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**Article**

**Title:** Understanding teenage obesity

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**DOI:** [10.12968/indn.2016.18.33](https://doi.org/10.12968/indn.2016.18.33)

**Example citation:** Cremonesini, L. and Oben, J. A. (2016) Understanding teenage obesity. *Independent Nurse*. **2016**(18), pp. 33-37. 1747-9800.

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**Version:** Accepted version

**Official URL:** <http://dx.doi.org/10.12968/indn.2016.18.33>

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## **Teenage obesity**

This is the third article in a series looking at childhood obesity at various stages of development. Having discussed infant and primary school aged children this article seeks to identify very specific challenges faced by adolescents/young people who are living with obesity.

Alarming figures show that 40% of males age 16-75 years are overweight and 20% are obese. For women the figures indicate less are overweight but more are obese. The consequences of this are severe with one key study highlighting how this generation of children may be the first to die before their parents (1).

Adolescence is a key developmental stage which may create an increased susceptibility toward obesity (2). This developmental stage is a time when many may seek to be more independent and with increased autonomy and may now want to make decisions about lifestyle choices independent of their parents views and wishes.

## **Rapid rate of growth in early childhood**

The correlation between body mass index (BMI) in the early years and the same in adolescence is not easily understood but a large Swedish study analysing BMI and subsequent growth rates sought to evaluate whether BMI and rapid growth in early life could be linked with an increased risk of being overweight in adolescence (3). The results of this study concluded that being overweight or obese at 12 months of age did correlate with becoming overweight /obese at age 16-18 years of age. These results were consistent with a large UK study looking at early weight gain and its influence at age 7(4).

## **Health Status**

Numerous studies have examined the correlation between childhood obesity and co-morbidity in adulthood but few have examined the long terms consequences of adolescent obesity in terms of its effects on health status. One study however did investigate this and although it's a North American study the findings are useful. It found that being obese at the age of 18 was independently associated with an increased risk of hypertension, diabetes, respiratory problems, polycystic ovary syndrome and walking limitations in adulthood. This remained the case independent of a change in BMI following adolescence (5). Findings also indicate that duration of obesity is a risk factor for

mortality (5). This is supported by other research that found two decades of obesity duration increased the risk of mortality by 2.5 fold (6).

A third study assessed the extent to which obesity, glucose intolerance, hypertension and hypercholesterolemia in children without a diagnosis of diabetes predicted premature death (1). The results demonstrated that all these factors aside from hypercholesterolemia had a strong correlation with increased rates of early death in the study population. Early death defined as that before 55 years of age (1).

### **Young people's perspectives /stigma**

There is a scarcity of published research looking at the psychological implications of obesity for young people but a study back in 2004 found high levels of mental health instability in overweight and obese young people (7).

A more recent systematic review presents some interesting findings that health professionals need to be aware of. This systematic review of 30 qualitative studies looking at the views of 1400 young people aged 12-18 demonstrated that regardless of their own size young people were judgemental of those who were obese. Respondents that had experience of being obese described multiple factors that hindered weight loss. They also described personal isolation and significant abuse from other young people. Over 30% of the study cited bullying as a regular experience if very obese. This was classified not only as verbal abuse and name-calling but also physical assault. In many of the studies the school was the place they were most likely to be targeted, with physical education sessions being a particular problem. The same young people in this large collection of studies reported a wide range of personal issues as a result of abuse. These included, depression, anxiety, fear of going out, poor self-confidence and feelings of loneliness. Coping strategies including withdrawal from social situations and comfort eating (8).

Interestingly these young people did not necessarily make the link between obesity and ill health though they did articulate the importance of losing weight for future health (8). Expressing views about what happened when they tried to lose weight many expressed that they had difficulties moderating the food they ate and expressed a great deal of frustration at repeatedly trying and failing to lose weight. For those who did lose weight there was demoralisation by later regaining weight.

Despite the increasing prevalence of obesity within our population, it seems that obesity is viewed as morally reprehensible and is linked with socially undesirable behaviours including laziness and greed. (9).

Overall, this research evidences a very negative stereotype of young people who are overweight /obese in the UK. More importantly Rees's study highlights the physical nature of abuse that some young people have to deal with and the social consequences of this (8). Although this study did not explore mental health issues other non-UK studies have highlighted that obesity in the young people may be a significant trigger for mental health issues including, poor self-esteem, anxiety and poor body image (7).

### **Parental perceptions and views/parenting style**

The majority of children will grow up living with families and so parents are well placed to observe weight gain and support weight management as required. Parental perceptions of their adolescent's weight are however interesting as are their feelings towards weight management. Wills and Lawton interviewed 69 parents of children who were obese and normal weight: almost all parents interviewed began discussions by outlining their own weight as problematic. Importantly, their own excess weight was viewed as inevitable with age but this did create underlying frustration (10).

Whilst parents were aware when their child developed what they referred to as 'extra weight' most parents found such weight gain to be acceptable. Parents expressed difficulties deciding whether their children were overweight and were confused about the influences of puberty and what level of weight gain could be viewed as normal. There was also some justification of potential weight gain linked to what was thought to be family genetics with parents suggesting that heaviness was perhaps a family trait (10).

As for managing their child's weight parents were torn between finding a compromise when dealing with teenagers with a need for independence and trying to help their child to make healthier choices. Some of these actions included buying less sugary snacks and more fruit and vegetables. Alongside these actions was a mind-set of themselves as parents only being able to do "so much" that really weight management responsibility also lay with their child (10).

### **Technology/screen time**

There are several potentially modifiable features that have been associated with the development of obesity in adolescence including frequent television viewing, interactions with other technologies, and sleep.

In a quantitative study involving 624 UK adolescents Arora et al, identified that frequent use of weekday technology involving television and other forms such as video games at bedtime demonstrated a positive correlation with BMI scores in adolescents, of note for each additional technology used at bedtime BMI score increased by 0.10, thus demonstrating statistical significance (11).

There are various factors that may account for such results, use of technology encourages sedentary behaviour and creates an energy imbalance in terms of calorific intake. The advertising of unhealthy food which was historically only a television viewers issue has now pervaded onto the internet and other electronic devices, such that it could be suggested that this population are not only at risk of being immersed in technologies but are also a target for undesirable marketing campaigns. Arora also demonstrated that sleep duration and onset of sleep are important features that correlate with increase in BMI.

More recently, Goldfield et al examined the relationship between screen time and health related quality of life (HRQOL). Research suggests that HRQOL is a consequence of obesity rather than a cause, but it is a useful measurement as it captures not only physical health but emotional and social wellbeing (Jansen et al; 2013). Across a sample of 358 overweight or obese young people aged 14-18 years' screen time was associated with a reduction in health related quality of life thus highlighting that screen time and diminished HRQOL is a greater problem for obese young people when compared to those peers who are not obese (12)

### **Key Points to consider in practice**

- Evidence suggests that most bullying with regard to excess weight happens in school, this needs to be acknowledged by individual schools and action plans integrated into current anti-bullying policy
- School nurses have an important role to play in identifying those in need of further support or those at risk of bullying
- There is a significant risk to the mental health status of those young people who are overweight/obese all health professionals need to be aware of this and highlight accordingly
- Potential for more involvement of obese/overweight young people as key stakeholders in developing appropriate policy and guidelines in relation to obesity in this age group
- Evidence tells us that time spent engaging with electronic devices and television can increase the likelihood of obesity, such habits can be learnt from an early age therefore parental education in early childhood is key

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