

Policies and healthcare to support preconception planning and weight management: optimising long-term health for women and children

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Key points

- There is increasing recognition in policy, research and healthcare that a focus on health and wellbeing prior to pregnancy is needed to improve health across the population – including for women, men, their future pregnancies and children

Abstract

Objective: To explore opportunities to change increasing weight gain trajectories for women during their reproductive lives, focusing on optimising health before pregnancy.

Type of program: Identifying optimal policies, health promotion and health services to support preconception health for women (with a focus on achieving a healthy weight).

Methods: Narrative description of changing policies and approaches for improving preconception health.

Results: Preconception preventive health priorities have been clearly determined globally and nationally. However, further rigorous research for effective interventions to facilitate healthy weight and other aspects of preconception health, alongside effective policies and strategies for implementing these interventions, remains potentially important. Barriers for women, their partners, families, communities and health professionals must be overcome and enablers fostered. The inclusion of preconception lifestyle health to tackle maternal and childhood obesity as a key priority of the World Health Organization as well as in the Australian *National obesity strategy 2022–2032* are steps in the right direction.

Key points (continued)

- To be effective, health policy strategies, guidelines, promotion and healthcare aimed at improving preconception health should incorporate the socio-ecological environment
- To ensure equity in preconception health, universal and targeted approaches are needed, with lifelong integration of health and social systems
- Evaluation and monitoring of outcomes are required

Lessons learnt: Improving health across the life course requires a whole of system, integrated and equitable approach to health promotion, healthcare and policy. This includes integrating education, work, community environments, and health professionals to engage girls and young women well before pregnancy, to optimise their health. National coordination to determine core indicators and systems to evaluate and monitor change has been shown to help internationally and can be applied in Australia.

Introduction

Optimising health in the preconception period offers the chance to address potentially modifiable health factors that may contribute to adverse pregnancy outcomes for women and their infants.

Modifiable factors include smoking, alcohol use, optimal management of chronic disease (e.g. diabetes, hypertension, mental health) and up-to-date immunisations. Supporting women to achieve a healthy lifestyle, including weight loss or prevention of further weight gain in women living with overweight and obesity during preconception can help decrease risks in pregnancy associated with increased body mass index (BMI) for both mother and baby. These risks include gestational diabetes, hypertension in pregnancy, macrosomia, caesarean section and post-partum haemorrhage.¹ Increased BMI around conception and through pregnancy has long-term effects on maternal obesity and is associated with increased obesity and metabolic syndrome in children, placing them at increased risk of cardiovascular disease, type 2 diabetes and stroke as adults.² Over-nutrition and obesity are rising rapidly globally, although the impact varies across socioeconomic status, with those living with socioeconomic disadvantage experiencing higher levels of obesity.³ It is not surprising therefore that almost one in two women conceive with a BMI that is considered to be unhealthy (>25 kg/m²).⁴ Young adult women are experiencing rapid weight gain that increases over time; a national longitudinal study of two population cohorts in Australia reported that women born 1989–95 were heavier and gaining weight faster than those of an older cohort (born 1973–78).⁵

This rapidly changing, global trend in obesity in women of reproductive age, associated with inequity, and its impact on the health of women and their children, makes policies, health promotion, and services enabling good preconception health (including interconception or between pregnancies) a global public health priority.^{6,7} However, it is important to recognise that weight sits within a socio-ecological framework, and

various influences need to be considered, such as food insecurity, built environment, cultural influences, work and stress. Approaches that stigmatise weight are vital.^{7,8} Stigmatisation of people living with larger bodies can adversely affect their mental health and wellbeing, decrease their engagement with beneficial health behaviours, such as exercise, and can take the focus away from policy approaches to address the broader influences on weight.^{8,9}

Methods

Below we outline recent developments in Australia that align with international initiatives to prioritise preconception lifestyle health as an obesity prevention strategy to improve the health of women and the next generation. We have aligned these with the priority setting of the Global Health in Preconception and Pregnancy Alliance and the National Preconception Network (Australia).

Preconception health developments

1. Research to support preconception healthy weight and wellbeing

Nearly half (47.5%) of Australian women entering pregnancy are overweight or obese.¹⁰ Research has focused on health in pregnancy for many years, but it is now time to recognise the importance of preconception health. Dietary interventions in pregnancy have been shown to improve maternal dietary behaviours and modestly reduce gestational weight gain but this does not translate into improvements in maternal or infant health outcomes.⁴ Longer-term, diet and lifestyle interventions in pregnancy in women with overweight or obese BMI scores have shown no beneficial effect on early childhood obesity or on maternal weight after birth.²

Preconception weight loss programs have demonstrated improved fertility following weight loss for women who have a high BMI (>25kg/m²), yet there remains few randomised controlled trials assessing the impact of preconception health interventions on pregnancy outcomes.¹¹ Weight loss interventions post-partum (inter-conception) have also demonstrated that dietary and/or physical activity interventions are associated with modest weight loss. However, evaluation of longer-term effects on sustained behavioural change or subsequent pregnancy and birth outcomes are limited.¹² Hence, developing our understanding of how to promote, and support, active agency in women to prioritise lifestyle health and weight management before conception is not only warranted but urgently needed. This has been recognised internationally by the Health in Preconception, Pregnancy and Postpartum Global Alliance (Global HiPPP Alliance) for the prevention of maternal obesity. The Alliance noted the following overarching principles for research to apply: operating in the context of broader preconception and antenatal priorities; social determinants; family health; and cultural considerations.⁷

There are two large randomised trials underway in two Australian states to understand how to best foster healthy weight before conception. Both trials aim to address gaps in evidence for preconception interventions and their impacts on pregnancy. A South Australian study is trialling an intervention to promote health, including nutrition, physical activity and wellbeing before conception, to evaluate the impact on subsequent pregnancy outcomes.¹³ A New South Wales (NSW) study is enrolling 1927 women with overweight and obesity who are planning a pregnancy into a randomised controlled trial that will compare a meal replacement program with recommended dietary advice.¹⁴ The NSW trial builds on promising data from a recent pilot study demonstrating acceptability and greater weight loss using this approach.¹⁵

2. Raising community awareness about preconception health

Raising public awareness of the importance of healthy weight and reproductive health is critical. Around 60–70% of pregnant women in Australia report that they planned their pregnancies.^{16,17} Of these, many are not aware of the importance of preconception health or seek health advice from a health professional, including women with overweight or obesity.¹⁸ Strategies are needed to increase public awareness of the importance of this health phase, the benefits of engaging with health professionals and how to access affordable healthcare, as well as to ensure health professionals have adequate training and resources about preconception health.¹⁹ Interventions are needed to reach women and their partners who are actively planning pregnancies, considering planning a pregnancy, and even those not planning at all. These will need to incorporate multiple opportunities to reach

Box 1. Case study: Gabby Preconception Care System (Gabby)

A successful example using a digital health platform to promote behaviour change is the Virtual Patient Avatar (VPA) 'Gabby', developed by author BJ. Gabby is a health education and behaviour change information technology system designed to improve health equity by providing a comprehensive health promotion and risk reduction program for African American women. The VPA, which is accessed on a web-based platform, creates a "my health to-do list" after completion of a health survey and simulates face-to-face conversations with unfolding, empathic dialogue designed to educate and support women. It is tailored to women's health risks (e.g weight, smoking) and records modifiable behaviour change over 12 months. Results can be shared with health providers. It has been tested through randomised controlled trials and the research team has developed technology for wider use, a process map of site-level operational workflow, and an implementation manual.²¹ However, Gabby needs to be adapted for different groups and settings and to address local communities' needs and priorities.

all women (e.g. at schools, pharmacies, contraception clinics). Digital platforms may be useful here and may have a role in supporting busy health professionals in promoting behaviour change.²⁰ (Box 1)

A life course approach is also important, including education in schools as part of a holistic approach to reproductive health that gives children skills and knowledge as they transition to independent lives.

3. Guidelines and implementation planning to support better preconception health and care

Preconception lifestyle health is recognised by the World Health Organization (WHO) as a priority for tackling childhood obesity.⁷ The WHO recommends integrating and strengthening guidance for noncommunicable disease prevention (including obesity). Guidance for preconception health includes addressing all forms of malnutrition, including caloric excess, to improve newborn and maternal health and reduce the risk of childhood obesity.

Preconception is also noted in the recently released Australian *National obesity strategy 2022–2032* as a critical life phase for obesity prevention, with a recommendation to embed support for healthy eating, sleeping and physical activity into standard maternal health services before, during and after pregnancy.⁸ Preconception healthcare and preventive health screening and management, along with supporting women to proactively plan if and when to have children, is also included in the guidelines for preventive health in primary healthcare by medical organisations, including

the Royal Australian College of General Practitioners²² and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists.²³ However, a recent systematic review that evaluated evidence-based statements or guidelines in English from national or international organisations highlighted there is insufficient detail in these guidelines, with a lack of plans for applicability in practice.²⁴

4. Policies to support preconception initiatives

Preconception health is a reflection of the broader ecological framework influencing a woman's life including environmental exposures, interpersonal networks, and institutional influences.^{7,8} Better preconception health therefore requires: clinical care that can support identification of personal modifiable risks; support for behaviour change; opportunities to address reproductive planning and reproductive health; health promotion that reaches women across their daily lives; and policies to enable affordable access to relevant multidisciplinary care. Policies are also required to address the broader social determinants of health, such as healthy and safe environments for physical activity, affordable healthy food, and decreased child poverty. These policies should also enforce nonstigmatising practices by health professionals because weight stigmatisation towards women living with larger bodies during the reproductive years is pervasive.²⁵

5. Monitoring and evaluation

Further research and care, monitoring of research, and guideline implementation are critical to identify what is working and where the gaps are, and to inform policy. As a first step to addressing this, the national Preconception Health Network was established in Australia in 2021.²⁶ The network is linked to a national Centre of Research Excellence in Health in Preconception and Pregnancy (CRE HiPP) funded by Australia's National Health and Medical Research Council (NHMRC), and includes practitioners and academics from obstetrics, midwifery, general practice, social care, academia and not for profit organisations. A priority for the network is to adapt the UK Preconception Partnership's conceptual model and core indicators for preconception health²⁷, to enable monitoring and evaluation in Australia with a focus on equity. Similar work has also been undertaken in the US.²⁸

Lessons for the future

We recommend that to support and optimise preconception health for women, a multifaceted approach is required, including the following priorities:

- A focus on research to improve health before pregnancy
- Clear evidence-based national preconception guidelines and implementation that meet the needs

of diverse women at different life stages across the reproductive life span

- Monitoring and evaluation of outcomes at regional and national levels, including ensuring equity in access and outcomes
- A holistic and integrated framework (including digital platforms) for support, health promotion and education for individuals and families across the reproductive life course with targeted care for women who need additional support, linking reproductive health and health and fitness for pregnancy
- Policies and education for health and social care professionals to provide nonstigmatising support.

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JB co-leads the preconception health network auspiced by the NHMRC CRE HiPP, and HS leads CRE HiPP. AG leads the PreBabe trial in NSW, JD leads the Begin Better Randomised Trial in SA and BJ led the development and research on "Gabby" described in Box 1.

Peer review and provenance

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Competing interests

None declared .

Author contributions

All authors contributed to the design and drafting of the manuscript and revising it critically for intellectual content. All authors approved the final manuscript.

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