

# Childhood Obesity

## Disease or Epidemic?



By Peter Nieman, MB, ChB, FRCPC

### In this article:

1. What is the current epidemic?
2. How can I properly evaluate it?
3. What are the associated conditions?
4. What are the obstacles in its assessment and treatment?
5. How important are behavioural issues?
6. What are the treatment options?

**A**n epidemic means the rapid spread of a disease through the community for a period of time. The root of the word “epidemic” comes from the Greek words, “epi” (meaning among) and “demos” (meaning people).

Since the most recent data indicate the rapid spread of the incidence of childhood obesity among children worldwide, one can without much further debate consider it an

### Case

A mother brings her seven-year-old boy to your clinic. The mother is obviously overweight and nibbles on a pack of potato chips when you walk into the examination room. Her son drinks a can of coke. He plays with his Gameboy and ignores you when you ask how he is doing, obviously lost in his video game.

The mother says that as a family they are always active; the boy walks to school every day. They have tried to lose weight before, but have given up because she is sure her son has a “glandular problem.” They are really here today to get referred to an endocrinologist. She is not interested in your approach of getting the family to exercise more - they have tried with no success; in fact, they just sold their treadmill last week. Apparently her son hates to exercise because he has always been clumsy and he gets teased for not being able to keep up with other boys his age. This sometimes “depresses” him. The child tells you that he likes food because it “calms his nerves.”

# Childhood Obesity



Dr. Nieman is faculty, department of paediatrics, University of Calgary, and pediatrician, Calgary, Alberta.

epidemic.<sup>1</sup> The use of the word epidemic is by no means an exaggeration. Childhood obesity has become a major public health problem. If the epidemic is not addressed properly, it will extol major costs to societies, patients and health-care systems across the globe.<sup>1</sup>

In the past, society had the luxury to debate whether obesity is normal or whether it is a disease. With the current epidemic proportions and the subsequent morbidity, such as the higher incidence of Type II diabetes, there remains lit-

tle doubt that it is not normal. Childhood obesity is a disease.<sup>2</sup>

## What are the incidences?

Between 1981 and 1996, the prevalence among Canadian boys has increased by 96%, from 15% in 1981 to 28% in 1996. In Canadian girls it has increased by 57%, from 15% in 1981 to 23% in 1996. One in seven children between the ages of seven and 13 are obese. More recent data (2002) by Statistics Canada indicate even greater numbers. Particularly disturbing is the trend for preschool children to become obese, *i.e.* children are becoming obese at an earlier age.<sup>3,4</sup>

Data in the U.S., according to the National Health and Nutrition Education Survey (NHNES), indicate that 11% of U.S. children have a body mass index (BMI) greater than 95%, while 14% have a BMI between 85% and 95%. Data from the Centers for Disease Control (CDC) reveal similar trends.

Table 1

### How to Calculate the Body Mass Index (BMI):

$$\text{Weight (kg)} \div \text{Height (metres squared)}$$

If the BMI exceeds 95%, the patient is considered obese. If the BMI exceeds 85%, the patient is considered at risk for being overweight.

## What is the criteria for diagnosis?

The CDC, the National Institutes of Health (NIH) and the World Health Organization use the body mass index (BMI) as their criteria (Table 1). There are some clinicians who choose to debate the validity of using the BMI. Even though the BMI is not a perfect criteria, it is one of the best ways to identify the problem.

The BMI percentiles for males and females were made available by the CDC in 2001. It was developed by both the Division of Nutrition and Physical Activity and the National Center for Health Statistics (NCHS).

A BMI greater than 95% predicts both the morbidity and natural history of the disease. Sixty per cent of children with a BMI greater than 95% have an existing biochemical abnormality, like elevated insulin or hyperlipidemia. If the BMI exceeds the 95th percentile then there is an increased risk of being persistently overweight.

## How do I evaluate the situation?

When an obese child is seen, it is important to identify his or her BMI. If the BMI exceeds 95%, the primary care physician should determine how the family perceives the child. If they do not see the child as obese, but normal like many of their peers, this may be an initial obstacle to treatment. It is important to identify a history of negative effects like being teased or ostracised (Table 2). The

motivation of the family matters in determining the successful outcome of treatment. After the above, (identifying obesity as a disease, doing a complete focused history, examination and laboratory assessment), many primary care physicians come to a wall (Table 3). The next step for an obese child is simple — he or she should be referred to a childhood obesity clinic. Children with inflammatory bowel disease are referred to a gastrointestinal clinic; children with seizures can see a neurologist; poorly controlled asthmatics see a pulmonologist; a dysmorphic child sees a geneti-

Table 2

### Getting Important Information

Ask the following questions:

1. Is there a family history of diabetes, obesity, hypertension or coronary artery disease?
2. Has there been past attempts at weight loss by the child or other family members?
3. What are some of the child's eating activities? (Where does the child eat, with whom, how often, what are the emotions during meals, does he/she eat because of boredom, is breakfast missed, are other meals skipped, is there a school cafeteria, how often does the family visit fast food outlets, who are the saboteurs, who is the primary cook in the family?)
4. Is the neighbourhood safe?
5. What is the child's mode of transportation to school?
6. What is the physical activity level of the child?
7. What is the family's schedule?
8. How much TV does the child watch and is there a TV in his/her bedroom?
9. Does the child suffer from stigmatisation?
10. Is the child depressed?

Table 3

## What to look for?

### In a physical examination:

1. Accurate height and weight
2. Dysmorphic features
3. Hypogonadism
4. Mental retardation
5. Papilledema
6. Acanthosis nigricans
7. Stria Pink if rapid weight gain occurred and Cushing's disease if violaceous
8. Bowing of legs

### In a laboratory examination:

1. Fasting insulin
2. Fasting glucose
3. Hemoglobin A1C
4. Transaminases (looking for steatohepatitis), a lipid screen and in some cases a thyroid screen

cist. These are clinics where further help by subspecialists are available.

The vast majority of obese children in Canada cannot be referred to childhood obesity clinics because such clinics rarely exist anywhere in this country. An ideal clinic should have at least a pediatrician trained in looking after obese children, a dietitian, an exercise physiologist and perhaps most important, a behavioural therapist.

Although diets and more focused exercise are important, the long-term success depends heavily on the use of behavioural modification.

## What about exercise?

Exercise issues involve first of all the identification of obstacles such as excessive exposure to television and computer, a lack of quality gym time at school, the extremely cold Canadian climate, neighbourhood safety concerns and gender issues (teenage boys exercise 25% more than teenage girls). Television exposure in the child's

own bedroom spells particular problems and it must be strongly discouraged.

The benefits of exercise should be reviewed. They include: loss of excess body fat, looking and feeling good, a healthy heart, more flexible joints and muscles, better muscle strength, better academic outcomes, more energy, less stress and better sleep. The child should choose his or her own exercise (exercise they can fit into their lifestyle). The child should think of exercise which is comfortable, convenient and consistent. The difference between children who lose weight and regain it later and those who lose weight and keep it off, has to do with establishing a regular exercise routine. Three to five days a week should include aerobic exercise (walking, bicycling, swimming, jogging, basketball). Two to three days should include strength and flexibility routines, such as push-ups, pull-ups, karate and dancing. The child's daily physical activity can include walking to school or the mailbox, walking the dog, using stairs instead of the elevator and doing chores.

## Why behavioural modification?

Behavioural modification identifies ways to change habits (Table 4). First, current patterns are identified (eating and physical activity). Records are kept. Behavioural patterns are identified. Inhibitors are used and forward planning is taught. The goal is for the child to decide what will work best and to give him or her a sense of control and the ability to overcome obstacles.

## What are the treatment options?

Pharmaceutical options include orlistat, sibutramine and acarbose. These options are not utilised routinely and have a minor role in the majority of obese

Table 4

### Dietary Measures

1. Keeping a food diary
2. Setting weekly goals
3. Self-monitoring
4. Having a specific easy-to-see format (on the fridge for example) of foods which are to be eaten daily (you could say the green zone foods), foods which should be consumed less often (the yellow zone) and foods which should be avoided or consumed as little as possible (the red zone)

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children. The cost is high and long-term success is less compared with lifestyle changes.

Gastric bypass surgery is done rarely at most tertiary care centres in Canada, if at all. It is never done when the BMI does not exceed 40%. Only if medication and exercise have failed should it be selectively considered. Few tertiary care centres in the U.S. perform bypass surgery in children.

## Is obesity a disease?

Obesity is a disease; it is not normal. A child with a BMI greater than 95% must be identified and, ideally, should see a team of experts, such as a pediatrician trained in looking after obese children, a dietitian, an exercise physiologist and a behavioural modification psychologist. In the absence of such a team of people, the primary care physician can attempt to play the role of all these team members, but success is expected to be more limited. Long-term success depends on lifestyle changes. Prevention is indeed better than cure and advocacy for better physical education and healthier food choices are appropriate. Less time by the television and longer breast feeding periods are proven methods to reduce childhood obesity. 

### References

1. Ebbeling CB, Pawlak DB, Ludwig DS: Childhood obesity: public-health crisis, common sense cure. *Lancet*. 2002 Aug 10;360(9331):473-82.
2. The Obesity Epidemic, AAP Update Series, Vol 22 Number 12 June 2002. Published by Medical Information Systems Inc, 2 Seaview Boulevard, Port Washington, N.Y. 11050-4618. Tel 1-800-847-0088.
3. Obesity in Childhood and Adolescence, Nestle Nutrition Workshop Series, Pediatric Program, Volume 49. Editors Chunming Chen and William H. Dietz. Lippincott Williams and Wilkins ISBN 0-7817-4132-7, 2002.
4. Barlow SE, Dietz WH: Obesity evaluation and treatment: Expert Committee recommendations. The Maternal and Child Health Bureau, Health Resources and Services Administration and the Department of Health and Human Services. *Pediatrics*. 1998 Sep;102(3):E29.

### Suggested Readings

1. *Trim Kids* by Melinda S. Sothorn Ph.D. Published by Harper Collins ISBN 0060188154.
2. *Kid Fitness* by Dr Kenneth Cooper M.D. M.P.H. Published by Bantam Books, ISBN 0553371126.

### Suggested Web Sites

1. [www.cdc.gov/nchs/products/pubs/pubd/hestats/overwgt99.htm](http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwgt99.htm)
2. [www.paguide.com](http://www.paguide.com) (Health Canada Resource)
3. [www.obesity.org](http://www.obesity.org)
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5. [www.pediatrics.org/cgi/content/full/101/3/e5](http://www.pediatrics.org/cgi/content/full/101/3/e5)
6. [www.obesity.chair.ulaval.ca/websites.html](http://www.obesity.chair.ulaval.ca/websites.html)
7. [www.caringforkids.cps.ca](http://www.caringforkids.cps.ca)
8. [www.cps.ca](http://www.cps.ca) (position statement of the Healthy Active Living Committee of the CPS)