

# Waist size and lifestyle in Iiyiyiu children

## What the Active Kids Study found

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This is a summary of a more technical report by Shauna M. Downs, Dru Marshall, Carmina Ng, and Noreen D. Willows (2008) called “Central adiposity and associated lifestyle risk factors in Cree children.” The summary is meant for community members in Iiyiyiu Aschii. The original article can be found in the journal *Applied Physiology, Nutrition, and Metabolism*, 33: 476-482, or on the National Research Council’s Research Press Web site at [apnm.nrc.ca](http://apnm.nrc.ca).

## Waist size and health

Some people carry a lot of their weight around the waist, like a spare tire. This does not always mean that they are overweight. It just means that most of their body fat is in one place. Usually, we measure a person's waist around the level of their belly-button, while they are standing up.

It seems that whether or not you are overweight, having a large waist size can put you at risk of health problems. Large waists seem to raise the risk of "Metabolic Syndrome," which can lead to diabetes and heart disease. Some health workers now think that we can get a better idea of someone's risk of diabetes by measuring their waist than by looking at how much they weight.

We need to know what habits go along with large waist measurements, so we can prevent these problems. And it is better to begin at young ages. This study looked at waist sizes among children in grades 4–6. The study tried to see how children's eating and exercise habits affect their weight and waist size.

## How the study was done

The study took place at two schools in Iiyiyiu Aschii in Fall of 2004 and 2005. Before the study began, the researchers discussed it with

- Band councils
- Health staff
- School principals

Radio programs told people about the study, and students were given papers to take home to their parents. Parents also got a paper to sign, saying if they wanted their child to be in the study or not.

Of the 225 children in those grades, 208 had parents who said they could be in the study. A few children missed some parts of the study, leaving 178 children (79%) who did all the parts.

## What the study looked at

The study looked at children's

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Weight	<p>The study used a measure of weight compared to height. Then it compared Iiyiyiu children to most other children. It grouped children as</p> <ul style="list-style-type: none"><li>• Obese: a child who weighs more than 95% of other children of the same age and sex — that is, a child whose weight is in the top 5%.</li><li>• Overweight: a child who weighs more than 85% of other children but isn't in the top 5%.</li><li>• Normal weight: everyone else.</li></ul>
Waist size	<p>Any child whose waist was larger than 85% of other children of the same age and sex was considered to have “large waist size.” Everyone else was considered normal waist size.</p>
Walking habits	<p>Students wore step-counters for two school days to measure how many steps they took in a day. Their total number of steps was compared to a standard that says that boys of this age should take at least 15,000 steps a day, and girls should take 12,000 steps.</p>
Physical fitness	<p>Fitness was measured by a shuttle-run test during gym class.</p>
Eating habits	<p>On three different days, children told the researchers what they had eaten in the past 24 hours. The answers were grouped by:</p> <ul style="list-style-type: none"><li>• How many calories the child ate per day, on average</li><li>• Whether the child ate at least 3 fruits and vegetables each day or not</li><li>• Whether the child got a lot of fibre or not</li><li>• Whether the child drank at least two glasses of milk each day or not</li><li>• Whether the child drank less than 1 can of sweet drinks per day, or more. (“Sweet drinks” means drinks like pop and fruit drinks with added sugar in them).</li></ul>

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# Results

## **About the children's size and habits**

- Overall, a third of the children in the study were of normal weight for their height. The rest were either overweight or very overweight (obese).
- About half the children had large waist sizes.
- Just over half of the children did enough walking each day. The rest did not walk much.
- Compared to other children in Quebec, the Iiyiyiu children did poorly on the shuttle-run test in gym class. This means they didn't run very far or very fast.
- The Canada Food Guide recommends that children of this age should eat six fruits and vegetables per day. Very few of the children were doing this. In fact, only one child in seven ate even three fruits or vegetables each day.

## **About the children with large waist sizes**

Most of the children with large waists also weighed too much overall. These were also the children who had trouble with the shuttle-run test.

As compared to the rest of the children, those with large waist sizes

- tended to be older, taller, and heavier
- were more likely to be overweight or obese
- ate fewer fruits and vegetables
- took fewer steps per day
- and had poorer results on the shuttle-run.

Some of the results were surprising. For instance, it seemed that the normal-waist children actually ate more calories per day than those with large waists. They also drank more sweet drinks. We are not sure how this is possible. It may be that the children don't report the amounts they eat very accurately. Also, because children with normal waist sizes seem to be more active, they may use up more calories.

Most of these habits—like eating few vegetables, being overweight, and walking less—tend to go together. The researchers used statistics to look at which habits have an effect even when you separate them out from all the others. The results suggest that three things help predict a child's waist size:

- how many fruits and vegetables he or she eats
- how much he or she walks
- how fast and far he or she can run.

## How could we encourage better waist sizes?

Sometimes, we are not sure what came first—the waist size or the lifestyle habit. For instance, we don't know if some children walked very little, and so got large waists, or if they got large first and then cut back on walking because it was harder. Still, the study results suggest some things that might help.

First, it might help if children had more fruits and vegetables and fewer sweet drinks. The results seem to show that sweet drinks and lack of vegetables go along with having a larger waist size.

Second, it might help if we encouraged children to do a lot of vigorous exercise. The study found that many Iiyiyiu children were not very fit. Being active helps keep weight down, helps with cholesterol levels, and prevents some health problems. It also seems to reduce waist sizes.

Other Aboriginal groups in Canada might also need to know what this study found out. If the Iiyiyiu results hold true for other groups, then a lot of Aboriginal children might have large waist sizes. This could put them at risk of diabetes and heart disease later. In the future, studies should look not just at children's weight, but also at whether they are carrying most of that weight around their middles.