MedicalXpress

More calories consumed from subsidized food commodities linked to cardiometabolic risks

July 5 2016

Current federal agricultural subsidies focus on financing production of food commodities, a large portion of which are converted into high-fat meat and dairy products, refined grains, high-calorie juices and soft drinks (sweetened with corn sweeteners), and processed and packaged foods.

Karen R. Siegel, Ph.D., of the Centers for Disease Control and Prevention, Atlanta, and coauthors used data from the National Health and Nutrition Examination Survey from 2001 to 2006 to calculate an individual-level "subsidy score" for consumption of subsidized food commodities as a percentage of total calorie intake.

The study, which relied on a single day of 24-hour dietary recall, included 10,308 participants, about half of whom were men, with an average age of about 40.

The seven major subsidized food commodities included in the score were corn, soybeans, wheat, rice, sorghum, dairy and livestock. Subsidy scores ranged from 0.0 to 1.0, where 0.0 indicates 0 percent of total calories from subsidized commodities and 1.0 indicated 100 percent of total calories from subsidized commodities.

The authors used body mass index (BMI), ratio of waist circumference to height, circulating high-sensitivity C-reactive protein (a marker of

inflammation), blood pressure, non-high-density lipoprotein (HDL) cholesterol level, and glycated hemoglobin to characterize cardiometabolic risk.

Overall, 56.2 percent of calories consumed came from the major subsidized food commodities, according to the study.

Results suggest that adults with the highest subsidy scores, compared with those with the lowest, had a 37 percent higher risk of being obese; a 41 percent higher risk of having abdominal adiposity (belly fat); a 34 percent higher risk of having an elevated C-reactive protein level; a 14 percent higher risk of having dyslipidemia (abnormal cholesterol levels); and a 21 percent higher risk of having dysglycemia (abnormal blood glucose levels). There appeared to be no association between the subsidy score and blood pressure.

The authors noted study limitations. They controlled for known demographic and lifestyle factors but important risk factors, such as smoking, physical activity, poverty and food insecurity, increased across subsidy score quartiles and that suggests other relevant risk factors for which they were unable to control.

"Although eating fewer subsidized foods will not eradicate obesity, our results suggest that individuals whose diets consist of a lower proportion of subsidized foods have a lower probability of being obese. Nutritional guidelines are focused on the population's needs for healthier foods, but to date food and agricultural policies that influence food production and availability have not yet done the same," the study concludes.

Commentary: How Society Subsidizes Big Food and Poor Health

In a related commentary, Raj Patel, Ph.D., of the University of Texas at Austin, writes: "If we are to ensure that everyone in the United States is able to eat healthily, policies will need to raise household income and ensure that the food industry pays for the damage it has caused. An analysis of food subsidies points to the fact that poverty and environmental damage are public health issues. The medical community would be valuable allies in the political coalition required to move us away from our current, damaging addiction to 'cheap' food."

Different Types of Dietary Fats Have Different Associations with the Risk of Death

In a related article, Frank B. Hu, M.D., Ph.D., of the Harvard T.H. Chan School of Public Health, Boston, and coauthors looked at how different dietary fats were associated with the risk of death.

The researchers analyzed data from more than 126,000 participants from two large study groups followed-up for as long as 32 years. Dietary fat intake was assessed at baseline and updated every two to four years. During follow-up, 33,304 deaths were documented.

Eating more saturated fat and trans-fat was associated with increased risk of death, while eating more polyunsaturated (PUFA) and monounsaturated (MUFA) fatty acids was associated with lower risk for death, according to the results.

The study estimates that replacing 5 percent of calories from saturated fats with equivalent calories from PUFA and MUFA was associated with a 27 percent and 13 percent reduced risk of death, respectively.

The authors note their study was observational and therefore cannot prove causality.

"These findings support current dietary recommendations to replace saturated fat and trans-fat with unsaturated fats," the study concludes.

More information: Siegel et al. *JAMA Intern Med*. Published online July 5, 2016. DOI: 10.1001/jamainternmed.2016.2410

Patel, *JAMA Intern Med*. Published online July 5, 2016. DOI: 10.1001/jamainternmed.2016.3068

Hu et al. JAMA Intern Med. Published online July 5, 2016. DOI: 10.1001/jamainternmed.2016.2417

Provided by The JAMA Network Journals