# ACCELERATING SALT REDUCTION IN EUROPE

## A COUNTRY SUPPORT PACKAGE TO REDUCE POPULATION SALT INTAKE IN THE WHO EUROPEAN REGION

World Health Organization
REGIONAL OFFICE FOR Europe

# ABSTRACT

Excessive consumption of salt (more than 5 g per day) raises blood pressure, a major risk factor for cardiovascular diseases such as heart disease and stroke, and is the leading cause of death in the WHO European Region. Many countries in the Region have initiated national salt reduction strategies, including public awareness campaigns, reformulation, and front-of-pack nutrition labelling. However, despite ongoing efforts, surveillance data indicate that salt intake still far exceeds the limits recommended by WHO to protect health. More concerted efforts are needed to develop effective national salt reduction programmes, conduct high-quality surveillance, and implement policies and interventions that are known to be effective in reducing population-level salt intake. In response, the WHO Regional Office for Europe – through the WHO European Office for the Prevention and Control of Noncommunicable Diseases in Moscow, as part of its mandate to support Member States and provide technical leadership for the prevention and control of noncommunicable diseases in the Region – has produced this country support package, which countries throughout the Region can use either to accelerate existing efforts to reduce salt intake or to embark on salt reduction journeys that have yet to begin.



# KEYWORDS

CARDIOVASCULAR DISEASES – prevention and control
DIET, SODIUM-RESTRICTED – utilization
HYPERTENSION – prevention and control
NUTRITION AND FOOD SAFETY
SODIUM CHLORIDE, DIETARY
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by Dr Hans Henri P. Kluge

# FOREWORD

In recent decades, dietary patterns across Europe and the world have been transformed primarily by the increasing predominance of processed foods, urbanization and changing lifestyles. Highly processed foods are generally very high in salt and are becoming more widely available and affordable.

Raised blood pressure is a major risk factor for cardiovascular diseases and is the leading cause of death in the WHO European Region. Excessive consumption of salt (more than 5 g per day) has been proven to increase blood pressure and is closely linked with heart disease and stroke. WHO has issued sodium intake guidelines that recommend consumption of no more than 5 g of salt (2 g of sodium) per day, to be achieved through a population approach to salt reduction. Despite ongoing efforts across the WHO European Region, surveillance data show that we are still consuming far too much salt to protect population health.

Based on the Sustainable Development Goals and the WHO General Programme of Work 2019–2023, WHO is in the process of adopting the new European Programme of Work that sets out the Regional Office's strategic direction, with a central focus on driving public health impact in every country. As part of the monitoring framework, a target of a 20% reduction in premature mortality from noncommunicable diseases (NCDs) by 2023 has been set. Ensuring healthy diets will be essential to meet this target and achieve the Sustainable Development Goals, and the reduction of salt consumption at the population level has been singled out as a highly cost-effective best buy intervention for the prevention of NCDs.

The WHO European Food and Nutrition Action Plan 2015–2020 provides a framework for action to progress towards healthy diets for all in the WHO European Region. While we can be proud of what has already been achieved, when it comes to salt reduction in particular, more must be done – especially in the eastern part of the Region, where salt intakes are among the highest in the world.

Member States of the WHO European Region are in an excellent position to accelerate national initiatives to reduce salt consumption at the population level and show the way forward for countries around the world. Comprehensive, population-level salt reduction requires policy commitment, partnerships, and the engagement of different sectors, including government, academia, civil society and, importantly, the private sector.

This practical country support package has been developed as part of WHO's support and technical leadership for the prevention of NCDs. WHO stands ready to support Member States across the Region to take action to reduce salt consumption and save lives.

**Dr Hans Henri P. Kluge**
Regional Director, WHO Regional Office for Europe

# FOREWORD

by Dr Tom Frieden

Each year, cardiovascular disease kills 18 million people worldwide, with excess salt consumption responsible for an estimated 3 million deaths from heart disease, stroke and related causes. But it doesn't have to be that way: many of these deaths could be prevented using evidence-based strategies for dietary salt reduction available today. WHO Member States' commitment to reducing the global population's intake of salt by 30% by 2025 could save an estimated 1.65 million lives each year.

At Resolve to Save Lives, an initiative of Vital Strategies, reducing sodium intake is key to our goal of partnering with countries to save 100 million lives by improving cardiovascular disease prevention and treatment. A 30% reduction in global salt intake alone would save 40 million lives over 30 years. Resolve works closely with WHO at global, regional and country levels to promote effective sodium reduction strategies.

Salt reduction saves both lives and money. It is one of the most cost-effective ways to improve health around the world, earning it recognition as a WHO best buy. By lowering the risk of developing high blood pressure and heart disease, salt reduction reduces both human suffering and the need for costly medical care. For every dollar spent on salt reduction efforts, an estimated 19 dollars can be saved as a result of reduced disability and premature deaths.

The WHO European Region has been a leader in salt reduction efforts worldwide, serving as a testing ground for valuable interventions. In the United Kingdom, the salt reduction programme showed the potential of industry reformulation of high-sodium products. In Hungary, the Public Health Product Tax reduced salt intake by taxing salty snacks. Finland demonstrated the effectiveness of a broader set of salt reduction efforts, including salt warning labels, reformulation and public awareness campaigns.

In spite of these strides, sodium intake remains far above recommended levels across the Region. There is an urgent need to both scale up proven strategies and explore innovative sodium reduction programmes.

This country support package for salt reduction is a clear step forward in providing practical strategies, tools and relevant examples to help countries take action to achieve their commitments on salt reduction. Though the most appropriate approaches to salt reduction may vary somewhat by country, a comprehensive package that covers a range of proven strategies is ideal. Advocacy efforts as well as monitoring to measure salt intake and identify key sources of salt are all essential. But the real benefits are likely to come from effective regulation of the food environment. This can include setting salt reduction targets for the food industry, requiring front-of-pack labelling, promoting low-sodium salts that replace sodium with potassium, and establishing healthy public spaces through healthy public food procurement policy and interventions among restaurants and supermarkets.

Resolve applauds the WHO European Region for its commitment to accelerating progress on salt reduction and sharing lessons learned with the global community. I look forward to a continued partnership with WHO as this country support package is used to support effective salt reduction strategies – and thereby save lives – around the world.

**Dr Tom Frieden**
Resolve to Save Lives

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This support package has been prepared for countries to use when taking action to reduce population salt consumption. Its aim is to support country teams in establishing or scaling up population-based salt reduction initiatives. It is inspired by existing toolkits, guidance documents and protocols published by WHO and others, but tailored to the regional context.

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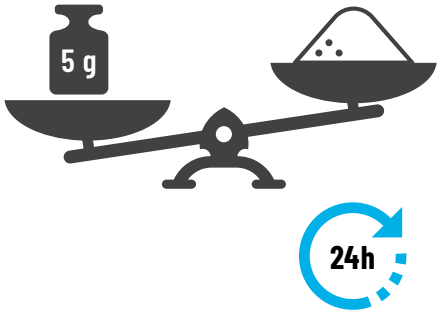
## ABBREVIATIONS

| | |
|---|---|
| **BP** | blood pressure |
| **CHD** | coronary heart disease |
| **CVD** | cardiovascular disease |
| **ESAN** | European Salt Action Network |
| **EU** | European Union |
| **FCDB** | food composition database |
| **FFQ** | food frequency questionnaire |
| **FLIP** | Food Label Information Program |
| **FOPL** | front-of-pack nutrition labelling |
| **HFSS** | high in fats, salt and sugar |
| **KAB** | knowledge, attitude, behaviour |
| **M&E** | monitoring and evaluation |
| **NCD** | noncommunicable disease |
| **SWA** | sales-weighted average |
| **USDA** | United States Department of Agriculture |
| **WASH** | World Action on Salt and Health |

# 1 INTRODUCTION

The human body requires small amounts of sodium to regulate body fluids and maintain critical body functions. Over the course of human evolution, sodium found naturally in foods was physiologically enough because the body developed mechanisms to retain and conserve it.[1] Today, however, increasing production of processed foods, rapid urbanization and changing lifestyles are transforming dietary patterns. Highly processed foods, high in salt, fat and sugar, are becoming increasingly available and affordable, and so are having a growing impact on health.[2,3]




**> 5 g salt**
(2 g sodium)
per day

High salt intake is a major cause of raised blood pressure (BP), which increases the risk of cardiovascular diseases (CVDs) such as stroke, heart disease and heart attack, the leading cause of death worldwide.[4] A moderate reduction in salt consumption causes a significant reduction in BP and is associated with reduced cardiovascular events.[5,6,7,8]

In response to such findings and on the basis of clear, high-quality evidence, WHO issued a guideline on sodium intake for adults and children.[9] WHO recommends a reduction to less than 2 g/day sodium (5 g/day salt) for adults, and for children a maximum of 2 g/day sodium adjusted downwards based on the energy requirements of children relative to those of adults.

Further, as part of the Global Action Plan to reduce the growing burden of noncommunicable diseases (NCDs), such as CVDs, in 2013 the World Health Assembly agreed a global target of a 30% reduction in population salt intake by 2025, to be achieved through comprehensive salt reduction strategies.[10]

Reducing population salt consumption has been recognized as a WHO best buy for NCD prevention and control; it is estimated that lowering BP by reducing salt intake even by a small amount (15%) would prevent 8.5 million premature deaths in 10 years in low- and middle-income economies[11] and could deliver cost savings in high-income countries.[12]

At the population level, salt reduction can be achieved through a combination of measures, such as awareness campaigns that alert consumers to the dangers of a high-salt diet and promote increased consumption of fresh fruits, vegetables and legumes and reduced consumption of processed foods; reformulation of processed foods and meals by the food industry; and replacing salt with lower-sodium "salt substitutes".

Most of the evidence on effectiveness of interventions comes from high-income countries, with limited evidence from low- and middle-income countries.[13,14] Furthermore, among socioeconomically disadvantaged groups, knowledge of government guidance is often lower while voluntary table salt use and total salt intake may be higher.[15,16] In such groups, salt intake can be 5–10% higher, so action to reduce salt consumption is essential in reducing health inequalities.[17]

In countries across the WHO European Region for which data are available, population-level average salt intake is universally higher than recommended. Data from salt

intake surveys indicate that salt intake among the general population ranges from 8.7 g in the Netherlands to 19.0 g in Kazakhstan.[18] CVDs are the leading cause of death, disability and premature mortality in the European Region, and there is significant potential for health gains from prevention based on reducing population intake of salt. In addition, both hypertension and CVD are more prevalent in socioeconomically deprived populations, where people are more likely to depend on cheaper, unhealthy processed foods that are high in salt.

**Box 1.**
Key terms in salt reduction

## KEY TERMS IN SALT REDUCTION

**Salt** is the commonly used name for **sodium chloride**, which consists of 40% sodium and 60% chloride by weight. Salt provides about 90% of the sodium in the human diet.

Note the following conversion: 2.5 g (2500 mg) of salt = 1.0 g (1000 mg) of sodium.

**Sodium** is naturally available in foods and drinks and is added (in the form of salt) to foods and meals during processing by industry, chefs and caterers, and by consumers at home while preparing foods.

The act of reducing **dietary salt intake** implies reducing **total sodium intake** from all dietary sources, including (for example) salt added during food manufacturing and processing, sodium additives such as monosodium glutamate and other sodium-based preservatives or taste enhancers, as well as salt added at the table and in cooking.

Where **salt substitutes** (in which sodium is partially replaced by potassium and other components) are advocated, **sodium reduction** may be achieved without **salt reduction**, so it is important that the two terms are distinguished. WHO is currently reviewing the evidence on the use of low-salt substitutes and will develop guidelines on the safe use of such substitutes based on this research.

**Box 2.**
Salt reduction saves lives

## SALT REDUCTION SAVES LIVES

Reducing population sodium consumption by 1.2 g (3 g salt) per day in the United Kingdom would reduce mean systolic blood pressure by approximately 2.5 mmHg, annually preventing approximately 4450 deaths from cardiovascular disease (CVD) and saving £40 million.

Reducing population consumption of sodium to 2 g (5 g salt) per day in Norway would reduce the risk of stroke by 4.2%, the risk of myocardial infarction by 3.8%, and the use of antihypertensives by 4.9%. Over 25 years, this translates into a reduction in heart attack by 7000, stroke mortality by 4500, and 87 000 quality-adjusted life-years saved.[8]

It has been estimated that reducing dietary intake of sodium in the United States of America to the level recommended by US dietary guidelines (2.4 g sodium/6 g salt) would reduce the prevalence of hypertension by 30%, or 11 million new cases, save US$ 18 billion, and save 312 000 quality-adjusted life-years. A 1.2 g sodium (3 g salt) reduction from current intake could reduce incidence of coronary heart disease (CHD) by up to 120 000, heart attack by up to 99 000, stroke by up to 66 000, and mortality by up to 92 000 per year. If population sodium consumption was only reduced by 400 mg (1000 mg salt), incidence of CHD would still be reduced by up to 40 000, heart attack by up to 35 000, stroke by up to 23 000, and mortality by up to 32 000.[5]

If mean dietary sodium intake was decreased by 1840 mg (4600 mg salt) per day, the prevalence of hypertension in Canadians would be expected to decrease by 30%, resulting in an estimated annual health-care saving of Can$ 430 million.[6]

# 1.1 SALT REDUCTION STRATEGIES

The WHO European Food and Nutrition Action Plan aims to significantly reduce the burden of preventable diet-related NCDs such as CVDs, through comprehensive, integrated policy actions to improve the nutritional quality of diets.[19] Developing, extending and evaluating integrated salt reduction strategies remains a priority in the Region.

These strategies comprise consumer awareness, education and skills, food product reformulation, interpretative front-of-pack labelling, marketing restrictions on unhealthy foods high in salt (as well as fat and sugar), and food standards for public institutions. In particular, dietary changes that reduce consumption of highly processed foods and food product reformulation, whereby the composition of manufactured foods is modified so as to improve the overall nutritional quality of diets, are important mechanisms for achieving the goals of population salt reduction.[20] In many European countries, it is estimated that about 75–80% of dietary salt consumed comes from manufactured foods, so progressing towards consumption of less processed food, and more unprocessed food, is essential.[21]

In general, strategies for salt reduction include:

- the government devising policies to ensure that food manufacturers and retailers produce and sell healthier foods (including unprocessed fruits and vegetables and reformulated products with less salt) that are clearly labelled, widely available and affordable;
- working with the private sector to reformulate foods and improve the availability and accessibility of low-salt products, table salt with less sodium, and salt substitutes;
- promoting consumer awareness and empowerment of populations through health literacy, social marketing and mobilization to raise awareness of the need to reduce salt consumption, by changing diets towards more unprocessed, plant-based foods, choosing low-salt products, and using salt with less sodium and salt substitutes;
- creating an enabling environment for salt reduction through local policy interventions and the promotion of healthy food settings in schools, workplaces, hospitals and other health facilities, communities, and cities; and
- monitoring population salt intake, sources of salt in the diet, and consumer knowledge, attitudes and behaviours relating to salt, in order to inform policy decisions.

Salt is often used as a vehicle to deliver micronutrients, particularly iodine. Iodine deficiency disorders are a global public health problem and many existing programmes to address iodine deficiency rely on salt as a carrier of iodine. The WHO guideline on sodium intake recommends that salt reduction programmes and programmes that promote fortification of salts with micronutrients such as iodine can coexist, but steps need to be taken to synergize programmes for elimination of iodine deficiency and salt reduction.[9] In particular, there is a real risk that the messages are perceived as being in conflict. Public awareness campaigns should be clear in encouraging the use of so-called iodized salt while advocating an overall reduction in the use of salts. Furthermore, the amount of iodine added to the salt should be adjusted to ensure that as salt intake decreases, iodine intake remains the same.

**Box 3.**
The WHO pillars of salt reduction

## THE WHO PILLARS OF SALT REDUCTION

***The SHAKE Technical Package for Salt Reduction***
This package outlines the policies and interventions that have been effective in reducing population salt intake and provides evidence of the efficacy of the recommended actions.

***Creating an enabling environment for population-based salt reduction strategies***
The focus of this report is on interventions for improved health literacy, consumer education and reformulation of industrially produced foods, to enable consumers to make appropriate choices to reduce the total sodium content of their diet.

***Strategies to monitor and evaluate population sodium consumption and sources of sodium in the diet***
This report identifies the appropriate tools and protocols to monitor/evaluate population sodium consumption and sources of sodium in the diet.

***Salt reduction and iodine fortification strategies in public health***
This report examines how salt reduction and iodine fortification can efficiently and effectively work together for the benefit of populations affected.

**Box 4.**
WHO partners in salt reduction

## WHO PARTNERS IN SALT REDUCTION

**WHO European Salt Action Network (ESAN)**
The WHO Action Network on Salt Reduction in the Population in the European Region (European Salt Action Network (ESAN)) was established in 2007 under the auspices of WHO and with the support of the United Kingdom Food Standards Agency. Since May 2013 Switzerland has chaired ESAN. The network consists of 33 of the Member States of the WHO European Region. Participants include governmental institutions (or those nominated by government) and representatives of WHO and WHO collaborating centres.

The network was established in response to concerns about the increasing salt consumption of the European population, in line with the WHO Regional Office for Europe's designation of salt reduction as a priority intervention for tackling NCDs among people in the Region.

**WHO collaborating centres**

- WHO Collaborating Centre for Nutrition
  University of Warwick
- Centre on Population Approaches for Non-Communicable Disease Prevention
  University of Oxford
- WHO Collaborating Centre for Nutrition
  Netherlands National Institute for Public Health and the Environment (RIVM)
- WHO Collaborating Centre for Nutrition Policy for Chronic Disease Prevention
  University of Toronto
- WHO Collaborating Centre for Population Salt Reduction
  The George Institute for Global Health, Sydney

- WHO Collaborating Center for Social Marketing and Social Change to Address Non-Communicable Diseases
  University of South Florida
- WHO Collaborating Centre for Obesity Prevention, Nutrition and Physical Activity
  Leibniz Institute, Bremen



# 1.2 SALT REDUCTION INITIATIVES IN EUROPE[22]

According to data from *Monitoring noncommunicable disease commitments in Europe*, published by the WHO Regional Office for Europe in 2017,[23] 47% of countries in the WHO European Region report that they have fully implemented national policies on salt reduction. Policies include taxes on high-salt food (Hungary), mandatory high-salt content labels (Finland, Israel), and targets for reformulation and close monitoring of the food supply (Spain, United Kingdom). The majority do so by engaging the industry on a voluntary basis to reduce the salt content of products; bread is the main food targeted for reformulation (36%), followed by processed meat (28%) and ready-made foods (23%). Fewer countries have taken steps to establish category-specific targets for a wider range of food products.

Evaluations of national salt reduction programmes have shown that it is possible to reduce the salt intake of a population through a combination of measures. This was demonstrated by the United Kingdom's salt reduction strategy, which involved a comprehensive population awareness campaign on diet change, coupled with category-specific food reformulation targets covering the manufactured food supply; the strategy led to a reduction of salt in food and a 15% reduction in population-level salt intake between 2003 and 2011.[24] Average salt intake also fell in Finland, by 25–30% between 1979 and 2007, as a result of systematic action on salt, including information on changing diets in a healthier direction and labelling regulations mandating that high-salt foods include warning labels that help consumers to identify products with a reduced salt content.[25]

Nevertheless, more work is needed on the development and implementation of comprehensive salt reduction strategies if declines in salt intake are to be seen in many countries of the WHO European Region. Overall, salt reduction strategies are least common in eastern European and central Asian countries. This is a major concern as limited data suggest that these countries have the highest salt intake in the Region and the salt content of foods is extremely high.

The issue for countries in the WHO European Region is no longer *whether* reducing salt intake is of public benefit but rather *how best* to achieve a steady, significant and sustained reduction in salt consumption towards the WHO-recommended levels.[26]

This country support package provides guidance on the key steps needed to implement a comprehensive national salt reduction programme, with accompanying tools that support implementation of each of these steps. Depending on country context, some areas will be easier to implement and more relevant to prioritize, but it is important to remember that a comprehensive programme should, over time, include all the relevant aspects.

The country support package consists of three sections:

- PROGRAMME MANAGEMENT
- TECHNICAL SUPPORT
- POLICY INTERVENTION.

For each section, there are a number of related **Resources**, which consist of various downloadable tools, protocols and case studies. These are mentioned at relevant places in the text and also listed together at the end of each section.

At the end of each section, there is also a **Checklist**, which summarizes the steps that need to be taken when implementing the various measures and interventions described in the preceding text.

# PROGRAMME MANAGEMENT

# 2

Successful and sustainable salt reduction programmes require good management. This section outlines the necessary structure and processes that must be put in place to successfully manage a national salt reduction programme.

## 2.1 FORM A SMALL LEADERSHIP TEAM

Strong and focused leadership is critical to ensure advocacy and successful programme development. The leadership should be situated within, or closely associated with, the government or another highly regarded health-related institution or organization, so that respect is gained among decision-makers, the health-care community and the population. A small core team should be supported by a broader group of experts with different expertise.

The core group requires a **leader** – someone with leadership characteristics and recognized in society for their work on (for example) hypertension, health promotion or nutrition reformulation. There should also be a **secretariat** to support the operation of the core group.

### PREPARING THE GROUND FOR A GOVERNMENT-LED SALT REDUCTION PROGRAMME

If the country has already shown commitment and put initiatives in place to fight NCDs and hypertension, the circumstances are likely to be favourable to the development and implementation of a salt reduction initiative with government staff at the helm.

If, on the other hand, the country is struggling with conflicting priorities and each government sector is occupied with its own specific tasks, the government may not be ready to step up and play a leadership role. As a first step, it may be necessary for researchers and/or civil society to advocate for population-based salt reduction by highlighting the importance of NCDs and hypertension.

**Box 5.**
Preparing the ground for a government-led salt reduction programme

The leadership team's main task is to **build the case** for salt reduction. The case is built on situation analysis and literature search, backed up by additional research if necessary. The findings of the technical support stage can also be used to strengthen the case for policy change.

**RESOURCES**
**Building a case for salt reduction**
*Provides research questions that offer support in developing a situation analysis and determining whether there is a need for additional research*

## 2.2 GATHER KEY STAKEHOLDERS

The leadership team should do a quick stakeholder analysis to identify people with potential interests in salt reduction, opportunities and challenges and determine the readiness of stakeholders to act. This can be achieved by administering a stakeholder interview/questionnaire with potential stakeholders who have been identified. These activities will help the leadership team to establish the **advisory committee** or to identify expertise to be engaged in specific tasks.

The advisory committee is accountable to the leadership team. A wide range of expertise is needed to contribute to different parts of the initiative: epidemiologists and statisticians, public health researchers, cardiologists and nutrition scientists (monitoring and surveillance), food technologists (reformulation), as well as anthropologists and health promotion specialists, patient group leaders, civil society representatives (advocacy and health literacy) and policy-makers. Food manufacturers should not form part of the advisory committee.

**RESOURCES**

Terms of reference for the advisory committee

Declaration of interests for advisory committee members

Potential stakeholders

Stakeholder consultation meeting agenda (example)

Stakeholder interview guide (example)

Stakeholders typically have some understanding of the problem. They may recognize the health challenge (the what), as well as the context (the where and the when); the missing part is usually the how – the way in which the problem can be addressed and their own role in achieving a solution. This kind of understanding will take time to develop, as mutual respect and trust are built along the way. The meeting with stakeholders provides information on how they can support the salt reduction initiative.

Some stakeholders – salt producers/distributors, manufacturers and retailers, caterers, the iodine fortification community, etc. – may feel threatened by the initiative. Their motives and concerns need to be taken into consideration, albeit from an objective perspective.

## 2.3 SECURE A BUDGET

**RESOURCES**

**Five-year budget template**

At the beginning of the programme, the seed budget should be secured. Then, to ensure sustainability, regular sources of funding should be established. It is worth considering appointing someone whose responsibility will be to actively look for and secure a regular stream of resources.

All countries have some policies or mechanisms in place – however limited – that will be a useful basis for developing a salt reduction initiative. As such, resources (data and/or funds) should not be a barrier to taking the first steps and building political support. For instance, the research community can contribute with projects/papers related to hypertension prevention, or data can be collected on salt in popular foods (from the label), at low cost. Although small, these efforts and the results obtained are likely to generate significant interest in the media and among the public and policy-makers.

There are various resources available that can be used to build the case for salt reduction. For example, resources from World Action on Salt and Health (WASH) are useful at international level, while those from ESAN are useful at both national and international levels.

A national initiative on salt reduction can be a stand-alone, or it can be integrated as part of a national CVD prevention or healthy diet initiative, working in close relationship with nutrition programmes.

## 2.4 SET A NATIONAL TARGET FOR POPULATION SALT INTAKE

When setting national targets for population salt intake, the following should be taken into consideration:

- the WHO recommendation of less than 5 g salt intake per day per person – the ideal long-term population intake goal;
- the WHO global target of a 30% relative reduction in population intake of salt by 2025 – the basis for a time-bound target; and
- existing targets from neighbouring countries with similar diets and living conditions.

The first two are not mutually exclusive – it may be worth having a population intake goal alongside a salt reduction target. Those responsible for programme management at country level should consider establishing interim targets (for example) in year 3 and year 5 as a means of monitoring progress and allowing adjustment of targets as needed.

## 2.5 IDENTIFY AND AGREE ON SPECIFIC OBJECTIVES OF THE INITIATIVE

The objectives may focus on the following:

- measuring population average salt consumption;
- increasing population awareness about salt intake and ensuring that the public has the tools to act on their knowledge (increasing demand for lower-salt products; encouraging less use of discretionary salt; promoting use of front-of-pack labelling; providing people with tools to choose meals with less salt in restaurants and other out-of-home settings);
- reducing the amount of salt in foods via reformulation (encouraging the food industry, catering businesses, and vendors to use less salt in food);
- establishing monitoring systems to track salt intake among the population, salt in food and relevant changes to population diet (salt intake and main sources of salt, as well as knowledge and behaviour of population groups, so target population can be selected); and
- creating a supportive environment, including by setting standards for food in public spaces (such as schools, workplaces, government organizations and health facilities).

The core objectives of the salt reduction initiative can be expanded to include additional objectives, including research questions such as assessment of potassium and iodine intake, economic analysis, policy evaluation, and new methods for monitoring salt intake.

If the initiative is part of a broader programme, such as an NCD or CVD programme, the objectives need to be tailored to fit with the broader initiative.

**RESOURCES**

**United Kingdom salt reduction programme (case study)**
*Example of a stand-alone salt reduction programme*

**Spanish Collaboration Plan (case study)**
*A programme developed as part of a broader national obesity prevention initiative*

## 2.6 DEVELOP THE IMPLEMENTATION PLAN AND DEFINE SPECIFIC ACTIVITIES

The implementation plan should have specific timelines, roles, responsibilities, and clear provisions for monitoring and evaluation (with clearly stated criteria). Under each objective, specific activities should be developed, taking into account the policy context, capacity and available budget.

## 2.7 DEVELOP A MONITORING AND EVALUATION PLAN

A monitoring and evaluation (M&E) plan is a key component of a salt reduction strategy and should be drawn up as part of the overall programme. The plan should aim to include objectives to monitor progress through process indicators, as well as the final results of programme interventions through outcome indicators. Each of the interventions should have its own set of indicators. In this way, the effectiveness of different interventions can be determined, and they can be tailored and improved accordingly.

Monitoring changes in population salt intake is a critical part of the M&E plan. In addition, it should aim to capture changes in the levels of sodium in the most important dietary sources of sodium and changes in knowledge and behaviour of the population in relation to salt consumption, as well as long-term outcome measures such as levels of BP in the population. It should also gauge the effects of specific policy actions on specific population groups or the environment.

The evaluation of the salt reduction programme should include the following outcome indicators:

- reduced mean population salt intake measured through a repeat baseline survey method (for example, analysis of 24-hour urine samples);
- reduced sodium content of key food products, either from labels or food product analysis;
- increased knowledge, attitudes and behaviours related to salt through repeated baseline surveys;
- reduced population BP;
- reduced prevalence of hypertension; and
- cost-effective approach to prevention of CVDs.

**RESOURCES**
**Programme monitoring plan (example)**
*Includes process (outcome) and impact (output) indicators*

## 2.8 COUNTERING MYTHS ABOUT SALT/SODIUM

While building a case for salt reduction and preparing the initiative, the country team may encounter and have to deal with various myths about salt/sodium and the relevance of salt/sodium reduction. Some of the more common myths are explained in the Table 1.[27]

| Myth | Facts |
|---|---|
| Our body needs salt. | The body efficiently conserves salt. It is very difficult to eat too little salt as it is already present in most foods we eat every day. People in some remote areas of the world or in rural areas of developing countries manage to survive on a fraction of the amount of salt eaten in developed countries. There is no evidence of harmful effects of a modest reduction in salt intake. |
| The current salt intake is a physiologically set normal range in adult humans. | Over several million years of evolution, humankind has survived on very little salt in the diet (less than 0.25 g of salt per day). Even in modern times, this very low intake is still seen in the Yanomami and Xingu peoples living in the humid and hot environment of the Amazon rainforest. They eat less than 1200 mg of sodium (3 g of salt) per day, their BP does not rise with age, and stroke events are rare. Meanwhile, in the populations of industrialized countries, the high sodium intake – typically 3600–4800 mg of sodium (9–12 g of salt) per day – is a very recent phenomenon in evolutionary terms. In these groups, BP rises steadily with age, often followed by stroke and CHD. |
| The normal salt intake is between 7.0 and 12.5 g per day. | The range of dietary salt reported by some people as "normal" is only the *usual* range in industrialized/developed countries. It is not physiologically normal. The physiological level compatible with life is seen when access to dietary salt is limited, as in parts of the Amazon rainforest. Furthermore, this excessive sodium intake is not a matter of personal choice. Only 15–20% of sodium in our diets comes from that added to food by consumers. |
| Public policy cannot modify salt intake. | The short-term experience of the United Kingdom (a population salt reduction of 15%, or 1.4 g salt per day, achieved in seven years) and the longer-term experience of Finland and Japan (about 3 g salt per day population reduction achieved over two decades) demonstrate that public health policy can lead to substantial reductions in population salt intake. Such reductions are paralleled by significant reductions in population BP and stroke rates, with ensuing cost savings. These reductions have very little to do with changing individual behaviour, but mainly reflect a healthier environment: the reformulation of industrially produced and distributed foods with lower sodium content. The vast majority of individuals in most developed countries have little choice over how much salt they eat because of the global distribution of processed foods. The health benefits of salt reduction are greater if mandatory regulations for food reformulation are introduced. |
| We need salt in hot climates or when we exercise because we sweat a lot. | We only lose a small amount of salt through sweat. We are adaptable. The less salt we eat, the lower the salt content of our sweat. Thus, in hot climates, while it is important to drink plenty of water to avoid dehydration, we do not need to eat more salt. |
| Consumer taste preferences make change impossible. | As salt intake falls, the salt taste receptors in the mouth become more sensitive to lower concentrations of salt within a couple of months. Furthermore, consumer experience in the United Kingdom confirms that, where salt has been gradually reduced in major-brand products, there has been no reduction in sales and no complaints about taste. Once salt intake is reduced, people actually prefer food with less salt. |

**Table 1.**
Salt myths and related facts

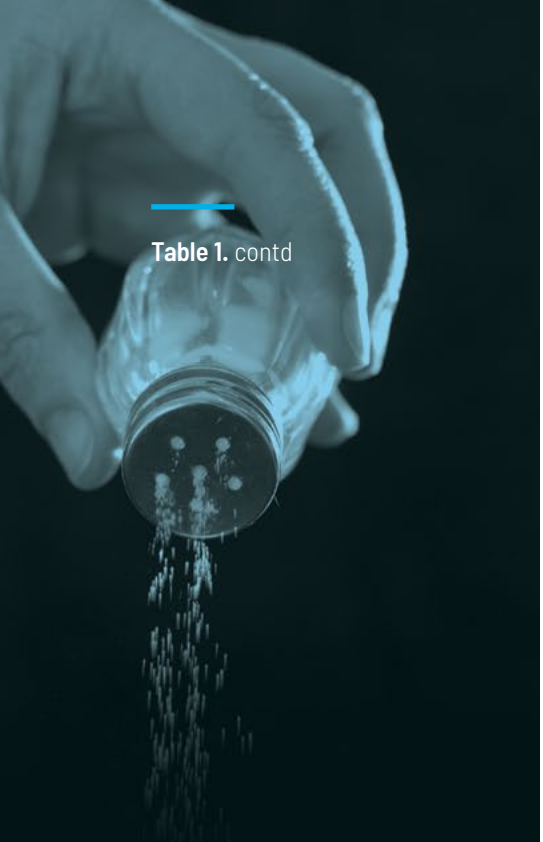


**Table 1.** contd

| Myth | Facts |
|---|---|
| Only old people need to worry about how much salt they eat. | Eating too much salt raises BP at any age, starting at birth and affecting children of all ages. |
| Traditional highly salted foods do not seem to harm the Portuguese. | Average salt intake in Portugal is high – approximately 15 g per day. However, BP is higher in Portugal than neighbouring countries and their stroke rates have been traditionally among the highest in Europe. This has improved recently, after Portugal started to reduce population salt intake. |
| Only people with hypertension need to reduce their salt intake. | A reduction in salt intake reduces BP in both normotensive and hypertensive individuals. In some ways, it is particularly important that people without hypertension reduce their salt intake, because the population-wide number of cardiovascular events that can be attributed to their level of BP is high, but their BP does not make them eligible for drug therapy. |

## SECTION 2.
## PROGRAMME MANAGEMENT

### CHECKLIST

- ✔ core team, leadership and secretariat
- ✔ background information including situation analysis, existing research and policies
- ✔ stakeholder analysis with understanding of opportunities and barriers
- ✔ budget
- ✔ clearly defined national target for salt intake
- ✔ clearly stated objectives of the initiative
- ✔ implementation plan
- ✔ monitoring and evaluation plan

### RESOURCES

- **Building a case for salt reduction**
- **Terms of reference for the advisory committee**
- **Declaration of interests for advisory committee members**
- **Potential stakeholders**
- **Stakeholder consultation meeting agenda (example)**
- **Five-year budget template**
- **United Kingdom salt reduction programme (case study)**
- **Spanish Collaboration Plan (case study)**
- **Programme monitoring and evaluation plan (example)**

# TECHNICAL SUPPORT

# 3

A salt reduction programme needs specific technical support for measuring and monitoring population salt consumption patterns, including measuring population salt intake, identifying sources of salt in the diet, measuring sodium contents of foods, and assessing knowledge, attitudes and behaviour with respect to salt (section 3.1). Some of these data provide the basis for policy interventions, such as informing the development of consumer awareness campaigns and reformulation activities. All of these data will inform the monitoring and evaluation activities of the salt reduction programme.

In addition, this section provides guidance and resources to support the implementation of key components of comprehensive salt reduction programmes, including setting of target salt levels in foods (section 3.2) and dietary salt intake modelling to achieve the desired reduction in population salt intake (section 3.3).

## 3.1 MEASURING AND MONITORING SALT CONSUMPTION, MAIN SOURCES OF SALT, SODIUM CONTENT IN FOODS, AND POPULATION KNOWLEDGE, ATTITUDES AND BEHAVIOUR

For the purposes of the salt reduction programme, each country should develop, adjust and maintain surveillance mechanisms, using the most reliable and valid methods feasible in each country context. These purposes include:

- determining baseline and changes in population salt intake;
- monitoring the main sources of salt in the diet;
- determining baseline and changes in the salt content of foods (in manufactured/processed foods and in restaurants); and
- assessing population knowledge and habits related to salt.

### 3.1.1 METHODS TO MONITOR POPULATION SALT CONSUMPTION

It may not be possible in all cases to obtain new data on sodium intake in the population. This should not hinder the planned initiative and other existing sources of information may be used. However, 24-hour urinary sodium excretion surveys are recommended and should be built into planning for future benchmarking and M&E.

Information on salt consumption can be sourced in the following ways.

**Existing data or secondary data from comparable settings can be used.** Data from a 24-hour dietary survey undertaken in a neighbouring country where the food

supply is known to be broadly similar can be used. However, cultural and other local factors should be considered when extrapolating data from other countries for the purpose of conducting situation analyses and establishing baseline intakes and consumption patterns.

**Data collection can be integrated with existing or planned surveys.** Assessments of salt intake or consumption patterns can be integrated into the WHO STEPwise approach to NCD surveillance, which can be used by countries to assess NCD risk factors.28

**A new survey can be established.** In the absence of opportunities to integrate surveys, it may be necessary to conduct a new, stand-alone survey. However, this is likely to be a more expensive and resource-intensive option, particularly in large countries with marked regional variations in dietary intakes.

The task of monitoring sodium intake and other relevant indicators should be delegated to a group that has expertise in the area and in carrying out population surveys. Potential profiles include CVD/hypertension specialists, nutrition specialists, biostatisticians, food technologists, anthropologists and public health specialists. Expert technical support can be provided by WHO and its collaborating centres.

#### 3.1.1.1 Determining population-level sodium from 24-hour urine samples

The most accurate estimates of salt intake in the population are provided by 24-hour urinary sodium excretion surveys. It should be noted that estimates tend to be higher than those obtained by other methods (such as spot urine samples, dietary recall and food diaries). As such, in order to capture changes over time, it is recommended to conduct a baseline 24-hour survey for accuracy, followed by a repeat survey using the same methods to capture impact. The primary and secondary purposes of this method are set out in Table 2.

**Table 2.**
Main purposes and uses of 24-hour urinary excretion surveys

| | Purpose | Further use |
|---|---|---|
| **Primary** | – To estimate average intake of dietary salt in men and women in the age stratum 18–64 through measurement of 24-hour urinary sodium excretion (intake can be further differentiated by ethnicity, other target groups, socioeconomic status, geographic area, etc.) | – To design and implement interventions<br>– To determine subsequent estimates of salt intake in the same population (monitoring over time)<br>– To provide trends of salt intake against which the effectiveness of interventions aimed at population-level dietary salt reduction can be monitored |
| **Secondary** | – To estimate average intake of potassium and iodine through joint measurement of these nutrients in 24-hour urinary excretion<br>– To determine creatinine excretion (essential)<br>– To capture information on knowledge, attitudes and behaviours with respect to salt by means of a questionnaire | |

#### 3.1.1.2 Use of spot urine to estimate 24-hour excretion of sodium, potassium and iodine

Some researchers have used spot urine samples to estimate the daily excreted amounts of sodium, potassium or iodine. The sample is a single urine pass collected during the day, frequently not the first pass of the morning made just after waking. However, the content of sodium, potassium and iodine depends on the volume of urine, which may be very variable among individuals of the same population, and is highly affected by age, sex, ethnic background, weather, body mass index and physical activity.

Furthermore, the urinary output of sodium, potassium and iodine is not constant across the 24 hours, introducing an unpredictable bias. Some correction has been proposed by dividing the analyte concentration by the creatinine concentration, based on the fact that creatinine excretion is more constant during the day within an individual, as it mainly depends on lean body mass. However, this correction has been found to be even less precise than expressing the absolute content by volume, especially in populations where there is undernutrition.

The use of spot urine is therefore discouraged as a method to determine sodium, potassium or iodine intake because of the limitations and uncertainty inherent in the method.[29,30,31]

**RESOURCES**

**How to obtain measures of population-level sodium intake in 24-hour urine samples: protocol**

*Includes selection of sample size, field protocol and necessary documentation*

**WHO STEPwise approach to NCD surveillance**

#### 3.1.1.3 Use of dietary surveys to measure population sodium intake

Dietary survey methods tend to underestimate population salt consumption. All dietary methods encounter problems associated with the reliability of participants' self-reporting of their food consumption (such as under- or overreporting total food consumption or missing important sources of sodium intake), inaccurate or incomplete food composition tables, and inaccurate measurement of discretionary salt use. Sodium intake estimated by food frequency questionnaires has shown poor agreement with 24-hour urinary sodium excretion and is therefore not recommended for estimating population sodium intakes.[32,33] It should also be noted that dietary methods rely on accurate and up-to-date food composition tables to estimate sodium contributed by food intake and require trained staff to code foods, which can be resource-intensive.

While dietary surveys are not necessarily optimal for determining average population salt consumption, they are useful for determining the main sources of salt in the diet (section 3.1.2). If dietary-based methods are used to assess population intakes, multiple 24-hour dietary recalls are the preferred option. In addition, the automated multi-pass method of the United States Department of Agriculture (USDA) has been shown to perform reasonably well.

**RESOURCES**

**Automated multi-pass method**

*An example of an instrument used to collect information on food consumption – a computerized method for systematically collecting interview-administered 24-hour dietary recalls, either in person or by telephone*

## 3.1.2 METHODS TO DETERMINE THE MAIN SOURCES OF SALT IN THE DIET

Several dietary survey methods are suited to the task of identifying the main sources of salt in the diet. The combination of methods and data sources in this section provides a complete profile of the dietary sources of sodium by identifying:

- the foods that people eat and the amounts and frequency of consumption (3.1.2.1)
- the amount of salt added at the table and during cooking (3.1.2.2)
- the intake of high-sodium foods that are culturally or regionally specific (3.1.2.3).

The variety of methods employed reflects the complexity and dynamic nature of food supplies. The country leadership team and advisory committee must select the methods that are most appropriate to their resources and circumstances.[a]

[a] Note that, in addition to sodium, data on several nutrients of concern to public health nutrition policy (saturated fats, trans fatty acids, fibre and total sugar) can be captured using the methods described here.

Most dietary survey methods rely on accurate and up-to-date food composition tables which are not available in all countries.

### 3.1.2.1 Foods that people eat and the amounts and frequency of consumption

#### 3.1.2.1.1 Direct/primary data on food consumption

National **food consumption surveys** are cross-sectional in nature, capturing food consumption data from which nutrient intakes are calculated; they also collect the height/weight measurements of respondents and sometimes their nutritional and health status. Food consumption surveys can be used if the country concerned has its own food composition database (FCDB), can use one from a neighbouring country, or has access to a validated international FCDB.

In this type of survey, participants provide information on what they typically eat and drink in a defined period of time. The main methods currently used are shown in Table 3.

**Table 3.**
Main methods used to conduct food consumption surveys

| Method | Definition | Characteristics |
|---|---|---|
| 24-hour food intake recall | Systematic questionnaire/ survey designed to capture all foods consumed in a defined 24-hour period | Commonly used by government agencies for national surveys<br>Requires considerable analysis to categorize foods and extensive follow-up questions to ensure complete recalls<br>Requires *either* distribution across the population of weekends and weekdays *or* a repeat recall on a different day (ideally a weekday and a weekend day) from a subsample of respondents to estimate usual intakes<br>Can include additional questions to assess:<br>– salt added at table or during cooking<br>– respondents' willingness to reduce dietary sodium<br>– consumption out of the home to monitor the nutrition transition<br>Recent improvements include computer-assisted questionnaires (see RESOURCES below) |
| Food frequency questionnaire (FFQ) | FFQs collect information on participants' usual dietary intake – how frequently certain foods and food groups on a predefined list are consumed during a specified period of time | Suitable for population surveys<br>Relatively inexpensive<br>Most amenable to web-based administration; recent improvements include a number of online and web-based versions which are often easier and quicker to complete<br>Can capture intake of all nutrients of interest to national nutrition policy and can give information on overall dietary adequacy<br>Can be expanded or contracted to include or isolate high-sodium food items.<br>Can include additional questions to assess:<br>– salt added at table or during cooking<br>– respondents' willingness to reduce dietary sodium<br>– consumption out of the home to monitor the nutrition transition<br>Represents usual nutrient intake, as diet is assessed over long periods of time (e.g. previous 12 months)<br>Typically long because of the need to include many common food products<br>Less accurate than 24-hour recall<br>Needs to be validated for the specific population |
| Three- or seven-day food diaries | Written records of all foods and beverages (including amounts) consumed over three or seven days | This method provides a highly accurate estimate of food consumption, but it is very time-consuming compared to 24-hour dietary recalls and requires significant resources to be used at a population level. |

#### 3.1.2.1.2 Indirect/secondary data sources

In addition to surveys whose specific purpose is to gather data on food consumption, there are a number of indirect or secondary sources from which supplementary data can be derived. These include household income surveys and various kinds of food sales data collected by manufacturers and retailers.

**Surveys of household income and expenditure** (Table 4) are typically conducted by government finance or agriculture departments or by market research companies, usually for purposes other than gathering data on nutrient intakes or informing health and nutrition policy. To estimate the intake of high-salt/high-sodium products, an additional set of questions needs to be included in routine surveys and careful setting of assumptions is required. While they cannot provide precise estimates of individual food intake, such surveys have long been used to track information on national supply and household availability.

**Table 4.**
Household income and expenditure (budget) surveys

| | |
|---|---|
| **Characteristics** | Such surveys are designed to provide information on the consumption patterns and economic conditions of private households in a specific time period (typical income, savings as well as consumption) |
| **Design** | Such surveys do not generally provide information specifically on salt consumption, so if they are to be used as a data source, certain elements need to be added:<br>– self-reported information on total salt used at the table as well as in cooking (including stock cubes, dried soup mixes, different sauces)<br>– direct weighing of salt at two time points (disappearance data) |
| **Advantage(s)** | – relatively easy to implement |
| **Limitation(s)** | – limited to a subsample of the population<br>– broad studies that require adaptation for salt consumption estimate<br>– do not account for products or losses other than for food preparation<br>– usually overestimate salt intake |

The principal purpose of **food sales data and scan data** is to collect detailed information on sales by the main manufacturers and retailers, so brand information is likely to be available but there is no information on who is buying the products or how much individuals are consuming. These data can be useful for prioritizing food categories and in a context where consumption of processed foods is high and the data on sales are linked to nutrition information through universal product codes. However, information about food sales/consumption away from home (for example, in restaurants and cafeterias) is not included. Comparable methodologies can be applied across countries, and utility is increased when combined with data on food consumption patterns.

**Box 6.**
Harnessing big data to analyse food and drink

### HARNESSING BIG DATA TO ANALYSE FOOD AND DRINK

Researchers at the University of Oxford, United Kingdom, have developed foodDB, a big data approach to the analysis of the food and drink marketplace. Since November 2017, foodDB has been used to collect data weekly on all foods and drinks available on six major United Kingdom supermarket websites. This is a powerful new tool for monitoring the food and drink marketplace and has potential to be expanded to other countries in Europe where the nutrition content of foods and drinks must be published online.

#### 3.1.2.2 The amount of salt added at the table and during cooking (discretionary salt)

Several techniques are used to estimate discretionary salt use. In research settings, carefully controlled studies using lithium as an additive to discretionary salt allow precise estimation; these studies measure the 24-hour urine excretion of lithium to estimate the proportion of dietary salt derived from discretionary salt added during cooking or at the table.[34] In other settings, measurement presents a challenge because most individuals find it hard to accurately report the quantity of salt they add during cooking or at the table. The same is true of salt-containing condiments, such as stock cubes, soy or fish sauces. Where discretionary salt is a leading source of dietary salt, local knowledge – particularly knowledge of cooking techniques – is key to understanding the best methods of assessing discretionary salt use and estimating its contribution to average dietary salt intake.

##### 3.1.2.2.1 Direct methods to estimate discretionary salt use

*Qualitative methods* can be used to measure salt added at the table by supplementing 24-hour dietary recalls, FFQ surveys and knowledge, attitude and behaviour (KAB) studies with questions on added salt, such as "How often do you add salt to your meal before trying?" or "How often is ordinary or seasoned salt added in cooking or preparing foods in the household?"

A number of *quantitative methods* are available to measure the amount of salt added at the table and in cooking.

**Weighed household salt (disappearance method)** is a method in which household salt is replaced by a defined quantity of salt that is measured after a specified period to determine how much has been used. This method can significantly exaggerate consumption because of the large amounts of salt discarded in cooking water.

**Simulated meals can be used**, with participants adding salt to food models or pictures of meals, which are then collected and measured. It is a simple method (often used in research studies or when targeting individuals), but it does not accurately represent what actually happens at a real meal.

**Cooking practices can be observed**, with the amounts of salt added during cooking noted. This method is semi-quantitative in that the observer estimates the amount of salt added by the cook. It may be difficult to generalize to large populations as household recipes can be highly variable.

**Sodium levels of foods prepared, for instance, in the home, restaurants and markets can be tested** through the prepared food being taken to a laboratory and the level of sodium assessed. The amount of sodium is then divided by the number of family members that eat in the same household.

**RESOURCES**

**FEEDcities project**

*Protocol to guide measurement of sodium content of foods sold in street food outlets and markets*[35]

If the food is purchased out of home, the most frequently bought or favourite food is taken to the laboratory for the level of sodium to be assessed; this is then added to sodium from other sources to reach an estimate of the total daily sodium intake. The WHO Regional Office for Europe has developed the FEEDcities protocol to guide measurement of the sodium content of foods sold in street food outlets and markets.[35]

##### 3.1.2.2.2 Indirect methods to measure discretionary salt use

Estimates of absolute and proportional intake of discretionary salt can be derived

from the results of 24-hour urinary sodium excretion surveys and primary or secondary food consumption data. An estimate is made using the following formula:

discretionary salt intake
=
24-hour urinary sodium excretion (converted into salt consumption)
–
sodium intake attributed to commercially available foods.

The accuracy of the estimate is highly dependent on the precision and certainty of measurements of consumption of commercially prepared foods. This method must also take into account commercially prepared foods consumed outside the home, including street food and food eaten in restaurants and fast-food outlets. Despite efforts to take into account non-food uses and losses, the values derived in this way may still overestimate discretionary salt intake.

#### 3.1.2.3 Measuring culturally and regionally specific high-sodium foods

In addition to salt from processed foods and discretionary salt added to food at the table and during cooking, in many countries there are traditional condiments or accompaniments that are high in salt and frequently consumed. Examples include some pickled foods, salted meats, condiments, sauces (soy sauce, tomato sauce, specialty local sauces), marinades, curry pastes and soup mixes. Information on the use of these products is also needed in order to estimate actual salt intake.

## 3.1.3 DETERMINING THE SODIUM CONTENT OF THE MOST COMMONLY CONSUMED FOODS

Reducing the sodium levels in food is a core component of any salt reduction programme. Collecting data on the sodium content of commonly consumed foods is essential to determine priority food categories for salt reduction; it is also important in raising awareness of hidden salt in these foods and in informing reformulation activities. The data collected can also be used to measure changes over time.

There are several ways to collect these data. FCDBs provide details of the nutritional contents of foods, derived from quantitative analysis of representative samples of foods. FCDBs have a wide variety of uses, including determining the sodium content of foods consumed as identified in dietary assessment/food survey data.

However, FCDBs can be outdated and may not reflect the nutritional composition of foods on the market, particularly in countries with dynamic food supplies. Therefore, there are two additional methods for determining sodium content of foods: use of published or declared nutritional information generated by food manufacturers, restaurants, etc. and direct chemical analysis.

#### 3.1.3.1 Direct/primary data

**FCDBs** provide detailed profiles of the nutritional composition of foods. The data they provide are essential in determining the sodium content of commonly consumed foods

identified in food consumption surveys and in prioritizing foods to be included in salt reduction efforts. They usually reflect food products consumed within a particular country, though they may extend across a region encompassing countries with a common food culture.

National FCDBs should include nutrient data (including sodium) that are reliable, up-to-date and readily available for local, processed and packaged foods. It is important that they are kept up to date as food supplies are dynamic, with different products constantly entering and leaving the market, and the nutrient composition of food products may change: for example, trans fats may be eliminated, sodium levels reduced, or discretionary nutrients added, while new processes, such as moisture enhancement of meats, may be developed.

FCDBs should also aim to capture widely consumed local traditional foods, ethnic foods, and foods provided by street vendors, which may be part of daily consumption and contribute significantly to salt intake. These foods are often sold unpackaged and unlabelled, so regular sampling of the most frequently consumed foods may be required; any changes that occur in the composition of these foods should be detected by laboratory tests so that the impact of any food-related policy intervention can be monitored. The WHO FEEDcities project aims to provide data on the nutritional content of ready-to-eat street foods sold in cities across central Asia and eastern Europe (see section 3.1.3.1.1).

If a national FCDB is not available for a country, modifying an existing database from a neighbouring country may be possible and can be cost-saving, as the nutritional content of a large proportion of food products may already be documented. However, the database may need to be updated and supplemented by analysis of national foods in order to identify where there are significant differences.

It should also be noted that traditional national databases usually provide averages or generic composite values for certain food categories, rather than product-specific data. Therefore, this information is not enough for the purpose of monitoring changes in the salt content of key food categories by the food industry, as maximum and minimum values (as well as mean and median values) are needed.

A number of international, regional or multi-country FCDBs, such as EuroFIR, have been developed. These allow countries to contribute their data to a common resource that benefits all those involved in its development. A selection of these resources is shown in Table 5.

**Table 5**.
Selection of food composition data resources

| Location | Name | Website |
|---|---|---|
| Australia / New Zealand | FSANZ (Food Standards Australia New Zealand) | https://www.foodstandards.gov.au/Pages/default.aspx |
| | Australian Food Composition Database (NUTTAB 2006) | https://www.foodstandards.gov.au/science/monitoringnutrients/afcd/Pages/default.aspx |
| Canada | Canadian Nutrient File | https://food-nutrition.canada.ca/cnf-fce/index-eng.jsp |
| Europe | EuroFIR (European Food Information Resource) | https://www.eurofir.org/food-information |

**Table 5**. contd

| Location | Name | Website |
|---|---|---|
| Latin America | LATINFOODS (Latin American Food Composition Network) | http://latinfoods.inta.cl |
| United Kingdom | Food Standards Agency – UK Nutrient Databank, Composition of Foods Integrated Dataset (CoF IDS) | https://www.gov.uk/government/publications/composition-of-foods-integrated-dataset-cofid |
| | McCance and Widdowson's The Composition of Foods (CoF) (7th Summary Edition, 2015) | https://pubs.rsc.org/en/content/ebook/978-1-84973-636-7 |
| United States | USDA Food Composition Database | https://www.nal.usda.gov/usda-food-composition-database |

#### 3.1.3.1.1 Direct chemical analysis of foods

Chemical analysis of foods provides a direct measurement of the sodium content of products. Technically, this process is relatively straightforward, but it is both time-consuming and costly. If funding is available, countries should consider this option for routine surveillance of the sodium content of foods.

Direct chemical analysis of food items for salt content is usually conducted by a titrimetric method using silver nitrate solution.[36] Several large food industry corporations make extensive use of direct chemical analysis of their products during development. However, in many settings this is more likely to be conducted to validate or supplement information reported on labels or websites.

### 3.1.3.2 Indirect/secondary data

#### 3.1.3.2.1 Data collected through surveys

In countries where food labelling is standard practice, data about the sodium content of packaged food products can be obtained from the information given on the nutrition information panel on the packaging. Likewise, compositional information for meals bought in restaurants or other outlets may be available from company websites; for example, many large chain restaurants now display this information. Compilation of information from these sources can be a useful method for estimating the most likely levels of salt in the food supply and can provide a good baseline upon which industry action can be based and tracked.

Established methods and tools for conducting surveys of the reported levels of sodium in processed and restaurant foods are widely available.[37] Most involve taking a representative sample of commonly consumed food products from supermarkets and other food outlets and systematically recording the sodium content as declared on the labelling.[38]

With increasing interest in the nutritional composition of the food supply, research organizations have taken to compiling databases of product-specific nutritional information in a format that is suitable for monitoring the salt content of commonly consumed foods purchased from shops or restaurants. These databases are usually commercial, can be expensive to access and tend to place significant constraints upon data usage. Global collaborative groups are highly active in this area and have some capacity to advise countries seeking to implement work of this type.

**RESOURCES**

**Shop survey protocol**

*Protocol to collect sodium information from packaged, processed foods in supermarkets*

Data obtained in this way do not show who is buying specific products or how much individuals are consuming, unless sales data are also obtained. Food industry representatives may be willing to share data on the nutritional composition of their product portfolio as well as data related to sales; however, this requires agreed and ongoing collaboration.

**Box 7.**
Monitoring the nutritional composition of the food supply

### MONITORING THE NUTRITIONAL COMPOSITION OF THE FOOD SUPPLY

The George Institute in Sydney, Australia, has developed FoodSwitch, a data technology platform to collate data on packaged foods from countries around the world, including the United Kingdom. The aim is to influence stakeholders across the food system to improve the food environment and also to empower individuals to make healthier food choices.[39]

The WHO Collaborating Centre for Nutrition Policy for Chronic Disease Prevention at the University of Toronto, Canada, has developed a similar tool called FLIP (Food Label Information Program). FLIP is a set of unique databases of branded food and beverage products and restaurant foods systematically collected since 2010. The database of packaged foods is updated every 2-3 years for monitoring and testing hypotheses related to the Canadian food supply.[40]

Branded products that are available globally may have different formulations (such as different levels of sodium) between countries, so it is important to note their country of origin (where they were produced or processed). For similar reasons, it is also useful to know the origin(s) of imported products.

Monitoring of the sodium content of packaged foods within and between countries in the WHO European Region, conducted by the Netherlands National Institute for Public Health using nutrient data provided by EuroFIR, reveals that there is a wide range of compositions within the same product category, indicating significant scope for improvements towards the best-in-class[b] products.[41]

Where nutrition labelling is voluntary, nutrient data may not be consistently available. Where nutrition labelling is mandatory but does not require declaration of salt/sodium content, other sources of complementary data, such as an industry website or laboratory testing, need to be found.

Restaurant chain nutrition information is usually web-based and less consistently available. There is variability in the available data due to local customization of menu options, and information can usually be found only for standard menu items.

## 3.1.4 METHODS TO DETERMINE POPULATION KNOWLEDGE, ATTITUDES AND BEHAVIOURS

Understanding the factors that drive behaviour related to salt intake is important in developing interventions to reduce salt intake at population level. On the assumption that behaviour is determined or affected by existing knowledge and attitudes, understanding whether a person's salt intake behaviour is related to their knowledge about salt and its effect on health should help to inform the development of salt

[b] Best-in-class/best-in-world signifies a food product with the best-quality characteristics that is produced by a food company somewhere (due to existing regulation or consumer choice); its existence proves that it is feasible to produce such quality, so the same quality of product can, in principle, be offered in any other country or part of the world.

reduction programmes. For this reason, any population salt reduction programme should include a study of knowledge, attitudes and behaviour in relation to salt intake and health.

#### 3.1.4.1 Stand-alone questionnaire as part of a salt study

When performing a baseline study of population salt intake, in addition to collecting urine and anthropometric measures and levels of BP, it may be convenient to ask at the same time about knowledge, attitudes and behaviours with respect to salt consumption. Further advice in this area is available in *How to obtain measures of population-level sodium intake in 24-hour urine samples: protocol*, which includes a model questionnaire (section 4); see section 3.1.1.1 above.

#### 3.1.4.2 Attaching questions or modules to existing survey instruments

As an alternative to a stand-alone salt intake survey, it is worth considering whether questions or modules specific to salt intake can be attached to existing survey instruments that collect data on risk factors for chronic NCDs.

Survey instruments, whether stand-alone or part of existing studies, can be customized to reflect national, regional or even more localized food cultures: supplementary questions can be added to (for example) national, regional or sentinel-site food consumption surveys, KAB surveys, household budget surveys, and household food disappearance studies.

## 3.2 SETTING TARGETS TO REDUCE THE SODIUM CONTENT OF FOOD

Achieving salt reduction at population level requires a well-structured food reformulation programme that is designed to gradually reduce the sodium content in food by setting a series of progressively lower targets for the food industry to meet.

Once the main dietary contributors to sodium intake in a country have been identified, targets can be set either for the food categories that contribute most to sodium intake or across all food categories. The extent for which targets are set will depend on the country's capacity to establish targets and monitor changes in sodium levels to keep track of progress towards targets.

Countries may set targets for the food industry alone or extend their targets to include retailers (such as quick-service restaurants, takeaways and meal-delivery businesses). If appropriate regulation is in place, targets may form part of procurement policies relating to preschool, school, worksite and hospital premises.

When setting targets, the following steps should be taken.

### 3.2.1 STEP 1. IDENTIFY SOURCES OF SODIUM IN THE DIET

Countries should obtain:
(a) data on dietary intake of sodium (see section 3.1.2.1 above)
(b) information on levels of sodium in foods (see section 3.1.3. above)

## 3.2.2 STEP 2. SELECT FOODS TO BE TARGETED – IDENTIFY PRIORITY FOOD CATEGORIES

Based on food consumption data and levels of sodium in foods, food categories that account for a large proportion of total sodium intake should be selected for targeting. Some food categories with a high volume of consumption, such as bread and other products that are very extensively purchased, may account for a large proportion of total sodium intake, even though they are not themselves especially high in sodium. Other food groups usually selected include cookies, cakes, pastries, cured meats, cheese, soup cubes and snacks. Conversely, some foods with relatively low volumes of consumption, such as soy sauce and other condiments, may contribute relatively large amounts of sodium to the diet because of their high sodium content.

Some food categories may already have been defined by countries as targets for salt reduction. Otherwise, a source of food categories needs to be identified (the Codex Alimentarius, other government definitions, categories used in other countries, etc.).

Selection of priority food categories can also be influenced by what has already been selected by other countries – particularly countries that are in a common market or from which products are imported. Some countries may decide to consider all processed food categories as well as the catering sector, while others may decide on a more gradual approach, choosing specific food categories that contribute most to sodium intake as identified in step 1 above. As national capacity increases, new food categories can then be added.

## 3.2.3 STEP 3. SELECT TARGETS

### 3.2.3.1 Decide upon types of target

Consider first if targets are to be set as an average/mean or as a maximum level of salt per food category or product. The advantages and disadvantages of the different types of target are shown in Table 6. Ideally, both an average target and a maximum target should be set for each category.

#### 3.2.3.1.1 Average targets

Setting an average target means that manufacturers are asked to ensure that the average or mean sodium level of all the products they sell in a given category (such as in bread) is at or below the target. A simple average is the average sodium level in foods within a category regardless of volume of sales. A sales-weighted average (SWA) is the average sodium level in a food category weighted by the relative sales volume of products within the category. This is the gold standard as it indicates product consumption more accurately than the simple average and can help ensure that reductions in food products lead to a reduction in intake.

Average targets address the most popular foods within a category, especially if SWAs are used. Note, however, that averages are difficult for consumers to understand and for national authorities to compare and monitor across individual products.

#### 3.2.3.1.1 Maximum targets

Maximum targets, setting the upper level of salt in products, are straightforward, transparent, and easier to administer, monitor and compare with levels in other products. Their advantage is that they are used in a regulatory (rather than voluntary) approach to reformulation; they ensure that there are meaningful reductions in products within a given category that have a relatively high level of salt. Such targets do not, however, affect products with levels of sodium below the maximum. Furthermore,

**RESOURCES**
**United Kingdom maximum and average salt/sodium targets (example)**

**Table 6.**
Salt target types – advantages and disadvantages

| *Advantages* | *Disadvantages* |
|---|---|
| **Average targets** | |
| . Relatively straightforward to derive<br>. Allows some flexibility in the levels of salt in different products within a category, some lower and some higher, allowing for different flavours<br>. Useful for foods where there is some natural variation in sodium levels, e.g. cheeses, cured meats<br>. Useful for companies to use an average target for a particular category to monitor its own compliance<br>. Compared to a maximum target, in most cases an average target requires far less reduction in sodium content in a food category to achieve a similar overall reduction in sodium intake, as there is flexibility about where to focus | . It is more difficult for consumers to compare sodium levels in individual products and for public health agencies responsible for dietary sodium reduction to monitor compliance<br>. If companies are asked to meet an average target that is derived from the whole food supply and their products are already at the lower end, they actually get credit for that fact and have less to do to meet the targets<br>. Industry may reduce the sodium in the saltiest low-selling products in a category, thereby reducing the overall average sodium level of the category without having any significant impact on actual sodium intake |
| **Sales-weighted averages (SWAs)** | |
| . Monitoring SWAs of different food categories, combined with food intake survey data, allows the most accurate estimates of population intake of sodium<br>. SWAs encourage more action by companies as more products are likely to need reformulation<br>. SWAs facilitate adoption of best-in-class/best-in-world products (see section 3.1.3.2, footnote b) | . Much more difficult to monitor than simple averages in an independent and transparent way<br>. From the food industry perspective, SWAs may reveal sensitive market share information<br>. Market share data are expensive; must be repurchased to monitor SWAs as changes are made; cannot be published or distributed; an unlikely option for low- and middle-income countries<br>. SWAs do not address products high in sodium<br>. SWAs can be lowered by focusing on a few high-volume products and not address products targeted at (for example) children<br>. Monitoring on the basis of SWA would not allow a common approach for the whole food supply as some sectors, such as large restaurant chains and the food services industry, do not provide sales volume data for menu items |
| **Maximum targets** | |
| *Advantages* | *Disadvantages* |
| . Maximum targets set a clear ceiling for all products in a category<br>. Very useful for regulatory approach to reformulation<br>. Can be set at around the average for a food category at one point in time and then reduced as the average shifts down<br>. Easy for consumers and food companies to compare products with the maximum and evaluate compliance<br>. Reduce the sodium content of products that are above the maxima below the maxima | . Maximum targets suggest that, if a food product is at or below the maximum, no further action is needed; no incentive for products to have sodium levels below the maximum<br>. Companies whose products have sodium levels initially below the maxima have no incentive to reduce their sodium content<br>. May undermine adoption of best-in-class/best-in-world standards that are based on SWA<br>. If high-sodium products are not high-volume in consumption, targets may have little or no impact on actual sodium intake levels<br>. Companies whose products are below the maximum do not participate |
| **Percentage reduction targets** | |
| *Advantages* | *Disadvantages* |
| . May be easier for the food industry<br>. Can be used with maximum targets | . Before and after data on levels of sodium content are still needed for monitoring purposes<br>. Difficult to distinguish and follow success or failure in individual food groups |

*Source:* adapted from Campbell et al.[42]

looking at the target itself gives no indication of whether the range of salt content across a food category is changing, which makes it difficult to predict the impact a target will have on average intake.

#### 3.2.3.1.1 Percentage reduction targets

Usually offered by industry, a percentage reduction target adds together the salt reductions in all targeted foods and expresses the sum as a percentage. This procedure makes it difficult to distinguish and follow success or failure in individual food groups and is not recommended.

### 3.2.3.2 Standardize the presentation of sodium content

It is important to standardize how sodium content is presented. It is recommended that targets be expressed as sodium per 100 g or 100 ml of product. If sodium content is expressed per serving size or portion, standard reference amounts should be indicated. For products that require reconstitution before consumption (such as soup cubes), indicate whether the target refers to the product "as sold" or "as consumed" (that is, prepared as per the manufacturer's instructions) per 100 g or 100 ml.

### 3.2.3.3 Propose timelines

The timeline should be such that the national salt intake goal or the internationally recommended goal can be reached within a period of 6–10 years. Consider initial targets that span four years with interim targets at (for instance) one- or two-year intervals to underpin monitoring and timely feedback.

Ensure that proposed timelines are grounded in successful experience elsewhere and/or are based on evidence of achievability supported by the food technology sector.

### 3.2.3.4 Compare sodium in foods with existing targets

When food groups are selected, it is necessary to look at the current range of products in the category and see how their sodium levels relate to existing targets (that is, targets that already exist either within the country or in other countries). It is important that targets not only affect products but are also feasible. One way to see if targets are achievable is to see if there are representative products in the category that are already below the target.

If foods are mostly imported, the targets from the exporting countries should be used (often there is a difference between products in the country of origin and products that are exported, as companies consider regulations when exporting goods).

### 3.2.3.5 Draft targets and timelines for priority food categories

Based on the information gathered in previous steps and when it is clear that the proposed targets are feasible, food group targets and timelines should be drafted.

At this point, it is recommended that targets and timelines are made widely known through public announcement and invitation to the food industry and retailers to start consultations (led and managed by government) on targets. If the process is made as open and transparent as possible, discussions with the food industry and the commitments they make – as well as reformulation successes and failures along the way – will become widely known and subject to public scrutiny.

## 3.2.4 STEP 4. MONITOR PROGRESS

### 3.2.4.1 Decide on monitoring mechanisms (use combination of options)

The databases needed to monitor trends as part of the mechanisms should be established. The databases should include most products sold in the country in the key categories, and they should be public and accessible for use by consumers, researchers and civil society. It is important to include both sodium levels as well as other nutrients to ensure that changes in sodium do not lead to adverse changes in other nutrients. Sources of sodium data for the databases can include:

- industry self-reports on levels of sodium in their products
- sodium level in packaged foods based on label data
- food analysis in the laboratory to assess sodium levels in foods.

The databases should be able to generate the following information:

- mean sodium levels per category, both simple and sales-weighted if including sales data;
- mean sodium levels per category per manufacturer;
- range of sodium per category and per manufacturer; and
- number or percentage of products above specific thresholds (e.g. maximum targets), per category and per manufacturer.

**RESOURCES**
**European and other sodium targets**

**European Union Salt Reduction Framework – benchmarks and major food categories**

# 3.3 MODELLING DIETARY SALT INTAKE TO ACHIEVE POPULATION SALT REDUCTION

The WHO Regional Office for Europe, in collaboration with the WHO Collaborating Centre for Population Salt Reduction at the George Institute, Sydney, Australia, has developed a methodology to guide the development of salt reduction models.[43] The purpose of such models is to determine the exact amount by which the sodium content in different foods (as well as in consumers' discretionary salt intake) needs to be reduced in order to achieve the WHO target of a 30% reduction in population salt intake. The model can then be used to guide the development of policies and interventions that will be needed to achieve the necessary sodium reductions and, ultimately, a 30% reduction in population salt intake.

Dietary intake modelling played a crucial role in the United Kingdom's successful salt reduction programme, both giving guidance on the reductions that needed to be achieved and helping to engage industry actors in the initiative (see box 8).

### DIETARY INTAKE MODELLING IN THE UNITED KINGDOM

In the United Kingdom, the Food Standards Agency developed a salt reduction model which showed the amount by which salt needed to be reduced in different food products to reduce population salt intake to the target of 6 g per day. The salt model was then used to engage the food industry and establish progressively

**Box 8.**
Dietary intake modelling in the United Kingdom

**Box 8.** contd

**RESOURCES**
**United Kingdom salt reduction programme (case study)**

lowered targets for the sodium content in several product categories. Reductions in sodium levels of up to 70% were achieved in a range of food categories. This was a key component of a multifaceted strategy that by 2011 had resulted in a 15% reduction in mean population salt intake. Thus, intake in adults fell from 9.5 g to 8.1 g per day (approximately 1.5 g per person, per day), which contributed to falls in population-wide BP over the same period.[44,45,46]

According to the WHO methodology, there are five key steps involved in developing a salt reduction model:

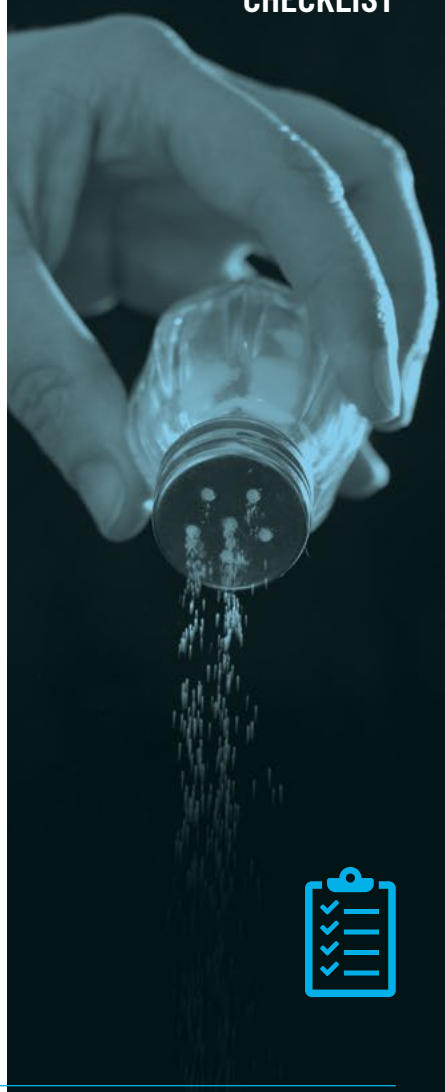
1. obtain data on current food intake and the sodium contribution of different foods and other sources;
2. obtain data on the sodium content of foods (food composition data);
3. calculate current food intake and the sodium contribution of different foods and other sources;
4. identify relevant sodium content targets for manufactured foods; and
5. calculate the reductions required in sodium content of manufactured foods and discretionary salt use to achieve a 30% reduction in population salt intake.

Key to the accuracy of a salt reduction model and the estimations it produces is the quality of the data input. It is important that justification for the chosen data source is provided and that methods are transparent. Under each step, guidance is provided on the appropriate data to use and how they should be handled for the purpose.

Following development of the salt reduction model, consultations with local food experts, programme leaders and policy-makers are required to interpret and design a salt reduction strategy. If manufactured foods are the major contributors, as in the United Kingdom, the salt reduction model could be used in discussions with food manufacturers to encourage gradual voluntary reductions in mean sodium content of processed foods across the food supply. Alternatively, governments may choose to regulate by setting maximum sodium limits. In countries where discretionary salt use is a major contributor, tailored interventions to encourage consumers to reduce such usage is required. The mean sodium content targets developed in the model may also be used to inform the establishment of sodium content cut-offs or criteria for interventions such as taxation, food procurement policies, and guidelines in public institutions and front-of-pack labelling schemes.

**RESOURCES**
**Using dietary intake modelling to achieve population salt reduction: a guide to developing a country-specific salt reduction model** (WHO Regional Office for Europe, 2018)[43]
*Offers detailed guidance on how to develop a country-specific salt reduction model; includes case studies from Kazakhstan and Turkey*

## CHECKLIST



***Monitoring instruments for salt consumption, sources, sodium content, population knowledge***

- ✔ data on dietary intake (methodology developed and data obtained)
- ✔ information on levels of salt in foods (methodology developed and data obtained)
- ✔ information on knowledge and behaviours (methodology developed and data obtained)

***Target-setting***

- ✔ foods for target-setting selected – priority food categories identified
- ✔ decision on types of target
- ✔ presentation of salt content standardized
- ✔ timelines proposed
- ✔ salt in food compared with existing targets
- ✔ targets and timelines for priority food categories drafted
- ✔ monitoring of progress defined

***Development of country-specific salt model***

- ✔ data on daily food intake and discretionary salt use obtained
- ✔ data on sodium content of foods obtained
- ✔ current food intake and sodium contribution of different foods and sources calculated
- ✔ relevant sodium targets for processed foods identified
- ✔ reductions required in sodium content of foods and discretionary salt use calculated to achieve 30% reduction

## RESOURCES

- › **How to obtain measures of population-level sodium intake in 24-hour urine samples: protocol**
- › **Automated multi-pass method**
- › **FEEDcities project**
- › **Shop survey protocol**
- › **United Kingdom maximum and average salt/sodium targets (example)**
- › **European and other sodium targets**
- › **European Union Salt Reduction Framework – benchmarks and major food categories**
- › **Using dietary intake modelling to achieve population salt reduction: a guide to developing a country-specific salt reduction model**

**Box 3.**

The [illegible]s of salt reduction

# POLICY INTERVENTION

# 4

The WHO European Food and Nutrition Action Plan highlights a range of government policy options that aim to reduce population salt intake by 30% by 2025.[19] Key interventions include increasing consumer awareness of the impact of a high-salt diet on health (health literacy); creating healthy food and drink environments through reformulation of foods and meals and by introducing restrictions on marketing of unhealthy foods to children; implementing interpretative front-of-pack labelling and increasing food literacy; and setting food standards for public institutions to improve the availability of healthier foods.

## 4.1 IMPROVING HEALTH LITERACY: EDUCATE AND COMMUNICATE TO EMPOWER FOR CHANGE

Societies and individuals are increasingly challenged to make healthy choices. Research shows that only a small percentage of people are prepared to make informed decisions to protect their health, or given proper support to do so.[47,48] The European Health Literacy Survey found that nearly half of all adults in the eight European countries tested had inadequate or problematic health literacy skills that adversely affected their health.[49] The range of skills and abilities that an individual needs to become fully health-literate are shown in the box below.

**Box 9.**
What it takes to be health-literate

### WHAT IT TAKES TO BE HEALTH-LITERATE

There is much more to health literacy than just being able to understand the language of health. This kind of literacy entails people's knowledge, motivation and competence to access, understand, appraise and apply health information in order to make judgements and take decisions in everyday life concerning health care, disease prevention and health promotion.

Ideally, a health-literate individual is able to seek and assess the health information required:

1. to understand and carry out instructions for self-care, including administering complex daily medical regimens;
2. to plan and achieve the lifestyle adjustments required for improving their health;
3. to make informed positive health-related decisions;
4. to know how to access health care and when it is necessary to do so; and
5. to share health-promoting activities with others and address health issues in the community and society.

**Box 9.** contd

Regarding salt reduction in particular, the health-literate individual should know that their BP level depends on their sodium consumption; that the health risks associated with consuming too much sodium bring complications such as stroke and renal failure; that consuming less sodium has the effect of lowering BP and reducing its complications; and that behaviour such as monitoring how much salt/sodium they consume, avoiding adding salt at the table and in cooking, and seeking food products with lower sodium content can have a positive effect on their health, life and the environment.

There are several strategies that can be implemented to improve health literacy with respect to salt reduction.

- **Provide reliable health information resources:** always use scientific evidence published in scientific journals with clear methodology and findings. If a lay person is preparing the information, they should utilize health professionals to check that they are delivering it correctly.
- **Build the foundations for health literacy in early child development:** parents are highly motivated to keep their children healthy and promote healthy habits. This is a critical period to engage children in the issue of sodium intake, including its effect on BP and future health, as well as to provide advice on foods to be avoided.
- **Make the healthier choice the easier choice:** use nudging (the choice architecture that alters people's behaviour in a predictable way without forbidding options or significantly changing economic incentives) to catalyse change in behaviour, for example by designating sections of supermarket trolleys for fruit and vegetables and making salad rather than chips the default side order.
- **Build supportive environments for consumers:** promote health issues in all community gatherings and celebrations/fairs, placing healthy food in attractive and easily accessible settings in stores and supermarkets and using easy-to-read food labels and front-of-package labelling.

Planning and delivering campaigns to promote communication, education and behaviour change with respect to population-based salt consumption should be led by groups that have expertise in the area. Potential profiles include members of civil society groups, mass-media representatives, anthropologists and social marketing specialists.

## 4.1.1 BUILDING/RAISING AWARENESS

Awareness building is one of the key components of policy interventions within national programmes. It is important, therefore, that information is based on a situation analysis to understand if the issue of NCDs, hypertension and their relationship with salt intake is understood.

The objectives of salt reduction awareness plans are to inform and educate about the health risks associated with excessive sodium consumption; to motivate and encourage health-protective behaviours (checking food labels, not adding salt before tasting food, eating more meals at home, purchasing less fast food and more fruit and vegetables); to encourage demand for low-sodium products on the market; and to increase support for policies that lead to lower-sodium food products and a healthier food environment.

**RESOURCES**
**Developing a population awareness plan**

In countries where the major source of sodium intake is salt added at the table or during cooking (in the form of table salt or condiments such as seasonings, stock cubes and soy sauce), awareness raising should focus on improving people's understanding of the risk and how to avoid it (health literacy), while social marketing should aim to influence the behaviour of consumers, cooks and caterers, encouraging them to reduce their salt use. For instance, awareness building could focus on using more fresh herbs instead of salt to give spice to food and/or on weekly or monthly monitoring of salt used when cooking. Social marketing, meanwhile, could promote a measuring cup/spoon (product) to be used to measure salt added when cooking, promoting it at markets and supermarkets and on cooking channels (promotion) as a new fashion in cooking.

In countries where processed foods are the major source of sodium, awareness building should focus on increasing information and education on sources of sodium in the diet (health literacy) and behaviour change (less processed food, fewer restaurant meals and fast foods, checking labels on ready-made products). It should also encourage increased consumer engagement to create pressure on the food industry to follow through with commitments to reduce sodium, on retailers to look for fresh foods and control levels of sodium, and on governments to work on targets and other policy actions.

Social media can be very influential in awareness building, providing opportunities to create and share content on a scale barely imaginable a few years ago. Given the widespread generation and consumption of content, it would make sense to target messages towards highly influential people, or so-called influencers, who will propagate them further through social networks.

When attempts are made to influence people to change their behaviour, health – unless they are actually sick – is rarely the main motivation. A precautionary approach ("It is dangerous, you are at risk", "Stop it or you will become ill") has shown results when addressing tobacco use. With food, a benefits-based approach should be considered, focusing on things that people care about – pleasure, taste, family, fun, social status, etc.

**RESOURCES**

**Social media campaign in support of World Salt Awareness Week 2012 (case study)**

**Campaign conducted on Facebook and Twitter by the Pan American Health Organization**

## 4.1.2 APPLYING SOCIAL MARKETING PRINCIPLES

Social marketing, as defined by Andreasen and Kotler,[50] is the application of commercial marketing principles to influence social behaviours. Marketing principles that are key to social marketing include: (1) consumer focus; (2) audience segmentation; (3) the exchange theory (including analysis of the so-called competition); and (4) the marketing mix.

Several social marketing principles are reflected in current population-based efforts. Thus, product reformulation and labelling are a *product strategy*; increased access to healthy alternatives and decreased access to high-sodium products reflect a *place strategy*; and countries are looking at *price strategies* that provide incentives for healthier choices and tax increases to deter consumers from high-sodium products.

Taking a new look at current salt reduction efforts through a social marketing lens will help strengthen efforts to influence individual choice, bridging the gap between what consumers know and what they actually do. Applying a social marketing framework to salt reduction will also help to tie together population-based and individual initiatives and create even more integrated and holistic programmes.[51]

Complementary methodologies such as communication for behavioural impact may also be considered.[52]

**RESOURCES**

**Social marketing**

*The principles of social marketing, with a focus on its application to salt reduction*

# 4.2 CREATING HEALTHY FOOD ENVIRONMENTS THROUGH REFORMULATION

In many European countries, it is estimated that the majority of dietary salt is obtained from manufactured food as well as from restaurants.[53] For this reason, food product reformulation – in which the composition of manufactured foods is modified to improve the overall nutritional quality of diets – is considered a critical policy intervention and one of the most important mechanisms for achieving the goals of population salt reduction. Successful reformulation programmes typically involve the setting of clear and progressively lower targets for salt levels in selected foods, backed up by measures that incentivize the food industry to take steps to reduce the salt content of their products, including through transparent monitoring. Ultimately, success will depend on the full engagement of the food industry, strong government leadership, adoption of challenging targets, and implementation of a transparent process that objectively defines progress.

Various forms of food reformulation, both voluntary and regulatory, have been implemented around the world (see box 10).

**Box 10.**
Product reformulation around the world

## PRODUCT REFORMULATION AROUND THE WORLD

The United Kingdom was the first country to establish a comprehensive and highly managed salt reformulation strategy that engaged the food industry on a voluntary basis (though it was closely monitored). The strategy involved working with food industry players, including manufacturers, retailers, trade associations, caterers and suppliers. The Food Standards Agency modelled the reduction needed to engage the food industry. The initiative resulted in reductions in sodium levels of up to 70% in a range of food categories.

Subsequently, the European Union (EU) High Level Group on Diet, Physical Activity and Health developed a Framework for National Salt Initiatives, approved and adopted by EU Member States. It encouraged countries to adopt salt reformulation targets to help them achieve the WHO target salt intake of 5 g/day. Specifically, 12 categories of food were identified, from which countries selected at least five to target through their national nutrition action plans and strategies. A common minimum European benchmark of a 16% salt reduction from baseline levels over four years was established.

Some countries have set legislative limits on salt in food. This is most common in the case of bread, for which a number of European countries have set maximum limits on salt content, some of which date back at least to the 1970s. One example is the Netherlands, which established a legal maximum allowed salt content for bread. The accepted level has decreased gradually over the past decade, from 2.5% per 100 g of dry matter in 2009 to 2.1% in 2011 and 1.9% in 2012. The maximum level was last amended on 1 January 2013, to 1.8% per 100 g of dry matter. For an average dry matter content of 64%, the limit is equivalent to approximately 1.15 g/100 g of bread. Many bread producers supported the move in order to level the playing field and to ensure that consumer tastes were adapted to universally reduced salt.

Outside Europe, Argentina and South Africa are some of the best examples of countries that have chosen to implement maximum limits through legislation that applies to a wider range of product categories. The Argentine law considers the maximum limits for the main food groups that are the biggest contributors to high salt intake in the national diet; the law stipulates a period of two years before targets are subject to further revision and new food groups are included.

Reformulation involves changing the nutrient content of a processed food product either to reduce the content of negative nutrients such as sodium, saturated fat, trans fat or energy (kilojoules); or to increase the content of beneficial nutrients such as dietary fibre, wholegrains, fruit, vegetables and unsaturated fats.

Priority should be given to reformulating products that contribute most to population intake of sodium.[54] Reviewing established reformulation programmes in other countries may provide an indication of what is feasible as a benchmark.[55,56]

Consideration may also be given to whether sodium should be the sole focus of reformulation. A multi-nutrient approach (for instance, sugar and/or saturated fat in addition to sodium) could help address the interplay of nutrients within foods and minimize costs related to packaging and product development. However, this involves additional work and countries may choose to tackle sodium reduction initially.[7]

For more information on setting targets for the main sources of sodium in the population, see section 3.2.

## 4.2.1 VOLUNTARY AND REGULATORY APPROACHES

If the main sources of sodium are processed and pre-packaged food products, the application of targets to food groups may be managed through a policy process that is based on either a voluntary or a regulatory approach. The chosen approach depends, to some degree, on the capacity of the country to monitor industry performance against commitments and/or its capacity to enforce the regulation.

Whether voluntary or regulatory, successful initiatives must have strong government oversight. For this reason, irrespective of which sector of the food supply or which food categories are being addressed, the approach must include a monitoring framework that assesses industry performance against agreed targets; this then informs the next stages of reduction.

A **voluntary approach** has been adopted in a number of countries, including Brazil, Canada, Netherlands, the United Kingdom and the United States. The approach is based on consultations with food industry representatives to establish sodium reduction targets, which are often complemented with a voluntary commitment mechanism. Most countries have committed to gradual reductions of sodium content per food category. Success depends on genuine commitment by the food industry to reach targets; determination on the part of the government to set the lowest possible targets; and government commitment to monitor progress. The voluntary approach can be initiated relatively rapidly in most countries that have basic national data on sodium intake and food sources of sodium, and it retains some flexibility to adjust the reductions targeted. It can also serve as a transition phase before legal regulations are established. If this is the intention from the outset, the food industry is initially prompted to respond to voluntary targets and is in a better position to follow through once regulations are passed.

**Box 10.** contd

**RESOURCES**

**United Kingdom salt reduction programme (case study)**

**Food reformulation via public–private initiatives in the Netherlands (case study)**

In a **regulatory approach**, targets are typically set as upper limits of salt in foods, which are legally binding. This approach has been adopted in several countries, including Argentina, Finland, Hungary, Portugal (pending) and South Africa. It has been most commonly used for widely consumed products such as breads. A regulatory approach has been assessed to be twice as cost-effective as a voluntary approach and to avert twice as much of the burden of disease.[57] For industry, this approach levels the playing field across food-processing sectors and is often preferred for this reason. Essential to the success of a regulatory approach is the capacity and willingness of the country to enforce measures, monitor changes, and enforce more stringent targets.

**RESOURCES**
**Strategies used by the food industry to reduce sodium in foods**

## 4.2.2 AWARENESS OF INDUSTRY OBSTACLES TO REFORMULATION

Reformulation activities are driven by public health benefit, whereas the economic model used by industry is primarily driven by profit. Industry's interests are therefore not wholly aligned with those of public health.

For this reason, a number of arguments may be employed by the food and beverage industry to claim that reducing the sodium content of certain foods is difficult or impossible.

One argument employed is that sodium reduction presents a competitive disadvantage for food producers – that it imposes higher costs, compromises taste or quality, and limits consumer demand. However, experience from around the world has shown that it is technically possible to reduce the amount of sodium significantly without affecting the product. Technical limitations are rarely a valid reason to omit a food category from a sodium reduction programme. Within almost every food category, there is already a broad range of sodium levels across similar products, which shows that it is technically feasible to produce lower-sodium options.

Consumer acceptability is more frequently put forward as an argument against reformulation. On the (supposed) basis of what is acceptable to consumers, the food industry usually offers to reformulate new products before (or rather than) addressing products that are already on the market. However, evidence suggests that it is possible to make significant reductions (40–50%) in the salt content of a range of products without consumers noticing, provided that it is done gradually.[58] As sodium intake falls, the specific taste receptors in the mouth become much more sensitive to lower concentrations of sodium.[59] Within a period of just 1–2 months, less salty food tastes as salty as the highly salted food did prior to reduction. Contrary to what is sometimes suggested, research shows that consumers do not compensate when sodium is reduced in prepared foods by adding the same amount of salt themselves.[60] For these reasons, it is unlikely that lowering sodium concentrations in foods will lead to them being rejected. On the contrary, evidence suggests that, once salt intake has been reduced, individuals prefer foods with less sodium.[61]

In summary, when negotiating with the food industry, it is important to remember that:

- there are many possibilities for reduced sodium products that are of good quality and retain excellent sensory properties (many products have already been successfully reformulated);
- consumers do accept food with substantially reduced sodium, provided that it is done gradually;
- reduction of the sodium content of foods leads to reduction in sodium intake; and
- product categories for which regulation/legislation is in place (such as bread) achieve the largest and fastest reductions in sodium content.

**RESOURCES**
**Tips on engaging with industry to reduce salt in foods**

### 4.2.3 SMOOTHING THE ROUTE TO REFORMULATION

Conducting a **public awareness campaign** in parallel with food industry consultations can help efforts to achieve reformulation. For example, a campaign that focuses on checking food labels for sodium content can contribute to a shift in demand for new products with less sodium. The food and retail industry may welcome such a campaign and be more open to reformulation.

Establishing and building relationships between government, industry, researchers and public health bodies requires time and careful planning. Such relationships are needed to address the challenges associated with improving the nutritional composition of processed foods. A **collaborative approach** of this kind can be adopted at country level, as in the case of the Netherlands, or at multi-country level, as in the Salt Smart Consortium of the Americas. In both cases, all interested parties – including programme leaders, scientific societies, nongovernmental organizations, the food industry and retailers – participated according to their specific roles. Alternatively, the initiative can be led by the team within government with responsibility for reformulation; it can approach each food industry stakeholder and negotiate on a one-to-one basis, starting with food industry representatives who are expected to be more open to negotiation and therefore more likely to agree to setting targets.

**RESOURCES**
**Examples of reformulation-supporting policies in Europe**

**Food reformulation via public–private initiatives in the Netherlands (case study)**

**Possible model of multi-stakeholder engagement**
*Salt Smart Consortium Americas – Terms of Reference*

## 4.3 IDENTIFYING OPPORTUNITIES FOR THE USE OF SALT SUBSTITUTES

A promising strategy to reduce sodium intake is to replace dietary salt (sodium chloride) with lower sodium salt substitutes, where sodium chloride is partially replaced with non-sodium alternatives, such as magnesium and potassium.[62]

In low- to middle-income countries, salt substitution could represent an important public health intervention both for primary and secondary prevention of CVDs. In economically developed countries, salt substitution in the home may be more appropriate as a supplementary measure, targeting secondary prevention or those with high cardiovascular risk.

As a public health intervention, salt substitutes can be used by the food industry in products such as bread, meat, cheese, soups, snacks and other foods that are heavily consumed or have a high sodium level.[56] Salt substitutes have been identified as a solution to further reduce salt levels in foods, where limits to reformulation have been reached.[60]

In countries where most of the salt consumed is added during cooking or at the table, or from high salt sauces (including table sauces) salt substitutes could be made easily available and promoted as a low cost way to reduce sodium intake. The use of salt substitutes in place of salt can effectively reduce sodium consumption while concurrently increasing potassium or magnesium intake. A meta-analysis of small randomized clinical trials showed that salt substitution reduces BP effectively and suggests that such strategies are effective at lowering systolic and diastolic BP, supporting a broader nutritional approach to preventing hypertension. The use of such substitutes in rural China has been shown to effectively lower BP.[63]

In 2017 the United Kingdom Scientific Advisory Committee on Nutrition and the Committee on Toxicity of Chemicals in Food, after careful assessment of the evidence, concluded that at population level the potential benefits of using potassium-based sodium replacers to help reduce sodium in foods outweighed the potential risks. The beneficial effects at an individual level are likely to be small in size but will impact a large proportion of the population.[64,65]

## 4.4 IMPLEMENTING STANDARDS FOR FRONT-OF-PACK NUTRITION LABELLING

Implementation of effective and accurate interpretative front-of-pack nutrition labelling (FOPL) systems is an important component to help consumers identify foods that are high (or low) in salt and guide them towards healthier options. FOPL may also encourage food manufacturers to develop healthier products that contain less salt.

FOPL refers to nutrition labelling systems that:

- are presented on the front of nutrition packages (in the immediate field of vision) and can be applied across the packaged food supply;
- comprise an underpinning nutrient profile model that considers the overall nutrition quality of the product of the nutrients of concern for NCDs; and
- present simple, easy-to-understand information on the nutrient content of products, to complement the more detailed nutrition information presented on the back of pack.

There are two major categories of FOPL: **interpretative** and **non-interpretative systems**. Interpretative systems use nutrient profiles or cut-off points to create a judgement or recommendation based on nutritional content. Non-interpretative systems provide nutritional content information in a standardized format, though with no specific indication of how these related to a healthy diet. Subsystems within these groups include nutrient-based systems, summary indicator systems, endorsement logos and nutrient-based warning labels. Endorsement logos are usually considered to be health claims in international and domestic standards; however, they are included as FOPL as they are a tool for supporting healthier food choices.

Interpretative FOPL is a policy priority for promoting healthy diets. The WHO European Food and Nutrition Action Plan 2015–2020 identified the introduction of "easy-to-understand or interpretative, consumer-friendly labelling on the front of packages" as a priority policy issue.[19] Evidence indicates that consumers have a reasonable understanding of interpretative FOPL systems, and their understanding improves with label familiarity and consistency within the market.

The main components of FOPL that need to be considered include policy development, the policy framework, policy implementation and M&E of the policy.

### 4.4.1 FOPL POLICY DEVELOPMENT

A recent report published by the WHO Regional Office for Europe identified government-endorsed interpretative FOPL policies in 15 Member States and summarized their development and implementation to support policy-makers to navigate these processes.[66] Most existing policies have been implemented under voluntary

arrangements, with variable penetration into the marketplace. Policy development that is led by government and based on formative research, and that engages stakeholders and the public, is most likely to lead to acceptable, credible and effective policies. FOPL implementation is best supported by policy provisions that encourage widespread uptake of the system and allow for formal evaluation of both implementation and impact.

The key steps in the development of FOPL policy are broadly outlined below, using examples from within the WHO European Region.

#### 4.4.1.1 Establishing FOPL as a nutrition policy

Most government-endorsed FOPL systems form part of policy measures to improve population nutrition. In France, FOPL was initially identified as part of the *Programme national nutrition santé* (National Nutrition Health Programme) in 2001, which included recommendations for a combination of nutrient-related laws, regulations and incentives with the aim of improving population health. In 2014, a report contained 15 new proposals to intensify the actions of the programme, including the introduction of the 5-Colour-Nutrition-Label (now referred to as Nutri-Score). In Lithuania, the government applied to the European Commission for an order to enable the installation of "a food labelling system promoting Lithuanian food manufacturers to improve the composition of foods that helps users to easily choose healthy foods".[67] The stimulus was the drive within the 2012–2016 NCD Action Plan to improve the nutrition of the population and reduce morbidity from NCDs.[68]

#### 4.4.1.2 Engagement and consultation with stakeholders

Broad stakeholder engagement and consultation have been identified as a cornerstone in establishing feasible and acceptable FOPL policies. Engagement with key stakeholders is important for the success of a FOPL system.

Stakeholders include:

- those with a health focus – for example, government departments and ministries, international organizations with a focus on health, health and consumer organizations, and the scientific community, including public health and nutrition experts; and
- those with a wider economic and development interest, including an interest in food industry growth, sales and trade; such stakeholders include:
  - the wider food and agriculture sectors – in particular, food manufacturers and retailers, and the scientific community involved in agriculture and food;
  - those government departments and ministries responsible for industrial development and trade.

Importantly, successful consultations have been government-led and engagement with stakeholder groups has occurred at discrete time points after interpretative FOPL has been identified as a policy priority by government. Engagement includes consecutive formal consultations with the food manufacturing and retail industries, public health organizations, health services and authorities, consumer groups, scientists and the public, and the establishment of formal committees for steering the policy's development. For example, in France, Israel and the United Kingdom, FOPL system development has been led by government, with stakeholder input managed with government oversight. Considerations for nutrient profiling criteria are not typically the topic of public consultations or industry engagement; rather, these criteria are developed or informed by independent nutrition experts, health organizations or government agencies.

#### 4.4.1.3 Collection of formative evidence to inform FOPL policy design

Although many FOPL policies across the WHO European Region have been informed by scientific evidence on label format, content and nutrient profiling criteria to ensure these have maximal utility with the target population, no publicly available information was identified for countries other than France, Israel, Norway, Portugal, Slovenia and the United Kingdom. Information on formative evaluation to inform FOPL labelling is particularly detailed for France and the United Kingdom, where such research was undertaken over a period of three and 10 years, respectively.

## 4.4.2 FOPL POLICY FRAMEWORKS

Implementation is either mandatory or voluntary, and may or may not be led by government.

Most of the identified FOPL policies in the WHO European Region have been implemented under voluntary arrangements. This is at least partly a result of existing EU regulations that prevent national governments within the EU from implementing mandatory national FOPL policies. Voluntary systems can be improved by policy-makers – for example, by encouraging food manufacturers to apply FOPL across their product portfolio, not just to selected (often healthier) products.

## 4.4.3 FOPL POLICY IMPLEMENTATION

Some countries in the WHO European Region have implemented FOPL, but this has taken different forms, with various degrees of interpretation of the nutritional composition of foods. Research provides evidence on the effectiveness of the various schemes, as well as a theoretical framework for countries to use in order to develop or adapt a FOPL scheme that is evidence-based and suited to the national context.

The WHO Regional Office for Europe has developed a manual that provides guidance on how to develop and implement front-of-pack nutrition labelling systems. The manual details a five-step process:

1. select the specific strategy: what is expected from an FOPL
2. select the type of FOPL graphical design
3. determine the underlying nutrient profiling system
4. define studies to be performed to select the final format
5. establish monitoring processes to assess implementation

## 4.4.4 FOPL POLICY MONITORING AND EVALUATION

Monitoring and evaluation should be included in implementation planning for a FOPL system. Evaluation of FOPL policy spans process, impact and outcome measures:

- process evaluation indicators measure policy implementation progress, including the activities undertaken and their quality and reach;
- impact evaluation is used to define the assessment of short-term results of a policy or programme (such as changes to KAB); and
- outcome evaluation indicators refer to measurement of the ultimate effects of an intervention, such as the impact on nutrition or health outcomes.

**RESOURCES**

**Manual to develop and implement front-of-pack nutrition labelling**

*Guidance for countries on the selection and testing of evidence-informed FOPL systems in the WHO European Region*

# 4.5 IMPLEMENTING STANDARDS FOR MARKETING TO CHILDREN

The food industry typically employs a range of marketing strategies to promote its products, which are often detrimental to health. Many existing policies and regulations aimed at tackling food marketing to children are markedly insufficient. As a consequence, children continue to be exposed to commercial messages promoting foods that are high in fats, salt and sugar (HFSS), and this influences their food preferences, purchase requests and ultimately consumption patterns.[69,70,71,72]

In May 2010, the World Health Assembly unanimously adopted the Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children.[73,74] These recommendations urge countries to reduce the impact on children of the marketing of energy-dense, highly processed HFSS foods and beverages. The recommendations broadly include: ensuring consensus across government; conducting a situational analysis; selecting a comprehensive or stepwise approach across marketing platforms; implementation; enforcement; and monitoring, evaluation and research.[69,75]

## 4.5.1 IMPLEMENTING RECOMMENDATIONS FOR MARKETING STANDARDS

While all 53 countries in the WHO European Region have taken some steps to address inappropriate marketing of unhealthy foods and beverages to children, implementation of the Set of Recommendations continues to be patchy. Current efforts by Member States are now complicated by rapid changes in digital and programmatic marketing strategies. Consequently, WHO has called on Member States to introduce restrictions on marketing of HFSS foods to children, covering all media, including digital, and to close any regulatory loopholes. To support this, the WHO Regional Office for Europe has developed the CLICK framework to facilitate monitoring of children's exposure to unhealthy products online and to further support implementation of the WHO recommendations in online settings.[76,77]

Further, a recent report evaluating the implementation of the WHO Set of Recommendations in the WHO European Region encouraged countries to consider the following points.[67]

- Most existing action focuses on broadcast advertising only, despite clear evidence that children are exposed to marketing through many other avenues: in the digital sphere, via product display, and through packaging and sponsorship of HFSS foods. Countries therefore need to adopt a more comprehensive approach to HFSS food marketing regulation.
- Existing regulations typically limit their scope to child-oriented programming and focus primarily on advertising, leaving a broad range of programmes, media and marketing techniques to which children are exposed unregulated. Countries should therefore ensure that they focus on establishing policies to effectively reduce children's actual exposure to HFSS food marketing, rather than policies based on the classification of content or media.
- Existing rules typically only seek to protect children up to a certain age (typically 12 or 13 years), even though a growing body of evidence suggests that adolescents are also negatively affected by HFSS food marketing. The scope of rules should be extended to protect all children under the age of 18.

- Countries have not always adopted effective food categorization systems to determine what foods should not be marketed to children. They should ensure that they use existing, or develop new, evidence-based nutrient-profiling systems that effectively identify unhealthy food according to nutritional quality.
- Countries have failed to effectively regulate cross-border marketing, at a regional level, as well as social media influencers; they should reflect on how better cooperation and harmonization could avoid weakening national HFSS food marketing restrictions and could strengthen efforts to address the global issue of food marketing in digital media.

#### 4.5.1.1 Nutrient profile models

In order to support countries in identifying unhealthy foods, the WHO Regional Office for Europe has developed a nutrient profile model for use and adaptation by Member States to support the development of policies to restrict food marketing to children.[78]

The nutrient profile model can be used by governments for the purpose of restricting food marketing to children. It defines five main steps for governments (or the food industry) to determine whether a food product may or may not be marketed to children:

1. identify which food category the food product falls within;
2. cross-check the nutrient composition of the food product against category thresholds;
3. assess whether the food product is as sold or reconstituted;
4. if the marketing is for a meal or two or more food products, all parts must be assessed against the nutrient criteria; and
5. check whether the food product has a protected designation of origin or is a traditional speciality, which may exempt it from marketing restrictions.

### 4.5.2 EVALUATION AND MONITORING OF MARKETING ON TV AND DIGITAL MEDIA

Monitoring the marketing of unhealthy products to children and adolescents is fundamental in order to encourage and sustain implementation of regulations and restrictions by Member States. To strengthen monitoring and evaluation, the WHO Regional Office for Europe has developed a training unit which includes protocols and tools.

The training unit provides protocols and templates for monitoring food marketing in audiovisual media (TV and Internet). The unit covers manual methods that are relatively simple and low-cost but also indicates where more complex or costly methods could be considered (for instance, methods that require data purchase). The templates can all be adapted to individual countries to ensure that the best possible study is conducted within the specific circumstances (cost, feasibility, researcher time).

The components provided by the training unit include:

- an overview of key issues in psychological and marketing research as they relate to evaluation of food marketing exposure, power and impact on children of all ages;
- step-by-step protocols for conducting monitoring in TV and digital media;
- coding templates with variables to measure exposure and power in marketing;

- examples of completed coding on templates, with associated explanations to support learning about the coding process (on request);
- guidance on statistical analyses;
- templates for writing official reports and/or journal articles to communicate findings; and
- optional training in monitoring study design and methods.

The training tool is designed to be a live package of resources. Media are evolving rapidly, as are the analytical tools designed to study them. Therefore, when updates to the contents of the unit are made, they will be flagged and dated with a new version number.

For monitoring of digital media, the unit provides relatively simple protocols and methods that Member States can use without specialist tools, skills or data purchase. However, for a deeper and more comprehensive understanding of children's exposure to digital marketing, the CLICK framework provides a high-level guide for researchers and public health experts to design larger-scale approaches.

**RESOURCES**

**CLICK monitoring framework for the digital marketing of unhealthy products to children**[75]

**WHO Regional Office for Europe nutrient profile model**[76]

**WHO Regional office for Europe monitoring and evaluation of marketing to children training**

# 4.6 INTERVENTIONS IN SETTINGS TO SUPPORT LESS CONSUMPTION OF SALT

Policy interventions that address public health need not operate only at the national level. Some interventions may be easier to initiate and show quicker results if they are implemented in specific settings such as communities, schools, workplaces and health facilities. Settings-based approaches to salt reduction have been implemented in many countries in the WHO European Region, including Estonia, Finland, France, Latvia, Poland, Portugal, Romania and the United Kingdom.

A settings-based approach includes some of the same strategies as the population-wide approach, such as awareness building (including promoting health literacy and social marketing); setting limits on sodium in food; reformulation of meals to contain less salt; and monitoring and evaluation of programmes. What goes into foods and meals served in institutional settings such as schools, workplaces and hospitals can be regulated, which makes it possible to introduce standards and set maximum limits for the amount of sodium permitted in foods and meals.

Specific interventions and promotion of a so-called less sodium message can usually be introduced easily into an existing initiative (such as Healthy Cities, Healthy Schools, Healthy Hospitals or Healthy Workplaces), where it can appear as part of a healthy eating component. It is necessary to evaluate the maturity and openness of existing initiatives, as it is easier to include salt reduction content if they already have well developed wellness and dietary policy components.

It is very important to link the salt reduction programme's goals, objectives and work plan with existing objectives – for example, educational objectives of the education ministry and the business objectives (such as enhanced productivity of employees) of private-sector workplaces. It is also important to have strong leadership support at the highest level (such as the education minister or the mayor) and the active participation of beneficiaries (such as schoolchildren, employees and community members).

As a starting point, there needs to be a decision about which setting is best suited for intervention. Which strategies to consider will then depend on an environmental scan of the setting.

1. Which foods and beverages are currently served within the organization (to identify high-sodium products and the availability of lower-sodium, nutrient-rich options)?[79]
2. Who are the caterers and is there a procurement policy?[80]
3. Are there places where food can be purchased (vending machines, kiosks, etc.)?
4. Are there any other activities/opportunities that could facilitate communication, education or social marketing?

## 4.6.1 STRATEGIES AND APPROACHES

### 4.6.1.1 Food policy and standards

A comprehensive food policy should include:

- procurement requirements (sodium standards for foods purchased and served);
- restrictions on the level of sodium in foods for sale or available in tuck shops, cafeterias, onsite restaurants, vending machines, etc.;
- restrictions on the level of sodium in foods that have been donated, as well as in catered foods for meetings, congregate meals, holiday parties and special events;
- implementation of reduced pricing for healthful foods; and
- inclusion in school curricula of lessons on salt and health and instructions on how to reduce sodium intake.

### 4.6.1.2 Modifying the surrounding environment

Environment plays an important role in influencing diets and dietary choices. Reminders of healthy eating throughout a specific setting can positively contribute to reduced sodium intake. Such reminders include:

- placing more healthful options that are also low in salt, such as fruit, near the point of food purchase;
- adding healthful food options to vending machines or placing traditional vending machines in low-traffic areas;
- establishing gardens around schools, worksites and institutions to grow and sell food to employees, students and visitors; and
- restricting marketing of HFSS foods.

### 4.6.1.3 Consumer awareness and social marketing techniques to shift behaviours

Raising awareness involves the use of activities such as advertising lower-sodium and more nutritious foods where foods are sold or distributed in order to educate setting participants and promote low-sodium diets. This strategy can complement changes made to the built environment through inclusion of signs and labels in places where people gather and eat.

Social marketing actions that can be effectively employed include:

- placing salt warning labels on food packages with excess sodium or on shelves where products are sold, for instance in tuck shops, canteens and cafeterias;

- using signs and posters to highlight foods that are nutrient-rich and lower in sodium, such as fruit and vegetables, and incorporating frequent low-sodium messaging into other healthy advertisement;
- providing free taste tests in cafeterias and asking for feedback to gauge consumer acceptability;
- offering diet education during new employee training;
- offering food service staff professional development training in the preparation of low-sodium foods;
- developing low-salt recipe books to provide guidance on how to cook tasty, popular foods that are low in salt; and
- giving cooking lessons and demonstrations to show people how to cook healthy, tasty foods using alternatives to salt to provide flavour to foods and meals.

## 4.6.2 POTENTIAL SETTINGS FOR IMPLEMENTATION OF SALT REDUCTION INTERVENTIONS

### 4.6.2.1 School

Schools are an important setting for promoting health and well-being. School-based public health programmes extend beyond their impact on children's health as they can also benefit families and the wider community.

Effective interventions for salt reduction in schools are multi-component and can integrate dietary salt reduction into overall school food policies. Some examples include:

- integrating the topic into curricula;
- placing warnings or good choice labels on foods distributed daily or donated for celebrations;
- adapting physical environments by changing the content offered through food machines or sold in cafeterias;
- introducing procurement policies stipulating the maximum sodium content in meals prepared or procured for canteens and cafeterias;
- promoting healthy options such as fruit and vegetables and other healthy alternatives.

### 4.6.2.2 Workplace

A workplace environment that supports healthy eating can significantly contribute to the health and well-being of all employees. How and what to include will depend on the overall policy at the workplace and its commitment to the health and well-being of workers and their families. Ensuring that both foods available for purchase and those provided to employees meet pre-established sodium criteria is a key element in limiting total daily sodium consumption.

### 4.6.2.3 Community

Salt reduction programmes can be initiated at a lower government level than the national government, sometimes in a community setting such as a city, town or village. There are opportunities at these levels of governance to address specific challenges that affect people in the local community. Many cities have become role models for commitment and actions to ensure equitable and sustainable development and peaceful, prosperous and just societies. Associations of municipalities, as well

**RESOURCES**
**United Kingdom maximum and average salt/sodium targets (example)**

**RESOURCES**
**National policies/guidelines to reduce salt in canteen settings**

*Case studies describing countries that have implemented national policies or guidelines for food served in school, hospital and workplace settings*

as international projects such as Healthy Cities (see box 11), bring city representatives together to discuss and endorse international agendas. These networks can help to progress towards the United Nations 2030 Agenda for Sustainable Development and the Sustainable Development Goals, by adjusting programmes to respond to that agenda to local conditions. Local communities are ideal settings for forging partnerships between national governments, international organizations and different sectors and levels of government, as well as with civil society and their populations.

**Box 11.**
The Healthy Cities Network

### THE HEALTHY CITIES NETWORK

The WHO Healthy Cities Network offers a transformative approach to tackling today's greatest public health challenges. Based on Health 2020, the European regional policy framework and strategy for health and well-being, the network takes account of the social, environmental, cultural, behavioural, commercial and political determinants of health and well-being, and recognizes the role that cities and urban places play in disease prevention and health promotion. The range of opportunities to influence city policies includes procurement related to the preschool, school, worksite and hospital food environment, agreements (voluntary or regulatory) with restaurants and supermarkets to provide healthier choices, economic incentives for local producers of fruits and vegetables, and taxes on HFSS foods.

## CHECKLIST

***Population awareness building***

- ✔ background information secured
- ✔ target audience selected
- ✔ communication goals and objectives ready
- ✔ campaign brand/logo ready
- ✔ M&E defined
- ✔ implementation plan in place
- ✔ budget developed and secured

*If social marketing component introduced*

- ✔ target audience segmented
- ✔ demand–supply component introduced
- ✔ creative concept developed
- ✔ marketing mix defined
- ✔ focus group selected
- ✔ materials pretested

***Reformulation***

Decision on voluntary or regulatory approach made

*If voluntary approach*

- ✔ different stakeholders engaged, including food industry
- ✔ targets and timelines discussed and agreed with stakeholders, including food industry
- ✔ monitoring mechanisms in place
- ✔ reporting timelines, sources and channels agreed

*If regulatory approach*

- ✔ targets and timelines in place
- ✔ analysis of supporting policies done
- ✔ control of implementation in place
- ✔ monitoring mechanisms in place
- ✔ reporting timelines, sources and channels identified

***Front-of-pack labelling***

- ✔ specific strategy selected
- ✔ FOPL design selected
- ✔ underlying nutrient profiling system identified
- ✔ studies to be performed designed
- ✔ M&E plan established and in place

***Marketing of food and beverages to children***

- policy approach determined
- foods and beverages to be included identified (nutrient profile model)
- policy implementation approach determined (statutory regulatory or self-regulation)
- M&E systems in place (CLICK tool to monitor and evaluate digital marketing)

***Environment and supportive settings***

Decision on strategies and settings in place

*If schools or workplace setting*

- key stakeholders mobilized
- strategies and actions decided and developed
- food policy and standards developed
- procurement policy implemented
- food environment modified to facilitate healthy choice
- M&E plan and indicators in place

*If community setting*

- key stakeholders mobilized
- awareness campaign developed
- strategies and actions decided and developed (Codex recommendations; restaurant chain menus with salt content, etc.)
- coordination and synergy with other supportive policies analysed
- M&E plan and indicators in place

## RESOURCES

- **Developing a population awareness building plan**
- **Social media campaign in support of World Salt Awareness Week 2012 (case study)**
- **Social marketing**
- **Food reformulation via public–private initiatives in the Netherlands (case study)**
- **Strategies used by the food industry to reduce sodium in foods**
- **Tips on engaging with industry to reduce salt in foods**
- **Examples of reformulation-supporting policies in Europe**
- **Possible model of multi-stakeholder engagement**
- **United Kingdom maximum and average salt/sodium targets (example)**
- **National policies/guidelines to reduce salt in canteen settings**

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## The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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