

Even Small Dietary Reductions in Salt Could Mean Fewer Heart Attacks, Strokes and Deaths

ScienceDaily (Jan. 21, 2010) — Reducing salt in the American diet by as little as one-half teaspoon (or three grams) per day could prevent nearly 100,000 heart attacks and 92,000 deaths each year, according to a new study. Such benefits are on par with the benefits from reductions in smoking and could save the United States about \$24 billion in healthcare costs, the researchers add.

A team from the [University of California, San Francisco](#), [Stanford University Medical Center](#) and [Columbia University Medical Center](#) conducted the study. The findings appear January 20 in online publication by the *New England Journal of Medicine* and also will be reported in the February 18 print issue of the journal. The team's results were derived from the Coronary Heart Disease Policy Model, a computer simulation of heart disease among U.S. adults that has been used by researchers to project benefits from public health interventions.

"A very **modest decrease in the amount of salt, hardly detectable in the taste** of food, can have **dramatic health benefits** for the U.S.," said Kirsten Bibbins-Domingo, PhD, MD, lead author of the study, UCSF associate professor of medicine and epidemiology and the co-director of the UCSF Center for Vulnerable Populations at San Francisco General Hospital.

"It was a surprise to see the magnitude of the impact on the population, given the small reductions in salt that we were modeling," [Bibbins-Domingo](#) added. The CHD Policy Model found that reducing dietary salt by **three grams per day (about 1200 mg of sodium) would result in 11 percent fewer cases of new heart disease, 13 percent fewer heart attacks, 8 percent fewer strokes, and 4 percent fewer deaths**. For African Americans, who researchers believe are more likely to have high blood pressure and may be more sensitive to salt, this degree of salt reduction could reduce new cases of heart disease by 16 percent and heart attacks by 19 percent.

"**Reducing dietary salt** is one of those rare interventions that has a **huge health benefit and actually saves large amounts of money**. At a time when so much public debate has focused on the costs of health care for the sick, here is a simple remedy, already proven to be feasible in other countries," said Lee Goldman, MD, MPH, senior author, executive vice president for health and biomedical sciences and dean of the faculties of health sciences and medicine at Columbia University.

The American Heart Association reports that **salt consumption** among Americans has **risen by 50 percent and blood pressure has risen by nearly the same amount since the 1970s** -- despite evidence linking salt intake to high blood pressure and heart disease.

"In addition to its independent benefits on blood pressure, reducing salt intake can enhance the effects of most anti-hypertensive (blood pressure lowering)

agents and **reduce complications associated with diabetes, obesity and kidney disease,**" said Glenn M. Chertow, MD, study co-author, professor of medicine and chief of the Division of Nephrology at Stanford University.

According to federal government data, the **average American man consumes more than 10 grams of salt (4000 mg sodium) daily.** Most health organizations recommend far lower targets -- no more than 5.8 grams of salt per day (2300 mg sodium) and less than 3.8 grams for those over 40. **Each gram of salt contains 0.4 grams of sodium.**

"It's clear that we need to lower salt intake, but individuals find it hard to make substantial cuts because **most salt comes from processed foods,** not from the salt shaker," Bibbins-Domingo said. "Our study suggests that the food industry and those who regulate it could contribute substantially to the health of the nation by achieving even small reductions in the amount of salt in these processed foods."

The **New York City Department of Public Health** and other state and local municipalities nationally have seen salt as an important target for regulation. **Mayor Michael Bloomberg has already made sweeping changes to the City's health regulations, including cutting trans fats in eating places and requiring fast-food restaurant menus to list calories. Now the city is seeking to join a national movement in cutting salt intake by 25 percent,** which he referenced in today's State of the City address.

"Our projects suggest that these regulatory efforts could both improve health and save money because of the healthcare costs avoided," said Bibbins-Domingo. **"For every dollar spent in regulating salt, anywhere from seven to 76 healthcare dollars could be saved."**

Additional authors include Pamela G. Coxson, PhD; James M. Lightwood, PhD, and Mark J. Pletcher, MD, all of UCSF, and Andrew Moran, MD, Columbia. The study was funded in part by a grant from the American Heart Association Western States Affiliate and a pilot grant from the UCSF Clinical and Translational Sciences Institute.