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Gynaecological issues affecting the obese adolescent

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The implications of obesity in childhood and adolescence resonate into adulthood and have implications at different levels that include psychosocial and health issues that impact beyond reproductive performance. This chapter explores the various facets and consequences on gynaecological issues of increased Body Mass Index in childhood, including the link with puberty, pubertal menorrhagia (also affecting children with complex needs) and the all too common problems surrounding hyperandrogenism, insulin resistance and the polycystic ovarian syndrome in particular which need to be seen in the specific context of the adolescent years. The wider ramifications of obesity on the psychosocial welfare of adolescents merits special attention. Finally management strategies are considered in the context of the needs of adolescents.

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Introduction

The Jesuit motto "Give me a child until he is seven and I will give you the man" is allegedly based on a quote by Saint Francis Xavier but can be moulded to represent the impact of obesity in children on their future wellbeing and in particular the ramifications of childhood obesity on gynaecological and reproductive health.

Adolescents constitute some 18% of the global population and will continue to grow in numbers globally in absolute terms until around 2030 [1]. Children who are overweight or obese are at greater risk of poor health in adolescence and adulthood including physical and psychological sequelae. The increase in children and adolescents with obesity has been particularly marked in recent years. Statistics indicate that childhood obesity has more than doubled in children and quadrupled in adolescents in the past 30 years [2,3]. In the United Kingdom research by the Health & Social Care Information Centre has demonstrated sharp and substantial increases in obesity levels amongst children between 1993 and 2011 [4].

When asked about obesity in adolescents, respondents from the American College of Obstetrics and Gynecology considered that 20% of general gynaecological patients were obese and a further 36% overweight [5]. In 2012 more than one third of children and adolescents were overweight or obese [2].

A significantly increased prevalence of obese and overweight women among adolescent gynaecological patients can therefore be anticipated. In a retrospective study Koliopoulus et al. [6] identified that there was a strong correlation between raised Body Mass Index (BMI) in adolescents with gynaecological problems seen in a designated adolescent gynaecology clinic over a six year period, with 24% being obese (BMI >98th centile for age) and 17% overweight (BMI>88th-98th centiles), representing a total of 41% of patients, as compared to the expected general population at the time of 2% and 10% for obese and overweight individuals. Figs. 1 and 2 illustrate the prevalence of childhood obesity in England and in a global context.

Prominent among the gynaecological problems linked to childhood obesity are the early onset of puberty, menstrual irregularities during adolescence and polycystic ovarian syndrome.

Obesity and the onset of puberty

The reduction in the age of the menarche over recent generations has been well recognised, with the age of menarche documented as 16.5 years in the mid to late nineteenth century as compared to as much

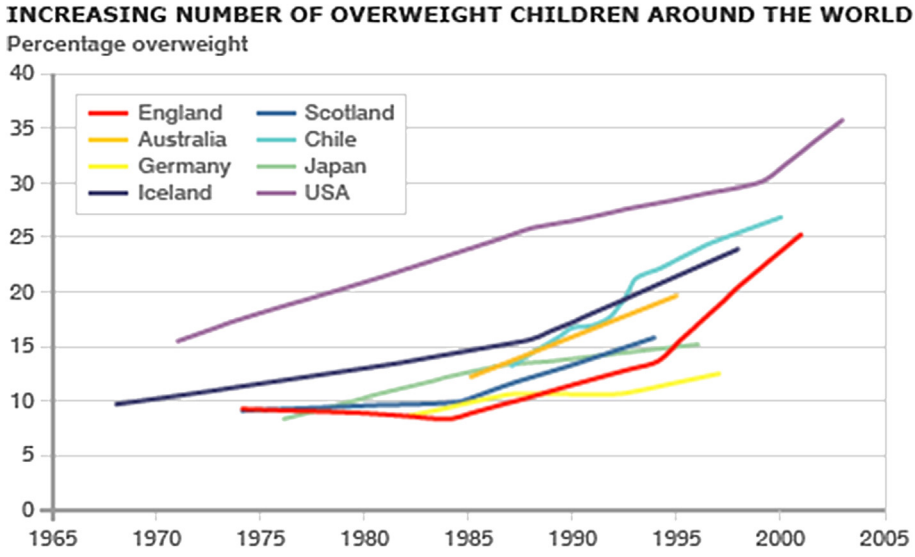

Fig. 1. Increasing numbers of overweight children around the world. (Courtesy of Government Office for Science, foresight).