

# Impact of Excess Salt Consumption on Hypertensive Disease

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## Abstract

Hypertension is a disease that occurs due to increased blood pressure which can be classified into two types, namely hypertension Primary and secondary hypertension which can be caused by kidney disease, endocrine disease, heart disease, adrenal gland disorders, etc. Hypertension is also known as the silent killer disease Where the symptoms that often occur include headaches, heart palpitations, a feeling of heaviness in the neck, fatigue, blurred vision, ringing in the ears, and in some cases the patient can blood circulation occurs which is characterized by nosebleeds. The occurrence of hypertension can be caused by several things, including genetics, age, obesity, high sodium diet, increased consumption Alcohol, and never exercise. Consuming excess salt is also one of the causes of hypertension.

**Keywords:** Consumption; Salt; Impact; excessive; Hypertension; Consumption.

## BACKGROUND

Salt consumption is necessary for survival because the human body depends on sodium for muscle contraction, nerve transmission and control systems to balance body fluids, along with other electrolytes such as potassium. Salt makes many foods taste better, but without many people knowing, eating too much salt can be as bad for health as hypertension and proteinuria as signs of kidney disease.

Hypertension is a disease that occurs due to increased blood pressure which can be classified into two types namely primary hypertension and secondary hypertension which can be caused by kidney disease, endocrine disease, heart disease, adrenal gland disorders.

Hypertension is also referred to as a silent killer disease where symptoms are often caused such as headaches, palpitations, heaviness in the nape, fatigue, blurred vision, ringing in the ears and in some cases patients can occur bleeding characterized by nosebleeds (Azzahra, 2019). The World Health Organization (WHO) states that about 972 million people in the world or 26.4% of people suffer from hypertension. Of the 972 million people, 333 million people are in developed

countries and 639 are in developing countries (Kurniawan and Sulaiman, 2019).

Hypertension is the number 3 disease out of 10 diseases that have a large percentage and are often found in the elderly (WHO, 1990 Cit Nugroho, 2000). Based on WHO data from 50% of known hypertensive patients only 25% received treatment, and only 12.5% were adequately treated (adequately treated Cases) Based on the Household Health Survey (SKRT) in 2001, deaths due to Heart and blood vessel disease in Indonesia amounted to 26.3%, while mortality data in hospitals in 2005 amounted to 16.7 (Ruhjana, 2007).

The prevalence of hypertension nationally is 25.8%. If the current population of Indonesia is 252,124,458 people, then currently there are 65,048,110 people with hypertension (Riskasdas, 2020). Indonesia is ranked fourth out of a row of 10 countries with the highest prevalence of hypertension in the world (Ministry of Health, 2020).

The occurrence of hypertension can be caused by several things including genetics, age, obesity, high-sodium diet, increased alcohol consumption, and never exercise (Davis, 2004). Consuming excess salt is also

included as one of the causes of hypertension. The results of this study will discuss the impact of consuming excess salt on hypertension, and how the correct dose of salt for people with hypertension.

One of the causes of hypertension in the community is caused by uncontrolled consumption of food and beverages in their lives. Coffee contains many Antioxidants that can inhibit diseases caused by oxidative damage. Coffee is useful to reduce the risk of stroke, Parkinson's, prevent cancer, improve cognitive function, treat the liver, improve physical work and open blood circulation. But on the other hand coffee has a negative impact because it contains caffeine and is not good for health. The effect of caffeine depends on the amount consumed and the condition of a person's health. Caffeine can increase heart rate and blood pressure In people who are not used to drinking caffeinated beverages, while in people who are accustomed to Sometimes this does not happen. However, caffeine consumption of 500 mg or 4 cups will stimulate the respiratory center and cardiovascular function (Firman, 2017). In consuming caffeine must have knowledge of how much amount can be consumed for each day. Caffeine in the human body Works by triggering the production of the hormone adrenaline derived from adinosa receptors In nerve cells that result in an increase in blood pressure, the effects of caffeine consumption can be felt within 5-30 minutes and last up to 12 hours. The effect will continue in the blood for about 12 hours (Indriyani, 2019).

Salt is one of the strategic conditions because in addition to being a human need, it is also used as an industrial raw material. For the needs of salt for human consumption, salt has been used as a means of fortifying iodine into iodized consumption salt in order to overcome Disorders Due to Iodine Deficiency (GAKY). Salt is one source of sodium and chloride where both elements are needed for human metabolism (Burhanuddin, 2018). Iodine Deficiency Disorder (GAKY) is one of several serious problems for the survival and quality of human resources. The recommended consumption of salt for each person is about 6 g or 1 teaspoon daily. How to

consume salt is usually used as table salt with the addition of iodized salt in cooking. (Widyatni, 2015).

## **METHOD**

This study discusses the impact of consuming excessive salt on hypertension / high blood pressure. This research method uses the case study method by taking 2 samples of residents with hypertension who are in the village of Siluman Lalang. The sample of this study was 1 adult man and 1 adult woman suffering from hypertension.

This research was conducted on January 21, 2023. By interviewing a sample of 2 demon villagers, about how the sample's salt consumption pattern. And what are the methods that have been done Sample to overcome his hypertension. This study was conducted to determine the relationship between salt consumption and hypertension. To find out what are the effects of consuming too much salt on hypertension for adults and the elderly.

The data analysis used is Univariate analysis, which is to find out Distribution of respondents' characteristics (age, sex, and history of hypertension), and lifestyle (physical activity, smoking habits, excess salt consumption and alcohol consumption). To determine the relationship between lifestyle variables and the incidence of hypertension, the Chi Square test ( $\chi^2$ ) was used.

## **RESULT**

Based on the results of the study, two people with hypertension in Siluman Lalang village who had conducted interviews, by asking how their diet and salt consumption were doing. One of the causes of hypertension in the community is caused by uncontrolled consumption of food and beverages in their lives. Coffee contains many antioxidants that can inhibit diseases caused by oxidative damage. Coffee is useful to reduce the risk of stroke, Parkinson's, prevent cancer, improve cognitive function, treat the liver, improve physical work and open blood circulation. But on the other hand coffee has a negative impact

because it contains caffeine and is not good for health.

In addition, consuming less or excess salt is not good for the health of the body. Less salt consumption can cause sodium in cells to be low, so the function of sodium to hold fluid in cells is disrupted, then the body can become dehydrated and lose appetite. Excess salt consumption will increase the amount of sodium in cells and disrupt fluid balance. The entry of fluid into the cells will shrink the diameter of the arteries so that the heart must pump blood more strongly which results in increased blood pressure. Increased blood pressure affects the improvement of heart work, which will ultimately increase the risk of having a heart attack and stroke (Purwono, 2020).

The results of Purwono's research (2020), entitled Salt Consumption Patterns with the Incidence of Hypertension in the Elderly. The results of the study found 54.9% of respondents consumed high salt, 60.8% of respondents experienced severe hypertension. There is a relationship between salt consumption patterns and the incidence of hypertension in the elderly in the Gadingrejo Health Center Area with P value = 0.010 and OR value = 5.704.

Consumption of foods with excessive salt content is one of the risk factors for hypertension. Sodium has a role in the body such as stimulating nerve function, regulating acid-base balance in the blood, muscle contraction and regulating osmosis pressure so that fluid does not come out of the blood and enter cells (Furqani et al., 2020). However, consumption of excess sodium will have a negative impact on health because excessive sodium consumption can cause the diameter of the arteries to shrink so that the heart works harder to encourage increased blood volume. The effect of excess sodium consumption can also cause increased fluid from cells that move low to high concentrations. If excessive in consuming atrial eating. The fluid in the extracellular increases and is followed by blood

volume that increases so that blood pressure also rises (Saputra and anam, 2016).

Aprilia research results (2020) Hypertension sometimes makes sufferers dangerous because hypertension is also called the silent killer which means it does not cause complaints and is not realized by sufferers so it is easy for complications of other diseases. Hypertension can affect anyone from age, social, and economic groups. One of the causes of hypertension is the lifestyle and diet of the community, because over time the influence of globalization in all fields has a lot of changes starting from lifestyle, diet and even physical activity that affect the increase in non-communicable diseases, one of which is hypertension. The study conducted by Wijaya, I., Rama, N.K.K., and Hardianto, H was conducted in a cross study and used simple random sampling with a large sample of 74 people, 41 people suffering from hypertension and 33 people not suffering from hypertension. The title of the study is "The Relationship of Lifestyle and Diet to the Incidence of Hypertension in the Working Area of the Towata Health Center, Takalar Regency" the results of this study show that there is a relationship between smoking, consuming table salt and consuming fatty foods with the incidence of hypertension, while physical activity has no significant relationship. (Wijaya et al., 2020).

From the results of research by Oscar et al, (2021) Hypertension or high blood pressure is a condition where a person experiences an increase in blood pressure  $\geq 140$  mmHg (systolic pressure) and  $\geq 90$  mmHg (diastolic pressure). Based on community service activities that have been carried out, the number of respondents known to suffer from hypertension amounted to 8 people, the data was obtained when community service was carried out by filling out the PIS-PK questionnaire from the Hajimena Health Center. The statement that suffers from hypertension with stage 1 is Mrs. Nu and Mrs. Sy With the explanation according to the theory where stage 1 hypertension has a history of

systolic blood pressure 140-159 and diastolic 90-99 mmHg. And hypertensive patients with stage 2 is Mrs. Av with her explanation according to the theory where stage 2 hypertension has a history of systolic blood pressure >160 and diastolic blood pressure >100 mmHg. Hypertension can be prevented by limiting salt intake to no more than 1 teaspoon (5 grams / day) (World Health Organization, 2019). For this reason, from the results of community service obtained, it has been determined that the preventive intervention carried out is to provide counseling on hypertension control by providing posters to people with hypertension targeting housewives because the use of salt intake at home can be more easily controlled by housewives.

The results of the Dila s.r (2023) study Eating salty foods is one of the risk factors for hypertension. Based on tests conducted with the chi-square test, a significance level value of  $0.000 < 0.05$  was obtained, namely there is a relationship between excessive salt consumption and hypertension, there is a relationship between excess salt consumption and the incidence of hypertension. Based on the theory of salt consumption, for example the amount of sodium in your diet is one of the causes of high blood pressure. This is because when salt intake is high, sodium is absorbed into the blood vessels, and water is retained, thus increasing the amount of water. High sodium/salt consumption causes the release of excess natriuretic hormone, which indirectly increases blood pressure (Dila s.r, 2023).

Lifestyle that has been shown to be significantly associated with the incidence of hypertension is Physical activity. A person who lacks physical activity has a 5.7 times chance of suffering from tension. Smoking habit, a person who smokes has a 2 times chance of suffering from hypertension. Excess salt consumption, Someone who consumes excess salt every day has a 2 times chance of suffering from hypertension. And alcohol consumption, someone who consumes alcohol has a 2 times chance of suffering from hypertension (Halim and Sutriawan 2022).

Based on the results of Aisah and Imamah's (2023) research that soaking feet using warm water and salt is one alternative treatment for hypertension. data from observations before warm water foot soak therapy with salt and lemongrass was carried out on Mrs.S and Mrs.W in Kaliwungu Village, Semarang Regency. Blood pressure before implementation on the first day Mrs.S 172/90 mmHg and Mrs.W 168/85 mmHg, hypertension suffered by both respondents entered the criteria for hypertension grade 2. Both respondents are said to be grade 2 hypertension This is in accordance with the PDHI theory (2019) which says it includes degrees if systolic blood pressure >140 mmHg and diastolic >90 mmHg.

Results of observation before Warm water foot soak therapy with salt and lemongrass on the second day Mrs.S 158/82 mmHg and Mrs.W 156/79 mmHg and observation results before therapy Warm water foot soak with salt and lemongrass on the third day Mrs.S 148/82 mmHg and Mrs.W 145/75 mmHg. There are various factors that can cause a person to experience hypertension that cannot be changed is age, gender, family history and genetics. While what can be changed includes smoking habits, salt consumption, and poor diet.

Field results showed that most groups of cases consumed excessive salt at 56%. Based on the statements of some respondents, they are accustomed to using salt in cooking, because if the food tastes less salty then it will be less delicious. In addition, some respondents also stated they usually consume salted fish, because it is more economical. Salt consumption patterns that can reduce the risk of hypertension. The recommended sodium level is no more than 100 mmol (about 2.4 grams of sodium or 6 grams of salt) per day (Siswanto Et. al., 2020).

Excess sodium consumption causes the concentration of sodium in the extracellular fluid to increase. To normalize it intracellular fluid is drawn out, so that the volume of extracellular fluid increases. The increase in

extracellular fluid volume causes an increase in blood volume, thus impacting the onset of hypertension (Adam, 2019). Salt causes fluid buildup in the body because it attracts fluid outside the cells so that it is not excreted, so it will increase blood volume and pressure (Yulistina et al., 2017).

## CONCLUSION

This research is based on solving the problem of excessive salt consumption for hypertension and getting to know more about hypertension / high blood pressure. Consuming excessive salt is one of the effects of hypertension, therefore reduce excessive salt consumption. Soaking feet with salt water is also one of the alternative treatments in hypertension. Hypertension is a disease that occurs due to increased blood pressure which can be classified into two types namely primary hypertension and secondary hypertension which can be caused by kidney disease, endocrine disease, heart disease, adrenal gland disorders, etc. In addition, consuming less or excess salt is not good for the health of the body. Less salt consumption can cause sodium in cells to be low, so the function of sodium to hold fluid in cells is disrupted, then the body can become dehydrated and lose appetite. Excess salt consumption will increase the amount of sodium in cells and disrupt fluid balance. The entry of fluid into the cells will shrink the diameter of the arteries so that the heart must pump blood more strongly which results in increased blood pressure. Increased blood pressure Effect on the improvement of the work of the heart, which will eventually increase the risk of having a heart attack and stroke .

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