Medical Xpress

Life-threatening syndrome makes hunger dangerous

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A University of Alberta medical researcher is studying obese children affected with a life-threatening syndrome that makes them constantly feel hungry.

The children Andrea Haqq is working with have a chronic genetic condition known as Prader Willi Syndrome, which affects more than 3,000 Canadians. It is the most common genetic cause of childhood obesity but there is no cure, although researchers like Haqq are trying to better understand and manage the condition and its symptoms.

Haqq and her research team want to hone in on two key areas for the studies. Specifically, they want to determine why children with this syndrome have higher levels of a hunger hormone known as ghrelin, compared to obese children without this syndrome. The researchers also want to see how the children's bodies are impacted by a higher protein meal, versus a lower protein meal.

"These children are so hungry that parents are sometimes forced to put locks on their refrigerators, never leave food on the counter or institute no-food-sharing rules," says Haqq, a pediatric endocrinologist and associate professor of pediatrics with the Faculty of Medicine & Dentistry.

"These children are so hungry they can be very creative when it comes to trying to get food. I know of one child who ordered pizza to be delivered to his neighbours' house and then went next door and got the pizza."

Haqq is conducting two studies to see if higher protein meals will make these children feel full even though they have high levels of ghrelin. She also wants to see if there is link between low protein levels in their brains, their insatiable appetite and other brain functions. Haqq explained there is some evidence that ghrelin may be impacted by protein, but this has not been well studied in children with Prader Willi Syndrome.

The second study will look at a protein level in the brain known as brain derived neurotrophic factor, which is responsible for brain growth. This protein level is significantly lower in children who have Prader Willi Syndrome, compared to obese children without the syndrome. Haqq wants to see if there is a link between the low protein level and hunger and brain functions in obese children with Prader Willi Syndrome, and compare that to obese children without the syndrome.

Haqq currently has eight obese children involved in the studies, but is prepared to see up to 45 children in total as part of her current and upcoming research projects. Haqq is studying obese children between the ages of five and 17, some with the syndrome and some without so she can compare the results of the two different groups.

More information: Haqq's findings were recently published in the *Journal of Clinical Endocrinology & Metabolism*.

Provided by University of Alberta