

Policy on reduction of salt and sodium consumption to reduce NCDs.

1. Definition

Salt (sodium chloride or NaCl) is a food seasoning used to give food a salty flavor and also used in food preservation. Consisting primarily of sodium (about 40% sodium), sodium chloride is useful in balancing body fluids and minerals. A small consumption of salt is found to be sufficient for the functioning of the human body.

Sodium is a chemical element constituting an important part of edible salt or sodium chloride. It is also a constituent of various other seasonings, including MSG (monosodium glutamate) and baking soda (sodium bicarbonate). The World Health Organization (WHO) recommends keeping sodium intake to less than 2 g per day or salt intake to less than 5 g per day.

Non-communicable diseases (NCDs) refer to a group of illnesses caused by physical disorder or degeneration. They are not contagious but are primarily responsible for chronic diseases, disabilities and deaths of many Thai people.

Non-communicable diseases, in general, refer to four groups of diseases: (1) cardiovascular diseases (e.g. coronary heart disease, hypertension, and stroke), (2) diabetes and obesity, (3) cancer, and (4) chronic lung diseases. In this document the word "non-communicable diseases" covers only cardiovascular diseases, hypertension, chronic kidney disease, and diabetes.

2. Health hazards from salt and sodium consumption exceeding the recommended level

Humans have used salt (sodium chloride) as a seasoning to give food a salty taste and also used it in food preservation. Its main constituent is sodium, an element useful in balancing the body fluids and minerals. A small consumption of salt is found to be sufficient for the functioning of the human body.

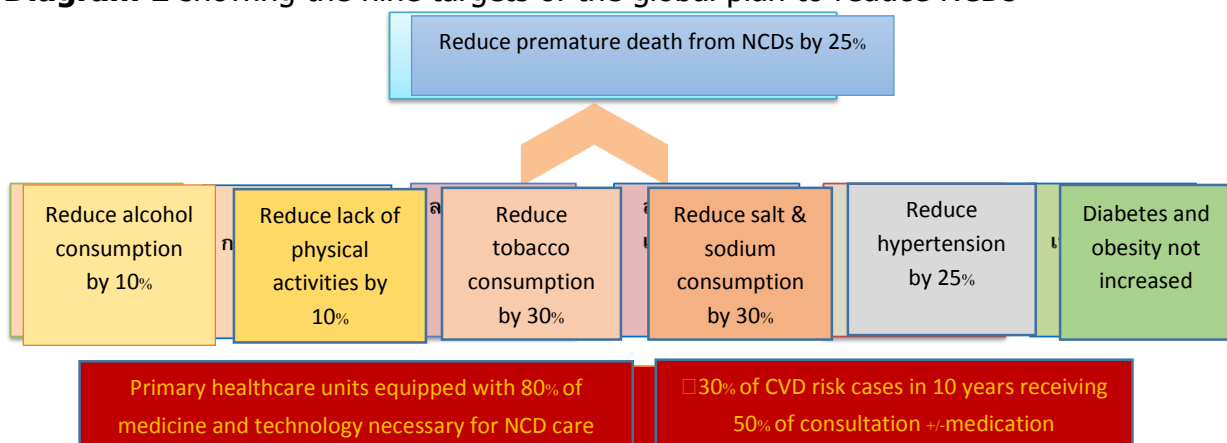
Too much intake of sodium has impacts on the functioning of several systems of the human body, especially the control of the balance of body fluids and minerals. According to the technical information today, too much salt consumption and sodium intake on a regular basis can lead to many health problems and are major causes of non-communicable diseases (NCDs), i.e. hypertension, chronic kidney disease, and cardiovascular disease¹⁻⁶, which become the main cause of deaths of the world population and increase severe complications in diabetes patients.

A study on the possible role of salt intake in the development of hypertension undertaken by Louis Dahl, *et al* in 1960 revealed that sodium intake has a linear correlation with salt intake and morbidity of hypertension⁷, leading to other diseases and complications. The US Centers for Disease Control and Prevention recommends a safe level of sodium intake to be 2 g/day, equivalent to a salt intake of 5 g/day⁸. In practice, the above amount is equal to 1 teaspoon of table salt or 3-4 teaspoons of fish sauce per day. In addition, a number of surveys on the amount of salt and sodium intake showed that the world population had an intake of salt and sodium twice the recommended level.

A high intake of sodium has a direct impact on kidneys – the major organ responsible for filtering sodium out of the body – causing leakage of a protein in the urine and making the kidneys work harder, thus degenerating faster. Such degeneration will continue even if the amount of sodium intake has gone down subsequently. In addition, hypertension is another important factor responsible for damaged kidneys, all being the consequence of high salt and sodium intakes. Therefore, a lower blood pressure and protein level in urine will prevent loss of kidney function⁹ and other complications, such as cardiovascular diseases¹⁰. In diabetes patients suffering from insulin deficiency, reduced salt and sodium consumption can lead to a more efficient function of insulin, making it easier to control the diabetic condition.

The severity of the situation of salt and sodium consumption is felt internationally. The WHO has, therefore, set reduction of salt and sodium consumption as one of the nine targets of the global action plan in the prevention and control of non-communicable diseases by the end of 2025¹¹, planning to reduce salt and sodium consumption by 30% by 2025 (see Diagram 1). In this matter, Thailand’s 6th National Health Assembly in 2013 adopted all the nine targets to be implemented under the theme “Thailand’s targets in the prevention and control of non-communicable diseases”. This is another big challenge for the Thai society to tackle the NCD issues.

Diagram 1 showing the nine targets of the global plan to reduce NCDs



3. Severity and impacts of reduced salt and sodium consumption on the health system

Salt and sodium consumption in Thailand has brought about severe problems of NCDs, including hypertension, diabetes, cardiovascular and chronic kidney diseases.

NCDs are leading causes of premature death of the world and Thai population today, and the trend is likely to continue. Premature death (before a person reaching the age of 70) represents 63% of mortality of the world population and 73% in the Thai population. It is expected that the number will increase from 36 million deaths in 2008 to 44 million in 2020. The situation is a health burden caused by illnesses and disabilities.

In Thailand the number of NCD patients has increased rapidly. According to the database on the patients treated at hospitals under the Ministry of Public Health from 1998 to 2009, the number of NCDs increased: 4.2 times for cardiovascular disease, 7.1 times for hypertension, 3.9 times for stroke, 4.8 times for diabetes, 1.2 times for liver cancer, and 1.23 times for pulmonary emphysema¹².

According to the database of Bureau of Policy and Strategy, Ministry of Public Health in 2013, the number of deaths from hypertension was 5,165, higher than the

2012 level of 3,684 deaths; and the trend of patients receiving treatment of hypertension in the hospitals under the Ministry of Public Health was on the increase in every region. A comparison between 2003 and 2013 reveals that the rate of hypertension patients increased from 389.8 per 100,000 population (i.e. 218,218 patients) to 1,621.72 per 100,000 population (i.e. 1,047,979 patients), an increase of more than four-folds). The situation is no different for diabetes. The number of deaths from diabetes in 2013 was 9,647 or an average of 27 deaths per day, representing a rate of 14.93 deaths per 100,000 population. Diabetes in-patients in the healthcare establishments under the Ministry of Public Health were 698,720 in number, representing 1,082 per 100,000 population.

In the cardiovascular case, in 2014 there were 58,681 deaths at an average rate of seven per minute, representing a death rate of 90.34 deaths per 100,000 population. The mortality was mainly caused by coronary heart disease (19,079 deaths, representing 27.83 deaths per 100,000 population) and stroke (25,114 deaths).

Chronic kidney disease (CKD) is another important public health problem that sees a constant rise in the number of patients both in developed and developing countries. However, most countries do not attach much importance to the matter. The disease is often a complication of such diseases as diabetes or hypertension, prevalent in urban dwellers today. It is found that 40% of the morbidity is caused by diabetes, and 20% by hypertension. The Nephrology Society of Thailand undertakes screening of people known to be at risk of kidney problems. In its screening project in 2010, sampling was taken from people of 10 provinces in all regions of Thailand, and the result showed a prevalence of the disease at every stage in 17.5% of the adult population¹³.

The above information indicates that among the Thai population aged 18 years and above about seven million suffer from the chronic kidney disease, one half at the beginning stage, and the other half at the moderate to severe stage. A matter of concern is that there is little awareness among the patients. In other words, of about three million patients at stage 3, only 5% know that they are suffering from the disease, and even among those at stage 5 only 20% are aware of it. Such a situation poses an obstacle to the treatment intended to delay the degeneration of kidneys. Besides, the number of the kidney patients increases each year. The number of the end-stage kidney patients who require hemodialysis, peritoneal dialysis, or kidney transplantation increased from 419.9 in 2007 to 905.9 per 100,000 population in 2012 (source: Nephrology Society of Thailand).

Today the cost of peritoneal- or hemo-dialysis is about 240,000 baht per person per year. The cost does not include medication and other indirect expenses. The National Health Security Office earmarks a specific amount from the medical service budget for dialysis capitation. In the budgetary year of 2015, the budget was as high as 5,247 million baht and will increase to 6,318 million baht in 2016. If the budget is to include other welfare benefit schemes entitled by CKD patients, such as social security benefits and government official welfare benefits, the government will have to spend more than 10,000 million baht per year.

One of the reasons for the high prevalence of CKD among the Thai population is high salt and sodium consumption, leading to hypertension, which in turns is a major cause of cardiovascular disease and heightens the severity of diabetes, another non-communicable disease. The situation has an enormous adverse economic impact, as it accounts for the loss of productivity in many dimensions, including premature death, absenteeism, poor work performance, disability, opportunity costs of job loss due to

illnesses, and other healthcare expenses. A high salt and sodium consumption is, therefore a factor responsible for economic loss, amounting to 78,976 million baht per year for cardiovascular disease and 24,489 million baht for diabetes.

4. Situation of the problem of salt and sodium consumption in Thailand

A survey on food and nutrition in Thailand found that Thai people consumed more seasonings from 7.0 g/ person/ day in 1960 to 20.5 g/ person/ day in 1995. Another survey on sodium consumption of the Thai population, conducted by Nutrition Division, Department of Health, Ministry of Public Health, together with Faculty of Public Health, Mahidol University, revealed that in 2007 Thai people's sodium intake from their diet was as high as 4.35 g/person/day¹⁴⁻¹⁶. The amount of sodium under survey was in all likelihood lower than that really consumed, as it did not include sodium in other food items. The main sources of sodium come from seasoning products used in the household. The first five items most used are: fish source (11.59 g/day), white soya source (3.15 g/day), salt (3.05 g/day), shrimp paste (2.91 g/day), and oyster source (2.17 g/day). In addition, the Thai intake of salt and sodium comes from various kinds of dips served on the table, chicken cubes, MSG, savory powders, sweets made with baking powder, processed food, preserved food, pickled fish, snacks, canned food, instant food, instant noodle and instant congee. The survey findings lead to a conclusion that the sodium intake by most Thai people is higher than it should be. Thus, campaigns on reduced salt/ sodium consumption in the general public as well as those at risk of NCDs is important and urgent in Thailand.

5. Action guidelines for reduced salt and sodium consumption

According to current information, the use of public policy on reduced salt and sodium consumption in the population is beneficial and cost-effective. Studies conducted in several countries show similar good results on health and cost-saving of the health service system. For instance, in USA a reduced consumption to 3 g/day will lead to the population leading a life of good quality and enjoying 194,000-392,000 years of wellbeing and reduce the healthcare costs by US\$10,000-24,000 million per year. In other words, the action will bring about a return of \$6-12 for every dollar spent in the control measure¹⁷; and a reduced salt consumption is more cost-effective than using medicines to lower blood pressure. In middle to low income countries, a reduced salt and sodium consumption in the population will prevent loss of life and entail little spending^{18,19}. India is an example of a country that can reduce the incidence of cardiovascular disease by reducing salt consumption.

In 2006 WHO convened a technical meeting in Paris, France, to set a direction in the reduction of salt and sodium consumption²⁰. Three key success factors to reduce sodium consumption in the population are identified: (1) change and development of products with reduced salt and sodium contents, (2) education and awareness-raising programs for consumers, and (3) environmental change conducive to a healthy choice of food.

A reduction of salt and sodium consumption will not lead to iodine deficiency disorder. In view of existing measures to promote iodine-fortified salt consumption, there could be some confusion over conflicting information on the reduction of NCDs through reduced salt consumption. Nevertheless, WHO recommended a joint approach to NCD reduction and control of iodine deficiency with a clear message that the population should consume less than 5 g of salt per day, while the salt for consumption must be of iodine-fortified type, thus having no impact on the program to prevent iodine

deficiency²¹. The organization also recommended that a reduction of salt and sodium consumption by 30% would not have any adverse effect on the iodine deficiency prevention program in the case in which people consume salt and iodine-fortified seasonings on a regular basis.

An analysis of the mechanisms and process on reduced salt and sodium consumption in Thailand reveals constraints and challenges on almost every front, ranging from lacking mechanisms to raise the level of problem-solving, having no clear implementation strategies, lacking a sense of ownership and participation of various sectors in tackling the problem, to lacking mechanisms to coordinate and integrate the work of responsible parties. Most agencies tend to work under their specific duties and responsibilities, without much collaboration and connection. Some even duplicate each other's work. There are also constraints on budget, human resources, necessary knowledge, information system, research and development (R&D), application to the formulation and implementation of strategies and policies, and monitoring and evaluation.

6. Consistency of reduced salt and sodium consumption with the Statute on the National Health System BE 2552 (2009)

The policy to reduce salt consumption in order to reduce NCDs is consistent with the Statute on the National Health System BE 2552 (2009) with regard to the philosophy and rationale of the health system (Chapter 1) No. 9 that the health system must attach great importance to health promotion leading to sustainable wellbeing and self-reliance of the people; and in line with Chapter 4 on health promotion in that the policy can lead to holistic wellbeing in society as a whole. It goes along with other sections, e. g. Chapter 5 on prevention and control of diseases and other health-threatening factors, Chapter 8 on consumer protection, Chapter 9 on generation and dissemination of health knowledge, and Chapter 10 on dissemination of health information.

7. Role of organizations/ agencies/ networks/ stakeholders and other related parties

At present, the Department of Disease Control, NCD Net, and Bureau of Management of Thailand Healthy Lifestyle Strategic Plan, Ministry of Public Health, together with the Salt Reduction Network, Thai Health Promotion Foundation (ThaiHealth) and other over 20 support organizations, are in the process of developing a draft strategy on reduced salt (sodium) consumption in Thailand, expected to lead to the development of implementation mechanisms and policy-based communication campaigns in the public and private/industrial sectors; and support the development of an action plan to control salt and sodium consumption at various levels. As far as the campaign to raise public awareness is concerned, the Salt Reduction Network and ThaiHealth have performed their part in information dissemination, but the knowledge about the matter is still inadequate. People of every age group do not have knowledge and understanding sufficient to follow it up in practice. It is important to see cooperation from mass media, education institutes at all levels; and people in the community helping in the dissemination of information and campaign to instill the value of reduced salt consumption in the community to induce behavioral change. At the moment, food producers from the food industry business and shops in the community have not adjusted their menus to reduce salt, giving the consumers no opportunity to choose food beneficial to their wellbeing. Local and central government organizations should play a greater role in controlling the amount of salt used in ready-made food as well as food prepared at food shops and restaurants to

ensure a low amount of salt and sodium used. Efforts should also be made to develop nutrition labels and symbols on the products, showing in clear terms the amount of salt and sodium to the required standard easy for consumers to understand. In addition, efforts should be made to promote and support education institutes in creating and developing tools to monitor salt consumption, including R&D in finding salt replacements. The government sector together with the partners concerned should take proper action to monitor, supervise, and assess the burden of diseases, behaviors and environment related to salt and sodium consumption of the public.

8. Conclusion

Reduction of salt and sodium consumption is one of the global targets that WHO sets to reduce by 30% in 10 years (by 2025). A submission to National Health Assembly to pass a resolution on this matter is therefore very necessary and appropriate, as it will serve as a basis for developing cost-effective measures to reduce important chronic diseases – hypertension, chronic kidney disease, cardiovascular disease, and severe diabetes – as well as showing the country’s commitment to achieve the NCD indicator targets to be recognized both at the national and international levels.

9. Issue for consideration by the National Health Assembly

Requesting the National Health Assembly to consider Document NHA 8/ Draft Resolution 4 “Policy on reduction of salt and sodium consumption to reduce NCDs”.

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