Healthy Weights CONNECTION™

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Predictors of Obesity among Indigenous Children and Youth

Fact Sheet No. 10

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Introduction

Pediatric obesity is a growing problem in Canada, with the prevalence being highest among Indigenous peoples[1]. In fact, it was found that the rates of obesity among off-reserve Indigenous peoples was more than double the national average[2]. The age of onset of childhood obesity continues to decrease and needs to be addressed[3].

This factsheet was created to help inform service providers about the predictors of obesity among Indigenous children and youth.

Definitions

Body Mass Index (BMI) is one method of measuring obesity that is based on the height and weight of an individual[4]. It is a measure excess weight of an individual (underweight, normal weight, overweight, obese). The calculation used to determine body mass index or BMI is weight in kilograms divided by height in centimeters squared.

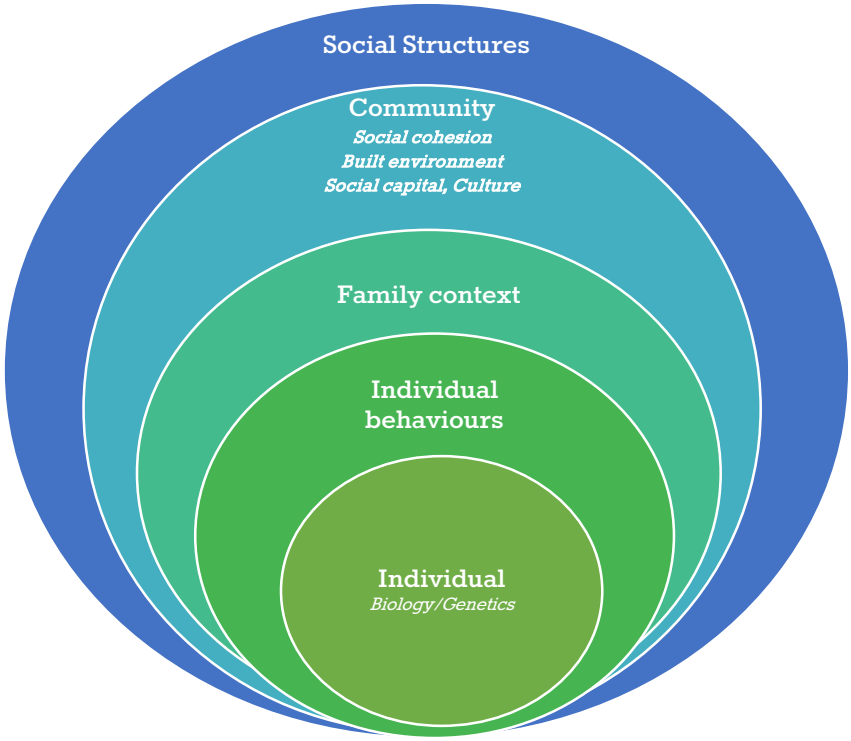
Overweight is an individual whose BMI value ranges between 25kg/m^2 and 29.9kg/m^2.

Obesity occurs when an individual's BMI value reaches 30kg/m^2 or more.

Predictors of Obesity

The predictors of obesity can be organized into a socioecological framework. As seen in the image below (Figure 1). All of these factors play a role in the development of obesity and intertwine with one another.

Figure 1: ***The socioecological framework for understanding childhood obesity among Indigenous peoples.***



Willows, Hanley and Delormier, 2012. A socioecological framework to understand weight related issues in Aboriginal children in Canada *Appl Physiol Nutr Metab*. Feb; 37 (1), 1_13.

Maternal and Infant Health Factors. Efforts to prevent childhood obesity should begin from the time that the child is conceived, or before, if possible. Mothers who were overweight or obese before pregnancy had obese children more than half of the time[5]. Research shows that women who have gestational diabetes and excessive weight gain during pregnancy increased the odds of their child becoming obese[5]. Children who are born with a high birth weight are also more likely to be obese[5]. Breastfeeding was found to be a protective factor from obesity, with children who were breastfed for a longer duration having a more favourable effect[5-7].

Family Conditions. The conditions in which children grow up places them at risk of obesity. Food insecurity (see Fact Sheet No. 3) was shown to be a major risk factor for obesity[6]. Some risk factors for food insecurity include poverty, low education, and living in a single parent household[6-8]. Low household education was also found to be a direct predictor of obesity among Indigenous youth[2,7]. High food literacy (see Fact Sheet No. 2) can lead to healthier choices for the family, and reduce obesity as a result. In addition, children who were obese had parents who were also overweight or obese a majority of the time[5,9].

Behaviour-related Characteristics. Multiple studies have reported that child behaviours can contribute to obesity. An example of this is increased screen time, which can lead to obesity through promoting unhealthy dietary habits[2,10]. Fiber and vegetable consumption has a favourable association with weight status, while junk food has the opposite effect[10]. Overall unhealthy dietary habits, sedentary behaviour and decreased physical activity have been associated with obesity[2,11]. One study reported that barriers to physical activity or sport participation may include, but are not limited to: location, transportation, availability of activities, and safety[12].

Box 1: Water Fact

Did you know that water can be used to aid in weight loss? Dr. Danielle Battram says that sometimes thirst can be mistaken for hunger, so if you are feeling hungry even though you just ate, try drinking some water.
For more information about water and its importance, check out the Sweet Truth Webinar on our website: http://www.healthyweightsconnection.ca/resources

Culture-related Characteristics. It is hypothesized that loss of reserves, hunting/harvesting land, in addition to the historical (or intergenerational) trauma endured by this population has led to the loss of traditional foods and activities which may contribute to difficultly making healthy decisions regarding diet and physical activity by parents[6]. The intergenerational trauma of residential schooling may also be a positive predictor of obesity[7]. Additionally, a strong sense of cultural belonging may decrease the risk of becoming obese[13].

Community Conditions. The environment surrounding the child can also be a predictor of obesity. Reduced access to healthy foods due to transportation and location was a risk factor for developing obesity[8], especially due to low income. The high cost of food and low availability may be a predicting factor as well. Some people may find it easier and cheaper to access unhealthy foods. For example, if a family was only able to go to the grocery store once a month, they would lean towards buying non-perishable items which last longer, unlike fresh fruits and vegetables. Lack of safe playing space for children, or proximity of local community centres may also be a limiting factor for being physically active.

Comorbidities and Complications of Obesity in Children and Youth

Obesity can lead to numerous health consequences in childhood and later on in life[14]. Diabetes is one of the most devastating consequences of obesity[15]. Overweight children have increased risk of exhibiting high overall cholesterol, low HDL cholesterol and high non-fasting glucose, thus displaying cardiovascular risk as well as metabolic syndrome[5]. In addition, obese children were found to have increased rates of depression and lower self-esteem[13].

Implications for Service Providers

Although many of the factors listed above cannot be altered, service providers can aid in decreasing the risk of childhood obesity by educating family on the differences between healthy and unhealthy foods and recipes, the benefits of breastfeeding, and promote healthy physical activity for families. Finally, they can host events in more easily accessible locations, and if providing refreshments or meals, they can provide healthy traditional meals as opposed to unhealthy meals.

Figure 2: ***Summary table of factors affecting childhood obesity***

Maternal and infant health	Family conditions	Behaviours
Smoking Maternal obesity High (or low) birth weight Breastfeeding	Lone parenthood Low income Low food literacy Food insecurity	Diet Physical activity Screen time Eating habits

Community conditions	Culturally specific factors
High food costs and low availability Poor transportation to grocery stores Lack of safe play spaces Opportunities for active transportation	Language/culture Sense of belonging Access to traditional knowledge

For additional resources on other topics please visit www.healthyweightsconnection.ca/resources.

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