Putting Evidence Into Practice:
Management and Prevention of Pediatric Obesity in Canada


Developed: Spring 2010
The purpose of these slides is to create a tool for health care practitioners that:

1. Identifies the Canadian recommendations for obesity management and prevention that are specific to the pediatric population

2. Provides information on how to implement each recommendation

   » This includes material directly from the Canadian Clinical Practice Guidelines (CPG) as well as supplementary information provided by the contributors based on their professional expertise
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Pediatric Obesity in Canada: Epidemiology, Etiology and Risks
Childhood Obesity in Canadian Children

- 3-fold increase in obesity in Canadian children
- Based on measured heights and weights in representative Canadian sample
- Classified by BMI $\geq 95^{th}$ percentile

Obesity prevalence (%)

Shields, 2005
Etiology

• Etiology for the development of obesity in childhood is complex and multifactorial

• Balance of input (through nutrient intake) and output (through physical activity) is fundamental – but understanding the underpinnings of these is most important

• Recognized determinants for the development of obesity occur across the lifespan – and both genetics and environment are critical
Role of Health Professionals: Evaluating and Managing Obesity
Recommendation: Role of Health Professionals
Health care professionals are encouraged to:

• Work with other health care team members to develop a comprehensive program for the patient
• Create a non-judgmental atmosphere
• Consider barriers people might have

[grade C, levels 3 & 4]

Complete Guidelines
Multidisciplinary Health Care Teams

- Can be used with individuals or with groups
- Include:
  - Medical practitioner (nurse, family physician or specialist)
  - Psychologist
  - Dietitian
  - Exercise Professional
  - Others
Attitudes toward overweight and obesity

• Many overweight and obese people experience negative bias and discrimination

• They may be reluctant to seek health care because of fear of scolding or humiliation

• Stereotypes and prejudices held by health care professionals can compromise care
Creating a non-judgmental atmosphere

- Ensure to take a sensitive, respectful approach
- Limit medical jargon
- Use neutral body language
- Speak with both the child and parent
- Avoid blaming
Considering Barriers

- Focus on the family’s agenda, not your own
- Seek out experienced colleagues to provide honest feedback
- Increase knowledge and clinical skills through continuing education in therapeutic techniques, including motivational interviewing and cognitive behavioural therapy
A Systematic Approach to Managing and Preventing Childhood Obesity
A Systematic Approach to Managing and Preventing Childhood Obesity

PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile:
- TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION
- TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS
  - Abnormality(ies) Absent
  - Abnormality(ies) Present
  - ASSESS READINESS TO CHANGE
  - LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION
  - FOLLOW UP

If <85th percentile:
- FOCUS ON HEALTHY ACTIVE LIVING
  - Individual Approaches: PHYSICAL ACTIVITY
  - Individual Approaches: NUTRITION
  - Environmental Approaches
Recommendations for Managing Childhood Obesity
Classification of Overweight and Obesity in Children and Adolescents

Recommendations for Managing Childhood Obesity

PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile

TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION

Abnormality(ies) Absent

Abnormality(ies) Present

TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS

ASSESS READINESS TO CHANGE

LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION

FOLLOW UP
Recommendation: BMI Screening
We recommend:

- Measuring BMI in all children and adolescents (aged 2 years and older)

- Using the growth charts of the US Centers for Disease Control and Prevention to screen for overweight and obesity
  - **Overweight**: Age and sex-specific BMI ≥ 85th and <95th percentile
  - **Obesity**: Age and sex-specific BMI ≥ 95th percentile

[grade A, level 3]
Measuring Height and Weight in Children

Height

- Should be measured to the nearest centimetre using a stadiometer
- The patient should look straight ahead, stand as tall as possible and take a deep breath while the measurement is taken

Weight

- Should be measured to the nearest 0.1 kg with an accurate, well-maintained physician’s scale
- The patient should be weighed in light clothing, without footwear
BMI Charts for Children
(US Center for Disease Control & Prevention, CDC)

Available online at: www.cdc.gov/growthcharts
Other Classification Systems

• Other resources are available for categorizing children and youth into different BMI groups
  » International Obesity Task Force (Cole et al., 2000)
  » WHO Growth Curves (http://www.who.int/childgrowth/en/)

• Waist Circumference
  » Among children and adolescents, waist circumference is a good predictor of other measures of adiposity and risk level for heart disease
  » Further research is required to determine the clinical utility of waist circumference and its association with health risks independent of BMI
Clinical Evaluation of Obese Children and Adolescents

Recommendations for Managing Childhood Obesity

PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile

TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION

Abnormality(ies) Absent

Abnormality(ies) Present

TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS

ASSESS READINESS TO CHANGE

LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION

FOLLOW UP
Recommendation: Clinical Evaluation
We recommend that:

• The clinical evaluation of overweight and obese children include a history and a general physical examination to exclude:
  » Secondary causes (endocrine-or syndrome-related)
  » Obesity-related health risks and complications

[grade A, level 3]

• In overweight or obese children, a fasting plasma glucose and lipid profile should be performed in those ≥ 10 years of age

[grade B, level 3]
Elements of the clinical evaluation and physical exam

• Clinical evaluation includes:
  » Identification of risk factors for the development of obesity
  » Exclusion of secondary causes of obesity

• Physical exam includes:
  » Review of systems (endocrine, gastrointestinal, cardiovascular, musculoskeletal, respiratory)
  » Laboratory investigations
  » Determination of obesity related co-morbidities
Medical History

- Does past family history include obesity and obesity related disorders?
- Does pregnancy history include maternal diabetes, pregnancy exposures or low birth weight?
- What was infant feeding history?
Additional Medical History Considerations

• What is the child’s developmental history?

• Does medical history include growth delay, asthma, or treatment for previous childhood cancer?

• What is the pattern of weight gain?

• Psychosocial history
  » Screen for depression and eating disorders
  » Assess quality of life

• Past or current medications
Physical Activity and Nutrition

• Patterns of Physical Activity:
  » Time spent watching television, using the computer and playing video games
  » Low participation in physical activities

• Nutritional Intake:
  » High sugared drink intake
  » Low fruit and vegetable intake
  » Disordered eating patterns
Physical Activity Considerations

Physical Activities
- Frequency (minutes per day)
- Weekdays vs. weekends
- Seasonal variation
- Type of activities (level of moderate to vigorous physical activity)
- With whom (friends, family, alone)

Sedentary Activities
- Total screen time
  - Television
    - Average per day
    - Is there a TV in the bedroom?
  - Leisure time computer and video games
    - Average per day
    - Active video games (Wii, Dance Dance Revolution)
Nutritional Intake Considerations

• Can be assessed using a 24 hour recall (or typical day recall) and/or a food frequency questionnaire

• Nutritional Patterns – what is the frequency of:
  » Eating meals together as a family?
  » Eating fast food/eating out?
  » Eating in front of the TV?
  » Eating breakfast?
Other Considerations

- Sleeping patterns.
- Mental health of all family members
- Psychosocial family dynamics
- Socioeconomics
- Environment factors (home / school / community)
Secondary Causes of Obesity

- **Endocrine causes**
  - Associated with attenuated linear growth or a history of central nervous system injury

- **Genetic syndromes**
  - Usually early onset
  - Often associated with neurodevelopmental delay
  - May be associated with dysmorphic features
Overview of History and Physical Exam for an Overweight or Obese Child: evaluation of genetic or endocrine causes

**History (personal and family)**

**Physical Exam**

- **Absence** of Dysmorphic features
  - Abnormal
    - Possible Endocrine Disorder:
      - Rule out hypothyroidism, GH deficiency, and Cushing’s
  - Normal
    - Exogenous, primary, “simple” obesity
- **Presence** of Dysmorphic features
  - Assessment of Growth Velocity
  - Chromosomal typing, molecular biology
Aspects of the Physical Exam

In addition to measuring height and weight and calculating BMI, the physical exam may investigate:

- Blood pressure
- Presence of acanthosis nigricans
- Hirsutism and excessive acne (females)
- Orthopedic concerns
Recommended Laboratory Investigations

For children 10 years old and older:

- Fasting plasma glucose
- Total cholesterol
- LDL cholesterol
- HDL cholesterol
- HDL: total cholesterol
Suggested Laboratory Investigations

- Oral Glucose Tolerance Test
- ALT and AST
- Alkaline phosphatase
- Albumin
- Creatinine
- Free testosterone, luteinizing hormone, and follicle stimulating hormone (females)
Obesity Related Co-morbidities

Many of the obesity-related co-morbidities recognized in adulthood begin to develop in childhood:

- **Cardiovascular** (hypertension)
- **Metabolic** (dyslipidemia, dysglycemia, type 2 diabetes)
- **Respiratory** (obstructive sleep apnea)
- **Gastrointestinal** (nonalcoholic fatty liver disease, cholelithiasis, gastroesophageal reflux)
- **Orthopedic** (slipped capital femoral epiphysis, tibia vara [Blount disease], musculoskeletal discomfort)
- **Reproductive** (polycystic ovary syndrome)
- **Psychosocial** (poor self-esteem, depression, poor body image, eating disorders, anxiety, bullying)
- **Renal** (focal segmental glomerulosclerosis)
### Determination of Obesity Related Co-morbidities

<table>
<thead>
<tr>
<th>Obesity related health consequence</th>
<th>Recommended assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>Serial blood pressure measurements</td>
</tr>
<tr>
<td>Obstructive sleep apnea</td>
<td>Hx: snoring, am headache, excess daytime fatigue. Consider sleep study</td>
</tr>
<tr>
<td>Nonalcoholic fatty liver disease (NAFLD)</td>
<td>History, physical exam, ALT &amp; AST levels</td>
</tr>
<tr>
<td>Gastroesophageal reflux</td>
<td>History</td>
</tr>
<tr>
<td>Gallstones</td>
<td>History, laboratory</td>
</tr>
</tbody>
</table>
## Determination of Obesity Related Co-morbidities

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<th>Recommended assessment</th>
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<tr>
<td>Slipped capital femoral epiphysis</td>
<td>History, Physical</td>
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<td>Tibia vara (Blount’s disease)</td>
<td>History, Physical</td>
</tr>
<tr>
<td>Spondylolisthesis</td>
<td>History, physical exam</td>
</tr>
<tr>
<td>Axial arthritis</td>
<td>History</td>
</tr>
<tr>
<td>Polycystic ovary syndrome</td>
<td>History (menstrual irregularity, 2ª amenorrhea)</td>
</tr>
<tr>
<td></td>
<td>Physical (hirsutism, acne)</td>
</tr>
<tr>
<td></td>
<td>Laboratory (LH, FSH, free testosterone, pelvic ultrasound)</td>
</tr>
<tr>
<td>Depression</td>
<td>History</td>
</tr>
<tr>
<td>Low self-esteem</td>
<td>History</td>
</tr>
<tr>
<td>Binge-eating disorder</td>
<td>History</td>
</tr>
</tbody>
</table>
Diabetes screening:

- For children ≥10 years if they have 2 of the following risk factors:
  - Member of a high-risk ethnic group
  - Family history of type 2 diabetes (especially if the child was exposed to diabetes in utero)
  - Acanthosis nigricans
  - Polycystic ovarian syndrome
  - Hypertension
  - Dyslipidemia

- Should be done every 2 years using a fasting plasma glucose test
  - An oral glucose tolerance test may also be considered as a screening test
Psychological well-being:

- Often one of the most difficult things to measure and address but is arguably the most important:
  - Screen for depression and eating disorders
  - Use a Pediatric Quality of Life questionnaire

- Other things to consider:
  - Family issues
  - Socioeconomics
  - Environmental considerations
  - Potential barriers
Assessment of Readiness to Change

PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile

TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION

Abnormality(ies) Absent

Abnormality(ies) Present

TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS

ASSESS READINESS TO CHANGE

LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION

FOLLOW UP
Recommendation: Readiness to Change
• Assess readiness and barriers to change before implementing a healthy lifestyle plan for weight control or management

[grade B, level 3]
Readiness to Change

- Specific to individual behaviours
- Can be influenced by temporal, environmental and social factors
- Represented by the stages of change categories:
  - Precontemplation
  - Contemplation
  - Preparation
  - Action
  - Maintenance

  Pre-action stages

  Action stages
Other Factors Influencing Change

• Decisional balance: the pros and cons of performing a healthy behaviour

• Specific barriers to performing the healthy behaviour

• Temptations to not perform the healthy behaviour
Barriers to Change

Include but are not limited to:

- Reluctance to seek medical attention
- Depression or other psychosocial barriers
- Low or lacking self-efficacy
PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile

TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION

Abnormality(ies) Absent
Abnormality(ies) Present

TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS

ASSESS READINESS TO CHANGE

LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION

FOLLOW UP
Recommendation: Lifestyle Modification
R: Lifestyle Modification

- We recommend a comprehensive healthy lifestyle intervention for overweight and obese people  
  [grade A, level 1]

- We suggest that members of the health care team discuss with those willing to participate in weight management programs appropriate education, support and therapy as adjuncts to lifestyle intervention  
  [grade B, level 2]
Recommendation: Behaviour Therapy
We suggest that individuals willing to participate in weight management programs be provided with education and support in behaviour modification techniques as an adjunct to other interventions

[grade B, level 2]

When treating obesity in children, we suggest using family-oriented behaviour therapy

[grade B, level 1]
Motivational Interviewing

• The goal of MI is NOT to get the patient to change but to facilitate motivation

• Key principles (from Miller and Rollnick):
  » Express empathy
  » Develop discrepancy
  » Roll with resistance
  » Support self-efficacy/confidence
Motivational Interviewing

Guided by the 6 mediators of change (FRAMES mnemonic):

1. Feedback of personal risk or impairment
2. Emphasis on personal Responsibility for change
3. Clear Advice to change
4. A Menu of alternative change options
5. Therapist Empathy
6. Facilitation of client Self-efficacy or optimism
Behaviour Modification Techniques

• Self monitoring and goal setting
  » Tracking and analyzing precipitants, consequences and moderating factors to set goals for change

• Stimulus control
  » Identifying stimuli (situations, times, people, emotions) that elicit unhealthy behaviour

• Reinforcement management
  » Rewarding specific behaviour change
Behaviour Change Principles

• Use a long term approach

• Work towards changes that are *achievable* and *sustainable*

• Focus on the priorities of the family

• Avoid scare tactics

• Identify potential barriers and enablers to behaviour change
Goal Setting

• Goal-setting with family should be centered around change in behaviour – not weight

• A modest weight loss of 5–10% body weight is beneficial

• In growing child, weight maintenance equivalent to weight loss

• Weight maintenance and prevention of weight regain should be considered long-term goals
SMART Goal Setting

• SMART goals are:
  » **S**pecific: You can answer when, where, what, and how
  » **M**easureable: You know if it’s done
  » **A**ttainable: It’s possible for you to do
  » **R**elevant: The goal is important to you
  » **T**ime-specific: Set a time limit for achieving your goals
Role of Families in Behaviour Change

- Recognize that parents play a fundamental role in weight management
- Use a family-centred approach – talk with both the child and the family
- Focus on helping the whole family to become healthier, not ‘fixing’ the individual child
Recommendation: Dietary Interventions
• Nutritional counseling for obese children and adolescents

• The Registered Dietitian should work with the family to develop an optimal dietary plan that meets the family’s needs and supports the achievement of a health weight

[grade B, level 2]
We recommend that a nutritionally balanced diet (designed to reduce energy intake) be combined with other supportive interventions to achieve a healthy body weight in overweight and obese people of all ages and to ensure the maintenance of growth in adolescents and youth.

[grade C, level 4]
Nutrition: Background

• Diets that have been studied include:

  1. Restricted diets such as very low calorie diets, low-calorie diets, healthy eating approaches with reduced calories (Traffic Light Diet)

  2. Macronutrient alterations such as high protein, high fibre, low glycemic index or low fat

  3. Micronutrient alterations such as calcium
None of these approaches could be recommended for pediatric weight loss due to:

» Inadequate sample sizes
» Short term follow ups
» Few randomized controlled trials
» Lack of control groups
Nutrition: Implementation

• Consume a nutritionally balanced diet including all four food groups
  » Decrease portions of grains and meat and increase portions of fruits/vegetables and low fat milk products

• Reduce sweetened beverages including juices, punches, sport drinks, sodas
  » Encourage water
Nutrition: Implementation

- Decrease eating out and ordering in
- Decrease frequency of seconds at meals.
  - Practice the 20 minute rule (wait 20 minutes before having second helpings)
- Don’t skip meals, particularly breakfast
- Include three food groups at each meal
- Try not to use food as a reward
Recommendation: Physical Activity Interventions
• Activity prescribed for children should be fun and recreational, with lifestyle activities tailored to the relative strengths of the individual child and family

  [grade A, level 2]

• Health professionals are encouraged to emphasize the short-term benefits of physical activity rather than the long-term health benefits to children

  [grade C, level 4]
We recommend that the primary care physician or health care team encourage children and adolescents to reduce sedentary pursuits and “screen time” (ie. television, video games)

[grade A, level 2]
Physical Activity: Background

- On average, obese children are less active than their non-obese peers.
- Enhanced physical activity, aerobic exercise in particular, is beneficial to obese children and adolescents.
- Reducing sedentary activities such as television watching and computer and video game playing has been shown to decrease BMI.
Physical Activity: Background

• Physical Activity may have beneficial effects on obesity related co-morbidities, but it is unclear if these results are due to the exercise or if they are secondary to decreased adiposity

• Difficult to determine the optimal type, duration, frequency or intensity of activity for children as there are no studies with mortality-related endpoints in children
Based on the assumption that Canadian children and adolescents are insufficiently active

Recommend an incremental increase in activity of at least 30 minutes/day with additional increases up to 90 minutes/day over time

Corresponding decreases in screen time are also recommended
Physical Activity: Implementation

- Emphasize the short-term benefits of physical activity
- Take into account the baseline level of fitness of child to set goals, as unrealistic expectations may lead to feelings of failure
- Keep track of goals (e.g. on a pedometer)
- Encourage friends and family to participate in the activities with the child
Physical Activity: Implementation

- Discuss decreasing “screen time” (television, computer and video games); aim for less than two hours per day
- Choose activities that suit the child’s strengths and abilities
- Have child choose activities that are not regimented, such as games or a paper route
- Try to choose activities that are inexpensive (e.g. nature walks)
- Above all, encourage activities that are “fun”
Recommendation:
Combined Dietary and Physical Activity Intervention
We recommend an energy-reduced diet and regular physical activity as the first treatment option for overweight and obese children to achieve clinically important weight loss and reduce obesity-related symptoms

[grade A, level 2]

We recommend ongoing follow-up by health professionals for a minimum of 3 months

[grade A, level 2]
Data is limited regarding the best combination of diet and exercise therapy for children.

It is not known what type of intervention promotes and maintains healthy attitudes towards exercise and eating.

Behavioural therapy and parental involvement are recognized as important parts of a comprehensive intervention.

Focusing on changes in lipid profile, fat-free mass and vascular function may be more informative than changes in body weight and BMI.
Follow-up

• Studies support the use of a counselor-guided, multidisciplinary program of at least 3 months

• Some follow-up is better than none; more frequent contact is better than less frequent contact

• Frequency of follow-up may ultimately be determined by clinical resources (e.g. time, personnel) as well as family motivation
Recommendation: Pharmaceutical, Surgical and Alternative Therapies
Orlistat can be considered to aid in weight reduction and weight maintenance when added to a regimen of lifestyle intervention among adolescents [grade B, level 1]

Because of lack of data for pre-pubertal children, the use of pharmacologic agents in this group should be considered only within the context of a supervised clinical trial [grade C, level 4]
Pharmacopotherapy: Orlistat

• May aid in weight reduction in adolescents for up to 12 months

• No data from a controlled study are available regarding reduction of cardiovascular risk factors

• The long term effects on obesity and obesity-related morbidity have yet to be determined
Pharmacoptherapy: Orlistat cont.

- Gastrointestinal side effects may limit use in adolescents.
- The dose of Orlistat in each of the 3 studies reviewed was 120 mg by mouth 3 times a day. There is insufficient evidence to recommend an optimum dose.
Pharmacoptherapy: Sibutramine

• May aid in weight loss for up to 6 months in conjunction with a behavioural therapy program

• Long-term effects on obesity and obesity-related morbidity have yet to be determined

• Caution is recommended because increases in blood pressure and arrhythmias have been associated with use
Bariatric surgery in adolescents should be limited to exceptional cases and performed only by experienced teams.

[grade C, level 4]
Bariatric Surgery

- Data on bariatric surgery in children and adolescents are extremely limited
- No conclusions can be drawn regarding the effect of bariatric surgery on co-morbidities in adolescents
- In adolescents, bariatric surgery has been associated with significant morbidity and mortality
There is insufficient evidence to recommend in favour of or against the use of herbal remedies, dietary supplements or homeopathy for weight management in the obese person

[grade C, level 4]

Literature examined for:

Plant extracts and polymers:
- Ayurvedic herbs, glucomannan (fibre from Konjac root), psyllium, guar gum, chitosan, Garcinia cambogia and hydroxy citric acid, Ephedra sinica, Chromium picolinate, Yerba mate (Ilex paraguariensis), Yohimbe.

Hormones:
- Growth hormone, human chorionic gonadotrophin

Complete Guidelines
Recommendations for the Prevention of Childhood Obesity
A Systematic Approach to Managing and Preventing Childhood Obesity

PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile

TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION

Abnormality(ies) Absent

Abnormality(ies) Present

TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS

ASSESS READINESS TO CHANGE

LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION

FOLLOW UP

If <85th percentile

FOCUS ON HEALTHY ACTIVE LIVING

Environmental Approaches

Individual Approaches:
PHYSICAL ACTIVITY

Individual Approaches:
NUTRITION

Management and Prevention of Pediatric Obesity in Canada
Recommendation: Prevention Through Physical Activity
• We suggest limiting “screen time” (i.e. television watching, playing video or computer games) to no more than 2 hours a day to encourage more activity and less food consumption, and to limit exposure to food advertising

[grade B, level 3]
Individual Approaches to Prevention Using Physical Activity

- Data is limited regarding the most effective approach (increased physical activity, decreased sedentary activity, multifaceted)
  
  » Most studies of increased physical activity showed no effect on BMI or body fat but noted increased fitness and rates of physical activity
  
  » About half of the studies of reduced sedentary behaviour showed decreased BMI / body fat. Most showed decreased screen time
Interventions were primarily school based and included:

- Classroom curricula
- Home newsletters
- Electronic television-time manager system
- Encouraging reading
- Encouraging outdoor games
A Systematic Approach to Managing and Preventing Childhood Obesity

PERFORM BMI SCREENING (ALL YOUTH)

If ≥ 85th percentile

TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION

Abnormality(ies) Absent

TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS

ASSESS READINESS TO CHANGE

LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION

FOLLOW UP

If <85th percentile

FOCUS ON HEALTHY ACTIVE LIVING

Individual Approaches:
PHYSICAL ACTIVITY

Individual Approaches:
NUTRITION

Environmental Approaches
Recommendation: Nutrition in Early Development
Discussion of the prevention of childhood obesity with the pregnant mother is encouraged
[grade C, level 4]

Exclusive breast-feeding of infants is encouraged until at least 6 months of age to prevent later obesity
[grade C, level 4]
Nutrition in Utero

• It is important to address the expectant mother’s weight and metabolic health, since a healthy pregnancy improves the baby’s future nutritional health

• Babies born either small- or large-for-gestational-age are at risk of later obesity
Nutrition in Infancy

• Initial breastfeeding protects against obesity in later life in most studies
  » Breast-fed children may better learn to self regulate energy intake
  » Adapt more readily to new foods (eg: vegetables)

• Formula-feeding is associated with more rapid weight gain in early infancy
  » Formula-fed infants demonstrate a greater insulin response
Breastfeeding: Implementation

• Encourage mothers to establish supportive networks for promoting breastfeeding prior to birth
• Identify and promote what community resources are available
• Consider the importance of cultural barriers and facilitators
• Promote the Baby Friendly Initiative within health settings
Delaying Solids: Implementation

• Explain reasons for delaying solids to mother early (e.g. at 2-4 months post-partum)

• Important to dispel myths about weaning (e.g. that early solid introduction promotes sleeping through at night)

• Provide supportive materials
Recommendation: Nutrition in Childhood
Discussion of limiting consumption of energy-dense snack foods high in sugar and fat during childhood and adolescence is encouraged

[grade C, level 4]
• The dietary habits of children are a factor in the rise in obesity prevalence, e.g. skipping breakfast, fast food consumption and consumption of sugar-sweetened beverages

• Early intervention is key to childhood obesity prevention
Strategies to Promote Healthy Childhood Nutrition

- Use routine health visits to discuss diet and weight issues from an early age
- Take advantage of opportunities to promote healthy balanced eating for all age groups (e.g. at schools, pre-schools, community health events)
- Emphasize links between community resources and the health system for promoting healthy eating
Recommendations for the Prevention of Childhood Obesity

**A Systematic Approach to Managing and Preventing Childhood Obesity**

**PERFORM BMI SCREENING (ALL YOUTH)**

- If $\geq 85^{th}$ percentile:
  - TAKE MEDICAL HISTORY AND CONDUCT PHYSICAL EXAMINATION
  - ABNORMALITY(IES) Absent
    - TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS
    - ASSESS READINESS TO CHANGE
    - LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION
    - FOLLOW UP
  - ABNORMALITY(IES) Present
  - TEST FOR SPECIFIC GENETIC OR ENDOCRINE CONDITIONS
  - ASSESS READINESS TO CHANGE
  - LIFESTYLE MODIFICATION APPROPRIATE TO SITUATION
  - FOLLOW UP
- If $<85^{th}$ percentile:
  - FOCUS ON HEALTHY ACTIVE LIVING
    - Individual Approaches:
      - PHYSICAL ACTIVITY
      - NUTRITION
  - Environmental Approaches
Recommendation: School-based Settings for Obesity Prevention
• Schools are key settings for:

  » Promoting healthy active living and school-based prevention programs to reduce the risk of childhood obesity

  » Promoting interventions to increase daily physical activity (PA) through physical education (PE) class time and opportunities for active recreation

[grade C, level 4]
The Role of School in Preventing Pediatric Obesity

- Literature on school-based settings supports school-based interventions to promote healthy active living.
- Multi-component (physical activity, nutrition, behaviour) interventions appear to have better outcomes than those focusing on only one facet.
Promotion of Physical Activity at School

• All schools should adopt physical activity policies promoting multifaceted programs targeting behaviour change
  » Daily PE encouraging moderate-vigorous PA during MOST of the class time
  » Dedicated PE taught by qualified physical educators
  » PE focused on FUN and respect with wide variety of activities to encourage ALL students to participate
  » Daily PA during regular class time “energizers”
  » Adequate recess & lunch time with adult supervision to promote active play
Promoting Healthy Nutrition at School

- Healthy eating programs in schools have been found to promote lower rates of overweight and obesity, healthy diets and more physical activity.

- School nutrition programs can increase children’s consumption of fruit and vegetables.

- Peer role models can support healthy behaviour changes.
Comprehensive School Health Programs

• Include eight interacting components:
  » Health instruction
  » Health services
  » School Environment
  » Food Service
  » School-site health promotion for faculty and staff
  » Social support services
  » Physical education classes
  » Integrated and linked family and community health promotion efforts
Recommendation: Multi-Setting Programming
The development of programs in multiple settings targeting behaviour change with parental and family involvement is encouraged

[grade C, level 4]
Parents as role models are key to promoting preventive change in children

The effect of targeting preschool aged children and the influence of culture and ethnicity is unknown but should be considered

Integrated school and community efforts can reinforce and support individual behaviour change
Strategies for Multi-setting Prevention

- Use newsletters, promotional materials to raise awareness
- Recognize those who make significant commitments to health promotion in schools and the community
- Ensure adequate facilities and equipment exist to promote healthy physical activity and nutrition
  - Develop partnerships with community recreation
  - Encourage appropriate corporate sponsorship
Recommendation: Multi-Sector Research
R: Multi-Sector Approach

• Obesity prevention approaches should:
  » Take a multi-sector approach similar to that used for tobacco control
  » Invest in and target all age groups from infancy to old age
  » Develop innovative ways to provide access to and programs for less economically viable citizens

[grade C, level 4]
Requires a shift away from the traditional focus on clinical management and individual behaviour to strategies that change the environment in which these behaviours occur

Targets environmental and population level policy
Integration for a Comprehensive Approach to Obesity Prevention

• Strategies must be population based as well as targeting the individual

• Governments working with the private sector, health professional bodies, consumer groups, academics research and other non-governmental groups is key
Elements of a Comprehensive Strategy for Obesity Prevention

- Should address:
  - Dietary habits and physical activity patterns of the population
  - Societal individual level factors
  - Immediate and distant causes

- Should include:
  - Multiple focal points and levels of intervention
  - Both policies and programs
  - The creation of links between sectors otherwise viewed as independent
Summary and Conclusion
Five Key Messages

1. Obesity is a societal and public health issue

2. Obesity predisposes to the development of related metabolic abnormalities leading to increased cardiometabolic risks

3. Obesity is a chronic disease and requires a long-term solution, which includes lifestyle intervention and when indicated pharmacotherapy and bariatric surgery

4. Prevention of obesity requires changes in built environment and workplace that favour healthy living and activity

5. The CPG are a call to action to bring together all stakeholders to address the necessary action to reduce the prevalence of obesity and obesity-related illnesses