

Tendency to obesity starts with pre-schoolers

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When it comes to understanding where tendencies to overweight and obesity develop, you have to begin with the very young, says John Spence, a behavioural scientist in the Faculty of Physical Education and Recreation at the University of Alberta.

His research, the first of its kind to look at North American kids and published in the *International Journal of Pediatric Obesity*, examined four- and five year olds' avoidance or approach behaviours to food and their relationship with [body weight](#).

What he's found may help to unlock the causes of obesity and what we can do to prevent a condition in Canada where, alarmingly, 26 per cent of 2 to 17 year olds are overweight or obese.

Spence and his team recruited 1730 Canadian children into the study – an equal mix of boys and girls, and four and five year-olds - via immunization clinics from 2005 to 2007 when they came for their pre-school vaccinations. Kids were classified according to body [weight status](#) and parents asked to complete the UK-developed Children's Eating Behaviour Questionnaire (CEBQ), which has been used in European studies to establish the [relationship](#) between food behaviours and body weight in children.

Parents were given a list of statements relating to how their child responded to food, for example, "My child loves food," or "My child eats more when worried" and asked if or to what extent the behaviour occurred.

The results of the two-year study were in line with what Spence had anticipated. He found significant differences between the children in different weight status groups for food responsiveness, emotional over-eating, enjoyment of food, satiety responsiveness, slowness in eating, and food fussiness.

"It does appear that children, not surprisingly, who are demonstrating approach behaviours to food (eating when upset, or eating when bored, for example) are going to be more overweight whereas children who are demonstrating avoidance behaviours (such as fussy or slow eating) are more likely to be underweight. But the issue now is: how do children develop these approach or avoidance tendencies to food?" says Spence.

"This model suggests that to some extent this is influenced by the household environment where the parents may be rewarding children for certain types of behaviours. It would suggest that there is some dynamic in the household that is leading children to be more approach or avoidant in relation to food."

Spence says the results, which show clear linear relationships across the body weight groups, bode well for his follow-up research, now in progress.

"If we are seeing associations between where children live and play; if there are associations between the environment and the weight status of the child then we have to try and figure out how that environment influences that child," says Spence.

"Is it exposure to food, prevention or promotion of physical activity? Is it the way they interact with their food as shaped by their environment? This is more of a household variable than one would expect, so is the child being rewarded or punished in relation to their food and is that then related to their weight status? Is there education we can be

providing to parents?

"These have potential intervention implications because if we can identify this and understand what the causes of approach and avoidance behaviours are, we can identify what we can intervene on."

Spence has begun a longitudinal study following the children from the original study who are now seven and eight year-olds. This time researchers will probe deeper and with confidence knowing their work is grounded in a solid foundation of findings consistent with European studies that have used the CBEQ to establish these associations between food behaviours and body weight.

"Now we'll be situating (our research) in a larger framework with more variables and we'll be looking to see how some of these work together," says Spence. "We'll look to see if, in [children](#) who are more approach-oriented to food, we are seeing more food being consumed and are they consuming some of the 'bad' [food](#)."

Spence says he expects governments to step in with policies once researchers know more. "Now that we've established the associations, we need to know how to change things, and if we change things how do we implement those in policy, and affect populations."

Provided by University of Alberta

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