Obesity in people with learning disabilities: possible causes and reduction interventions

People with learning disabilities have a high risk of obesity and cardiovascular morbidity. Multidisciplinary working is vital to identify potential problems early

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Obesity is more prevalent in people with learning disabilities than the general population, contributing towards health inequalities and higher risk of cardiovascular and cerebrovascular disease. This article discusses possible causes of this higher prevalence and examines interventions to reduce obesity and associated risks. It also outlines key points to consider when dealing with adults with learning disabilities, such as assessing mental capacity to consent to specific interventions. The importance of multidisciplinary team working with a range of professionals and specialists, and ensuring a consistent approach are also stressed.

INTRODUCTION
Obesity is a major health concern due to its increasing prevalence. A number of clinical guidelines including the National Institute for Health and Clinical Excellence (2006) offer practical recommendations on managing and preventing it, with a strong focus on primary care (Mercer, 2009).

The prevalence of obesity is higher among people with learning disabilities than the general population. Yamaki (2005) reported a prevalence of 35% in 1997-2000 in a sample of 3,499 people with learning disabilities living in the community in the US, while Emerson (2005) reported 27% in 1,304 residential service users with learning disabilities in England.

People with learning disabilities present particular challenges for primary care staff, in terms of both prevention and the clinical management of obesity. They comprise an estimated 2.5% of the UK population (Whitaker, 2004); in a typical GP practice with 12,000 registered patients, 300 are likely to have a learning disability. Michael (2008) reported several reasons for health inequalities among people with learning disabilities. Data on them and their journeys through the healthcare system is lacking and that which is available is ill coordinated or poorly understood.

POSSIBLE CAUSES
A variety of causes have been suggested as likely to increase the risk of obesity in people with learning disabilities. Adolfsson et al (2008) noted those living in the community had a relatively high proportion of calorie intake contributed by:
- Snacking between meals;
- A diet including a high consumption of milk, meat and dense sugary foods;
- Low intake of fruit, vegetables and fibre.

Lower physical activity levels have also been reported in this group (Messent et al, 1999). Limited availability of community leisure facilities, staff shortages and transport limitations, as well as lack of clarity in day services and residential home guidelines and participant income/expenditure, have been identified as barriers to increased physical activity (Messent et al, 1999).

Bhakum et al (2008) also proposed that low basal metabolic rate, hypotonia and hypothyroidism, which may result in weight gain, may be more prevalent in people with learning disabilities. In a minority, a predisposition to obesity may be associated with the cause of learning disability and its behavioural phenotype, for example in Down’s syndrome (Henderson et al, 2007).

Some 45% of inpatients and 20% of people in the community with learning disabilities and mental health problems receive antipsychotic medication (Ashcroft et al, 2001). In those taking this medication, clinically significant weight gain, a range of negative cardiac and electrocardiogram changes and the risk of metabolic syndrome have been reported (Newcomer, 2005).

BASELINE CARDIOVASCULAR RISK
Advances in medical and social care have increased the life expectancy of people with learning disabilities. It is recognised that advancing age is an important unmodifiable risk factor for cardiovascular disease and obesity is also a significant risk factor.

Research on overall cardiovascular risk in this group is limited. Wallace and Schluter (2008) found that people with learning disabilities in an Australian sample generally had a more favourable cardiovascular risk profile than the general population, including lower prevalence of risk factors such as hypertension, diabetes and smoking. However, obesity and low physical activity were more common in this group, with 35% of the sample identified as obese.

Weight gain and obesity is also an issue in adolescents with learning disabilities; Wallé et al (2009) reported a higher percentage of fat mass, larger waist circumferences and greater evidence of insulin resistance among this group than their peers. Their study also showed that having a learning disability was linked to lower cardiovascular fitness.

Hill et al (2003) studied 4,872 people with...
Down’s syndrome and found significantly higher rates of cardiovascular mortality compared with the general population based on standardised mortality ratios, which were 16.5 and 6.0 respectively.

INTERVENTIONS
Unfortunately, the few studies on weight loss interventions in people with learning disabilities tend to be methodologically weak, involving small numbers and lacking controls (Hammond et al, 2007).

Chapman et al’s (2008; 2005) studies involved a healthy living coordinator who designed activity programmes and dietary strategies, and identified barriers to healthier lifestyles. The researchers compared the body mass index of members of the intervention group with the control group, and found their BMI fell throughout the six years of follow up, while the control group had an overall rise. The small sample sizes may have contributed to an overall lack of statistical significance between the two groups. The studies were also unable to identify which elements of the multifaceted intervention worked well and for which groups of people with learning disabilities.

Hamilton et al (2007) reviewed interventions for weight loss in adults with learning disabilities who were obese. They noted four main approaches:
- Focusing on dietary intake;
- Physical approaches to increase energy expenditure;
- Health promotion and health education;
- Multifaceted approaches incorporating more than one of these interventions.

Each of these approaches showed some effectiveness in producing weight loss in the short term, although long term data on sustaining this is lacking. A literature search did not reveal any research on pharmacological or surgical interventions to reduce weight in this group.

Obesity carries many health risks, and lower physical exertion and obesity appear to be the most prominent modifiable risk factors of cardiovascular and cerebrovascular disease in people with learning disabilities. Differences in body fat in adolescents based on the presence of learning disability highlight the early development of these problems. However, the efficacy of interventions to address and reduce the risks of obesity is limited.

Multidisciplinary approach
Effective multidisciplinary work tailored to an individual’s needs tends to be beneficial if planned with their GP, practice nurse, dietitian, community learning disability nurse, speech and language therapist, and has psychology and psychiatry input from local learning disability services. A well-planned, organised programme including the following should be implemented:
- A focus on dietary intake, taking into account individual food preferences;
- A personalised physical fitness programme including assessment of risks, for example atlanto-axial instability in people with Down’s syndrome;
- Health promotion and health education in the home, residential placement, day centre and respite care setting.

A consistent approach from staff teams in different settings is vital to provide structure and familiarity for patients, particularly those with autism. A key aspect is effective use of communication for each person’s level of ability, including using British sign language, Makaton (a language programme using signs and symbols: www.makaton.org) or the picture exchange communication system.

### TABLE 1. OBESITY INTERVENTIONS FOR CHILDREN AND YOUNG ADULTS

<table>
<thead>
<tr>
<th>Programme</th>
<th>Summary</th>
<th>Who for?</th>
<th>Duration</th>
<th>What does it involve?</th>
</tr>
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<tbody>
<tr>
<td>MEND (Mind, Exercise, Nutrition... Do it)</td>
<td>A multicomponent family based programme</td>
<td>Children with obesity aged 7-13 years and their families</td>
<td>Twenty two hour sessions over 10 weeks</td>
<td>One hour discussion session on mind or nutrition learning and one hour of land/water based physical activity</td>
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<tr>
<td>Mini-MEND</td>
<td>Similar to the MEND programme</td>
<td>Primary prevention programme for toddlers (2-4 years) and parents/carers</td>
<td>Ten 1.5 hour sessions over 10 weeks</td>
<td>Includes 30 minutes’ physical activity, 15 minutes’ snack time and 45 minutes’ parent discussion/toddler creche</td>
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<tr>
<td>Traffic Light Programme</td>
<td>Family based behaviour treatment programme</td>
<td>Children with obesity aged 8-13 years and their families</td>
<td>Fifteen sessions over six months for children and parents</td>
<td>Extensive psychology input and support from a dietitian: individual 15-30 minute session followed by one hour group session</td>
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<tr>
<td>Watch IT</td>
<td>A multicomponent, family based programme</td>
<td>Children with obesity aged 8-16 years</td>
<td>One year comprising three levels each lasting four months: bronze, silver and gold</td>
<td>Bronze involves weekly 30 minute one to one sessions covering the basics. Silver involves fortnightly group sessions (45 minutes) and monthly one to one sessions to allow learning from peers. Gold involves one to one and group sessions with an emphasis on preparing to move on from the programme</td>
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<tr>
<td>Carnegie Weight Management</td>
<td>Carnegie runs three different models: clubs; day camps; and residential camps</td>
<td>Young people and a family member</td>
<td>Clubs are 12 weeks with a 12 week follow up held after school/at weekends. Day and residential camps run in the school holidays</td>
<td>Campers receive 24 hour support and must stay for a minimum of two weeks</td>
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<td>Empower</td>
<td>Empowering parents to give their babies a healthy start and prevent obesity</td>
<td>Mothers whose baby is at high risk of developing childhood obesity</td>
<td>The intervention involves 6-8 one hour home visits and telephone contact between visits</td>
<td>The programme is delivered by specialist health visitors providing home visits to expectant mothers. It is based on the family partnership model and aimed at the primary prevention of childhood obesity</td>
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</table>
system (PECS: www.pecs.org.uk). These can help to engage clients meaningfully, reducing identified health risks and helping them to make healthy lifestyle choices.

**Mental Capacity Act**

The rights of people with learning disabilities to make choices, including choosing a particular lifestyle, must be respected and are protected by law (Department of Health, 2007). However, carers can face dilemmas when addressing obesity and cardiovascular risks, in terms of balancing their responsibility of care while protecting individuals’ rights, particularly where clients make potentially harmful lifestyle choices, such as persistent overeating.

In these circumstances, mental capacity needs to be assessed with regard to each of the identified health risks and specific decisions made regarding one or more lifestyle choices contributing to that risk. If a person lacks capacity to make a decision relating to a particular lifestyle choice and, as such, a risk to their health, a “best interests” decision needs to be taken by stakeholders including primary care professionals under the Mental Capacity Act 2005.

**ACCESS TO CARE AT POINT OF NEED**

In some people, non-cooperation and non-concordance may be a barrier. Some express a fear or dislike of attending hospitals and GP surgeries, complying with procedures, and use of equipment, such as needles (which may prevent blood tests being taken) or electrocardiographs. This may result in failure to detect health problems early and contribute to health inequalities. Community learning disability nurses can provide a graded desensitisation programme, although this may take several weeks or months to be successful. The same team could also carry out basic health checks after training, including pulse, blood pressure, BMI and abdominal girth measurements and regular monitoring in those at risk, liaising closely with both primary and acute care. Community learning disability nurses could receive training in phlebotomy and carry out both ECG recordings and blood tests in patients’ own homes for greater comfort.

**Care pathways and interventions**

Care pathways and intervention programmes have been developed specifically for children with obesity; some of these could be adapted for children and adults with learning disabilities. Pheasant and Enock (2008) developed a care pathway for children with obesity with the following stages:

- Identification of obesity
- Assessment and classification
- First line advice including lifestyle assessment by health visitors, general nurses, nursery nurses and/or practice nurses and use of behaviour change techniques

**CONCLUSION**

Annual health checks in primary care and more regular monitoring by practice nurses liaising with community learning disability nurses, are vital to identify potential problems early. Person-centred planning needs to be put in place, with collaboration between primary and acute care, learning disability services, relevant specialists and social services, to reduce the risk of obesity and cardiovascular morbidity.

Methodologically robust studies are needed to investigate both the aetiology and management of obesity in this group to ensure prevention and early intervention.

**REFERENCES**


