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Salt Skip News

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Salt intake in early childhood

The harmful effects of too much salt intake are likely to begin before birth. A recent study in rats (1) showed this clearly. Rats are relatively easy to do dietary experiments on – they can be kept well nourished on a uniform 'chow' and they develop into adult rats quickly. A group of rats was fed either a normal salt content diet (0.15%) or a high salt content diet (8.0%) during pregnancy and lactation. Interestingly, the rats on the higher salt content diet ate more over their pregnancy although there was difference between groups in their weight gain over the pregnancy, the size of the litters or the average birth weight of their offspring. The male offspring were weaned at 4 weeks of age – half were continued on the dietary intake of their mothers and half were switched to the opposite diet. The male rats were observed until 12 weeks of age. The rats that were on the normal salt diet gained more weight and drank less water than the rats on the high salt diet regardless of which diet their mothers had been on.

The weight of the heart was greater for offspring where the mother had been on a high salt diet and the arteries thicker and, in the case of the aorta, more fibrotic. These changes were regardless of the diet of the offspring. There was no difference between groups in blood pressure.
This study indicates that, at least in rats, adverse changes occur to the vascular system (blood circulation) of offspring due to the salt content of the diet of the mother during pregnancy and lactation. Furthermore these adverse changes are not mediated by blood pressure after birth.

In human children, salt intake is associated with blood pressure from the first months of life (2). Two randomised controlled trials have indicated that children receiving food and liquids with a lower sodium content have a lower blood pressure. In fact, when the participants of the Dutch trial (which was conducted for 6 months from soon after birth) were followed up 15 years later, the children who had received the lower salt diet for the first six months of life still had a lower blood pressure than the more usual salt intake group.

The requirement for sodium in young children is very low and newborns have an aversion to salty taste. Children should not become accustomed to the high levels of salt consumed by adults and known to be harmful for them.

References:

1. *Piecha G, Koleganova N, Ritz E, et al. High salt intake causes adverse fetal programming – vascular effects beyond blood pressure. Nephrol Dial Transplant 2012;27:3464-3476.*
2. *Strazzullo P, Campanozzi P, Avallone S. Does salt intake in the first two years of life affect the development of cardiovascular disorders in adulthood? Nutr Metab Cardiovasc Dis 2012;22:787-792.*

Saving lives with salt reduction

In 2007, the well-known medical journal The Lancet published an analysis on preventing death from chronic disease from 2 simple interventions (3). They focused the interventions on 23 countries which jointly account for 80% of the chronic disease burden in low-income and middle-income regions of the world. The interventions were to reduce sodium intake by 15% and to reduce smoking prevalence (i.e. the percentage of people who smoke) by 20%.

The number of deaths averted in those countries over 10 years was estimated to be 13.8 million (8.5 million from dietary salt reduction and 5.5 million by tobacco control). Most averted deaths would be from cardiovascular disease (76%) followed by respiratory disease (15%) and cancer (9%). It is estimated that a death averted would have, on average, another 18 years of life.

The cost of the intervention was estimated to be less than $US0.40 per person per year in the low income countries and $US0.50–1.00 per person per year in the upper middle income countries (in 2005 dollars).

This extraordinarily large number of lives saved is only a small fraction of the total burden of chronic disease.

A reduction of salt intake to 5g a day was estimated to result in more than 28 million deaths averted over 10 years in the 23 countries.

Salt intake of 5g a day is seen as a reasonable population target by the Italians. People who are serious about lowering their sodium intake will do much better.

Italy has undertaken a number of measures to lower population dietary salt intake (4).
Firstly a working group has been set up and is seeking the collaboration of a broad range of stakeholders. The measures being undertaken and being planned are intended to consider the cultural traditions and current dietary habits of different Italian regions, seek the engagement of the lower income groups, and utilise the existing structures operating in the field of nutrition and prevention.

The Ministry of Health has signed an agreement with the bakers' associations for a gradual reduction of the bread salt content – initially by 15% with further reductions to follow. It is intended to extend voluntary food reformulations to meat, cheese and canned food.

Educational campaigns are being implemented to increase population awareness of the importance of lowering salt intake. World Hypertension Day is promoted, as is Salt Awareness Week. Key messages are conveyed to health professionals and the population about the risks of excess salt intake and options to reduce habitual intake.

It is expected that the food catering system, including restaurants, chefs and food shops will play an important role in the campaign.

Further action is planned to improve labelling of sodium on foods. The objective of the campaign is ultimately to save lives – a worthy objective which we would all support.

References:
3. Asaria P, Chisholm D, Mathers C, Ezzati M, Beaglehole R. Chronic disease prevention: health effects and financial costs of strategies to reduce salt intake and control tobacco use. Lancet 2007;370:2044-53.
4. Strazzullo P, Cairella G, Campanozzi A, et al. Population based strategy for dietary salt intake reduction: Italian initiatives in the European framework. Nutr Metab Cardiovasc Dis 2012;22:161-166.

QHA News & Snippets

August was a busy month for QHA with an opportunity to apply for a Grant from the Jupiters Casino Community Benefit Fund (JCCBF).

Established by the Queensland Government in 1987 to provide funding to community groups in Queensland the JCCBF receives money from taxes on casinos. It distributes these funds to not-for-profit community groups on a quarterly basis.

One-off grants of up to $150,000 are allocated to approved not-for-profit organisations to help them provide community services or activities that benefit communities.

QHA have asked for the resources to update and enhance our modes of communication, printed materials, brochures and for the funding to develop a website.

It is anticipated successful recipients will be advised before the close of 2012. Here's hoping, QHA will be selected for the role the Association takes in:

1. Educating patients, health care personnel and the general public on the causes, diagnosis, care and treatment of hypertension, and to thereby promote a self-care approach (including through home blood pressure monitoring, dietary sodium restriction and other healthy lifestyle changes) towards control of hypertension, and

2. Supporting and encouraging research into the causes, diagnosis, treatment and means of prevention of hypertension.

Salt Free Soy Sauce Recipe

2 Tablespoons Sodium Free Beef Bouillon
2 Teaspoon Red Wine Vinegar
1 or 2 Teaspoons Molasses
1/4 Teaspoon Ground Ginger
Pinch of Black Pepper
Pinch of Garlic Powder
3/4 Cup Water

In small sauce pan, combine and boil gently uncovered about 5 minutes or til mixture is reduced to 1/2 cup. Store in refrigerator. Stir before using. Yield: 8 Servings

Quotes to Ponder

'Wit is the Salt of *Conversation*, not the Food'

William Hazlitt - British Writer best known for his humanistic essays 1778 – 1830

'Can that which is unsavory be eaten without salt? Or is there any taste in the white of an egg?'

The Bible, Job 6.6

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Salt Skip News will continue to be distributed in hard copy in The BP Monitor (QHA newsletter)

Salt Intake and Stomach Cancer

Stomach cancer is relatively common, accounting for about 10% of new cancers worldwide. A meta-analysis has recently been published to examine the association of habitual salt intake with incidence of stomach cancer or death from stomach cancer. A meta-analysis collects the results of studies of a similar design and provides a combined analysis – effectively it quantitatively summarises the results of a number of individual studies. This meta-analysis examined the results of prospective studies – studies where the usual salt intake was measured in healthy people who were followed up many years later for occurrence of stomach cancer. A total of 7 studies were included – from Japan, Norway, the Netherlands and Hawaii. The total number of subjects in the studies was 268,718 who were followed for 6 to 15 years. The number of events of stomach cancer that were found over the study period was 1474.

Compared to 'low' salt intake, people who had high salt intake had a 70% higher risk of stomach cancer (relative risk 1.68, 95% confidence interval 1.17-2.41), while those people with moderate salt intake had a 40% higher risk (relative risk 1.41, 95% confidence interval 1.03-1.93). There was no difference in association between men and women, but the association appeared to be stronger in Japanese people.

Stomach cancer was also found to be related to habitual consumption of high salt foods such as pickled food, salted fish and processed meat.

This analysis does not prove that higher salt intake is a cause of stomach cancer – however it is suggestive that a population-wide reduction of dietary salt intake to reduce the occurrence of cardiovascular disease may also provide benefit in relation to other serious diseases such as stomach cancer.

Reference: 5. D'Elia L, Rossi G, Ippolito R, et al. Habitual salt intake and risk of gastric cancer: a meta-analysis of prospective studies. Clin Nutr 2012;31:489-498.

BP Monitor with Salt Skip News is published every 2 months, from February to December (6 issues a year).
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