

Compliments of ...

\*\*\*\*\*

Center for Family and Community Health  
School of Public Health  
University of California, Berkeley  
A CDC Center for Chronic Disease Prevention  
and Health Promotion Research

\*\*\*\*\*

## **Salt 'could fuel child obesity'**

**Salt-rich diets could be the key to why some children battle with obesity, University of London researchers say.**

BBC News, Feb 2008

In a study of data on 1,600 children, they found that children eating a salty diet tended to drink more, including more fattening, sugary soft drinks. They reported in journal Hypertension that halving the average daily salt intake of six grams a day could cut 250 calories a week from a child's diet. They called for further work by the food industry on reducing salt content.

**This is evidence of another, hidden way in which eating too much salt may harm the health of children**

Professor Graham McGregor

St George's University of London

One in five children in the UK is overweight and there are fears that this will contribute to a rising trend in adult obesity, heart disease and stroke in years to come. Eating products high in salt tends to make people thirsty and it is known that in adults, a salt-laden diet tends to increase the amount of sugary soft drinks consumed.

### **First in children**

This is the first study to see if the same effect was found in children. The team from St George's, University of London, looked at data from the National Diet and Nutrition Survey, conducted in 1997. They used a sample of 1,600 four to 18-year-olds who had all had their salt and fluid intake measured precisely. They found that children eating a lower-salt diet drank less fluid and estimated that one gram of salt cut from a daily diet would reduce fluid intake by 100 grams per day. Approximately a quarter of those 100 grams would be sugary soft drinks, they predicted. The researchers estimated that if children cut their salt intake by half - an average reduction of three grams a day - there would be a decrease of approximately two sugar-sweetened soft drinks per week per child. That, in turn, would decrease each child's calorie intake by almost 250 calories per week.

**When children regularly swill down salty foods with sugary, calorie-laden soft drinks, it can mean double trouble for their future heart health**

British Heart Foundation

They urged parents to check the salt content of their children's meals and manufacturers to find ways to reduce this content. They said reductions in the salt content of 10% or 20% cannot be detected by human salt taste receptors and do not cause any "technological or safety problems".

Professor Graham McGregor, one of the paper's authors and the chairman of Consensus Action on Salt and Health, said that while some manufacturers had acted to reduce salt levels in bread and cereals - the main sources of salt for children - there was still plenty left for the industry to do. "Unfortunately some

food specifically targeted at children has to be laced with salt otherwise it would be inedible, because it is made from mechanically-recovered meat," he said. "The salt levels in some of these products have been brought virtually up to the level of sea water. "This is evidence of another, hidden way in which eating too much salt may harm the health of children and the industry needs to do a lot more."

### **Label call**

Dr Myron Weinberger, from the Indiana University Medical Center, wrote that reductions in salt and soft drink consumption in children, coupled with an increase in physical activity, could help reduce the "scourge of cardiovascular disease" in western society. A spokesman for the British Heart Foundation said that better food labeling would help parents to choose healthier foods for their families. "When children regularly swill down salty foods with sugary, calorie-laden soft drinks, it can mean double trouble for their future heart health. "This report is yet more proof that children must be supported to make healthier food choices to avoid becoming obese or increasing their blood pressure."

### **Reducing Kids' Salt Intake May Lower Soft Drink Consumption**

ScienceDaily, Feb 2008

Children who eat less salt drink fewer sugar-sweetened soft drinks and may significantly lower their risks for obesity, elevated blood pressure and later-in-life heart attack and stroke, researchers reported in the print and online issue of *Hypertension: Journal of the American Heart Association*. Previous studies have shown that dietary salt intake increases fluid consumption in adults. But researchers at St. George's University of London, England, are the first to examine whether the same is true in children.

"Sugar-sweetened soft drinks are a significant source of calorie intake in children," said Feng J. He, M.D., lead author of the study. "It has been shown that sugar-sweetened soft drink consumption is related to obesity in young people. However, it is unclear whether there is a link between salt intake and sugar-sweetened soft drink consumption."

Dr. He and colleagues analyzed data from the National Diet and Nutrition Survey (NDNS) in Great Britain, conducted in 1997 in a nationally representative sample of more than 2,000 people between 4 and 18 years old. Among the participants, more than 1,600 boys and girls had salt and fluid intake recorded using a seven-day dietary record, with all food and drink consumed weighed on digital scales. "We found that children eating a lower-salt diet drank less fluid," said Dr. He, a cardiovascular research fellow at St. George's. "From our research, we estimated that 1 gram of salt cut from their daily diet would reduce fluid intake by 100 grams per day."

The researchers also found that children eating a lower-salt diet drank fewer sugar-sweetened soft drinks. From their research, they predicted that reducing salt intake by 1 gram each day would reduce sugar-sweetened soft drink consumption by 27 grams per day, after considering other factors such as age, gender, body weight and level of physical activity.

"If children aged 4 to 18 years cut their salt intake by half (i.e., an average reduction of 3 grams a day), there would be a decrease of approximately two sugar-sweetened soft drinks per week per child, so each child would decrease calorie intake by almost 250 kcal per week," Dr. He said. "Not only would reducing salt intake lower blood pressure in children, but it could also play a role in helping to reduce obesity."

In previous studies, researchers found that a modest reduction in dietary salt intake lowers blood pressure in children, and a low-salt diet during childhood may prevent the development of high blood pressure later in life (Reference: He FJ, MacGregor GA. Importance of salt in determining blood pressure in children: meta-analysis of controlled trials. *Hypertension*. 2006;48:861-869).

The new research suggests that reduced salt intake could also help decrease childhood obesity, through its effect on sugar-sweetened soft drink consumption.

"Both high blood pressure and obesity increase the risk of having strokes and heart attacks," Dr. He said. "It is, therefore, important for children to eat a low-salt diet to reduce their risk of having a stroke or a heart attack later in life. All physicians should give their patients appropriate advice on how to reduce salt in their diet."

Dr. He recommends that parents check labels, choose low-salt food products and not add salt during cooking and at the table. She also urges consumers to challenge the food industry to make a gradual and sustained reduction in the amount of salt added to children's food products that have added salt. In most developed countries, about 80 percent of salt intake is from salt already added to food by the food industry. Reducing salt would not necessarily impact food taste, she said. "Small reductions in the salt content of 10 percent to 20 percent cannot be detected by the human salt taste receptors and do not cause any technological or safety problems," Dr. He said.

In a related Hypertension editorial, Myron H. Weinberger, M.D., Indiana University Medical Center, Indianapolis, wrote that reductions in salt and sweet-beverage consumption among children, coupled with an increase in physical activity, "could go a long way in reducing the present scourge of cardiovascular disease in our industrialized society. Obviously, each step in this progression requires further definition and confirmation. This presents a formidable challenge as we move into the 21st century."

====

Feng J. He; Naomi M. Marrero; Graham A. MacGregor. Salt Intake Is Related to Soft Drink Consumption in Children and Adolescents: A Link to Obesity? Hypertension. 51:629-634. 2008.

Dietary salt is a major determinant of fluid intake in adults; however, little is known about this relationship in children. Sugar-sweetened soft drink consumption is related to childhood obesity, but it is unclear whether there is a link between salt and sugar-sweetened soft drink consumption. We analyzed the data of a cross-sectional study, the National Diet and Nutrition Survey for young people in Great Britain. Salt intake and fluid intake were assessed in 1688 participants aged 4 to 18 years, using a 7-day dietary record. There was a significant association between salt intake and total fluid, as well as sugar-sweetened soft drink consumption ( $P < 0.001$ ), after adjusting for potential confounding factors. A difference of 1 g/d in salt intake was associated with a difference of 100 and 27 g/d in total fluid and sugar-sweetened soft drink consumption, respectively. These results, in conjunction with other evidence, particularly that from experimental studies where only salt intake was changed, demonstrate that salt is a major determinant of fluid and sugar-sweetened soft drink consumption during childhood. If salt intake in children in the United Kingdom was reduced by half (mean decrease: 3 g/d), there would be an average reduction of 2.3 sugar-sweetened soft drinks per week per child. A reduction in salt intake could, therefore, play a role in helping to reduce childhood obesity through its effect on sugar-sweetened soft drink consumption. This would have a beneficial effect on preventing cardiovascular disease independent of and additive to the effect of salt reduction on blood pressure.

Key Words: salt intake • soft drink consumption • obesity • children and adolescents

<http://hyper.ahajournals.org/cgi/content/abstract/51/3/629>

Related Article:

Myron H. Weinberger. **Are Children Doomed by What They Eat and Drink?** Hypertension 2008 51: 615-616. [\[Full Text\]](#)