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National Guidelines *for Community Based Practitioners on Prevention & Management of* Childhood Overweight & Obesity

December 2006

Evidence Review and
Recommendations for Good Practice

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Foreword

Overweight and obesity is one of the most serious health problems facing Irish children today. One in four children in Ireland is either overweight or obese and the trend is increasing. Many obese children become obese adults who are more likely develop serious illness such as diabetes, heart disease, some cancers and psychological problems. As a result their length and quality of life will be reduced.

Obesity creates a major economic burden through loss of productivity and income, and consumes approximately 8% of overall health care budgets, creating a severe impact on our health service in terms of its ability to cope and the costs of treating associated medical conditions.

A healthy lifestyle is essential to counteract obesity. While we are all individually responsible for what we eat and the amount of physical activity we take, the prevention and management of obesity is complex. It needs a multifaceted approach with shared societal responsibility and collaboration between the public, private and voluntary sectors as outlined in the report of the National Task Force on Obesity.

Healthy lifestyle choices are not made with equal ease by people living in Ireland and this has to change. All children need healthy public policies which enable them and their parents to make healthy choices. They require transport policies that allow them to walk safely to and from school. They have a right to exercise programmes in school, playgrounds, the preservation of green spaces and parks, and access to affordable and nutritious food. The food industry has an obligation to provide healthy food with reduced fat, salt and sugar content and better, easily understandable food labelling. The media need to contribute to informing the public in a responsible manner, endorsing appropriate advertising and marketing strategies.

The health sector plays an important role in the prevention and management of childhood obesity. Health professionals are concerned about obesity and parents seek guidance on the issue. These guidelines were produced in response by the Health Service Executive Children and Young People Team to support health professionals in their practice.

This document describes the epidemiology and measurement of obesity in children, risk factors and consequences, referral criteria and requirements for successful management. It gives a overview of evidence from research and was developed in collaboration with leading national and international experts, representatives from professional and academic organisations and in consultation with parents and children.

I wish to thank all contributors to this important document and hope that it provides health professionals, parents and young people with the information they need on obesity prevention and management.

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Abbreviations

BMI	Body Mass Index
CHISP	Child Health Information Service Project
DoHC	Department of Health and Children
HBSC	Health Behaviour in School- Aged Children
HSE	Health Service Executive
IOTF	International Obesity Task Force
IT	Information Technology
PAC	Programme of Action for Children
PE	Physical Education
PHR	Parent Held Personal Child Health Record
TV	Television
UK	United Kingdom

Summary

Definitions and Measurement

- Overweight and obesity in children should be identified by objective anthropometric means.
- Routine data or suitably powered surveys can be utilised to monitor the obesity epidemic.
- BMI centiles should be used to describe childhood obesity.
- Nationally agreed definitions for childhood overweight and obsity in Ireland are needed.
- BMI should be calculated separately from taking growth measurements and not routinely given to parents.
- Appropriate ways of communicating growth monitoring results to parents need to be developed.
- Health professionals require training in growth monitoring and good practice in preventing and managing childhood overweight and obesity.

Prevalence

- One in four children and one in two adults living in Ireland are overweight or obese.

Consequences of Childhood Overweight & Obesity

- Obese children are at risk of adverse physical and psychological health consequences, including cardiovascular, metabolic and endocrine as well as psychosocial disorders.
- The risk of childhood obesity tracking into adulthood increases with age.
- Parental obesity is a risk factor for childhood obesity and its persistence into adulthood.

Prevention

- Parents, families and peers are important determinants of child health behaviours.
- Breastfeeding support measures need to be strengthened.
- Parents require education and support to optimise infant feeding practices.
- Shared family meals and appropriate school policies can contribute to healthy nutritional habits in children and young people.
- Children should be physically active for at least 60 minutes a day.
- School based interventions need to be multifaceted and sustained.

- Antenatal education programmes and parent support during infancy and early childhood can facilitate health promoting environments for children.
- Single issue health promotion does not work.
- Parents need to be supported in understanding the importance of encouraging the development of positive mental health in children and young people.
- Screening for childhood overweight and obesity is not recommended.
- Information on childhood overweight and obesity needs to be evidence based, up to date, consistent and readily available.
- All health professionals have an advocacy role.
- Health professionals need to understand and participate in community development approaches to improving equity of access to and facilitating healthy lifestyle choices.

Referral

- BMI needs to be interpreted in the context of the individual child, taking into account age, body build and pubertal stage.
- Referral should be based on clinical concern and readiness of the child and family to support weight management measures.
- Children with obesity, short stature or associated symptoms of developmental delay and abnormal growth require referral for paediatric assessment and diagnosis.
- Children with symptoms and conditions associated with childhood overweight and obesity need to be referred for paediatric investigation and treatment.
- Communication with parents and amongst professionals is essential for coherent and consistent management of childhood overweight and obesity.
- Effective management of childhood overweight and obesity requires participation of and support from the child's or young person's family.
- Change management skills form the basis of multidisciplinary working with families of overweight and obese children and young people in community settings.
- Health professionals need to work together in settings that are acceptable to children and their families to effectively manage childhood overweight and obesity.

Management

- Effective approaches to treating obesity are based on complex multidisciplinary, multifaceted and participatory models of behaviour modification.
- For most children, weight maintenance is an acceptable goal, allowing them to 'grow into their weight'.
- Weight loss should be limited to those children being managed in secondary or tertiary care.

Section 1

Key issues in childhod overweight & obesity

1.1 Introduction

This document aims to provide guidance to community based practitioners in the prevention and management of childhood overweight and obesity in Ireland. It is intended to complement recommendations of the National Task Force on Obesity[1] with a specific focus on the information needs of health professionals working with children and their families in the context of community child health services. It is based on a review of evidence from research, expert opinion and consultation with health service users and providers undertaken by the former HSE Programme of Action for Children between March 2005 and October 2006 (Appendices 1- 3). In the context of health service reform, this work is now being continued by the HSE Population Health Directorate Children and Young People Team.

1.1.1 Background

Childhood overweight and obesity is one of the current main threats to child public health, which has been termed by the World Health Organisation as a 'global epidemic'.[2] Rising levels of childhood overweight and obesity are mirrored by increasing public and professional concern, and there is a need to provide clear guidance to practitioners in community and primary care settings on good practice in this area:

- ***To raise awareness and improve skills for community based staff in prevention and management of childhood overweight and obesity, and***
- ***To build capacity for effective interventions in relation to childhood overweight and obesity.***

Definition and diagnosis of childhood overweight and obesity is complex in comparison to adults, which has led to widespread variations in practice. The Body Mass Index (BMI) (weight (kg)/ height (m) ^{2}) correlates sufficiently well with direct measures of body fat and is suited for monitoring the obesity epidemic, but there is much individual variability in the relationship between BMI and body fat, cardiovascular risk and other long term health outcomes.[3] Children grow and do so at variable rates and with differentials between weight and height gain. They generally double their weight in puberty, while only increasing their height by approximately 20% in the same time period. Weight maintenance as apposed to weight reduction is often an achievable and reasonable goal.

In the absence of more appropriate tools applicable in community and primary care settings, children's weight status should be expressed as a BMI centile in relation to an age and gender matched population, but needs to be interpreted in the clinical context of the individual child.

It is increasingly acknowledged that obesity is not primarily a health issue, but the result of a complex interplay of obesogenic factors within the environment, as well as individual genetic and lifestyle behaviours, with far reaching health, economic and psychosocial consequences.

The marked rise in obesity prevalence has coincided with a major change in how children spend their time, resulting in both a decrease in physical activity and a rise in sedentary behaviour. This leads to a positive energy balance, with excess adipose tissue being formed and stored. There is a wider societal and political context with regard to the lack of play grounds and increase in sedentary past times, transport policies that favour driving, as well as changes in dietary habits. This is compounded by widely and cheaply available foods high in saturated fat, sugar and salt

marketed by a powerful food industry and supported by economically motivated agricultural policies, which favour the production of unhealthy foodstuffs.

Childhood obesity is a risk factor for adult obesity, which is compounded if one or both parents are also obese. The odds of an obese child becoming an obese young adult rise with increasing age of the child.[4] There are many adverse health consequences of childhood overweight and obesity, both in terms of physical and psychological well-being.

Evidence for effectiveness of treatment of childhood overweight and obesity is sparse, and the emphasis should be on interagency co-operation to improve the environment and opportunities for healthy lifestyle choices.

Prevention and treatment of obesity should be initiated in childhood, and more effort needs to be invested in finding effective approaches to prevent the persistence of overweight and obesity from childhood into adulthood. The evidence base for good practice in prevention and effective interventions is evolving. In light of this, it is important that interventions are evaluated prior to widespread dissemination. Interagency debate and action is needed to ensure that protective factors are increased and risk factors reduced.

A complex societal issue like childhood overweight and obesity requires leadership at the highest level as recently recommended by the National Task Force on Obesity.

The National Children's Office published play policy for children[5] and recently developed recreational policy for young people[6] emphasise the need to create enabling environments for physically active play and leisure pursuits, while also referring to their positive influence on child mental health and overall well being. Implementation of these policies requires leadership, funding and effective collaboration between governmental departments at national, regional and local levels.

Parents and professionals working with and concerned about the welfare of children have a role as advocates in lobbying for improved environmental and socio- economic conditions for children and young people to grow up in, making the healthy the easier choice.

1.1.2 Purpose of guidelines

These guidelines are based on current evidence for good practice, expert opinion, practitioner and service user experience in the prevention and management of overweight and obesity in children and young people up to the age of 18 years. They are primarily aimed at those working with children in primary and community care in Ireland. These include:

- general practitioners,
- public health nurses,
- school nurses,
- community dieticians,
- community medical officers,

Multidisciplinary and interagency approaches to obesity are necessary for effective prevention and management. The following professional groups should therefore be familiar with the guidelines:

- consultant hospital and community paediatricians and physicians,
- junior doctors,
- clinical psychologists,
- physical activity co- ordinators,
- health promotion and public health professionals.

The issue of childhood overweight and obesity is a societal rather than a medical one, and both prevention and management can only effectively occur when all sectors in society are working in partnership for a common goal. This includes physical education and other teachers, community development workers, spatial planners and policy makers.

1.2 Definitions and Measurement

Obesity can be described as "the extent to which body fat has accumulated to a degree that health is adversely affected".[2] Visual assessment of body build and estimation of fatness ('eyeballing') is unreliable. An ideal tool for assessing obesity in children would simply, rapidly and accurately identify those with excess body fat at risk of increased morbidity and long-term mortality. There is however no simple tool to assess body fat in children and anthropometric measurements are used as correlations for body composition.

- ***Overweight and obesity in children should be identified by objective anthropometric means.***

1.2.1 Measures of childhood overweight and obesity

Table 1 illustrates a range of methods for assessing body fat in children.[7] These range from height and weight based assessments suitable for community and primary care over anthropometric assessments requiring specialist training and equipment to laboratory techniques for experimental research settings.

Table 1 Measures of body fatness

Principle of measure	Description	Comment
Height and weight based measures	Body Mass Index Weight for height centile	Useful for population monitoring Statistically unsound
Anthropometric measures	Skin fold thickness Waist circumference Waist to hip ratio	Requires specialist equipment and training Difficult to measure accurately Prone to measurement error
Direct measures of body fat	Bioelectrical impedance Dual x- ray absorptiometry Underwater weighing	Research tool available in tertiary centres

1.2.2 Monitoring the obesity epidemic in children

BMI (weight (kg)/ height (m) ^{2}), while not meeting all criteria of an ideal measure, is the single best method to assess childhood overweight and obesity in children in community settings. There are now available international gender and age specific BMI cut off points for children aged 2-18 years that correspond to the adult cut offs for overweight and obesity. These are based on pooled international data developed by Cole et al and are useful for international comparisons of obesity trends.[8] However, for clinical purposes and national monitoring of overweight and obesity trends national BMI reference data are preferable.[9]

1.2.3 Childhood obesity surveillance in Ireland

The National Taskforce on Obesity[1] has recommended that growth measurements be collated in order to monitor trends in growth, overweight and obesity. Such data need to be collected regularily but there is not a need to measure every child every year. For epidemiological purposes, a standard annual sample of the population of children might be preferrable to produce meaningful indicators of childhood overweight and obesity levels in a more cost effective manner.[10]

The parent held Personal Health Record (PHR) IT support system[11] can be developed to monitor overweight and obesity levels on a population basis following its national implementation.

- ***Routine data or suitably powered surveys can be utilised to monitor the obesity epidemic.***

1.2.4 Role of BMI in clinical context

The concept of the BMI is not easily understood by parents and requires skilled interpretation. In adults, BMI acts as a fixed reference for weight status with a normal range of 20 to 24.9. In children, body composition changes with age. The mean BMI of a baby girl at birth is just above 17, falling to 15 during the preschool years and then rising gradually to reach adult values during later childhood and adolescence. Adverse health outcomes resulting from overweight and obesity have been linked to BMI cut- offs in adults, and adverse short- and long- term health effects result from overweight and obesity in childhood.[12]

In the new growth charts for children in Ireland, the 91st and 98th BMI centile are in close proximity to the IOTF cut off centiles for childhood overweight and obesity and will be highlighted. There is no nationally accepted definition of childhood overweight and obesity in Ireland and further work is required on this.

- ***BMI centiles should be used to describe childhood obesity.***
- ***Nationally agreed definitions for childhood overweight and obsity in Ireland are needed.***

1.2.5 Growth monitoring of children in Ireland

Universal growth monitoring at birth, at 6-8 weeks, and at 8-12 months and at school entry is recommended in Ireland as part of the national core child health programme[13] and as an integral part of routine clinical care. This does not constitute a screening programme.[4] Consideration needs to be given to extend routine growth measurements to support monitoring of the obesity epidemic after school entry, as the rise in obesity tends to occur later in childhood.
Accuracy in measuring children and recording of results is vital. Trained professionals can be expected to calculate BMI and understand its underlying concepts, including the need to interpret it in the clinical context of individual children. As there is no agreed definition of overweight and obesity and no clear cut off to indicate a referral to specialist care, it is currently considered inappropriate to give out BMI results routinely to parents of all children.

- ***BMI should be calculated separately from taking growth measurements and not routinely given to parents.***
- ***Appropriate ways of communicating growth monitoring results to parents need to be developed.***

Limited resources exist both in terms of health care staff capacity and finance. All children regardless of weight status need to receive support and advice regarding healthy lifestyle choices, as many normal weight children and young people subsequently develop overweight and obesity.[14] Careful considerations of effectiveness are needed when allocating limited resources to either growth measuring programmes or efforts to strengthen health promoting and obesity prevention models, which have been shown to be an effective means of prevention and intervention in relation to childhood overweight and obesity.[15]

- ***Health professionals require training in growth monitoring and good practice in preventing and managing childhood overweight and obesity.***

1.3 Prevalence

1.3.1 Routine data in primary school children

There is an increasing amount of research on current levels of childhood overweight and obesity in Ireland. Depending on the measure used, the prevalence amongst primary school entrants in a rural area of Ireland has been estimated at between 23 to 25% of girls and 25 to 33% of boys being either overweight or obese in accordance with IOTF or United Kingdom (UK) definitions.[16]

1.3.2 All Ireland BMI survey of children and young people

These results are confirmed by preliminary data from the National Survey of Children's Dental Health 2001- 2002, which include height- and weight measurements of 20,000 randomly selected school children, aged 4- 16 years, in both jurisdictions on the island of Ireland.[17] Prevalence of overweight and obesity in this large scale, representative cross sectional study range from 18 to 34%, depending on age and gender. There is a stronger tendency for girls to be overweight or obese, and it appears that younger age groups now show a higher level of overweight and obesity. This should not be taken as an indication that young children tend to become slimmer as they get older. It rather suggests that the rising level of childhood overweight and obesity is affecting children more than previously with young children at higher risk now than five or ten years ago.

1.3.3 Self reported data of school children in Ireland

Self- reported data from the Health Behaviour in School- Aged Children (HBSC) study show that overweight and obesity rates among Irish 13 year old boys and girls are comparable to the international average taken from 29 countries worldwide (14.4% and 10.5% respectively), but lower for 15 year old boys (11.0%) and higher for 15 year old girls (12.6%).[18] These figures have to be interpreted with caution, as they are based on self-reported weight and height data and are likely to underestimate the actual prevalence rates of overweight and obesity.

1.3.4 Self reported adult data

Irish data for adults are available from the North/ South Ireland food consumption survey. Since 1990, obesity has more than doubled in men from 8% to 20% and increased from 13% to 16% in women.[19]

- ***One in four children and one in two adults living in Ireland are overweight or obese.***

1.4 Consequences of Childhood Overweight and Obesity

1.4.1 Cardiovascular risk factors, metabolic and endocrine complications

Adult obesity increases the risk for developing other diseases including:

- diabetes mellitus,
- dyslipidaemia,
- hypertension,
- stroke,
- heart disease,
- neoplastic disease,
- gall bladder disease,
- arthritis,
- sleep apnoea.

Life expectancy is reduced by obesity, mainly through the effect of increased weight on related conditions.[20] There is evidence of an association between adolescent obesity and increased risks for ill health in adult life, including cardiovascular risk factors, long-term morbidity and mortality.[15]

During childhood and adolescence, the picture of observed associations is somewhat different, with overweight and obese children experiencing increased risk of suffering from muskuloskeletal problems, sleep apnoea, and hepatobiliary disease.[21] A sharp increase in the number of adolescent patients with a diagnosis of non insulin dependent diabetes mellitus has been observed in parallel with an increasing prevalence of overweight and obesity in children and young people,[22] and deaths from arteriosclerotic cardiovascular disease have occurred in extremely obese youths.

The following cardiovascular risk factors are commonly observed amongst overweight children and adolescents, forming part of the increasingly common metabolic syndrome in this population group:

- dyslipidaemia,
- hyperinsulinaemia,
- hypertension.[23]

The extent of fatty streaks and fibrous plaques in the aorta and coronary arteries at autopsy of children and adolescents shows a strong association between ante mortem existence of cardiovascular risk factors like high BMI, blood pressure and blood lipids.[24]

1.4.2 Psychological and socioeconomic consequences

Obese children are more likely to show evidence of psychological distress than are non-obese children, including:

- poor self-esteem,
- depression,
- disordered eating,
- body dissatisfaction.

There is evidence to suggest that the risk of childhood overweight and obesity rises with levels of increasing socio-economic deprivation.[25] Adverse associations between childhood obesity and educational attainment, ability to maintain long-term relationships and income have been shown for women.[26] Interventions aimed at reducing socio- economic inequalities are likely to have a positive impact on overweight and obesity and its associated adverse health outcomes.

- Obese children are at risk of adverse physical and psychological health consequences, including cardiovascular, metabolic and endocrine as well as psychosocial disorders.

1.4.3 Persistence of childhood obesity into adulthood

A positive association exists between childhood and adolescence BMI and adult overweight and obesity, placing the risk of obesity in younger years tracking into adulthood at one fifth for boys younger than 8 years, one third for young males aged between 8 and 13 years and above one half for those aged above 13 years. The figures for girls have been shown to be one third, more than one half and two thirds, respectively.[27]

- ***The risk of childhood obesity tracking into adulthood increases with age.***

Age in years	Risk for boys	Risk for girls
<8 years	1 in 5	1 in 3
8-13 years	1 in 3	>1 in 2
>13 years	1 in 2	2 in 3

It is apparent from these data that the risk of overweight and obesity persisting into adulthood increases with age. Other determinants include parental obesity, social factors, birth weight, timing and rate of maturation, as well as behavioural and psychological factors.

Parental obesity has been found to more than double the risk of adult obesity, both in obese and non-obese children under 10 years of age, and the relative importance of parental obesity decreases with increasing age of the studied children.[28]

- ***Parental obesity is a risk factor for childhood obesity and its persistence into adulthood.***

Section 2

Dealing with childhood overweight & obesity

2.1 Prevention

2.1.1. Prevention at the level of children, families and communities

Parents, families and peers

Parents and families are influential in determining child health outcomes, including childhood overweight and obesity. Early childhood experiences are crucial in shaping lifestyle patterns and behaviours. Parents require support to fulfil this important role to the best of their ability and need to be empowered to realise their responsibilities and capacity to optimise the developmental potential of their children.[29] For older children and adolescents, peer support becomes increasingly important and has been effectively harnessed to empower young people in the development of healthy lifestyle behaviours.[30]

- ***Parents, families and peers are important determinants of child health behaviours.***

Breastfeeding and infant nutrition

The overall role of breastfeeding as an important contributing factor to positive child health outcomes is well established,[31] and there is some evidence indicating its usefulness in reducing the risk of overweight and obesity in childhood,[32] although its role in the prevention of childhood overweight and obesity[33] has been questioned.[34]

Breastfeeding rates remain low in Ireland compared to other European countries, and better antenatal support as well as breastfeeding support policies and services are urgently required, as recently recommended by the National Committee on Breastfeeding.[35]

- ***Breastfeeding support measures need to be strengthened.***

The introduction of a variety of foods, tastes and textures during weaning and in early childhood is likely to contribute to a more varied and balanced diet in later life.

Infant growth patterns and their association with childhood overweight and obesity in later childhood requires further investigation.[36]

- ***Parents require education and support to optimise infant feeding practices.***

Nutrition during childhood and adolescence

Healthy nutrition has been shown to improve academic performance and educational achievement.[37] There is evidence from cross sectional studies that eating breakfast is associated with a reduced incidence of childhood overweight and obesity levels and improved academic performance.[38]

Substituting carbonated drinks available in schools and offering healthier choices in vending lobbies has been associated with reduced consumption of unhealthy foodstuffs without having a negative impact on school income. The impact of freely available drinking water in schools and how to best promote the use of healthy food and drinks options in schools needs to be explored further.[39]

In the UK it is estimated that a quarter of family households don't have a table to eat at. Not sharing family meal times has been associated with obesity[40] and poorer diet quality in older children and adolescents.[41]

- ***Shared family meals and appropriate school policies can contribute to healthy nutritional habits in children and young people.***

Physical activity

Children should be involved in at least 60 minutes of moderately intensive physical activity a day. Reducing sedentary behaviour associated, amongst others, with television viewing and the use of electronic equipment through active play and other physical activities might be effective in preventing childhood overweight and obesity.

Being physically active before arriving at school might improve concentration, but the impact of means of travelling to school on levels of childhood overweight and obesity needs to be explored further.[42] Of the variance in physical activity undertaken by primary school children, only a very small percentage is attributable to differences in school environments, pointing towards internally determined individually variable average daily physical activity levels.[43]

Especially in adolescent girls physical activity levels declining sharply with increasing age. [44] Opportunities for being active need to be offered to boys and girls, giving consideration to age and gender.[45] Pupils and teachers welcome the inclusion of activities like yoga and dance in schools' physical education curricula, but evidence of impact on childhood overweight and obesity is as yet outstanding.

Participative approaches to the planning and delivery of physical activity programmes increase their acceptability to children and young people, as well as families and teachers, thereby improving effectiveness.

Improving access of young people to leisure facilities through increased provision and reduction of fees might encourage especially those from economically disadvantaged backgrounds to use such facilities and provide alternatives to spending time sedentarily.[5,6]

- ***Children should be physically active for at least 60 minutes a day.***

School based interventions

There is evidence for the effectiveness in the prevention of childhood overweight and obesity of multifaceted interventions based on the concepts underlying the health promoting schools model, which involves families and communities in school activities. Despite inadaequate support for and resources within Irish schools to engage on a broad basis with the European Health Promoting Schools Network, some success in introduce the model amongst has been achieved amongst Irish schools.

Peer group and family support, especially for younger adolescents, are important for success. Interventions need to be designed and delivered in a participative manner, including children, parents, teachers and other professionals, to be acceptable and sustainable in order to have an impact.

Introducing healthy living as an academic subject requires further consideration. The existing Social, Personal and Health Education (SPHE) Primary School Curriculum provides a potential framework for this.

There is as yet inconclusive evidence that increasing the amount of school physical activity time reduces the risk of children becoming overweight, as well as reducing existing levels of overweight and obesity. [46]

Programmes will require sustained long term resources and comprehensive evaluation to ascertain their long term impact. Potential exists for better integration with other chronic disease prevention programmes to optimise use of limited resources and reduce duplication. [47]

- ***School based interventions need to be multifaceted and sustained.***

Health promotion and education

In light of the potential importance of early childhood growth patterns and other risk factors like parental overweight and obesity for developing overweight and obesity,[36] interventions targeting actual and would be parents of young children need to be developed and evaluated with the aim of reducing parental overweight and obesity, as well as modifying child rearing practices. Such interventions could be delivered as part of antenatal and early childhood home visiting programmes by community based practitioners.

- ***Antenatal education programmes and parent support during infancy and early childhood can facilitate health promoting environments for children.***

Single-issue health promotion activities like focussing on nutritional issues only while not addressing other factors contributing to childhood overweight and obesity are not effective.

- ***Single issue health promotion does not work.***

Mental health

Positive mental health and skills development underpin individual ability to make healthy lifestyle choices and manage change where necessary. Body image dissatisfaction is related to poor self esteem, unhealthy eating behaviours and inadaequate participation in physical activity.

- **Parents need to be supported in understanding the importance of encouraging the development of positive mental health in children and young people.**

Table 3 Individual risk and protective factors

Risk factors	Protective factors
• Low birth weight	• Breastfeeding
• Fast growth in infancy	• Regular mealtimes
• Parental obesity	• Shared family meals
• TV viewing	• Healthy diet
• Fast foods	• Active lifestyle
• Fizzy drinks	• Drinking water
• Socio economic deprivation	• School sports participation

2.1.2 Prevention at the level of services

Screening

There is good reason to recommend against screening for obesity, as there is currently little evidence on which to base the delivery of effective and accessible therapy.

Screening might be considered beneficial if systematic early detection of obesity led to management that avoided subsequent adverse outcomes. Therefore, screening would need to identify those most at risk of adverse effects and/or those least likely to remit spontaneously by adulthood, while minimising false positives. These conditions for instigating screening programmes for obesity in childhood are not currently achievable.

Therefore, repeated universal measuring of children's weight and height is not recommended in light of currently available evidence for good practice. Growth monitoring can lead to stigmatisation of overweight and obese children.[48] It might not be appropriate to measure a child in the context of an opportunistic or scheduled assessment, if it is likely that adverse psychological consequences will result and when there is no parental support for weight management measures.

Population approaches in reducing environmental obesogenic factors and raising awareness regarding the prevention and management of childhood overweight and obesity may be more successful than strategies to improve detection of individual obese children.

- **Screening for childhood overweight and obesity is not recommended.**

Access to information

As the knowledge base in the area of childhood overweight and prevention strengthens, training of professionals becomes increasingly important.

Information available to the public and professionals needs to be evidence based and cohesive to avoid conflicting messages. It would be useful to post such information and appropriate links on websites available to young people.

The PHR[11] and Child Health Information Service (CHISP) projects[49,50,51] provide vehicles for informing parents on best practice in childrearing.

- ***Information on childhood overweight and obesity needs to be evidence based, up to date, consistent and readily available.***

Primary and community care

Primary care practitioners like general practitioners, practice nurses and public health nurses are in frequent contact with children, young people and their families and can therefore play an important role in the prevention of childhood overweight and obesity. Training in intervention techniques like motivational interviewing requires further exploration.

Other child health professionals

Health and other professional groups need to use their influence and utilise opportunities to promote appropriate and evidence based messages for the public domain in relation to childhood overweight and obesity in order to raise awareness and influence public opinion.

- ***All health professionals have an advocacy role.***

Community development

Socially disadvantaged groups are particularly vulnerable to food poverty and related conditions including malnutrition and obesity.[52] There is a need to facilitate the provision of healthy and nutritious food to low income households and to increase the capacity of people to make healthy lifestyle choices. This requires the development and implementation of healthy public policy to reduce structural health inequalities through environmental change. Improved and accessible facilities for physical activity, community based nutrition training programmes and the development of sustainable food partnerships designed to alleviate the impact of socio economic disadvantage directly benefit from the support of health and other service providers.

- ***Health professionals need to understand and participate in community development approaches to improving equity of access to and facilitating healthy lifestyle choices.***

2.2 Referral

2.2.1 Referral criteria

The decision to refer a child should not be based solely on BMI or weight for height, the latter being a statistically unsound measure for the purpose of identifying overweight or obese children.[53] Clinical judgement should be used, taking into account the child's appearance, body build and pubertal stage.

- ***BMI needs to be interpreted in the context of the individual child, taking into account age, body build and pubertal stage.***

Parental, child or professional concern and readiness to support changes in lifestyle aimed at weight maintenance or reduction are essential in the decision making criteria for referral.

- ***Referral should be based on clinical concern and readiness of the child and family to support weight management measures.***

Genetic, metabolic or endocrine conditions resulting in obesity are uncommon, but can be an underlying and causative factor in children with severe obesity, especially when this is associated with short stature or developmental delay.

- ***Children with obesity, short stature or associated symptoms of developmental delay and abnormal growth require referral for paediatric assessment and diagnosis.***

Where a child who is considered overweight or obese has associated comorbidity and symptoms including breathlessness, lethargy, behaviour or psychological problems, referral for further investigation is indicated.

- ***Children with symptoms and conditions associated with childhood overweight and obesity need to be referred for paediatric investigation and treatment.***

Discussion and partnership with parents or carers is essential, because they are agents for change. The introduction of the PHR,[11] held by parents on behalf of their children is an important adjunct to facilitating information of parents about the health status of their child. The PHR also conveys messages about healthy lifestyles and supports communication between professionals.

It is important that primary and secondary care professionals exchange information about children's health status, the results of assessments and decisions to refer, investigate and manage. If the decision to refer the child is taken, the BMI and BMI centile should be included in the referral letter (for details please see Growth Charts for Children in Ireland, 2006).

- ***Communication with parents and amongst professionals is essential for coherent and consistent management of childhood overweight and obesity.***

Referral is indicated for:

- Children with severe obesity in combination with short stature or developmental delay
- Suspected underlying endocrine and genetic conditions
- Ill health related to overweight and obesity
- Child and family concern
- Clinical judgement

2.2.2 Referral Pathways

These depend on local availability of services and need to be agreed in discussion with colleagues from a range of disciplines including:

- Public Health Nursing
- School Health Nursing
- Primary Care
- Community Medical Officers
- Community and Hospital Dietetics
- Physical Activity Co- ordination
- Occupational and Physiotherapists
- Health Promotion Officers
- Community and Hospital Paediatrics
- Clinical Psychologists
- Social workers
- Teachers

as well as children, young people and their families.

2.3 Management

A multifaceted approach aimed at increasing physical activity at the expense of sedentary behaviour in combination with modifying nutritional habits is needed. The involvement of parents and families is essential to ensure a supportive environment for behavioural change management to take place.[54] This needs to take into consideration the wider community and societal context.

- ***Effective management of childhood overweight and obesity requires participation of and support from the child's or young person's family.***

Resources in the areas of public health nursing, primary care, family support, dietetics, psychology, paediatrics and within physical education are limited and often not available to work in a multidisciplinary fashion with children and families in need of interventions. It is nevertheless essential for successful management that practitioners build alliances across disciplines, agencies and sectors of working together for children and their families.

- ***Change management skills form the basis of multidisciplinary working with families of overweight and obese children and young people in community settings.***

The therapeutic approach needs to be empathic and genuine, and programmes need to be of appropriate intensity and duration. It is necessary to take an individualised approach within an accessible and acceptable setting. While hospital based clinics might be appropriate for some, others will prefer community based programmes associated with sports and leisure facilities.[55]

- ***Health professionals need to work together in settings that are acceptable to children and their families to effectively manage childhood overweight and obesity.***

There is limited published research of high quality to inform on the effectiveness of approaches to manage already overweight and obese children and young people.[56] Many intervention packages are complex and originate in specialised clinics, making their results difficult to generalise or apply in community and primary care settings. Psychosocially supported models of family based behavioural management require a multidisciplinary team approach.[57] This needs to be complemented by a high level of awareness, skills and knowledge amongst practitioners to support children and their families, as well as recognising and raising the issue of overweight and obesity as one step on the way to effective intervention.

Participative design and implementation of pathways of care can help to develop and follow a shared vision for success between the client, i.e. the child or young person, their family and practitioners. There needs to be positive reinforcement for success, tailored to individually set goals and measures of achievement. It appears helpful to focus on collateral benefits of weight loss or maintenance like mental health benefits and advantages associated with behavioural change.

Improving self-esteem, especially in adolescent girls, can support the development of self-efficacy skills aimed at weight control.[58] Conversely, if a child feels singled out and exposed on account of his or her appearance, this is likely to hinder changes in behaviour contributing to overweight and obesity.[59]

- ***Effective approaches to treating obesity are based on complex multidisciplinary, multifaceted and participatory models of behaviour modification.***
- ***For most children, weight maintenance is an acceptable goal, allowing them to 'grow into their weight'.***
- ***Weight loss should be limited to those children being managed in secondary or tertiary care.***

Sucessful management requires…

- Multifaceted approaches
- Multidisciplinary working
- Designated settings
- Participative designs
- Family based therapies
- Behavioural management
- Improved psychosocial well-being

…. within an enabling environment

2.3.2 Child protection

Where childhood overweight and obesity remains unaddressed, concerns about child harm might arise, because obesity can be one of many signs of child neglect and harm. Such situations need to be addressed in a holistic manner appropriate to the individual circumstances within which they arise.

Section 3

Key Messages

3.1 Key Messages for Health Professionals

- *Provide antenatal education programmes.*
- *Promote breastfeeding.*
- *Support parents during infancy and early childhood in providing a health promoting environment for their child.*
- *Advise parents to introduce a variety of foods, tastes and textures in their child's diet during weaning and in early childhood.*
- *Dispel the myth that rapid growth during infancy is a sign of health for all children.*
- *Advise parents and children on the importance of regular mealtimes.*
- *Encourage shared family meals.*
- *Let parents know that children should be involved in at least 60 minutes of moderate physical activity a day.*
- *Highlight to parents that reducing sedentary behaviour can prevent overweight and obesity in children.*
- *Undertake regular training in the principles and accurate technique of growth monitoring of children.*
- *Use objective anthropometric measures to describe childhood overweight and obesity.*
- *Interpret the BMI in the context of the individual child, taking into account age, body build and pubertal development.*
- *Keep up-to-date with appropriate and evidence-based messages in relation to childhood overweight and obesity.*
- *Use contact with children, young people and their families as an opportunity to promote healthy lifestyles and positive mental health.*
- *Engage with parents of overweight and obese children and assess their readiness to support behavioural change.*
- *Remain a supportive ally to families, using effective communication, change management and health promoting approaches to encourage a step wise approach to lifestyle changes. You might need to try more than once!*
- *Base the decision to refer a child on clinical judgement, the level of concern, readiness to support behavioural changes and the existence of weight related co-morbidity.*
- *Raise awareness regarding the adverse effects of marketing unhealthy foodstuffs, increased portion sizes and misleading food labelling.*
- *Act as advocate for children and families in creating healthy environments and responsive services.*
- *Support and remain abreast of further research.*

3.2 Working with Parents

These messages are intended for health professionals to support their discussions with parents, based on principles of Investing in Parenthood to Achieve Best Health for Children.[29] Provision of information does not guarantee that information is received. Information should be accessible and appropriate to a variety of audiences and cognisant of diversity in literacy and ethnicity.[60]

- ***Obesity in childhood is becoming more common.***
- ***Obesity is a health concern in itself and increases the risk of other serious health problems such as high blood pressure, heart disease, strokes, diabetes and psychological distress in children and later life.***
- ***Obese children tend to become obese adults.***
- ***Obesity is easier to prevent than to treat. Starting in early childhood, teach children good nutrition and activity habits.***
- ***Breastfeeding helps to prevent obesity.***
- ***Water is a healthy drinks choice for children from weaning age onwards.***
- ***Make healthy nutrition and exercise a family affair. Share family meals and family activities.***
- ***Children do not have to 'clean their plate'.***
- ***Food and drink are necessities, not rewards.***

"Support parents as individuals". Parents differ in their styles of coping with the demands made of them and their capacity to cope can vary from time to time. In order for parents to be in the best position to do the best for their child they need to have their own needs identified and met. Empowering parents as individuals in their own right enables them to meet the responsibilities and enjoy the rights of parenthood.

"View parents as key to the child's health and well being". Many health problems experienced by children today are the result of complex interactions between children and their family, their social, economic and cultural environments. Evidence highlights the importance of parents in mediating these wider effects on a child."

- ***Children who watch TV for hours every day are at higher risk of obesity than those who are playing or active in sports.***
- ***School is an important place in the life of children. Encourage your child's school to support and teach healthy nutrition and physical activity.***
- ***Most children are not obese because of a medical problem but as a result of their lifestyle.***
- ***Lifestyle change involves the whole family in making small gradual changes to behaviour.***
- ***A positive self image is important for child health and wellbeing. An encouraging and open relationship between parent and child is essential for developing positive self esteem.***
- ***Family support is needed for successful treatment. The aim is for most children to maintain their weight in order to 'grow into it'.***

Appendices

Appendix 1

Methodology of Guideline Development

Aim

The purpose of the Programme of Action for Children expert symposium on childhood overweight and obesity in Dublin in June 2005 was to establish evidence based principles of good practice for the definition, prevention and management of childhood overweight and obesity, based on a holistic conceptual model of childhood overweight and obesity (see below), which would form the basis of guidelines for community based practitioners, developed in consultation with young people, parents, practitioners and policy makers.

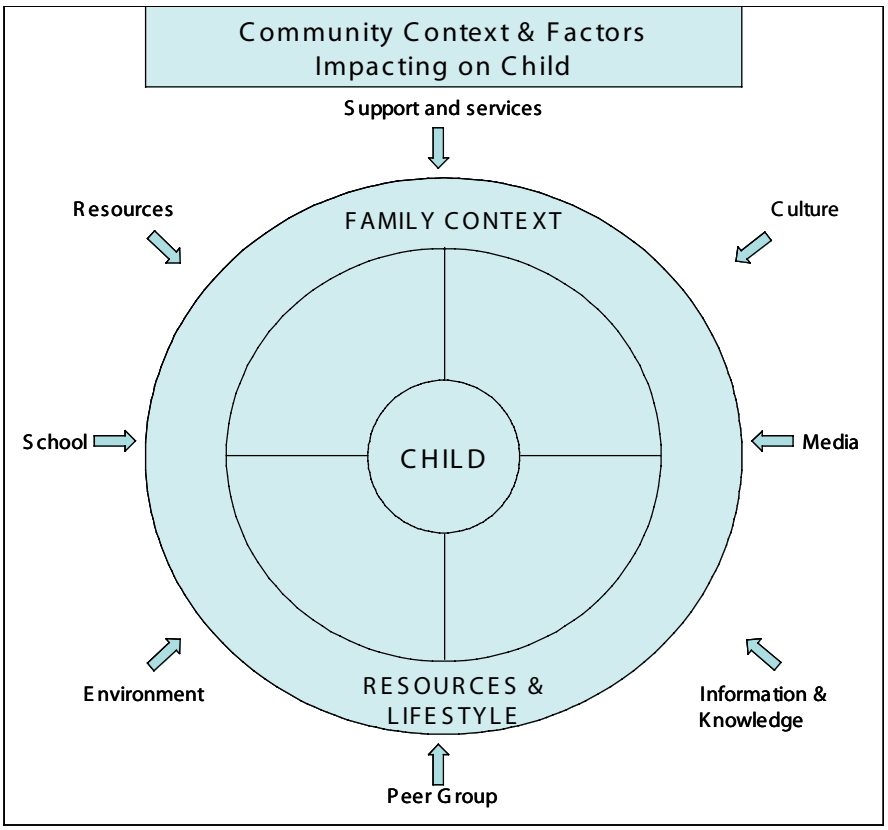

Figure 1 Conceptual model of obesity development in children

Symposium design

Participants at the symposium included international experts and representatives from relevant agencies in Ireland, as well as parents and young people. Based on their knowledge, experience and understanding, they debated the topic in four workshops aligned with the intended guideline sections:

1. Definitions and referral criteria
2. Prevention at the level of children, families and communities
3. Prevention at the level of services and society
4. Management and treatment

Guideline development

Further workshops took place during October 2005 with practitioners, policy makers and young people from various agencies within and outside health to develop, debate and agree draft guidelines.

Consultation

Consultation with young people from the 'Crib', a youth health café in Sligo, and parents from 'Parentstop', a voluntary parent support organisation in Letterkenny, as well as parents of primary school children in the Donegal area took place between December 2005 and March 2006, resulting in development of key messages with parents and alterations to the proposed guidelines.

Endorsement

Consultation with relevant voluntary, professional and academic agencies to discuss and endorse the guidelines was scheduled to take place from May to October 2006 with publication and circulation to all relevant agencies and organisations for information and implementation planned for December 2006.

Dissemination

The HSE continues to support the delivery of training in the application of the proposed guidelines nationally and regionally through the existing national training programme for doctors and public health nurses in child health screening, surveillance and health promotion.

Appendix 2

Principles of Good Practice

The following is a summary of workshop discussions held during the obesity symposium organised by the Programme of Action for Children in Dublin in June 2005, which underlie these guidelines and are based on evidence from research presented and contributed by participants.

General

- All children have the right to grow up in a supportive and enabling environment regarding healthy lifestyle behaviours.
- Parents and families are key agents for change and need to be supported in this role.
- Effective communication between service providers and service users is essential in creating a context, within which behavioural change can occur as a prerequisite for prevention and management of childhood overweight and obesity.

Information

- Information sharing amongst service providers is important to ensure co ordination of services aimed at childhood overweight and obesity prevention and management.
- Access to authoritative, evidence based and coherent information about prevention, management and the consequences of obesity is important for service providers and users alike.
- The PHR and CHISP projects and websites are useful vehicles to carry unified health promotion and education messages for health service users and providers alike.

Risk factors for childhood obesity

- Early childhood experiences, including intrauterine nutrition and growth patterns, contribute to later risk of childhood overweight and obesity.
- Interventions aimed at establishing healthy dietary patterns during this period are likely to reduce the risk of childhood overweight and obesity.
- Parental overweight and obesity increases the risk for overweight and obesity in children, and there is a need to develop effective interventions for weight management aimed at young people and adults of childbearing age.
- Sedentary behaviour like watching television is associated with childhood overweight and obesity.

Interventions

- Increasing physical activity levels through active play and other non- sedentary pursuits is effective in the prevention and management of childhood overweight and obesity.
- A participative approach to development, design and delivery of interventions aimed at the prevention and management of childhood overweight and obesity is essential to facilitate readiness for behavioural change and engagement.
- Multifaceted school based interventions based on health promoting schools principles are effective in the prevention and management of childhood overweight and obesity.
- The potential of primary care service providers in the prevention and management of childhood overweight and obesity needs to be realised through training and skills development.

Growth monitoring

- Training in the importance and technique of accuracy in measuring children, recording and interpretation of results for professionals is a corner stone of good practice.
- BMI is the most widely used measure to assess childhood overweight and obesity and is particularly useful for epidemiological purposes.
- A clinical BMI based definition of childhood overweight and obesity is useful only if the limitations of BMI as a measure for obesity and predictor of future health risk are fully understood.
- Repeat measurement of individual children over time as part of a universal growth monitoring programme are not helpful, as there is limited evidence for effective interventions, which can be offered to such children.
- Childhood overweight and obesity prevalence rates can be obtained through selective and appropriately powered surveys or use of routine data collected as part of the existing statutory school health service.
- The decision to refer a child should be based on clinical judgement, the level of concern, readiness to support behavioural changes and the existence of weight related co-morbidity.

Treatment

- Management of childhood overweight and obesity requires a multifaceted multidisciplinary participative approach to family based behavioural management.

Society

- Marketing of unhealthy foodstuffs to children negatively influences purchasing and consumption behaviour and is likely to contribute to rising levels of childhood overweight and obesity.
- Increased portion sizes and unhelpful food labelling are means used by the food industry to direct consumer choices towards intake of energy dense and unhealthy foodstuffs. Legislation, enforcement, education and media literacy are required to reverse this trend.

- The role of the media in supporting positive health promoting messages needs to be strengthened.
- Effective interventions to prevent and manage childhood overweight and obesity are based on improving psychological well-being and the creation of enabling environments. There is no evidence that such measures lead to eating disorders.
- Reducing socio economic inequalities and improving access to affordable healthy food stuffs is likely to support healthier lifestyle choices leading to reduced levels of childhood overweight and obesity.
- Government support is needed to facilitate inter-departmental, cross agency and multidisciplinary cooperation to improve the obesogenic environment and reverse societal trends like increasing sedentary behaviour, access to and consumption of unhealthy foodstuffs.

Appendix 3

What Young People Say

The following are quotes from young people during consultative meetings in December 2005 in 'The Crib' in Sligo, where draft guidelines were presented and discussed.

"Doctors and nurses really can't do very much to prevent obesity…"

"The Department of Health should give the Department of Education money to prevent obesity in schools."

"Our P.E. teacher gets everyone going… worst (disciplinary action after 1st year) was not to be allowed to do P.E."

"There needs to be a choice for those who don't enjoy competitive sports, and there isn't really. We were offered swimming in transition year, but when it came to the last day and giving of certificates, they did not turn up…it is offered, but then not seen through."

"Why was 'girls active' stopped?"

"The P.E. hall is closed this year, which is good in the long term, because we will have better facilities, but there is nothing happening this year."

"The canteen is closed this year, because the food was so horrible last year. It is cold, and you want something warm, but the soup is full of salt. I got wedges, a sausage roll at lunch today and a bar for €2, and the person behind me bought a ham sandwich for €3.50…"

"The machines only sell soft drinks with loads of sugar in them…the water machines have been broken for years…water should be free in schools."

"Students should be given a discount card, allowing them to buy healthy food at reduced (affordable) prices."

"Young people don't need any more information, it just makes them feel bad, because they know what they should be doing. It is the parents of the young children who can really make a difference by getting (the young children) used to healthy foods."

"Education about healthy living needs to start in early primary school, perhaps until Junior Cycle in secondary school."

"There is not enough time for young families to prepare food properly and eat healthily; young people have so many academic subjects that there is not time for being physically active."

"…too many advertisements of unhealthy foods for children…advertising of healthy foods needs to and can be fun…skinny role models for girls in the media…good information could be posted on websites like 'spunout.ie'…"

"The government is unlikely to change advertising regulations, because they get too much money from the food lobby."

"Prevention is better than cure!"

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Notes

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