

# The Year of Sodium



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**F**or those who follow the lunar calendar, this is year 4707, and Feb. 14 marks the start of the “Year of the Tiger.” However, for you golfers out there, most of you have to believe this is not a “Tiger” year.

In the context of the food industry, this year 2010 it may be the year of the element, sodium.

While essential for life, sodium is implicated as a risk factor for hypertension and its associated illnesses including heart disease and stroke. While the science is still unclear on the benefits of reducing sodium intake for healthy individuals, reduction of dietary sodium intake may help lower blood pressure for those individuals diagnosed with hypertension.

Because ordinary table salt is about 40% sodium (60% chloride) one focus has been on reduction of salt intake. The U.S. Dietary Guidelines have directly and indirectly included recommendations for Americans to reduce their sodium and salt intake for many years. From 1980 to '85, the recommendations were to “avoid too much sodium;” in 1990, “use salt and sodium only in moderation;” in 1995, “choose a diet moderate in salt and sodium;” and in 2000, they recommended we “choose and prepare foods with less salt.”

Then the 2005 Dietary Guidelines stated that “adults limit consumption of sodium to 2,300 mg/day” (~1 tsp dietary salt/day) and “to choose and prepare foods with little salt.” And for individuals with hypertension, blacks and middle-age and older adults, they recommended “to aim to consume no more than 1,500 mg of sodium per day.” Despite these recommendations, average sodium intake has increased over 50% since the 1970s. According to the Institute of Medicine, 100% of adults exceed 1,500 mg sodium a day (men age 31-50 have a median intake of 4,300 mg sodium/day and women age 31-50 have a median intake of 2,900 mg sodium/day)<sup>1</sup>.

As a result, there have been renewed efforts to lower the consumption of sodium content of the food supply. None more prominent than the recent National Salt Reduction Initiative led by the New York City Department of Health that includes 17 national health organizations and 26 cities, states and related entities. This voluntary initiative recommends to lower the salt content of packaged and restaurant foods by 25% within five years<sup>2</sup>.

However, lowering the salt content in foods is not as simple as it sounds. Salt functions as a seasoning, preservative, binding agent, color controller, texture aid and fermentation controller in many foods. In dairy foods such as cheese, salt is used in many cheese making processes where it functions to encourage control of cheese moisture and regulates starter culture growth. Also, salt in cheese modifies secondary organism growth during ripening, influences enzyme activities, modifies cheese microstructure and associated texture, and contributes desirable salt and complimentary taste sensations<sup>3</sup>. Despite numerous efforts to find alternative ingredients, and processes to produce lower salt cheeses, an optimal solution remains elusive. Unfortunately, it is not just a matter of getting people used to less salty foods but salt reduction has implications in food safety, composition control, keeping quality and the sensory properties of cheese and other dairy products.

Food processing accounts for more than 75% of the sodium intake (i.e. naturally occurring, table use and during cooking accounts for less than 25% of total sodium in the food supply). While the dairy industry is trying to do its part to help Americans lower their sodium intake, dairy contributes less than 11% of total sodium intake and cheese accounts for roughly 7.8%<sup>4</sup>. In fact, new data on sodium content of dairy foods may suggest these numbers may even be lower. Other foods contribute a greater portion

of the sodium intake from the addition of salt and other ingredients which contain sodium such as leavening agents, emulsifiers, stabilizers, antioxidants, sweeteners, curing agents, preservatives, flavor enhancers, buffers, and gelling agents. For example, grain products (i.e. breads, rolls, chips, popcorn, tortillas, pancakes, crackers) account for 21.45%, and meat, poultry and fish products account for 15.67% of sodium intake respectively<sup>4</sup>.

Another approach might be to offer a whole new line of dairy foods that do not contain added salt or other sodium based ingredients. Remember, milk which is the foundation of dairy foods already contains a unique balance of nutrients. So in the “year of sodium,” or more than likely in the foreseeable future, finding new ways to preserve that balance of nutrients from milk into food forms that fit consumer lifestyles, tastes, and other needs offers another opportunity for dairy to show that dairy is an essential part of a healthy diet.

For copies of the presentations at the 2009 meetings held by Institute of Medicine on “Strategies to Reduce Sodium Intake,” visit: [www.iom.edu/Activities/Nutrition/ReduceSodiumStrat.aspx](http://www.iom.edu/Activities/Nutrition/ReduceSodiumStrat.aspx). ■

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<sup>1</sup> National Health and Nutrition Examination Survey 2003-04, Institute of Medicine, National Center for Disease Statistics, Center for Disease Control and Prevention, Hyattsville, Md.

<sup>2</sup> [www.nyc.gov/html/doh/html/cardia/carcio-salt-initiative.shtml](http://www.nyc.gov/html/doh/html/cardia/carcio-salt-initiative.shtml)

<sup>3</sup> E. Johnson, R. Kapoor, D. J. McMahon, D. R. McCoy, and R.G. Narasimmon. 2009. Reduction of sodium and fat levels in natural and processed cheeses: scientific and technological aspects. Comprehensive reviews in food science and food safety, Vol. 8: p. 252 - 268.

<sup>4</sup> Hentges, E. 2009. Sources of Sodium in the U.S. Food Supply. Presented at Institute of Medicine Strategies to Reduce Sodium Intake Meeting, March 30, 2009. [www.iom.edu/~/media/Files/Activity%20Files/Nutrition/ReduceSodiumStrat/HENTGES.ashx](http://www.iom.edu/~/media/Files/Activity%20Files/Nutrition/ReduceSodiumStrat/HENTGES.ashx).