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## Breakthrough with low salt sausages

### Snags with sausages

Ordinary sausages are too fatty and salty to meet the national dietary guidelines. Until this is altered they have no place in a healthy diet.

The fat can be greatly reduced and the salt can be left out altogether (it is added only for flavour), but a third snag is the high salt content of sausage casings, which the butcher buys from a specialist supplier.

Even after thorough rinsing some casings raise the sodium content above 120 mg/100g on analysis, even in sausages that are otherwise no-added-salt (NAS).

When butchers buy casings that avoid this they can achieve healthy sausages (reduced fat and low salt), but a fourth snag now is the very bland flavour—even salt skippers seldom take them to barbecues.

**Sausages were the most difficult of the five problem foods** (bread, soup, gravy, cheese and sausages). *Salt Matters* and the low salt cook-books can help with bread, soup and gravy. Cheese is partly unfinished business, but sausages have now achieved a breakthrough.

Calcium glutamate has recently arrived in Australia in commercial quantities and changed everything.

Calcium glutamate (additive 623) is a flavour enhancer and a sodium-free alternative to MSG (monosodium glutamate, additive 621).

### Calcium glutamate works

It makes *low salt* pumpkin soup as acceptable to university students and staff as *standard* pumpkin soup containing the usual amount of added salt [1].

It is equally good in bratwurst sausages (one-third pork and two-thirds beef), and low salt and reduced fat sausages are now in commercial production in Hobart and getting repeat orders from appreciative salt skippers.

These sausages are probably the first to comply with Australia's Dietary Guidelines. The sodium analysis is 57 mg/100g. Fat data calculated from the FSANZ tables (Food Standards of Australia and New Zealand) are total fat 6.7 g/100g and saturated fat 2.8 g/100g.

Eumarrah Wholefoods sells calcium glutamate—see page 3.

### Food intolerance to MSG

*Calcium glutamate is not MSG.* Even with MSG itself, people who complain of 'intolerance' are seldom positive when tested under blind conditions. We discuss the evidence critically on page 2.

### Reference

1. Ball PJ, Woodward DR, Beard TC, Shoobridge A, Ferrier M. Calcium diglutamate improves taste characteristics of lower-salt soup. *European Journal of Clinical Nutrition* 2002;56:519–23

## Kwok's legacy—the MSG debate

Little could Dr Robert Kwok have guessed that his letter to the *New England Journal of Medicine* [1] would be debated for four decades.

Kwok (a Chinese American) reported a strange syndrome that started within 15–20 minutes of eating at a Chinese restaurant, and went away in about two hours, leaving no hangover.

He had numbness at the back of the neck, gradually spreading to both arms, with general weakness and palpitation. Several Chinese friends had it too and wondered if MSG might be the cause, but Kwok wrote:

'Another alternative is that the high sodium content of the Chinese food may produce temporary hypernatremia' [high blood levels of sodium], 'which may consequently cause intracellular hypokalemia' [low potassium], 'resulting in numbness of the muscles, generalized weakness and palpitation.

'The Chinese food causes thirst, which could also be due to the high sodium content. The syndrome may therefore be due merely to the large quantity of salt in the food, and the high dissociation constant of the organic salt monosodium glutamate, which may make symptoms more acute.'

Kwok blamed salt, with MSG perhaps making the symptoms 'more acute' (which means making the symptoms start and finish earlier).

A pilot study in London confirmed that a Chinese meal could indeed be salty enough to raise blood sodium well above normal, exactly as Kwok suggested [2]. Seven volunteers ate a very salty Chinese take-away meal and all had a steep rise in blood sodium. All had symptoms. This single meal (using the saltiest items on the menu) provided a total of 238 mmol (5474 mg) of sodium on analysis [2].

### Scientific evidence

While salt is a prime candidate, randomised double blind scientific trials usually fail to incriminate MSG. Two authoritative reviews summarise the scientific evidence [3,4].

### Clinical experience

Clinics that treat food allergy and intolerance regularly see people who claim to be sensitive

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'The syndrome may therefore be due merely to the large quantity of salt in the food . . .'

Robert Ho Man Kwok

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to MSG. Double blind testing with capsules of MSG and identical placebo capsules sometimes confirms it when the MSG is swallowed with water but no food. When MSG is swallowed with food, sensitivity is difficult to confirm.

Clinical experience is anecdotal and controversial but it confirms the scientific evidence that genuine intolerance to MSG (if it exists) is very rare.

We can say today with confidence that the odds were against Kwok having several friends with MSG intolerance living close enough to know one another.

And we can say today with confidence that salt is another matter.

### An overview of Kwok's syndrome

Kwok has suggested [1] and MacGregor's group confirmed [2] that salty Chinese food could cause various other symptoms of salt loading as well as thirst. When drinking relieves thirst it apparently (and not surprisingly) relieves the other symptoms.

These events are too ephemeral to be attributed to food intolerance.

The most obvious remedy for Kwok's syndrome—and a dozen other health problems—is a low salt Chinese cuisine [5].

### The tolerable upper limit (UL)

**Sodium.** There is no separate UL for salt. It is 39% sodium and the UL for sodium in Australia is 70 mmol (1600 mg) per day. No country puts the UL for sodium higher than 100 mmol (2300 mg) per day.

**MSG** is so well tolerated in normal use that Europe, the US and Australia set no UL for MSG.

**References** are on page 4.

## Australia's first supermarket low salt bread



Good salt control needs low salt bread. Now at last Coles, Woolworths, Action and Bi-Lo supermarkets carry at least one brand of low salt bread in NSW, Victoria and Queensland. Health food shops and specialty grocers also carry it. Note that only one of Moores breads is low in salt.

The declared sodium content is 75 mg/100g. The ingredient list shows wholemeal flour, wheat flour, water, wheat fibre, canola oil, soy flour, gluten, malt flour, herb, spice and fruit extracts, malt extract, vitamin (thiamin). The extracts would be the source of most of the sodium.

This ingredient list omits the raising agent, which is a sourdough starter. The description 'yeast free' is technically incorrect, but people who are allergic to baker's yeast can usually tolerate the wild yeasts in sourdough bread.

This bread has a good flavour. Distribution in other states will depend on consumer acceptance in NSW, Victoria and Queensland, and it is up to the growing army of salt skippers to do our best to keep this product on the market.

## Raguletto pasta sauce

This pasta sauce has a declared sodium content of 120 mg/100g. The ingredient list looks suspicious—the last five items are salt, garlic, spices, garlic extract and vinegar (more salt than vinegar)! The company has explained that the garlic is preserved in vinegar, so traces remain that have to be mentioned. Salt at 0.1% of the recipe provides 39 mg/100g out of the 120 mg of sodium. Home cooks will find it difficult to make a low salt pasta sauce that beats this one for flavour.

### How to buy calcium glutamate

For full details apply to Eumarrah Wholefoods, 30 Pearl Street, Derwent Park, TAS 7009, phone (03) 6273 9511, FAX 6273 9936, email eumarrah@trump.net.au

### TV Program on salt, Channel 7

At 6.30 one evening in February, Today Tonight (TV Channel 7, Southern Cross in Tasmania) will show a documentary on the Salt Skip Program with interviews of two Hobart patients, one with high blood pressure and one with Meniere's disease.



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Salt Skip News is also distributed in hard copy to members of QHA.

## Good things from South Australia

The F C Newman Horseradish Farm in South Australia sells four no-added-salt products under the Newman's Original Red Label:

### **Crushed garlic (sodium 8 mg/100g)**

This is ideal for all the occasions when a recipe calls for fresh garlic. The ingredients are garlic 98%, acetic acid, vegetable oil and vegetable gum (412, which is guar gum, used as a thickener and stabiliser).

### **Crushed chilli-garlic (sodium 8 mg/100g)**

For a mild sauce for a schnitzel add 1 tsp crushed chilli-garlic to 1 cup of NAS tomato paste, mix well and add it to a mixture of vegetables consisting of a chopped tomato, a chopped onion and a diced zucchini. Cook the mixture 10 minutes and pour over the schnitzel. For a hotter sauce add up to 1 Tbs of crushed chilli-garlic.

### **Prepared horseradish (sodium 25 mg/100g)**

This is a perfect accompaniment to roast beef or no-added-salt smoked fish. Note that smoked fish must be **hot**-smoked to special order without salting (*Salt Matters*, page 37). Commercially smoked fish otherwise has a sodium content upwards of 1700 mg/100g.

### **Crushed ginger (sodium 12 mg/100g)**

A delicious cold summer soup can be made by blending 1–2 tsp (or more to taste) with a peeled, seeded and chopped cantaloupe melon in a blender. One Hobart restaurant has served this regularly to all of its customers without adding a grain of salt.

A hot ginger soup can be made with 2 sweet potatoes (diced), one medium onion (diced), 1 Tbs of olive oil, one litre of low salt chicken stock and 2 tsp crushed ginger. Sauté the onion in the olive oil until golden, add the sweet potato and ginger and sauté another two minutes. Cover with stock and simmer until the sweet potato is soft, then purée. Thin the soup to the preferred consistency with more stock if necessary. A quick chicken stock can be made with Salt Skip Chicken Stock Powder (see where to buy it in *Salt matters* page 255).

### **How to buy Newman's Original Red Label products**

Ask a local grocer that specialises in gourmet foods to order them from Brian J Meakins Pty Ltd, Lake Plains Road, Langhorne Creek, SA 5255, phone (08) 9537 3086, FAX 8537 3220, email [horseradish@olis.net.au](mailto:horseradish@olis.net.au)

### **References from page 2**

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2. Smith SJ, Markandu ND, Rotellar C, Elder DM, MacGregor GA. A new or old Chinese restaurant syndrome? *British Medical Journal* 1982;285:1205.
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4. Geha RS, Beiser A, Ren C, Patterson R, Greenberger PA, Grammer LC, et al. Review of alleged reaction to monosodium glutamate and outcome of a multicenter double-blind placebo-controlled study. *Journal of Nutrition* 2000;130:1958s–62s.
5. Beard TC, Liu S, Wang TY, Wang YG, Dwyer T, Liang LQ. Is it feasible to prevent hypertension and stroke in China? *Australian Journal of Nutrition and Dietetics* 1993;50:146–51.

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