

pathways by shifting energy balance and storage and promoting metabolic endotoxaemia [2,3].

Aim: The aim of this study is to assess the therapeutic effect of a novel probiotic on glucose metabolism in adults diagnosed with prediabetes and early T2DM.

Methods: Sixty adults with a BMI ≥ 25 kg/m² and diagnosed with pre-diabetes or T2DM (within the previous 12 months) have been enrolled in a double-blind controlled clinical trial and randomised to a multi-strain probiotic or placebo for 12 weeks. Both groups received lifestyle advice. Measurements and samples are collected at baseline and 12 weeks after treatment. Outcome measures include fasting plasma glucose, 2-hour glucose tolerance, insulin, lipids, inflammatory markers, gut permeability, and faecal microbial and metabolomics profiles.

Results: Recruitment is complete and the study will be concluded in September 2016. The primary outcome of fasting blood glucose will be reported as well as secondary outcomes including insulin sensitivity, lipid profiles and inflammatory and permeability markers.

Discussion: Intentional manipulation of gastrointestinal microbial profiles may be useful for regulating T2DM and its associated metabolic disorders.

Trial registration: Australian New Zealand Clinical Trials Registry: ACTRN12613001378718.

Competing interests: LV and SC participate in research on probiotics at Medlab Clinical. The authors CM, IC and TP declare that there are no conflicts of interest.

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Recruiting young women with obesity to weight management trials: Barriers and enablers



Helen Parker^{1,*}, Cheyne Donges², Janelle Gifford¹, Karen Lau¹, Eliya Greenfield¹, Kate Steinbeck³, Helen O'Connor¹

¹ *University of Sydney, Lidcombe, NSW, Australia*

² *School of Human Movement Studies, Charles Sturt University, Bathurst, NSW, Australia*

³ *Department of Adolescent Medicine, The University of Sydney, Sydney, NSW, Australia*

Background and significance: Young women are difficult to recruit to weight management trials (WMT). Limited research has explored these challenges. This study aimed to examine barriers and enablers influencing WMT participation by young obese women.

Methods: Young (18–35 y) women with obesity (BMI >30–40 kg/m²) were recruited to 90 min focus groups (3–5 participants/group) to discuss barriers and enablers influencing participation in WMT. Participants were required to have undertaken at least two previous serious weight loss attempts. Discussion was recorded and transcribed verbatim. Recruitment continued until thematic saturation occurred with qualitative content analysis conducted using NVivo.

Major findings: Eight groups (5 urban; 3 regional) including 27 women (16 urban; 11 regional) were conducted. Age and BMI was (mean \pm SD) 29.2 \pm 5.8y and 36.0 \pm 2.8 kg m⁻² respectively. Barriers were psychological, physical or program-related. Strong psychological barriers included, feeling stigmatised about obesity, especially the fear of judgement by health professionals/researchers (or other participants) as well as the challenge of overcoming the denial of needing to lose weight. Physical barriers included the time commitment, other participation costs and access (transport/parking). Perceived program barriers included the lack of WMT tailoring to younger women and the need to eat specific foods. Financial incentives were a strong enabler. Advertising other WMT benefits (health, fitness, well-being) rather than weight loss and use of private (toilet door, e-mail, e-newsletters, social media and websites with self-assessment of eligibility) rather than public advertising (noticeboards

or flyers) was viewed positively. The words obesity, BMI or weight loss were identified as deterrents to participation.

Conclusions: Young women feel vulnerable to weight stigma and this is a barrier to WMT participation. Tailoring content to age-stage and considering time and access barriers was viewed as important. Positive health messages, financial incentives, self-eligibility assessment and 'private' advertising emerged as valuable recruitment strategies.

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Is food porn contributing to obesity?



Helena Popovic

Winning at Slimming, Burleigh Waters, QLD, Australia

In June 2012, a study in the journal *Obesity* examined the effect of pictures of food on the hormone, ghrelin. Ghrelin is a neuropeptide produced by cells of the gastrointestinal tract when the stomach is empty. The role of ghrelin is to act on cells in the hypothalamus to stimulate hunger. Ghrelin also causes secretion of gastric acid to prepare the stomach for food.

During the first week of the study, healthy young men were shown 50 neutral pictures followed by blood tests to measure their ghrelin levels. One week later, the same blood tests were repeated after the men were shown food pictures. Ghrelin levels and perceived hunger increased significantly after the men were shown food pictures versus neutral pictures. This research suggests that our hunger is constantly being stimulated by the sight of food in our environment: billboards, bus stops, supermarket posters, TV advertisements and glossy magazines. Wherever we look, we are likely to see food. As the saying goes, 'A picture paints a thousand... calories.' Food porn — those gorgeous, mouthwatering, close up, oozing, intimate, airbrushed food photos — are particularly potent in triggering the release of hormones that stimulate both hunger and pleasure.

People are even more susceptible to the effects of food porn when they're tired. A study in the *Journal of Clinical Endocrinology and Metabolism* demonstrated that people are more strongly induced to eat in response to food porn when they are sleep deprived.

Does this mean that everyone is doomed to be in a constant state of hunger?

This presentation examines the effect of food porn on our physiology and brain chemistry, and its contribution to obesity. It also discusses the antidote to being enticed to eat by images of beguiling bagels. The steps include awareness, substitute-visualisation, physical movement and a regular good night's sleep.

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There's nothing left to eat!



Helena Popovic

Winning at Slimming, Burleigh Waters, QLD, Australia

The title of this abstract comes from my patients who lament that every food on the planet has been demonised. Meat gives you cancer, fish are full of metals, grains inflame your brain, dairy causes arthritis, carbs elevate your insulin, fat clogs your arteries, legumes are 'anti-nutrients' (contain lectins) and vegetables are poisoned with pesticides. The food pyramid has been turned upside down and Humpty Dumpty is still sitting on the fence. So what's left?

Moderation and understanding bio-individuality.

We now recognise that genes, microbiome and epigenetic factors play a major role in individual responses to different foods. We can no longer tell people 'You are what you eat' because we now know this is only part of the picture. We are what our genes, hormones, gut bacteria and fit or unfit bodies *do* with what we eat. Add that to the role of stress, socioeconomic factors and cultural beliefs in determining food choices, and you have a recipe for mass public confusion. It also doesn't help that every blogger and celebrity is a nutritional expert, and personal stories with a sample size of one carry more clout than scientific data.

This presentation examines the need for health professionals to focus on delivering simple and consistent core messages that will help people make daily choices that lead to better health. We also need to agree on a uniform goal. Should we ditch the BMI in favour of waist circumference? Should we be focusing on improving fitness rather than reducing fatness? Remind people that happy meals are not real meals? We need to think outside the plate and rebrand health as a way of life, not a fad diet or annual detox. When health is reframed as a daily decision not a distant destination it empowers people to make positive changes.

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