

Salt and Other Health Conditions

Introduction

A small amount of salt is essential for the normal physiological functioning of the human body. However, adults need just 1 gram per day and children need even less. Most adults currently consume between 7 and 10 grams/day, far more than needed.

Adults should consume less than 6grams of salt per day and children much less.

A high salt diet can contribute to high blood pressure, cardiovascular disease, osteoporosis, stomach cancer, kidney disease, renal stones, and obesity. There are individual fact sheets available to download for each of these. Other health conditions that can be affected by a high salt diet include vascular dementia, Ménière's disease, asthma, and diabetes.

People with or considered at risk of the mentioned conditions should take extra care to ensure that they keep their salt intake below the recommended maximum of 6g. This can be achieved by simple changes, such as consuming less processed foods and checking product labels before purchase.

Cognitive Function

Vascular Dementia

Vascular dementia (VD) is the second most common cause of dementia, after Alzheimer's disease, making up 20% of all dementia cases. VD is caused by a blockage in one of the brains blood vessels and can occur either suddenly, following a stroke, or over time, through a series of small strokes.¹ Because of the link to stroke, hypertension and therefore a high salt diet are important risk factors for VD. It is thought that the relationship between hypertension and VD could be due to the arterial stiffness and atherosclerosis caused by hypertension.

Having a stroke more than doubles the risk of developing VD and around one in three people who have a stroke develop VD.² A number of studies have shown a relationship between high blood pressure during mid life and dementia later in life. The Kungsholmen project was able to show that a very high systolic pressure (>180mmHg) increased the risk of VD by 50%, and that there was an 80% increased risk of VD amongst those who had suffered from heart failure.³ A 32-year prospective study showed that those who developed dementia, had a greater increase in blood pressure over the 32 years compared to those who did not develop dementia.⁴ (Stewart *et al*, 2009). A recent review paper⁵ concluded that high diastolic blood pressure, systolic blood pressure and/or pulse pressure in mid life are associated with an increased dementia risk.

Due to the ageing population in the UK, dementia cases are increasing. There are currently 750,000 people with dementia in the UK and every year, 60,000 deaths are directly attributable to dementia. The financial cost of dementia in the UK is thought to be more than £20 billion a year.⁶ People with a medical history of stroke, high blood pressure and/or high cholesterol and people who have a sedentary lifestyle, drink a lot of alcohol, have high salt/fat diet, or who have South Asian or African Caribbean ethnic background are at increased risk of getting VD.¹

Because of the links between mid life blood pressure and dementia, salt reduction in younger life can be recommended as part of a preventative diet and good blood pressure control is hugely important.

Cognitive Decline

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*²³. 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 intake²³.

Ménière's Disease

Ménière's is a rare disease, with approximately 1 in 1000 people in the UK suffering from it. 1 in 10 of these people suffer from an inherited condition.⁷ Ménière's is a progressive disease which damages the ear. In early stages Ménière's causes attacks of giddiness with nausea and vomiting, lasting anything from a couple of minutes to several hours. As the disease progresses tinnitus (ringing in the ear) becomes more prominent. In the late stages loss of hearing is common, and 50% of people lose their hearing in both ears.^{8,9} Ménière's can occur at any age but it mainly affects people between the ages of 20 and 60.⁷

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.^{8,9} Salt also increases fluid retention all over the body. When fluid is retained in the ear, the high pressure exerted can cause Ménière's disease and the associated symptoms. A lower salt diet is thought to be extremely effective in treating Ménière's, and one study has found that a strict diet of less than 3g of salt per day can be highly effective at reducing Ménière's disease symptoms.¹⁰

Asthma

Asthma is a common condition with 1.1 million children (1 in 11) and 4.3 million adults (1 in 12) currently being treated for asthma in the UK. On average, 3 people die from asthma every day. In 2006, there were 1,200 deaths from asthma in the UK.¹¹ Anyone can get asthma, but people with a family history of allergy, asthma or eczema are at greater risk. The environment, cigarette smoke and viral infections can also contribute to risk.

A high salt diet is not thought to be a cause of asthma, but some studies have shown that a high salt diet can aggravate symptoms of asthma.¹²⁻¹⁵ Salt is thought to contribute to physiological deterioration and morbidity in asthmatic men.¹⁵ Salt may also increase bronchial hyperactivity. A recent population-based study in children aged 6-7 years demonstrated that adding salt to foods was strongly associated with an increased risk of respiratory symptoms such as wheezing and asthma.¹⁶ If your child suffers from asthma, reducing their salt intake may be beneficial in combination with the other treatments for asthma.

Diabetes

There are currently over 2.5 million people with diabetes in the UK and it is predicted that there is a further half a million people who are unaware that they have the condition.¹⁷ The NHS is spending approximately £1million/day on the treatment of diabetes and its complications (10% of total budget).¹⁸ Particularly when untreated, diabetes can lead to cardiovascular disorders, kidney failure and blindness and is thought to halve an individual's life expectancy.¹⁷

People with hypertension are 2.5 times more likely to develop diabetes than those with normal blood pressure.¹⁹ People of African and South Asian descent as well as overweight and inactive individuals are at the highest risk of diabetes.

Salt increases the risk of developing diabetes by increasing blood pressure.²⁰ One study also suggested that a higher salt intake was directly associated with an increased risk of diabetes.²¹ Salt reduction is recommended for people with diabetes because keeping blood pressure in the healthy range helps to reduce the risk of the long term complications associated with diabetes.²²

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