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Processed meat – not so good for you.

Appropriate categorisation of foods is important for research and the communication of its findings. Positive or negative health aspects of foods may not apply to all of the food groups we commonly recognise.

Meat can be difficult to categorise, but often red meat (for example beef, pork, lamb) is distinguished from white meat (for example chicken, turkey, rabbit) on the basis of what animal the meat comes from, but also reflecting nutrient differences (predominantly iron, but also fat and cholesterol depending on production methods). Meat can also be distinguished as processed (preserved with high levels of salt and/or other preservatives) or un-processed. The two categorisation schemes are overlapping – red meat can be processed or unprocessed.

A recent review examined the evidence for effects of processed meats and unprocessed red meats on coronary heart disease and diabetes mellitus.

In this analysis, processed meat was a mixture of red meat and white meat and included products such as bacon, hot dogs, sausage, salami, and processed deli or luncheon meats.

In relation to coronary heart disease, the review found that consuming unprocessed red meat neither raised nor reduced the risk, while processed meats increased with risk by about

40% for every 50g per day consumed.

For type 2 diabetes, consumption of unprocessed red meats increased the risk by about 20% per 100g per day, while consumption of processed meats increased the risk by 50% for every additional 50g per day.

In the United States, unprocessed red meats and processed meats did not differ greatly in their content of saturated fat – total fat content was about 50% of the food energy for unprocessed red meat and about 57% of the food energy for processed meat. This fat content is much higher than most cuts of unprocessed red meat used in Australia.

The largest difference in the two types of meat was in the content of preservatives, particularly sodium. Processed meat had about 400% more sodium per gram than unprocessed red meat, and about 50% more nitrates.

Sodium content may not be the reason for higher risk of heart disease and diabetes, but people following a low salt diet would rarely eat processed meat.

Reference:

1. Micha R, Michas G, Mozaffarian D. Unprocessed red and processed meats and risk of coronary artery disease and type 2 diabetes – an updated review of the evidence. *Curr Atheroscler Rep* 2012;14:515-525.

Dietary intake of people with low heart disease risk.

The INTERMAP study collected data in 1996-1999 from 4,680 men and women aged 40-59 years from 17 communities in China, Japan, the United Kingdom and the United States.

People who were defined to be at low risk of cardiovascular disease (LR)

- had a blood pressure of 120/80 mmHg or less,
- did not receive medication for high blood pressure or lipid lowering,
- were not currently smoking,
- were not overweight or obese (had a body mass index of less than 25 kg/m² (US and UK) or less than 23 kg/m² (China and Japan)),
- did not consume alcohol heavily (less than 26 g/day for men, less than 13 g/day for women, and
- had no history of diabetes, heart disease or stroke.

Only about 16% of people were classified as LR and these people were slightly younger, more likely to be women and less likely to report a family history of hypertension compared to people who were not LR. They were less likely to be on a special diet.

Physical activity and education level was not associated with being in the LR group or the non-LR group.

Dietary intake was measured by repeated dietary recalls, with sodium intake measured by 24 hour urinary collection.

The LR individuals consumed a diet that was higher in foods such as fruits, vegetables, fish, lower fat dairy foods and pasta/rice; and lower in processed meat, red meat, poultry, eggs, alcoholic and non-alcoholic beverages, and high-fat dairy foods than non-LR people.

This food intake pattern resulted in a dietary

intake for the LR people that provided more vitamin C, beta carotene, calcium, magnesium, phosphorus, iron from non-animal sources, fibre and carbohydrates, and less dietary energy, sodium, cholesterol, total fat, saturated fat, monounsaturated fat and alcohol.

The dietary intake for people in the LR group was generally consistent with dietary recommendations to reduce risk of cardiovascular disease. A reduced intake of poultry is not consistent with many dietary recommendations for reduced cardiovascular risk, however it is consistent with a reduced intake of protein foods from an animal source.

Importantly, the dietary differences associated with lower risk of cardiovascular disease are associated with an intake that is nutrient and fibre dense, with lower intake of fat.

It is reasonable to suppose that being in the LR group would also be associated with genetic determinants. However, this cross-country study suggests that even given the role of genetic traits in determining LR status, favourable dietary intake also contributes in an important way.

Reference:

2. Shay CM, Stamler J, Dyer AR, et al. Nutrient and food intakes of middle-aged adults at low risk of cardiovascular disease: the international study of macro-/micronutrients and blood pressure (INTERMAP). *Eur J Nutr* 2012;51:917-26.

Sodium Restriction – the neglected antihypertensive.

Dr Rajiv Agarwal, of the US Indiana University School of Medicine, has recently written that sodium restriction is a potent - but forgotten – antihypertensive agent.

Resistant hypertension is where blood pressure remains above the goal in spite of the use of three antihypertensive agents of different classes. Ideally, one of the three agents should be a diuretic and all should be prescribed at optimal dose amounts.

Resistant hypertension is quite common, occurring in about 13% of those US adults taking antihypertensive medications. It is associated in the US with older age, black race, obesity and chronic renal disease.

Dietary sodium restriction is a well accepted strategy to treat pre-hypertension and stage 1 hypertension. It is likely that people with later stage hypertension and including those taking multiple antihypertensive agents will also benefit from dietary sodium restriction.

In the United States, average sodium intake is 2 to 3 times that recommended.

To assess how well a person is complying with a low sodium diet, a 24 hour collection of urine is required. Sodium excretion of greater than 65 mmol/day suggests an intake of more than 1500mg of sodium a day. If such a person lowers their sodium intake they can expect a benefit to their blood pressure in the form of better response to antihypertensive drugs, or not needing to use such medications.

To follow a low sodium diet, it is critical to be able to read and interpret food labels because most dietary sodium comes from processed foods. Most restaurants and food service outlets are aware of the interest in dietary sodium lowering. Fast food restaurants provide information and will modify aspects of their food preparation on request (for example requesting fries without added salt).

Dietary sodium restriction may protect against cardiovascular disease beyond blood pressure reduction. For example, a recent experiment was conducted with adults who had normal blood pressure. They followed a low sodium diet for one week and a high sodium diet for one week, in random order. On the high sodium diet (350 mmol/day) impaired microvascular function independently of blood pressure.

Furthermore this impairment was improved by the administration of vitamin C, an antioxidant. Microvascular function relates to how well blood flow can respond to change in the environment impacting on the small blood vessels – it is obviously better if they can respond very well!

The investigators speculate that the sodium induced impairment of the microvasculature is related to oxidative stress mechanisms which are sensitive to the antioxidant vitamin C.

A group of investigators in Turkey measured the sodium intake using urinary measurement of a group of non-diabetic hypertensive adults. When categorised into low, medium and high salt intake, they found no difference in blood pressure between the groups, although the high salt intake group had a higher mean number of antihypertensive agents on average. The high salt intake group had a higher level of a marker for systemic low-grade inflammation and a higher level of protein in the urine. Both of these measures are markers of cardiovascular disease independently of more conventional risk factors.

References:

3. Agarwal R. Resistant hypertension and the neglected antihypertensive: sodium restriction. *Nephrol Dial Transplant* 2012;27:4041-4045.
4. Greaney JL, DuPont JJ, Lennon-Edwards SL, et al. Dietary sodium loading impairs microvascular function independent of blood pressure in humans: role of oxidative stress. *J Physiol* 2012;590.21:5519-28.
5. Yilmaz R, Akoglu H, Altun B, et al. Dietary salt intake is related to inflammation and albuminuria in primary hypertensive patients. *Eur J Clin Nutr* 2012;66:1214-18.

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

Almond and Honey Biscuits – gluten free



250g ground almonds
250g castor sugar
zest of an orange
1 Tb honey
2 egg whites
100g flaked almonds – to roll biscuits in

Method

1. Pre-heat oven to 150°C
2. Collect all ingredients and line biscuit tray with baking paper.
3. In a medium bowl, combine the ground almonds, castor sugar and zest of an orange.
4. Add egg whites and honey, mix ingredients until well combined, the mix should be slightly sticky.
5. Roll mix into balls about a tablespoon in size, roll each in flaked almonds the almonds (gentle pressure may be required).
6. Place on prepared biscuit tray with a little space between.
7. Bake for 15 – 18 minutes, stand on cake cooler to cool before removing from paper.

This recipe comes to us courtesy of Dossie Maher and Jane Brown, teachers at Claremont College in Hobart. It is a sweet treat that was one component of a low salt luncheon held in August.

Next issue – from the same luncheon – Roast Pear and Parsnip Soup.

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