

## Symposium on 'Dietary management of disease'

### Session 3 (Joint with the British Dietetic Association): Management of obesity Management of obesity in Scotland: development of the latest evidence-based recommendations

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The problem of obesity in Scotland has reached epidemic proportions and this reality is recognised at Scottish Government level. The financial impact of treating obesity and obesity-related disease is substantial and in Scotland the cost was estimated at £171 × 10<sup>6</sup> in 2001 but only a small proportion of this estimate included weight-loss interventions. The Scottish Intercollegiate Guidelines Network (SIGN) define clinical guidelines as 'systematically developed statements to help practitioner and patient decisions' that 'provide recommendations for effective practice in the management of clinical conditions where variations in practice are known to occur and where effective care may be known not to occur'. The evidence base for successful interventions has progressed since the publication by SIGN of *Obesity in Scotland: Integrating Prevention with Weight Management* in 1996 and *Management of Obesity in Children and Young People* in 2003. In 2007 SIGN commissioned a review of these two publications. In 2006 the National Institute for Health and Clinical Excellence (NICE) published a comprehensive obesity guideline and to avoid duplication of effort SIGN used the ADAPTE guideline adaptation framework to utilise and update evidence tables produced by NICE (where appropriate) as a basis for considered judgement. The new SIGN guideline is due for publication in 2010 and addresses children, young people (<18 years old) and adults. It will provide evidence-based recommendations on primary prevention of obesity (defined as intervention when individuals are at a healthy weight and/or overweight to prevent or delay the onset of obesity) within the clinical setting and treatment by lifestyle measures, drugs and surgery.

#### Obesity management: Evidence-based guidelines: Scotland

Scotland's national clinical guideline on the management of obesity is due for publication in 2009–10 and addresses children, young people (<18 years old) and adults. It aims to provide evidence-based recommendations on primary prevention of obesity (defined as intervention during healthy weight and/or overweight to prevent or delay the onset of obesity) within the clinical setting and treatment by lifestyle measures, drugs and surgery. The development of the guideline was undertaken using standard methodology and presented a range of challenges during its development.

Obesity presents a growing challenge for Scotland. Data from the 2003 Scottish Health Survey show that 18% of children aged 2–15 years were obese<sup>(1)</sup>. For those aged 16–64 years 42% of men and 33% of women were classified as overweight and a further 22% of men and 24% of women were classified as obese. The percentage of men with a raised waist circumference (≥102 cm) increased from 14 in 1995 to 25 in 2003, and the percentage of women with a raised waist circumference (≥88 cm) increased from 19 in 1995 to 34 in 2003.

**Abbreviations:** GDG, guideline development group; SIGN, Scottish Intercollegiate Guideline Network.  
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Obesity greatly increases the risk of a range of conditions including type 2 diabetes and cancer as well as heart and liver disease. Hypertension, hyperlipidaemia and type 2 diabetes are increasingly recognised in childhood and are therefore of increasingly serious concern.

The problem of obesity in Scotland has reached epidemic proportions and this position is recognised at Scottish Government level<sup>(2,3)</sup>. The financial impact of treating obesity and obesity-related disease is substantial and in Scotland the cost was estimated at £171 × 10<sup>6</sup> in 2001. Only a small proportion of this estimate included weight-loss interventions<sup>(4)</sup>. 'Better Health Better Care' sets out the Scottish Government's programme of work for National Health Service Scotland for the next 5 years to deliver a healthier Scotland by helping individuals to sustain and improve their health, especially in disadvantaged communities, ensuring better, more local and faster access to health care<sup>(2)</sup>. Five strategic actions are described that relate to helping Scotland become wealthier and fairer, smarter, healthier, safer and stronger and greener. The programme makes specific reference to the importance of obesity and its association with rising levels of chronic diseases, particularly type 2 diabetes, stroke, CHD and cancer and £11.5 × 10<sup>6</sup> is identified to help tackle diet, physical activity and obesity, particularly in children. 'Better Health Better Care' indicates the need for local weight-management strategies, a focus on children, a whole-community approach and an obesity-focused and joined-up approach between diet and physical activity programmes<sup>(2)</sup>. 'Healthy Eating, Active Living' is the 3-year national obesity plan, launched by the Scottish Government in June 2008, that recommends combined actions on diet and physical activity<sup>(3)</sup>. 'Healthy Eating, Active Living' addresses a number of elements including: population groups across the life course and different settings, i.e. early years, schools and school-age children, adults and workplaces, older adults and communities; delivery and evaluating success; health improvement; a social marketing strategy; developing a longer-term strategy to tackle obesity.

The high prevalence of obesity-related long-term conditions indicates that healthcare professionals require evidence-based guidance on how to deal with the problem of overweight and obesity in clinical practice. The Scottish Intercollegiate Guidelines Network (SIGN) define clinical guidelines as 'systematically developed statements to help practitioner and patient decisions' that 'provide recommendations for effective practice in the management of clinical conditions where variations in practice are known to occur and where effective care may be known not to occur'<sup>(5)</sup>. SIGN guidelines are produced using standard methodology that complies with the criteria used by Appraisal of Guidelines for Research and Evaluation in Europe<sup>(6)</sup>. The guidelines are based on a systematic review of the evidence, undertaken by a guideline development group (GDG) made up of clinicians, academics and lay representatives, with support from the SIGN Executive. Key steps for the GDG and SIGN include: identification of key questions and terms for literature searching; undertaking a detailed literature review; grading and synthesis of the evidence; preparation of draft recommendations; preparation of a draft guideline; hosting a national open

meeting to present and discuss draft recommendations; incorporating feedback from the national meeting into the draft guideline; undertaking a peer review of the revised draft guideline; incorporating feedback from peer reviewers into the draft guideline; reviewing by the SIGN editorial group before publication and dissemination.

The evidence base for obesity interventions has progressed since the publication by SIGN of *Obesity in Scotland: Integrating Prevention with Weight Management* in 1996<sup>(7)</sup> and *Management of Obesity in Children and Young People* in 2003<sup>(8)</sup>. SIGN commissioned a review of these two guidelines and the twenty-seven-member multidisciplinary GDG was set up in 2007. To avoid any duplication of effort SIGN used the ADAPTE guideline adaptation framework to utilise and update the evidence tables produced by the National Institute for Health and Clinical Excellence for their guideline published in 2006<sup>(9)</sup> as a basis for considered judgement where appropriate<sup>(10)</sup>. The ADAPTE group was a collaborative enterprise between the French National Federation of Comprehensive Cancer Service and the Quebec Cancer Control Department whereby a project was established to examine how the French National Federation of Comprehensive Cancer Services guidelines could be adapted for use in French-speaking Quebec. The ADAPTE group subsequently designed an explicit approach to trans-contextual guideline adaptation<sup>(10)</sup> and this approach was applied as part of the SIGN process in the development of the 'management of obesity' guideline.

The final draft of the SIGN management of obesity guideline<sup>(11)</sup> is currently out for final approval, with the guideline due for publication in 2010. The guideline provides evidence-based recommendations on primary prevention of obesity (defined as intervention during healthy weight and/or overweight to prevent or delay the onset of obesity) within the clinical setting, as well as for the treatment of overweight and obesity by lifestyle measures, drugs and surgery. It addresses children, young people and adults and is aimed at practitioners in primary, secondary and tertiary care.

In the guideline, weight management encompasses primary prevention of weight gain, weight loss (usually completed within 3–6 months), prevention of weight re-gain (from 3 to 6 months onwards) and optimising health and reducing risk of disease (whether or not weight loss is achieved). Twenty-six key questions were defined by the GDG. The primary outcome of interest for the adult section of the guideline was intentional weight loss expressed as absolute weight loss (kg) or, for bariatric surgery, percent excess weight lost (where current weight is compared with a measure of 'ideal' body weight for height, based on BMI or tables compiled by insurance providers).

BMI is an internationally-accepted measure of general adiposity in adults and SIGN endorses this international consensus by proposing that BMI should be used to classify overweight or obesity in adults. Waist circumference is also recommended to enable refinement of clinical risk. For children and young people BMI is not a static measurement, but varies from birth to adulthood, and is different between boys and girls; therefore, interpretation of BMI values depends on comparisons with population

reference data, using cut-off points in distribution (BMI percentiles). The SIGN guideline recommends that BMI percentiles are used to diagnose overweight and obesity in children and young people.

The various sections in the guideline describe the outcome of the literature reviews for the key questions and are identified as follows:

in adults: diagnosing overweight and obesity; prevention of overweight and obesity; identifying high-risk groups; initial considerations in managing overweight and obesity; dietary interventions; physical activity; psychological and/or behavioural interventions; multi-component interventions; pharmacological treatment; bariatric surgery; referral and service provision;  
in children and young people: aetiology and consequences of obesity; prevention of overweight and obesity; treatment of obesity.

The development of the guideline has presented the GDG with several challenging issues, four of which are outlined:

1. how can the remit be constrained to the clinical aspects of obesity prevention? Obesity prevention by necessity requires broad multisectorial action in, for example, food policy, transport policy, education etc. and broad public health aspects of obesity prevention are outside the scope of the guideline. Drawing up limits of remit in this area was a great challenge for the GDG;
2. in selecting the most important key questions to address is it worth asking important questions even though it is known there is no evidence? Systematic literature review often identifies evidence of which GDG was not aware, so it is usually worth asking the important questions and lack of publications clearly identifies important areas for further research;
3. in selecting the most important questions to address is it worth asking important questions that are unlikely ever to be answered by scientific study? Examples of this kind of question are: are standard obesity interventions adequate for those with binge eating disorder; which adults who are obese should be referred to other services; what potential harms are associated with repeated efforts to lose weight. Including such questions opens them up to full discussion by the group and highlights any published expert opinion that may provide guidance;
4. in forming recommendations that necessitate complex and/or costly intervention how can the balance be struck between reflecting the evidence base and developing recommendations that are able to be implemented? The process of considered judgement allows the evidence to be synthesised alongside factors of clinical and resource impact.

The following examples highlight one or more of these challenges.

In relation to the prevention of obesity it was not possible to draw conclusions about the relative effectiveness of intervention components. A good-quality systematic review of obesity prevention interventions based on dietary intake or physical activity in adults has identified nine

heterogeneous studies but results are inconsistent<sup>(11)</sup>. A World Cancer Research Fund systematic review<sup>(12)</sup> has developed a range of evidence-based statements on the associations between dietary components and obesity and these statements are subsequently proposed as grade B recommendations.

A key question has sought to establish which distinct subgroups of the adult population are more at risk of becoming overweight or obese compared with the rest of the population, and a range of population subgroups at increased risk for weight gain were identified. However, the GDG also wanted to know whether focusing on these at-risk individuals for provision of interventions as opposed to provision at all stages leads to improved outcome measures in adults who are overweight or obese. There was however insufficient evidence upon which to base guidance.

The health benefits of weight loss are undeniable but the literature reports weight loss in varying ways (e.g. absolute weight loss, percentage weight loss), making it difficult to combine studies and interpret overall. Furthermore, although the aim of weight loss interventions is proposed as improving pre-existing obesity-related comorbidities and reducing the future risk of obesity-related comorbidities, the GDG have recognised that the amount of weight loss required by an individual depends on their comorbidities and risk as opposed to only their weight. Thus, the GDG propose a good-practice point specifying a percentage weight loss related to the level of BMI and make a distinction between weight loss for CVD and metabolic risk reduction, as opposed to the presence of obesity-related comorbidities, i.e.:

in patients with a BMI of 25–35 kg/m<sup>2</sup> obesity-related comorbidities are less likely to be present and a 5–10% weight loss is required for CVD and metabolic risk reduction;

in patients with a BMI of >35 kg/m<sup>2</sup> obesity-related comorbidities are likely to be present; therefore, weight loss interventions should be targeted to improving these comorbidities. In many individuals a >15–20% weight loss will be required to obtain a sustained improvement in comorbidity.

There is good evidence showing that lifestyle weight-management programmes should include physical activity, dietary change and behavioural components, with the adjunct of pharmacological treatment as necessary<sup>(13)</sup>. There is also good evidence to support the inclusion of psychological interventions in weight-management programmes, reflected by several high-quality meta-analyses and systematic reviews<sup>(14)</sup>. However, the GDG has also asked about the effectiveness of specific psychological interventions in weight-loss programmes, but in the absence of good evidence the guideline proposes a list of specific psychological interventions as a good practice point. The guideline emphasises that all lifestyle interventions should be delivered by individuals who have support and supervision from appropriately-trained personnel.

The recommendations relating to bariatric surgery in the guideline have posed a number of distinctive challenges.

Key questions on bariatric surgery relate not only to efficacy of surgery for weight loss and health outcomes (mortality and diabetes), but also to issues relating to preparation and follow-up for patients and the need for plastic surgery interventions. In considering the evidence the GDG has to take into account the number of obese and severely-obese individuals in Scotland, current levels of bariatric surgery, resource issues and public and professional biases. This topic demonstrates some of the complexities involved in the process of developing evidence-based recommendations using considered judgement.

SIGN is currently undertaking an exercise to identify the recommendations in the proposed management of obesity guideline that are likely to have a marked clinical and resource impact for National Health Service Scotland. This exercise involves the preparation of a report to accompany the guideline that will identify for each key recommendation the numbers of patients likely to benefit from the recommendation, the resultant clinical benefits, the resources required to implement it and the accompanying costs. This report will assist Health Boards in implementation of the key recommendations.

#### Acknowledgements

The author declares no conflict of interest. The author acknowledges the support of NHS Tayside and Scottish Intercollegiate Guideline Network.

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