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Dietary salt intake and mental function in older people.

Physical activity is emerging as a factor that is protective against a progressive decline in mental functioning in older people. There is now also an indication that lower physical activity may act to allow a relationship between higher sodium intake and greater mental function decline to become apparent.

Investigators examined 1262 functionally independent and cognitively normal adults in Quebec aged 67 to 84 years at the start of the study. Baseline measurements included demographic factors such as age, sex and education; medical history; body fatness measurements; sodium intake (using a 78-item food frequency questionnaire), physical activity (using the Physical Activity Scale for the Elderly – PASE) and global cognitive function (using the Modified Mini Mental State Examination – 3MS). Global cognitive function was then measured annually for 3 years using the 3MS questionnaire.

The results did not initially indicate a relationship between dietary sodium intake and cognitive function. However, when the study population was categorised on the basis of their physical activity, a relationship was found for the tertile (or one-third) of people in the lowest physical activity group. In this group, those with the lowest sodium intake showed less decline in cognitive function over the follow-up period than people in the groups with higher sodium intake.

This study suggests that a combination of low levels of physical activity and high levels of sodium intake are particularly detrimental to cognitive function.

Decline in cognitive function related to age is normal and this study cohort of healthy older adults did not show unusual cognitive decline. Nevertheless, slowing the rate of age-related cognitive decline is desirable. Some reasons for cognitive decline are believed to be related to the circulatory system, however the finding in this study was independent of blood pressure (hypertension in mid-life is believed to be associated with worse cognitive function in later life) and the authors speculate that some other mechanism must be responsible.

The beneficial impact of adequate physical activity appeared to outweigh the negative impact of high dietary sodium in those people who were in the higher activity groups.

Best advice: Keep active, maintain a low sodium intake.

Reference: Fiocco AJ, Shatenstein B, Ferland G, Payette H, Belleville S, Kergoat M, Morais JA, Greenwood CE. Sodium intake and physical activity impact cognitive maintenance in older adults: the NuAge Study. Neurobiology of Aging 2012;33:829.e21-829.e28.

Taking salt out of soy sauce

Soy sauce is a traditional Asian condiment. During its production, about 16-20% (weight for volume) of sodium chloride (salt) is added to prevent microbial growth. This has the additional result of preventing soy sauce from freezing at industrial freezing temperatures ranging from -18 to -25 degrees Celsius.

A better sodium concentration for soy sauce from a health point of view is said to be 5 to 10% weight for volume which was the aim of the processing in this report. This is a large reduction in sodium chloride content, but it is equivalent to 2000 to 4000mg of sodium per 100ml (noting that sodium contributes 40% of the weight to sodium chloride). Even salt reduced soy sauce is still a very high salt food, which would be used very sparingly by people following a low salt diet. A low salt food is a maximum of 120mg/100g sodium (Australian Food Standards). The sodium content of food is required by law to be on the Nutrient Information Panel of the label.

The challenge for removing salt from soy sauce is to achieve this without an adverse impact on taste- and aroma-bearing components (molecules such as peptides, amino acids, alcohols, aldehydes, and ketones) and at a reasonable cost. Nanofiltration (filtration with very small pore size) has been used with some success, but desirable molecules are also of a low size and can be difficult to retain using this method.

Electrodialysis uses an electric current to encourage electrically charged ions to move across a membrane within a solution – chloride ions are negatively charged, while sodium ions are positively charged.

This technology can be used to desalinate a large range of seasonings extracted from foods such as meat, seafood, fruit and vegetables using saline solutions.

The process was used with soy sauce to

reduce the sodium content in a tablespoon from 1000-1100mg in traditional soy sauce to a minimum of about 140 mg. Current lower sodium soy sauces achieve about 390mg to 700 mg in a tablespoon.

The soy sauce desalted in this manner was subjected to sensory testing. Comparisons were soy sauce, soy sauce diluted with water, soy sauce treated by electrodialysis and treated soy sauce that was resalted to the original level. The appearance and colour was the same for soy sauce and the treated soy sauce, as was soy sauce taste. The treated soy sauce had a reduced saltiness, and an improved soy sauce aftertaste compared to the traditional soy sauce. The diluted soy sauce was different to traditional soy sauce on all four attributes, while the soy sauce that was treated then resalted to the original level was indistinguishable from the traditional soy sauce.

Conclusions:

New technologies make it possible to greatly reduce the amount of salt in salty foods without sacrificing flavour and appearance (and in this case, flavour is arguably improved). Soy sauce produced in this way tastes less salty, but should still be used in small amounts by people on a low salt diet because the sodium content is still substantial.

Reference:

Fidaleo M, Moresi M, Cammaroto A, Ladrang N, Nardi R. Soy Sauce desalting by electrodialysis. Journal of Food Engineering 2012;110:175-181.

Sodium intake of overweight Australians with Diabetes.

[Villani AM, Clifton PM, Keogh JB. *Journal of Human Nutrition and Dietetics* 2012;25:129-39]

The National Health and Medical Research Council (NHMRC) recommend an upper limit of salt intake of 6 grams/day for Australian adults and a dietary target for chronic disease prevention of 4 grams/day. People with diabetes have even more reason to maintain a low sodium intake because hypertension is a common accompanying condition and accounts for up to 75% of added cardiovascular disease risk.

The investigators from the CSIRO measured sodium intake in 88 overweight or obese adults with diabetes who were resident in Adelaide and taking part in dietary trials. The mean body weight index for the study group was 35.9 kg/m² for women and 34.5 kg/m² for men. More than half of the group were taking hypertensive medication. Dietary sodium intake was assessed by weighed or measured dietary food intake over 4 days, and 24 hour urinary collection over one 24 hour period.

Dietary sodium intake was found to average 2300 mg for women and 2830 mg for men. The main source of the dietary sodium was breads and cereals (providing 23%) followed by processed meats (15%). Fast foods and takeaways contributed 7% - the same as spreads (which includes vegemite). Discretionary salt (salt added by each person during cooking or at the table) contributed only 1.5% of the total sodium intake.

Only 4 men (6.7%) and 5 women (12.2%) met the NHMRC sodium target of 2300mg per day, and only a single male met the more restrictive target developed to prevent chronic disease.

The finding is similar to that for other groups of Australian adults – only a small percentage achieve the recommended target for sodium intake. There might be some basis for expecting that people with a serious chronic condition would have a better dietary intake than other Australians, but this does not appear to be the case. The overconsumption of sodium is clearly not caused by people adding too much salt to their food – it is related to buying too much food with salt already added to it.

The Food and Health Dialogue

The Food and Health Dialogue is an initiative of the Commonwealth Government Department of Health and Ageing. Among its activities is leading a program of voluntarily reformulating foods to be lower in salt, fat and sugar.

The food categories and sodium targets agreed to so far are:

Soups:

- 290mg/100g for dry soups and maximum of 300mg/100g for wet and condensed soups

Processed meats:

- 1090mg/100g for some bacon and ham products; 830mg/100g for some luncheon meats

Simmer Sauces:

- seek a 15% reduction for simmer sauces with sodium greater than 420mg/100g, or for Asian style sauces with greater than 680 mg/100g

Breakfast Cereals:

- seek a 15% reduction in sodium for cereals with greater than 400mg/100g

Breads:

- a reduction to 400mg/100g for nominated bread products.

The agreements have been reached at different times over the life of the Food and Health Dialogue and generally allow for a 3 to 4 year process to achieve the target.

These targets are substantially higher than the definition of a low sodium food (120mg/100g) – the easiest way to stay on a low sodium intake is to eat only low sodium foods. Some activity to reduce the amount of sodium added to foods before they are purchased is important, but effort also needs to be directed to helping people to achieve the target set by the NHMRC.

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We are on the Web at
www.saltmatters.org

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

Spicy Egyptian Lentil Soup

2 Tbs olive oil
2 onions – finely diced
2 cloves garlic – crushed
1 tsp cumin
1tsp ground coriander
2 carrots – grated
200g red lentils
2ltr NAS chicken or veg stock

½ lemon, juice

Heat oil in large saucepan and gently fry onion until just beginning to colour. Add garlic and spices and continue to cook until aroma arises, then add carrot, lentils and stock. Simmer 30 - 40 min until lentils disintegrate, blend if desired. Stir in lemon juice just before serving.

Delicious served with a garnish of caramelised onion rings or yoghurt mixed with chopped garlic and fresh coriander or mint.

Great news! Our recipe section is back. Many thanks to Jane Brown (Tasmania) for providing this recipe – any other low salt recipes that readers know and love are most gladly accepted for this section.

Shop online!

Debbie and Martyn have taken some of the trouble out of sourcing low salt foods – it looks like they have a great range.

Have a look at :

<http://www.lowsodiumfoods.com.au/>

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