

# Salt and the Older Population

## Introduction

Salt has many detrimental effects on health by causing a rise in blood pressure, the consequence of which is Cardiovascular Disease (CVD), including strokes, heart attacks and heart failure.

Blood pressure, and therefore the risk of having a stroke or heart attack, significantly increases with age (fig.1). As you get older it is important to keep salt intake as low as possible to help ensure that your blood pressure stays within a healthy range. Furthermore, with increasing age there is also an increased salt sensitivity meaning that salt has a greater effect on blood pressure. Therefore, a reduction in salt is particularly important for older people even if they do not have high blood pressure.

## Strokes, heart attacks and heart failure

The main consequences of high blood pressure are strokes, heart attacks and heart failure. These are the most common causes of death and disability in the UK, and the risk increases with age. It is therefore important to keep blood pressure under control through drugs that treat high blood pressure, changes to lifestyle and most importantly through eating a low-salt diet. Reducing salt intake by 6g per day is estimated to reduce stroke by 24% and CHD by 18%.<sup>1</sup> A recent meta analysis has predicted that a reduction in salt from 10g to 5g would reduce overall CVD by 17% preventing 3million CVD deaths (250,000 of which are from stroke) worldwide. Studies have shown that even those with normal blood pressure would benefit from reducing salt in their diet.<sup>2</sup>

## Osteoporosis

Osteoporosis, which causes bones to more easily break, has been associated with a high salt intake. The older population are at greater risk of osteoporosis because bones naturally become thinner with age. Post-menopausal women are particularly at risk of osteoporosis because of the decrease in the female hormone, oestrogen. There are approximately 3 million sufferers in the UK alone with 1 in 2 women and 1 in 3 men over 50 breaking a bone.

A high salt intake can cause calcium losses through the urine which can lead to bone demineralisation. It is believed that patients with high blood pressure excrete more calcium in the urine and are therefore at higher risk of osteoporosis. One study found that for every 100mmol increase in salt intake, urinary Ca is increased by 1.4mmol.<sup>4,5</sup> Assuming that this loss is from the bones, it equates to about 1% extra loss of bone each year.<sup>6</sup> Both epidemiological studies and randomised trials have shown that a decrease in salt intake reduces urinary calcium excretion. A 2-year longitudinal study in postmenopausal women showed that the loss of hip bone density was related to 24-hour urinary sodium at entry to the study and was as strong as that relating to calcium intake.<sup>7</sup>

## Cognitive Function

In people with low physical activity level, a low salt diet may benefit brain health as you get older according to a prospective study by Fiocco et al. The authors recorded the exercise levels and salt intake of 1262 elderly participants at baseline and examined their cognitive function annually for 3 years. They found that in the low exercise group, those with a low sodium intake displayed better cognitive performance over time than those with a higher sodium intake<sup>23</sup>.

## Other conditions

**Stomach Cancer:** Epidemiological evidence has shown that there is a link between a high salt intake and stomach cancer.<sup>8,11,12</sup> It has been proposed that a high salt intake damages the lining of the stomach which may increase the risk of an infection with *Helicobacter pylori*, a bacteria strongly associated with the development of

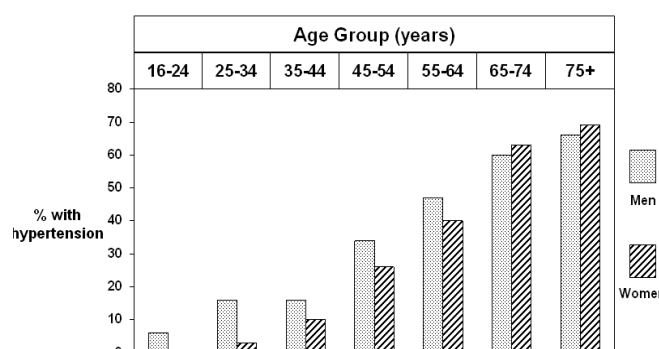


Figure 1 - Prevalence of hypertension for men and women  
Source: Health Survey for England 2006<sup>20</sup>

stomach cancer.<sup>8,9</sup> Salt has also been found to increase the growth and action of *H.pylori* and therefore increase the risk of cancer.

**Meniere's disease:** Meniere's is a rare and progressive condition associated with fluctuating hearing loss, vertigo and tinnitus. It can occur at any age, although it mainly affects people between 20 and 60.<sup>13</sup> Ménière's can be caused by metabolic imbalances of sodium in the inner ear fluid, which can be contributed to by a high salt diet.<sup>14</sup> Salt also cause fluid retention, which can increase the pressure on the ear and cause Meneiere's disease. A low salt diet is thought to be extremely effective in treating Ménière's, with one study showing that a strict diet of less than 3g of salt can be highly effective at reducing the symptoms of Ménière's disease.<sup>15</sup>

**Oedema:** Oedema or fluid retention can be caused by eating a high-salt diet, and is more likely to occur when you get older. Cutting down salt intake will help to reduce fluid retention and patients who already have heart failure, nephrotic syndrome or cirrhosis of the liver, will particularly benefit from cutting salt intake.

**Kidney disease:** High blood pressure has been shown to increase the amount of protein in the urine which is a major risk factor for the decline of kidney function.<sup>16-19</sup> In addition, the water retention that occurs with a higher salt diet will increase blood pressure which can accelerate the rate of deterioration of renal function in people who already have kidney disease.

A high salt diet also increases the risk of kidney stones through the same mechanism as it increases the risk of osteoporosis. A diet designed to reduce blood pressure has been found to be associated with a marked decrease in kidney stone risk.<sup>20</sup>

### Current Salt Intake & Dietary Advice

Almost everyone in the UK (and the rest of the western world) eats too much salt. While the recommendation is a maximum of 6g per day, the current average salt intake is 8.6g. As you get older it is important to make dietary changes, including reducing salt intake. By using the advice below people can help to reduce their risk of getting high blood pressure or if they already have high blood pressure, help to lower their blood pressure.

- Reduce or stop the amount of salt added to food in cooking and at the table and try using alternatives for seasoning such as black pepper, herbs and spices.
- Avoid eating too much processed food as this accounts for 75% of our salt intake (e.g. bread, pies and pastry products, ready meals, soups, sausages, baked beans, pizzas, stews)
- If possible make meals from scratch, using fresh and frozen ingredients (e.g. homemade bread, homemade pies, casseroles, fresh meat and products with no added salt).
- For snacks, try eating unsalted nuts or homemade fruit bars, or scones as these make good low salt snacks.
- Choose foods that are low in salt. Remember to check the nutrition labelling when shopping, and look for products that contain less than 1.5g salt (0.6g sodium) per 100g.

To further reduce their risk of getting high blood pressure, heart disease and strokes everyone should make sure they eat at least 5 portions of fruit/vegetables per day, increase the amount of exercise they do (at least 30 minutes, 5 times a week) and reduce the amount of saturated fat they eat. People who are overweight should try and lose weight and people who smoke should stop.

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