

# Researcher finds reason for weight gain

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Liwei Chen, MD, PhD, Assistant Professor of Epidemiology at the LSU Health Sciences Center New Orleans School of Public Health, is the lead author of a research paper showing that weight gain and obesity are more linked to an increase in liquid calories, particularly sugar-sweetened beverages, than calories from solid food. To our knowledge, this is the first study to document the relative effects of calories from liquids compared with those of calories from solid food on weight loss in adults over an extended period. The study is published in the May 1, 2009 issue of the *American Journal of Clinical Nutrition*.

The study reports four principal findings: First, a reduction in liquid [calorie intake](#) was significantly associated with [weight loss](#) at both 6 months and 18 months. Second, the weight-loss effect of a reduction in liquid calorie intake was stronger than that of a reduction in solid calorie intake. Third, a reduction in sugar-sweetened beverage intake was significantly associated with weight loss at both 6 and 18 months. Fourth, no other beverage type was associated with weight change.

It has been projected that 75% of US adults will be overweight or obese by 2015.

"Today, Americans consume 150-300 more calories a day than they did 30 years ago," notes Dr. Chen, "and caloric beverages account for approximately 50% of this increase."

The researchers followed 810 men and women, 25-79 years old, whose 24 hour dietary intake recall was measured by telephone interviews

conducted when they entered the study and at 6 and 18 months. Beverages were divided into 7 categories based upon calorie content and nutritional composition.

1. Sugar-sweetened beverages (regular [soft drinks](#), [fruit drinks](#), fruit punch, or any other high-calorie beverage sweetened with sugar)
2. diet drinks (diet soda and other diet drinks sweetened with artificial sweeteners)
3. milk (whole milk, 2% reduced-fat milk, 1% low-fat milk, and skim milk)
4. 100% juice (100% fruit and vegetable juice)
5. coffee and tea with sugar (sweetened with sugar)
6. coffee and tea without sugar (unsweetened or sweetened with artificial sweeteners)
7. alcoholic beverages (beer, wine, spirits, and other alcoholic drinks).

Each participant's daily nutrient, energy, and beverage intakes were calculated by taking the average of 2 recalls per time point. Liquid calorie intake was calculated as the sum of calories from the 7 beverage categories. Solid calorie intake was calculated by subtracting liquid calories from total calories.

The researchers offer a couple of possible explanations for their findings. The absence of chewing when consuming liquids may result in decreased pancreatic responses. Beverages also clear the stomach sooner

than solid food and may induce weaker satiety signals in the gastrointestinal tract.

"Our study supports policy recommendations and public health efforts to reduce the intake of liquid [calories](#), particularly from sugar-sweetened [beverages](#)," concludes Dr. Chen.

Source: Louisiana State University Health Sciences Center

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