], Lauren Ball[2], Donna Pendergast[3], Neil Harris[1]

[1] *School of Medicine (Public Health), Griffith University, Gold Coast, Queensland, Australia*
[2] *School of Allied Health Sciences, Griffith University, Gold Coast, Queensland, Australia*
[3] *School of Education and Professional Studies, Griffith University, Gold Coast, Queensland, Australia*

Background: High school setting has been identified as an ideal setting to teach adolescents about healthy dietary behaviours. This study explored home economics teachers' views on the role of high schools in enhancing adolescents' food literacy and promoting healthy dietary behaviours.

Methods: Semi-structured interviews with 22 home economics teachers were conducted. The interview questions focused on the perceived strengths, opportunities, limitations and barriers in enhancing adolescents' food literacy and healthy dietary behaviours in high schools in Australia. Thematic data analysis was used to analyse the data. Five key themes have been identified from the interview transcripts: (1) standing of food-related life skills; (2) food literacy in the Australian school curriculum; (3) emphasis on resources; (4) building school to home nexus; and (5) learning through school canteens.

Results: Overall, home economics teachers stated that food literacy education was regarded by parents and other school staff to be a less important subject than Maths or English for adolescents to learn in high schools in Australia. Teachers indicated that most high schools offered one year compulsory food literacy education through home economics classes. However, teachers stated that the time was insufficient to develop sustainable food-related life skills and introduce broader concepts of food literacy such as environmental sustainability. The lack of financial resources and a largely non-supportive school food environment including school canteens were major factors that influenced food literacy education and improved dietary behaviours of adolescents.

Conclusion: Increased status of food literacy education in high schools would support adolescents to develop food-related life skills and mobilise them as agents of dietary behaviour change in the home setting.

https://doi.org/10.1016/j.orcp.2016.10.269

269

Anti-obesity health warnings promote healthier dietary decision making

Daniel H. Rosenblatt[1,2,*], Stefan Bode[1], Helen Dixon[2], Carsten Murawski[3], Melanie Wakefield[2]

[1] *Melbourne School of Psychological Sciences, The University of Melbourne, Melbourne, Victoria, Australia*
[2] *Centre for Behavioural Research in Cancer, Cancer Council Victoria, Melbourne, Victoria, Australia*
[3] *Department of Finance, The University of Melbourne, Melbourne, Victoria, Australia*

Background: Following successful use in tobacco control, health warnings on energy-dense, nutrient-poor foods and beverages have been proposed as a potential anti-obesity intervention.

Aim: To investigate the efficacy of health warnings in promoting healthy dietary choices, and examine how health warning design factors (positive versus negative message framing, text-only versus text-and-graphic warnings) influence their efficacy.

Methods: A mixed-effects experimental design was used, whereby 96 participants completed a novel dietary self-control priming task. Participants were randomly assigned to one of five health warning groups featuring the following health warnings formats: text-based with negatively

framed messages (TN; $n = 16$), graphic with negative framing (GN; $n = 16$), text with positive framing (TP; $n = 16$), graphic with positive framing (GP; $n = 16$) and a message-free control group (C; $n = 32$). Participants initially provided subjective health and taste ratings of snack food items. Participants were then required to choose items to consume at the end of the experiment prior to- and post-exposure to health warning messages. A measure of dietary self-control (DSC) was calculated based on the provided health and taste ratings. Linear mixed effects modelling was used to test the influence of health warning characteristics on DSC, while controlling for participant and stimulus related variance.

Results: A significant interaction effect between health warning group and decision stage condition (pre- and post- priming with health warning images) on DSC was found ($p < .001$). GN participants displayed significantly greater DSC than all other groups, while TN and GP participants showed greater DSC than TP and C participants, which did not differ.

Conclusions: Health warnings primed healthier dietary decision making and may be effective in reducing obesity. Negatively framed health warnings were more effective than positively framed health warnings, and graphic warnings promoted greater DSC than purely text-based health warnings.

https://doi.org/10.1016/j.orcp.2016.10.270

270

What's on the INSIDE matters — Exploring and characterising the 'Thin on the Outside Fat on the Inside' (TOFI) profile across ethnicities: The TOFI_Asia study

Ivana Sequeira*, Wilson Yip, Louise W.W. Lu, Sally D. Poppitt

Human Nutrition Unit, School of Biological Sciences, University of Auckland, Auckland, New Zealand

The New Zealand National Science Challenge (NSC) program is designed to address the biggest science-based challenges within the country as identified by government, researchers and the general public. Intended to have both a national and global footprint, the NSC High Value Nutrition (HVN) program has 5 priority research platforms comprising metabolic, gut and immune health plus food and consumer science. The Peak Nutrition for Metabolic Health (PANaMAH) platform is investigating metabolic susceptibility and resilience in the face of weight gain and obesity, with the long term aim of identifying nutrition interventions to prevent dysglycaemia and type 2 diabetes (T2D).

Apparently slim individuals may be more susceptible to development of T2D than those obese but resilient due to lipid overspill from safe peripheral stores into risky ectopic sites such as liver and pancreas [1]. The thin on the outside but fat on the inside 'TOFI' profile may explain why Asian Chinese and Indian populations are reported to be at greater risk of poor metabolic health than Caucasian counterparts at the same BMI and younger age [2]. TOFI_Asia aims to determine the metabolic profile that characterises and predicts susceptibility and resilience to T2D, in individuals with and without the TOFI profile, including early metabolomic biomarkers that may predict later glucose response.

200 Asian Chinese and 200 European Caucasian adults (18—70 years; overweight BMI 25—50 kg/m^2) will be enrolled into the TOFI_Asia study. T2D risk will be determined from HbA1c, and predictors of risk identified through (i) anthropometry and body composition using dual X-ray absorptiometry (DEXA, % fat) and 3 Tesla Chemical shift magnetic resonance imaging (MRI, pancreatic and liver fat) (ii) established plasma markers of metabolic risk including biochemistry, peptides, cytokines (iii) untargeted metabolomics and (iv) cardiorespiratory fitness using the YMCA submaximal fitness test [3].

Reference

[1] Saponaro C, Gaggini M, Carli F, et al. The subtle balance between lipolysis and lipogenesis: a critical point in metabolic homeostasis. Nutrients 2015;7:9453—74.
[2] Haldar S, Chia SC, Henry CJ. Body composition in asians and caucasians: comparative analyses and influences on cardiometabolic outcomes. Adv Food Nutr Res 2015.
[3] Heyward VH, Gibson A. Assessing cardiorespiratory Fitness. Advanced fitness assessment and exercise prescription. 7th ed. Human kinetics; 2014.

https://doi.org/10.1016/j.orcp.2016.10.271