

Obesity and reproductive health

Further complications of the "obesity epidemic"

The potential health burden to our community of escalating overweight and obesity is well documented and publicised. Attention has focused on the association with chronic diseases such as hypertension, diabetes, cardiovascular disease and all-cause mortality. The effects of obesity on reproductive function and outcomes have received less attention.

The ability to conceive spontaneously is reduced by obesity. While many overweight women can conceive easily, they are over-represented among subfertile groups and those presenting with menstrual disorders.¹ Overweight women, both with and without polycystic ovary syndrome, present with menstrual irregularity and anovulation more frequently than women with normal body mass index (BMI). The US Women's Health Study concluded that even a slightly elevated BMI at age 18 was a risk factor for subsequent anovulatory infertility.² Several studies have confirmed the association between obesity and reduced fertility.^{1,3} Elevated BMI is also associated with poorer outcomes from assisted reproduction.³

Obesity also affects pregnancy outcomes. The article in this issue by Callaway et al (*page 56*)⁴ is an important and timely reminder of the high prevalence of obesity in women of reproductive age and the serious adverse effects of overweight during pregnancy. Risks are increased for both mother and baby. Maternal problems can result from pre-existing obesity-related illnesses such as hypertension and type 2 diabetes. The increased pregnancy-related risks of obesity include increased rates of miscarriage,¹ gestational diabetes, pregnancy-induced hypertension, pre-eclampsia, thromboembolism, haemorrhage, caesarean section, sleep apnoea, wound infection and anaesthetic complications.^{5,6} These risks persist, even when adjusted for pre-existing illness.

The offspring of overweight and obese women are more likely to require admission to neonatal intensive care and to have congenital abnormalities such as neural tube and cardiac defects. Birth-related injuries and fetal death in utero are also higher in this group, and babies are more likely to be macrosomic, placing them at risk of birth trauma and possible subsequent childhood (and, indeed, lifelong) obesity.^{5,7}

What are the effects of weight loss on fertility and pregnancy outcomes? Weight loss alone often leads to improvement in conception rates. Clark et al,¹ evaluating a 6-month diet and exercise program in overweight anovulatory women, found that participants in the program tended to lose weight and resume ovulation. Pregnancy rates, self-esteem and endocrine parameters improved, while rates of miscarriage fell. Seventy-eight per cent of the women conceived, with 67% achieving a live birth. Weight loss of dramatic proportions was not required — a relatively small weight loss (6–10 kg) could lead to resumption of spontaneous ovulation.

The effects of weight loss on pregnancy outcomes have recently been reported by Dixon et al.⁸ Their prospective study sought to examine the effects of laparoscopic adjustable gastric banding (LAGB) in severe obesity. They concluded that "pregnancy outcomes after LAGB are consistent with general community outcomes rather than outcomes from severely obese women".

Callaway et al⁴ comment on the implications for health care delivery costs of obesity-related increases in maternal and neonatal morbidity. This problem will only worsen. The AusDiab study⁹

reported that the prevalence of obesity in 2003 was 2.5 times higher than in 1980. Moreover, obesity is occurring at a younger age, the problem increases with time, and women are becoming pregnant later in life.¹⁰

Solutions to such a complex problem will inevitably be multifaceted and costly. Callaway and colleagues recommend that maternal BMI should be recorded at the booking visit for all pregnancies. While this will assist in documenting the problem, any meaningful intervention must occur before presentation with an established pregnancy. Given the potential for adverse health outcomes for both mother and baby, and the potential lifelong effects of neonatal macrosomia, there is a pressing need for action well before conception.

As part of general public health efforts to combat obesity, we strongly recommend pre-pregnancy counselling for all women, with every effort being made to intervene in the case of women who are overweight or obese. The majority of women are highly motivated to strive to have healthy babies, and the power of this commitment could well be used to achieve behavioural change that could have short-term (and potentially lifelong) benefits for both mothers and children.

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