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# Mapping **dietary prevention** of **cancer** in the EU28

*European National Cancer Plans  
and their coverage of dietary prevention  
of cancer*

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## Preface

The European Commission has been active in supporting actions against cancer for over 25 years. More recently in 2009, a *Communication on Action Against Cancer* (European Partnership (COM (2009) 291 final)) was adopted and led to the formation of a joint action called the European Partnership for Action Against Cancer (EPAAC). While EPAAC just finished (February 2014), a new Joint Action has now started. CANCON–European Guide on Quality Improvement in Comprehensive Cancer Control will address comprehensive cancer care across the Member States and set the guiding principles for its achievement.

The Joint Research Centre (JRC), as the European Commission's in-house science service, has started activities in the areas of cancer care quality and cancer information as well as nutrition and public health. In close collaboration with the Directorate-General for Health and Consumers (DG SANCO), the JRC will draw on its experience in harmonisation, its independence of private and commercial interests as well as its networking and collaboration capacities to facilitate and drive improvements both in cancer information and care quality.<sup>1</sup> Improvements in both domains, together with cancer pre-

vention—*e.g.* via improved diet and lifestyle—should make significant strides towards reducing the burden of cancer in Europe.

The present report focuses on one particular aspect of cancer prevention—diets. It assesses the degree of attention given to dietary prevention of cancer in National Cancer Plans (NCPs) throughout the EU28 plus four additional countries (Norway, Switzerland, Iceland and Turkey). The reader will find a thorough summary of the content of these NCPs in regards to dietary prevention in this report. The report falls short of addressing the extent to which the measures proposed by NCPs were implemented or evaluated. In times of financial crisis, inexpensive but far reaching diet-related interventions are promising cost-effective strategies to cut cancer and other healthcare-related budgets. The effect of successfully implementing such measures will likely extend beyond reducing cancer incidence as it is likely to affect other diseases and conditions from obesity to type II diabetes and cardiovascular disease. It is our hope that this report will prompt a response that leads to further inclusion of dietary preventive measures in the fight against cancer.

1. [http://ihcp.jrc.ec.europa.eu/our\\_activities/public-health/cancer\\_policy\\_support](http://ihcp.jrc.ec.europa.eu/our_activities/public-health/cancer_policy_support).



## Executive summary

This report deals with dietary prevention of cancer. It provides an overview of cancer and its causes highlighting that the risk of developing cancer (or some cancers in particular) can be substantially reduced through various measures. To this end, publications such as the *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*<sup>2</sup> and the European Code Against Cancer<sup>3</sup> have, on the basis of available scientific data, produced clear evidence-based recommendations advocating for dietary prevention of cancer. These recommendations encourage keeping a healthy body weight (BMI = 18.5 - 24.9 kg/m<sup>2</sup>), being physically active and making wise and healthy food choices. The recommendations include eating mostly foods of plant origin, a minimum of five servings a day of fruits and vegetables while limiting the consumption of red or processed meats, energy dense foods and sugary drinks.

2. World Cancer Research Fund/American Institute for Cancer Research: *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*. Washington DC: AICR, 2007. [http://www.dietandcancerreport.org/cancer\\_resource\\_center/er\\_full\\_report\\_english.php](http://www.dietandcancerreport.org/cancer_resource_center/er_full_report_english.php) (accessed on 27 August 2013).

3. Boyle P. *et al.*: 'European Code Against Cancer and scientific justification: third version, 2003'. *Annals of Oncology*, 14:973-1005. <http://annonc.oxfordjournals.org/content/14/7/973.full.pdf+html>.

### The aim of this report

This report aims to raise awareness of the potential for dietary prevention of cancer, analyses the European National Cancer Plans (NCPs) currently in place, describes the level of attention they give to dietary prevention of cancer, and highlights different types of population-oriented measures to promote dietary prevention of cancer.

### Analysis of dietary-related content of European National Cancer Plans

The analysis shows that the majority of Member States' NCPs (≈90%) acknowledge a general link between nutrition and/or physical activity and the potential positive impact that these can have in the prevention of various types of cancer. Twenty-three of these plans also define 'cancer dietary risk' or 'protective factors' and a similar number of plans propose actions that target diets or physical activity. The contents of the NCPs and the areas of focus are quite heterogeneous. The majority of the actions targeting diets and physical activity consist of awareness-raising campaigns while concrete measures to make healthy options easily available or to influence behaviour change towards healthier lifestyles and dietary patterns are less frequent. For example, only nine NCPs have actions in place that target the consumption of fruits and vegetables, beyond providing information about

their beneficial effects. Promoting research and better surveillance systems related to the link between diets or foods and cancer are other types of measures that are only seldom proposed. The same applies to imposing stricter regulatory measures, mostly related to limiting marketing or access of high fat sugar and salt (HFSS) foods or sugary drinks to children.

The number of NCPs that have been developed, published and implemented in recent years in the EU has increased but clear implementation plans including resource allocation, targets and timelines as well as monitoring and evaluation are not typical standards of practice. This analysis has not addressed whether the proposed measures have been implemented or whether other measures not clearly defined in the NCPs have taken place. Therefore, we invite Member States and other public health actors to highlight successful campaigns and actions and share best practices regarding this issue.

### Next steps?

Overall, most European NCPs include cancer prevention and acknowledge a role for dietary prevention of cancer. However, this does not always translate into concrete actions to ensure healthier dietary behaviour patterns. Additional action is needed. While it can be said that public health actors have proposed many different cancer prevention actions at European level, the number of initiatives proposed by individual Member States is limited. The lessons learned from the implementation and evaluation of these actions need to be openly discussed so that hands-on knowledge, ‘best-buys’ and implementation tips can be shared and successful actions can be effectively replicated throughout Europe. Currently, much is known regarding cancer prevention although admittedly there is still a lot to learn. Additional research on food components and their anti-carcinogenic effects as well as refining and developing more effective methodologies for implementing and evaluating dietary-related cancer prevention measures are areas where information is lacking. Nevertheless, these gaps should not prevent us from applying what is already known. More importantly, with regard to dietary prevention of cancer, most measures will contribute to the reduction of other non-communicable diseases such as type II diabetes or cardiovascular disease.

# 1. An introduction to cancer

Cancer (or malignant tumours/malignant neoplasias) is a term used to define many different diseases that share a common feature: uncontrolled division of abnormal cells that gain the ability to invade other tissues. This later process of leaving the tissue of origin and spreading through the body to start new growth foci is called *metastasis* and is responsible for most cancer-related deaths. Different cancers are generally defined on the basis of the organ or cell type where the abnormal growth originates, e.g. lung cancer (tumour originating in the lung) or melanoma (the indefinite proliferation of skin melanocytes causing a melanoma).

The data presented in the OECD report *Health at a Glance 2012*,<sup>4</sup> show that cancer is a major public health issue and causes an enormous economic and societal burden on European citizens. In 2010, cancer was the second most common cause of mortality in the EU with a mortality rate of 28%.

The most frequently occurring cancer types in Europe are breast, colorectal, prostate and lung cancer. The latter of which is still responsible for most cancer-related deaths.<sup>5,6</sup>

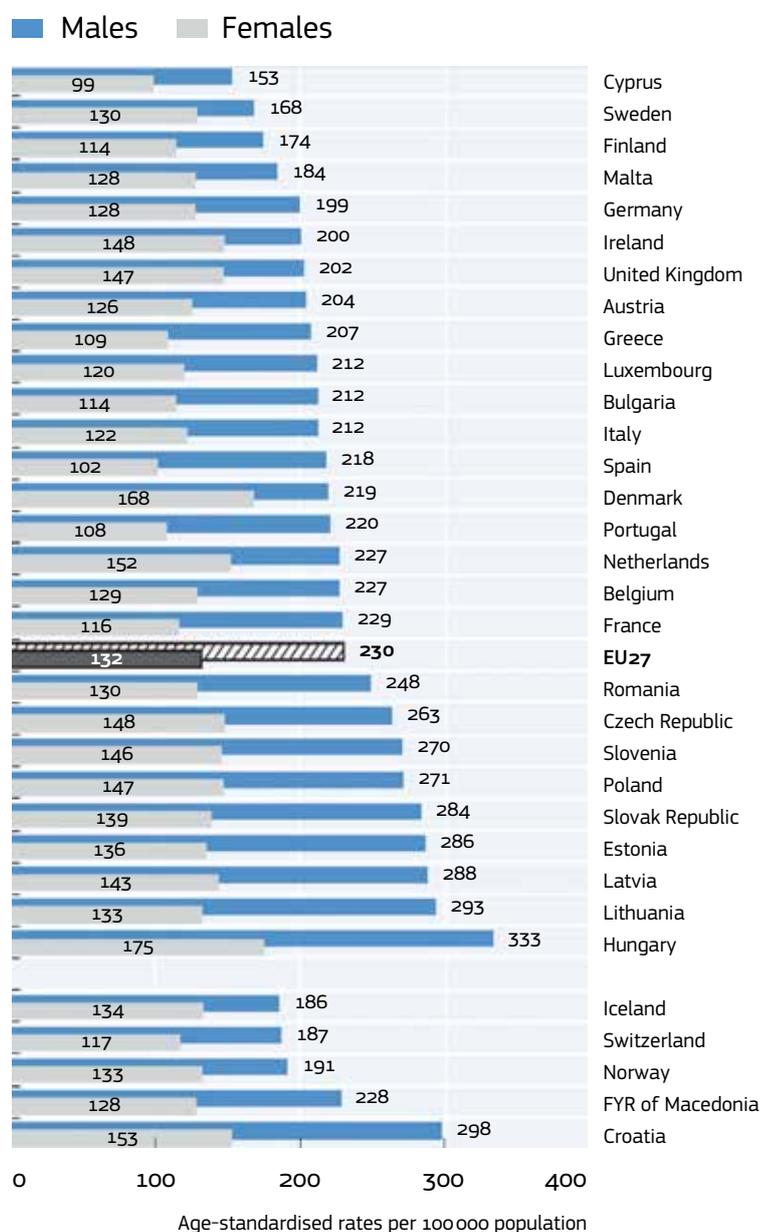


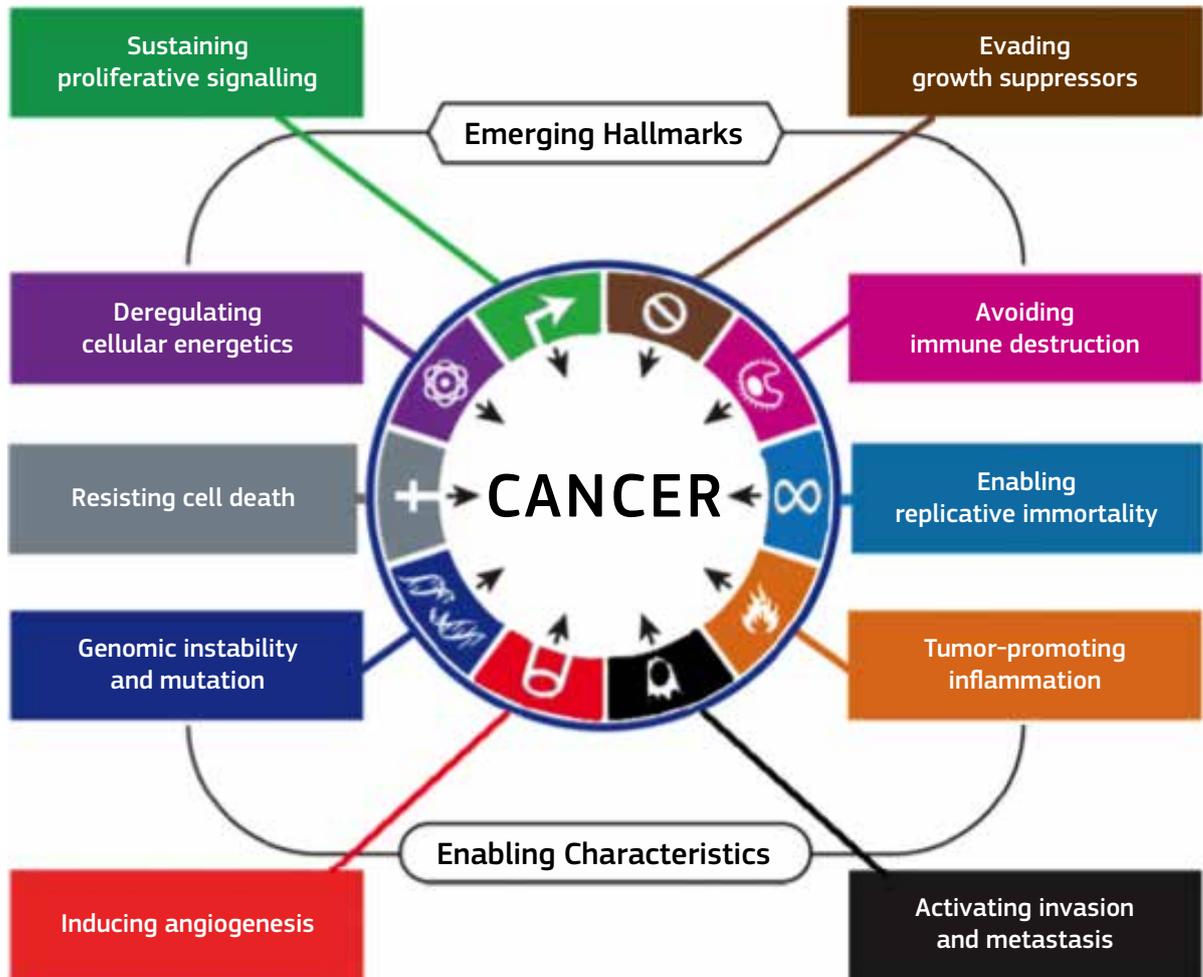
Figure 1 – All cancers mortality rates, males and females, 2010 (or nearest year).

Source: Eurostat Statistics Database. Data are age-standardised to the WHO European standard population. Reproduced with permission from OECD (2012): *Health at a Glance: Europe 2012*, OECD Publishing.

4. OECD (2012): *Health at a Glance: Europe 2012*. OECD Publishing. <http://dx.doi.org/10.1787/9789264183896-en> (accessed on 26 August 2013).

5. Ferlay J. *et al.*: 'Estimates of cancer incidence and mortality in Europe in 2008'. *Eur J Cancer*, 2010, 46 (4):765-81.

6. Ferlay J. *et al.*: 'Cancer incidence and patterns in Europe: Estimates for 40 countries in 2012'. *Eur J Cancer*, 2013, 49:1374-1403.



**Figure 2 – The hallmarks of cancer.** *The hallmarks of cancer are acquired functional capabilities that allow cancer cells to survive, proliferate and spread. The figure presents six well-established hallmarks: sustaining proliferative signalling, evading growth suppressors, resisting cell death, enabling replicative immortality, inducing angiogenesis and activating invasion and metastasis. It is likely that deregulating cellular energetics and avoiding immune destruction are two other hallmarks. However, additional*

*studies are needed to clearly establish their role in the tumorigenesis of all cancer types. Genomic instability and mutation as well as tumour-promoting inflammation are seen as characteristics of neoplastic cells or tissues that facilitate the acquisition of cellular cancer hallmarks. A short explanation of each hallmark or enabling characteristic is provided on the right.<sup>7-8</sup> This figure was adapted from Hanahan and Weinberg (2011)<sup>8</sup> with permission.*

7. Hanahan D. and Weinberg R.A. (2000): 'The hallmarks of cancer'. *Cell*, 100:57-70.

8. Hanahan D. and Weinberg R.A. (2011): 'Hallmarks of cancer: the next generation'. *Cell*, 144:646-674.

**Sustaining proliferative signalling:**

In contrast to healthy cells, cancer cells can grow in the absence of external growth signals.

**Evading growth suppressors:**

While healthy cells respond to growth-inhibitory signals and stop growing, cancer cells can continue growing even in the presence of external signals that would otherwise inhibit growth or prompt cell death.

**Enabling replicative immortality:**

The number of cell divisions that a particular cell can undergo is well defined in healthy cells, for example by the size of the chromosome telomeres. This mechanism is faulty in cancer cells that therefore display unlimited growth potential.

**Resisting cell death (apoptosis):**

Non-cancer cells will undergo programmed cell death (also known as apoptosis) when they have irreparable damage. Cancer cells however do not respond to apoptotic signals and therefore abnormal cells can survive and multiply.

**Inducing angiogenesis:**

Tumor cells can stimulate the formation of new blood vessels, needed to provide oxygen and nutrients.

**Activating invasion and metastasis:**

Tumor cells can grow into other tissues (invasion) and leave their organ of origin, settle and start dividing elsewhere (metastasis).

**Genomic instability and mutation:**

Genomic instability in cancer cells leads to random mutations that can underlie the acquisition of the hallmarks referred to above.

**Tumor-promoting inflammation:**

Inflammatory processes triggered by immune cells in cancer or pre-cancer lesions inadvertently support the acquisition of cancer hallmarks by a variety of mechanisms.

**Deregulating the cellular energetics:**

Cancer cells can use alternative metabolic pathways to generate energy, ensure survival and the generation of new cells.

**Avoiding immune destruction:**

Cancer cells appear to evade detection and/or elimination by the immune system.

Figure 1 shows that, apart from gender differences in cancer mortality, there are also inequalities between EU Member States (MS). For example, in 2010 the mortality rate due to lung cancer was four times higher in Hungary than in Sweden. Furthermore, while cancer mortality has been decreasing in most of the developed world, cancer incidence has not.<sup>9</sup> Given the growing number of new cases in Europe in recent years (e.g. 3.2 million cases estimated in 2008<sup>10</sup> and 3.45 million in 2012),<sup>11</sup> it is expected that the incidence of the disease will continue to increase in the future.<sup>12</sup> The repercussions of this in terms of public health expenditure are important: cancer cost the EU 126 billion euros in 2009.<sup>13</sup>

### 1.1. What causes cancer?

Although there are many different types of cancer there are a series of properties that are virtually common to all cancer cells. At the heart of the disease is uncontrolled cellular division. There are several cellular characteristics that allow for this cellular prolifera-

9. Jemal A. *et al.*: 'Global Cancer Statistics'. *Ca Cancer J Clin*, 2011, 61:69-90.

10. Ferlay J. *et al.*: 'Estimates of cancer incidence and mortality in Europe in 2008'. *Eur J Cancer*, 2010, 46 (4):765-81.

11. OECD (2012): *Health at a Glance: Europe 2012*. OECD Publishing. <http://dx.doi.org/10.1787/9789264183896-en> (accessed on 26 August 2013).

12. European Commission (2008): *Major and Chronic Diseases – Report 2007*. EC Directorate-General for Health and Consumers, Luxembourg. [http://ec.europa.eu/health/archive/ph\\_threats/non\\_com/docs/mcd\\_report\\_en.pdf](http://ec.europa.eu/health/archive/ph_threats/non_com/docs/mcd_report_en.pdf) (accessed on 28 August 2013).

13. Ramón Luengo-Fernández *et al.* (2013): 'Economic burden of cancer across the European Union: a population-based cost analysis'. *The Lancet Oncology* (14) 12:1165-1174.

tion. *Figure 2* on the left provides a simplified explanation of these characteristics, their underlying causes and their consequences.

Having these explanations in mind, it is easy to understand why substances that promote genome instability can be considered as potential tumour promoting agents or carcinogens. In recent years, the role of inflammation in creating an environment favourable for survival and metastasis of cancer cells is becoming clearer. Consequently, some pro-inflammatory agents are being viewed as *tumour-promoting* agents as well.

Researchers rely on many different kinds of studies to help them understand which substances or lifestyle factors are linked to cancer. Some mechanistic studies aim to understand what happens inside the cell that becomes cancerous while epidemiological studies examine the population-based associations between behavioural and lifestyle factors and specific cancers in an effort to reduce cancer incidence and mortality. A *cancer risk factor* is any individual characteristic, condition, behaviour, exposure (occupational, biological or physical) or lifestyle factor that increases the probability of developing cancer. Based on many molecular and epidemiological studies, the International Agency for Research on Cancer (IARC) has evaluated more than 900 agents, of which more than 400 have been classified as carcinogenic, probably carcinogenic, or possibly carcinogenic to humans. These include chemicals, complex mixtures, occupational exposures, physical agents, biological agents, and lifestyle factors.<sup>14,15</sup>

## 1.2. Can cancer be prevented?

Knowing the causes of cancer and its risk factors is the first step towards prevention. Many cancer risk factors can be avoided by modifying behaviours like eating habits or physical inactivity. In addition, limiting exposure to known carcinogens is another important preventive measure and it is best illustrated with the case of tobacco and tobacco smoke. Tobacco and tobacco smoke promote genetic instability and are well-established carcinogens. For example, recently published data<sup>16</sup> show that a current smoker has only half the likelihood of a person that never smoked to reach 80 years of age (primarily due to lung cancer mortality). More importantly, the same study also highlights the benefits of smoking cessation—showing that life expectancy can be extended 4 to 10 years longer, among smokers who quit, depending on their age at the time of cessation.

In an effort to reduce the risk of cancer through the prevention or modification of risk factors, the European Commission has endorsed the ‘11 commandments’ for cancer prevention outlined in the *European Code Against Cancer*. The ‘Code’ was initially de-

14. IARC Monographs on the Evaluation of Carcinogenic Risk to Humans. <http://monographs.iarc.fr/> (accessed on 28 August 2013).

15. Coglianò V.J. *et al.*: ‘Preventable Exposures Associated with Human Cancers’. *JNCI*, 2011. <http://jnci.oxfordjournals.org/content/early/2011/12/11/jnci.djr.483.full> (accessed on 28 August 2013).

16. Prabhat Jha *et al.*: ‘21st-Century Hazards of Smoking and Benefits of Cessation in the United States’. *N Engl J Med*, 2013, 368: 341–350, January 24, 2013, doi:10.1056/NEJMs121128.

veloped by Boyle *et al.*<sup>17</sup> and is currently under revision. A copy of its most recent version, revised in 2003<sup>18</sup> is presented in *Box 1*. The *Code's* recommendations are based on scientific literature and expert input. Most

of them relate to lifestyle, diet and factors related to physical activity and, at least in theory, it should be within everyone's reach to follow these recommendations.

**Box 1.** *The European Code Against Cancer (ECAC).*<sup>19</sup>

**EUROPEAN CODE AGAINST CANCER (third version) – The '11 Commandments' for cancer prevention:**

*Many aspects of general health can be improved and many cancer deaths prevented, if we adopt healthier lifestyles:*

1. Do not smoke; if you smoke, stop doing so. If you fail to stop, do not smoke in the presence of non-smokers.
2. Avoid obesity.
3. Undertake some brisk, physical activity every day.
4. Increase your daily intake and variety of vegetables and fruits: eat at least five servings daily. Limit your intake of foods containing fats from animal sources.
5. If you drink alcohol, whether beer, wine or spirits, moderate your consumption to two drinks per day if you are a man or one drink per day if you are a woman.
6. Care must be taken to avoid excessive sun exposure. It is specifically important to protect children and adolescents. For individuals who have a tendency to burn in the sun, active protective measures must be taken throughout life.
7. Apply strictly regulations aimed at preventing any exposure to known cancer-causing substances. Follow all health and safety instructions on substances which may cause cancer. Follow advice of national radiation protection offices.

*There are Public Health programmes which could prevent cancers developing or increase the probability that a cancer may be cured:*

8. Women from 25 years of age should participate in cervical screening. This should be within programmes with quality control procedures in compliance with 'European Guidelines for Quality Assurance in Cervical Screening'.
9. Women from 50 years of age should participate in breast screening. This should be within programmes with quality control procedures in compliance with 'European Guidelines for Quality Assurance in Mammography Screening'.
10. Men and women from 50 years of age should participate in colorectal screening. This should be within programmes with built-in quality assurance procedures.
11. Participate in vaccination programmes against hepatitis B virus infection.

17. Boyle P. *et al.*: 'European School of Oncology advisory report to the European Commission for the "Europe against Cancer Programme" European Code Against Cancer'. *Eur J Cancer*, 1995, 31A: 1395-1405. <http://www.sciencedirect.com/science/article/pii/S095980499500334F>.

18. Boyle P. *et al.*: 'European Code Against Cancer and scientific justification: third version (2003)'. *Annals of Oncology*, 14:973-1005. <http://annonc.oxfordjournals.org/content/14/7/973.full.pdf+html>.

19. Available at: [http://ec.europa.eu/health-eu/doc/cancercode\\_en.pdf](http://ec.europa.eu/health-eu/doc/cancercode_en.pdf) (accessed on 27 August 2013).

The World Cancer Research Fund (WCRF) in cooperation with the American Institute for Cancer Research (AICR) in 2007<sup>20</sup> has also published a comprehensive and detailed report on nutrition, physical activity and the prevention of cancer. The report *Food, Nutrition, Physical Activity and the Pre-*

*vention of Cancer: a Global Perspective* is based on the scientific literature in the field and analyses the links between diet, physical activity and various cancers. Based on the analysis of approximately 7 000 studies, the report makes 10 recommendations that are listed in *Box 2*.

**Box 2. WCRF cancer prevention recommendations.**

There are eight general recommendations (1-8) and two special recommendations targeting specific groups (9 & 10).

1.	Body fatness	<i>Be as lean as possible within the normal range of body weight.</i>
2.	Physical activity	<i>Be physically active as part of everyday life.</i>
3.	Foods and drinks that promote weight gain	<i>Limit consumption of energy-dense foods. Avoid sugary drinks.</i>
4.	Eat mostly foods of plant origin	<i>Eat mostly foods of plant origin.</i>
5.	Animal foods	<i>Limit intake of red meat and avoid processed meat.</i>
6.	Alcoholic drinks	<i>Limit alcoholic drinks.</i>
7.	Preservation, processing, preparation	<i>Limit consumption of salt. Avoid mouldy cereals (grains) or pulses (legumes).</i>
8.	Dietary supplements	<i>Aim to meet nutritional needs through diet alone.</i>
9.	Breastfeeding	<i>Mothers to breastfeed; children to be breastfed.</i>
10.	Cancer survivors	<i>Follow the recommendations for cancer prevention.</i>

These recommendations make it clear that preventive diets should be characterised by a large proportion of plant foods such as vegetables, fruits, whole grains and legumes. This type of diet is relatively low in energy

dense foods but high in fibre, vitamins, minerals and other bioactive substances. Foods like red meat and pork, alcohol and highly processed, energy-dense as well as salty foods should only be consumed in moderate amounts. More importantly, these recommendations are not only valid for cancer prevention but also in weight management and the prevention of other diet-related diseases such as cardiovascular diseases and diabetes mellitus.

20. World Cancer Research Fund/American Institute for Cancer Research: *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*. Washington DC: AICR, 2007. [http://www.dietandcancerreport.org/cancer\\_resource\\_center/er\\_full\\_report\\_english.php](http://www.dietandcancerreport.org/cancer_resource_center/er_full_report_english.php) (accessed on 27 August 2013).

# 2 . Dietary prevention of cancer in the EU

Recommendations such as those proposed in the *European Code Against Cancer* or the WCRF recommendations can help prevent the development of cancer. Key actors, from NGOs to media operators, industries or governments can also contribute to cancer prevention and care in various ways including facilitation of these recommendations. Most European countries for example have national cancer plans (NCPs) or public health programmes ‘*designed to reduce the number of cancer cases and deaths and improve quality of life of cancer patients, through the systematic and equitable implementation of evidence-based strategies for: prevention, early detection, diagnosis, treatment, rehabilitation, palliation and research to search for innovative solutions and evaluate outcomes*’.<sup>21</sup>

This section of the report presents a targeted analysis—focusing on dietary aspects of cancer prevention for all available European cancer plans. It maps and further discusses the measures that MSs propose to implement in this regard. The main goal of this analysis was to evaluate whether European NCPs contemplate dietary habits as a means of prevention and to what extent they build on the evidence base and recommendations currently available to promote healthy cancer preventive diets and lifestyles.

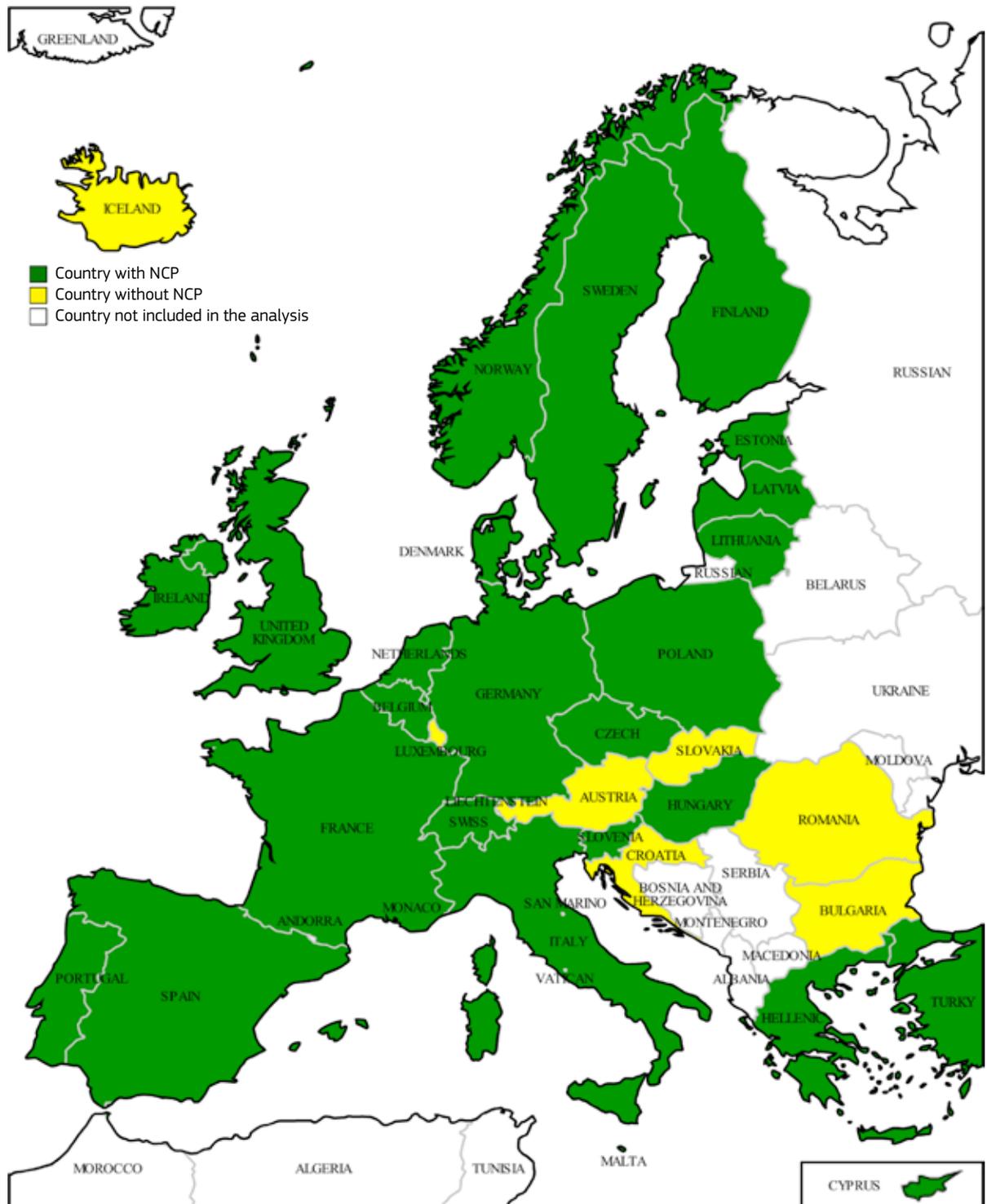
21. European Partnership for Action Against Cancer (EPAAC): *National Cancer Control Programmes: Analysis of Primary Data from Questionnaires* (12 December 2011 and amended until 22 April 2012).

## 2.1. Analysis of European National Cancer Plans

In order to identify NCPs, we consulted the EPAAC website<sup>22</sup> where a list of NCPs for most EU28 countries can be found. We checked each NCP on this website and ensured that for each MS no newer versions were available. NCPs not listed on the EPAAC website were identified through additional online searches and/or contact persons within the relevant Ministry of Health or academic public health experts (see *Acknowledgements*). 28 out of 35 countries currently have NCPs (see *Figure 3* on the following page; note that the United Kingdom has different plans for England, Scotland, Wales and Northern Ireland; each is referred to hereafter as a *country*).

Every NCP for which a full version was available in English was analysed in detail. In cases where only a summary was available in English or where no English version was available, only sections of the NCP that were immediately relevant to the dietary prevention of cancer were translated and analysed. Therefore, the analysis of these NCPs presented here may not entirely reflect their original content. The analysis included the most recent version of every NCP available with publication dates ranging from 2003 to 2012.

22. <http://www.epaac.eu/> (accessed on 27 September 2013).



**Figure 3** – European countries with national cancer plans (NCPs). All countries highlighted in green currently have NCPs (note that the United Kingdom has different plans for England, Scotland, Wales and Northern Ireland). Countries

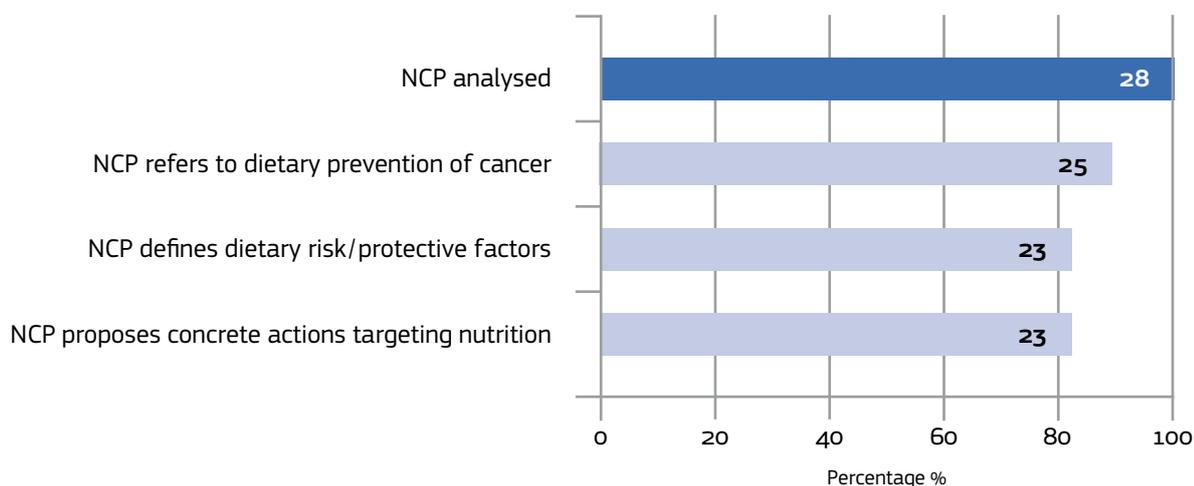
highlighted in yellow do not currently have a NCP. Countries not highlighted were not included in the analysis. The analysis included the most recent version of every available NCP and publication dates ranged from 2003 to 2012.

## 2.2. NCPs: Dietary prevention of cancer-related content

We checked the *Table of Contents* of every NCP and searched each plan using the following keywords (in English or the original language): *nutrition, diet, obesity, overweight, physical activity, food, meat, fruit, vegetable, salt, energy, research, surveillance, regulatory, policy, campaign* and *action*. This step identified dietary prevention of cancer-related sections and paragraphs relevant to the analysis. As the NCPs analysed were very heterogeneous, we developed a data extraction matrix to summarise and make direct comparisons. *Figure 4* and *Table 1* summarise the nutrition-related content of the analysed European NCPs.

Out of the 28 NCPs analysed, 25 plans acknowledged a link between dietary-related factors and cancer and of these, 23 plans went further and indicated concrete diet-re-

lated cancer risk or protective factors. While some plans simply referred to healthy, balanced diets or lifestyles in the context of cancer prevention, the majority defined factors such as overweight/obesity and physical inactivity as cancer risk factors and/or considered a diet high in fruits and vegetables as protective. Other cancer dietary risk factors that were highlighted/targeted in some of the cancer plans (as well as in the ‘Code’ and/or the WCRF recommendations) include excessive consumption of fat (*e.g.* animal fats, saturated fats or trans fatty acids) but also of foods high in sugar and salt as well as high consumption of red meat. On the other hand, nutrients or foods such as fibre, whole grain or wholemeal bread were described in several NCPs as protective dietary factors. These coincided with recommendations 2-4 of the *European Code Against Cancer* (see *Box 1*) and three of the WCRF recommendations (see *Box 2*).



**Figure 4 – NCPs and their nutrition-related content.** The bars show the total number of NCPs with the related corre-

sponding content. 100% refers to the total number of NCPs analysed, i.e. 28.

Table 1. NCPs and their nutrition-related content: a brief summary.

	Title*	Year of Publication	Time-frame	Content				
				Does the NCP refer to dietary cancer prevention?	Does the NCP define dietary risk or protective factors related to cancer?	Does the NCP propose concrete actions targeting nutrition and cancer?	NCP refers readers to other relevant sources (including WCRF, EPAAC, or other national plans)	Links to NCP or other relevant plans(s)
Austria (AT)	N/A							<a href="http://bmg.gva.at/cms/home/attachments/5/0/CH1046/CMS1264514565545/nape_2012_final.pdf">http://bmg.gva.at/cms/home/attachments/5/0/CH1046/CMS1264514565545/nape_2012_final.pdf</a> (National Nutrition Action Plan, German) <a href="http://www.nabewegung.at/main.asp?V-ID=1&amp;kat1=85&amp;kat2=603&amp;kat3=">http://www.nabewegung.at/main.asp?V-ID=1&amp;kat1=85&amp;kat2=603&amp;kat3=</a> (National Action Plan on Physical Activity, German)
Belgium (BE)	National Cancer Plan	2008	2008-2010				<ul style="list-style-type: none"> <li>National Food and Health Plan (NFHP)</li> <li>National Alcohol Action Plan</li> </ul>	<a href="http://www.health.belgium.be/internet2Ptd/groups/public/@public@mixednews/documents/iezddivers13614502_fr.pdf">http://www.health.belgium.be/internet2Ptd/groups/public/@public@mixednews/documents/iezddivers13614502_fr.pdf</a> (NCP, English)
Bulgaria (BG)	N/A							
Croatia (HR)	N/A							
Cyprus (CY)	National Cancer Control Strategy	2009		✓	<ul style="list-style-type: none"> <li>Obesity</li> <li>Fibre from rye</li> <li>Mediterranean diet</li> <li>Physical activity</li> </ul>	✓	<ul style="list-style-type: none"> <li>School Health Programme</li> <li>National Action Plan: The Environment and children's health</li> </ul>	<a href="http://www.epaac.eu/from_heidi_wiki/Cyprus_National_Strategy_on_Cancer_English.pdf">http://www.epaac.eu/from_heidi_wiki/Cyprus_National_Strategy_on_Cancer_English.pdf</a> (NCP, English)
Czech Republic (CZ)	National Cancer Control Program	2005		✓		✓		<a href="http://www.links.cz/en/national-cancer-control-programme/">http://www.links.cz/en/national-cancer-control-programme/</a> (NCP, Czech & English)
Denmark (DK)**	National Cancer Plan II*	2005		✓	<ul style="list-style-type: none"> <li>Obesity/ overweight</li> <li>Physical inactivity</li> <li>Aflatoxins</li> <li>Certain types of salting &amp; fermenting fish</li> <li>Consumption of very hot food &amp; beverages</li> <li>Red meat</li> <li>Saturated fatty acids</li> <li>Fruit &amp; vegetables</li> <li>Whole grain</li> </ul>	✓	<ul style="list-style-type: none"> <li>National Action Plan Against Obesity</li> <li>Municipal Programme against overweight in children &amp; adolescents</li> <li>Joint Nordic Action Plan on diet &amp; physical activity</li> <li>Investigation of Health Economic Consequences of overweight/obesity in Denmark</li> </ul>	<a href="http://www.sst.dk/publ/Publ2005/PLAN/Kraefplan2/KraefplanII_UK/KraefplanII_UK_med.pdf">http://www.sst.dk/publ/Publ2005/PLAN/Kraefplan2/KraefplanII_UK/KraefplanII_UK_med.pdf</a> (NCP II, English) <a href="http://www.sst.dk/publ/Publ2005/PLAN/Kraefplan2/bilag/Bilag_7_1_Primaer_forebyggelse.pdf">http://www.sst.dk/publ/Publ2005/PLAN/Kraefplan2/bilag/Bilag_7_1_Primaer_forebyggelse.pdf</a> (NCP II Annex, Danish)
	National Cancer Plan III*	2010		✓	<ul style="list-style-type: none"> <li>Foods high in fat &amp; sugar</li> </ul>	✓		<a href="http://www.sum.dk/Aktuelt/Nyheder/Kraeft/2010/November/III~/medial/Files%20-%20dokumenter/KraeftplanIII/Afaletekst-k%3%AC3%A6ftplan-III.ashx">http://www.sum.dk/Aktuelt/Nyheder/Kraeft/2010/November/III~/medial/Files%20-%20dokumenter/KraeftplanIII/Afaletekst-k%3%AC3%A6ftplan-III.ashx</a> (NCP III, Danish) <a href="http://www.epaac.eu/from_heidi_wiki/Denmark_Summary_of_National_Cancer_Plan_III_English.pdf">http://www.epaac.eu/from_heidi_wiki/Denmark_Summary_of_National_Cancer_Plan_III_English.pdf</a> (NCP III Summary, English)

Table 1. (cont.)

Content							
Title*	Year of Publication	Time-frame	Does the NCP refer to dietary cancer prevention?	Does the NCP define dietary risk or protective factors related to cancer?	Does the NCP propose concrete actions targeting nutrition and cancer?	NCP refers readers to other relevant sources (including WCRF, EPAAC, or other national plans)	Links to NCP or other relevant plan(s)
<b>Estonia (EE)</b>	2007	2007-2015	✓	<ul style="list-style-type: none"> <li>• Animal fat</li> <li>• Salt &amp; pickled food</li> <li>• Fibre</li> <li>• Fruit &amp; vegetables</li> <li>• Mediterranean diet</li> </ul>	✓		<a href="http://www.ssm.ee/fileadmin/meedia/Dokumentid/Terveisevaldkond/Terveispoliitika/Vaehiennetus/National_Cancer_strategy_2007_2015eng.pdf">http://www.ssm.ee/fileadmin/meedia/Dokumentid/Terveisevaldkond/Terveispoliitika/Vaehiennetus/National_Cancer_strategy_2007_2015eng.pdf</a> (NCP, English)
<b>Finland (FI)***</b>	2010	2010-2020	✓	<ul style="list-style-type: none"> <li>• Obesity</li> </ul>			<a href="http://www.stm.fi/c/document_library/get_file?folderId=1082856&amp;name=DLFE-11085.pdf">http://www.stm.fi/c/document_library/get_file?folderId=1082856&amp;name=DLFE-11085.pdf</a> (NCP, Finnish) <a href="http://www.epaac.eu/from_heidi_wiki/Finland_Summary_of_NCP_English.pdf">http://www.epaac.eu/from_heidi_wiki/Finland_Summary_of_NCP_English.pdf</a> (NCP Summary, English)
<b>France (FR)</b>	2009	2009-2013	✓	<ul style="list-style-type: none"> <li>• Overweight/obesity</li> <li>• Sedentary lifestyle</li> <li>• Red meat</li> <li>• Cured meat products</li> <li>• Salt</li> <li>• Physical activity</li> <li>• Fruit &amp; vegetables</li> <li>• Breastfeeding</li> </ul>	✓	<ul style="list-style-type: none"> <li>• Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective (WCRF/AICR)</li> <li>• National Nutrition and Health Programme (PNNS)</li> <li>• National Environmental Health Plan (PNSEz)</li> <li>• National Plan 'Ageing Well'</li> <li>• Quality of Life Plan for patients with chronic illnesses</li> <li>• Plan for Care and Prevention of addiction</li> <li>• Government Plan to fight drugs and drug addiction</li> <li>• Report Reducing the burden of cancer (Council of Europe)</li> </ul>	<a href="http://www.plan-cancer.gouv.fr/images/stories/fichiers/plancancer20092013_english.pdf">http://www.plan-cancer.gouv.fr/images/stories/fichiers/plancancer20092013_english.pdf</a> (NCP, English)
<b>Germany (DE)***</b>	2012						<a href="http://www.bmg.bund.de/fileadmin/dateien/Publikationen/Praevention/Broschueren/Broschuere_Nationaler_Krebsplan_Handlungsfelder_Ziele_Umsetzungsempfehlungen.pdf">http://www.bmg.bund.de/fileadmin/dateien/Publikationen/Praevention/Broschueren/Broschuere_Nationaler_Krebsplan_Handlungsfelder_Ziele_Umsetzungsempfehlungen.pdf</a> (NCP, German)
<b>Greece (EL)***</b>		2011-2015	✓		✓		<a href="http://www.anticancer.gov.gr/catalogue/SxedioDrasis_24selidopdf">http://www.anticancer.gov.gr/catalogue/SxedioDrasis_24selidopdf</a> (NCP, Greek)

The table lists existing (or currently active) NCPs in the European countries screened along with an analysis of their nutrition-related content. Grey rows indicate countries for which no NCP was found.

\* Titles have been translated by the authors to English from their original language.

\*\* Different versions of the same programme were counted only once. In the case of the United Kingdom, NCPs from England, Scotland, Wales and Northern Ireland were considered individually.

\*\*\* The analysis of the NCPs from Denmark, Finland, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Sweden and Switzerland may be incomplete as these plans were only partly translated by the authors of this report.

Table 1. (cont.)

	Title*	Year of Publication	Time-frame	Content			
				Does the NCP refer to dietary cancer prevention?	Does the NCP define dietary risk or protective factors related to cancer?	Does the NCP propose concrete actions targeting nutrition and cancer?	NCP refers readers to other relevant sources (including WCRF, EPAAC, or other national plans)
Hungary (HU)	Hungarian National Cancer Control Programme	2006		<ul style="list-style-type: none"> <li>✓</li> <li>• Obesity</li> <li>• Improper habits</li> <li>• Low fat</li> <li>• High fibre,</li> <li>• Fruit &amp; vegetables</li> <li>• Whole grain</li> <li>• Antioxidants</li> <li>• Physical activity</li> </ul>	✓	<ul style="list-style-type: none"> <li>• WHO recommendations</li> <li>Importance of healthy diets</li> </ul>	<a href="http://www.eum.hu/english/printed-publications/hungarian-national-ncp">http://www.eum.hu/english/printed-publications/hungarian-national-ncp</a> (NCP, English)
Ireland (IE)	A Strategy for Cancer Control in Ireland	2006		<ul style="list-style-type: none"> <li>✓</li> <li>• Poor diet</li> <li>• Overweight/ obesity</li> <li>• Physical activity</li> <li>• Fruit &amp; vegetables</li> </ul>	✓	<ul style="list-style-type: none"> <li>• National Health Promoting Strategy</li> <li>• Report of the National Task Force of Obesity</li> </ul>	<a href="http://www.hse.ie/eng/services/Publications/HealthProtection/Public_Health_National_Cancer_Control_Strategy.pdf">http://www.hse.ie/eng/services/Publications/HealthProtection/Public_Health_National_Cancer_Control_Strategy.pdf</a> (NCP, English)
Italy (IT)***	Technical Policy Document on the Reduction of Cancer*	2011-2013		<ul style="list-style-type: none"> <li>✓</li> <li>• Overweight/ obesity</li> <li>• Healthy diet</li> <li>• Physical activity</li> </ul>	✓	<ul style="list-style-type: none"> <li>• ECAC recommendations, 3rd edition</li> <li>• National Platform on Diet, Physical Activity and smoking</li> <li>• The National Prevention Plan</li> </ul>	<a href="http://www.salute.gov.it/imgs/C_17_pubblicazioni_1440_allegato.pdf">http://www.salute.gov.it/imgs/C_17_pubblicazioni_1440_allegato.pdf</a> (NCP, Italian) <a href="http://www.epaac.eu/from_heidi_wiki/Italy_National_Oncology_Plan_Summary_English.pdf">http://www.epaac.eu/from_heidi_wiki/Italy_National_Oncology_Plan_Summary_English.pdf</a> (Summary of NCP, English)
Latvia (LV)***	Oncologic Diseases Control Program*	2009-2015		<ul style="list-style-type: none"> <li>✓</li> <li>• Diet high in calories, fat &amp; low in fibre</li> <li>• Fruit &amp; vegetables</li> <li>• Healthy lifestyles</li> <li>• Physical activity</li> </ul>	✓		<a href="http://polsis.mk.gov.lv/view.do?id=2932">http://polsis.mk.gov.lv/view.do?id=2932</a> (NCP, Latvian) <a href="http://www.epaac.eu/from_heidi_wiki/Latvia_Oncologic_Diseases_Control_Programme_2009-2015_Summary_English.pdf">http://www.epaac.eu/from_heidi_wiki/Latvia_Oncologic_Diseases_Control_Programme_2009-2015_Summary_English.pdf</a> (Summary of NCP, English)
Lithuania (LT)***	National Cancer Prevention and Control Programme*	2003-2010					<a href="http://sena.sam.lt/repository/dokumentai/veikla/Vezio.doc">http://sena.sam.lt/repository/dokumentai/veikla/Vezio.doc</a> (NCP, Lithuanian)
Luxembourg (LU)	N/A						
Malta (MT)	National Cancer Plan	2011-2013		<ul style="list-style-type: none"> <li>✓</li> <li>• Saturated fatty acids &amp; Trans fatty acids</li> <li>• Salt &amp; added sugar</li> <li>• Physical inactivity</li> <li>• Unhealthy diet</li> <li>• Fruit &amp; vegetables</li> </ul>	✓	<ul style="list-style-type: none"> <li>• American Food and Drug Administration (FDA) recommendations</li> <li>• WHO recommendations</li> </ul>	<a href="https://ehealth.gov.mt/download.aspx?id=4720">https://ehealth.gov.mt/download.aspx?id=4720</a> (NCP, English)

Table 1. (cont.)

		Title*	Year of Publication	Time-frame	Does the NCP refer to dietary cancer prevention?	Does the NCP define dietary risk or protective factors related to cancer?	Does the NCP propose concrete actions targeting nutrition and cancer?	NCP refers readers to other relevant sources (including WCRF, EPAAC, or other national plans)	Links to NCP or other relevant plan(s)
Netherlands (NL)	National Cancer Control Programme	2004	2005-2010	✓	<ul style="list-style-type: none"> <li>• Overweight/ obesity</li> <li>• Unhealthy diet</li> <li>• Physical inactivity</li> </ul>	✓		<a href="http://www.epaac.eu/from_heidi_wiki/Netherlands_National_Cancer_Control_Programme_English.pdf">http://www.epaac.eu/from_heidi_wiki/Netherlands_National_Cancer_Control_Programme_English.pdf</a> (NCP, English) <a href="http://www.epaac.eu/from_heidi_wiki/Netherlands_Progress_Report_on_Cancer_Control_2010_English.pdf">http://www.epaac.eu/from_heidi_wiki/Netherlands_Progress_Report_on_Cancer_Control_2010_English.pdf</a> (NCP, English)	
	Progress Report on Cancer Control in the Netherlands	2010							
Poland (PL)***	National Programme for Cancer Control*		2006-2015	✓	<ul style="list-style-type: none"> <li>• Excessive animal fat consumption</li> <li>• Fruit &amp; vegetables</li> <li>• Healthy eating habits</li> </ul>	✓		<a href="http://www.mz.gov.pl/wwwfiles/ma_struktural/docs/opis_zadan_3092009.pdf">http://www.mz.gov.pl/wwwfiles/ma_struktural/docs/opis_zadan_3092009.pdf</a> (NCP, Polish)	
Portugal (PT)***	National Cancer Control Plan*	2007	2007-2010	✓	<ul style="list-style-type: none"> <li>• Obesity</li> <li>• Healthy diet</li> </ul>	✓	<ul style="list-style-type: none"> <li>• EPAAC recommendations</li> <li>• <i>Plataforma de luta contra a obesidade (fight against obesity) – program of the General Health Direction (DGS)</i></li> <li>• <i>The National Plan for School Health</i></li> <li>• <i>The program 'Physical activity and sport: Act on Health Education' ( DGS)</i></li> <li>• <i>European guidelines for physical activity – Politics for the promotion of Health &amp; wellbeing'</i></li> </ul>	<a href="http://www.portaldasaude.pt/NR/rdonlyres/F1EE7092-2F50-4987-9A46-D7F1058545210/PNPCDO_2007.pdf">http://www.portaldasaude.pt/NR/rdonlyres/F1EE7092-2F50-4987-9A46-D7F1058545210/PNPCDO_2007.pdf</a> (NCP, Portuguese) <a href="http://www.epaac.eu/from_heidi_wiki/Portugal_National_Cancer_Control_Plan_2009_Portuguese.pdf">http://www.epaac.eu/from_heidi_wiki/Portugal_National_Cancer_Control_Plan_2009_Portuguese.pdf</a> (NCP, Portuguese) <a href="http://www.epaac.eu/from_heidi_wiki/Portugal_Summary_of_NCP_English.pdf">http://www.epaac.eu/from_heidi_wiki/Portugal_Summary_of_NCP_English.pdf</a> (NCP, English) <a href="http://www.portaldasaude.pt/portal/contenidos/aa+saude+em+portugal/politica+da+saude/programas+nacionais/programas+prioritarios.htm#a">http://www.portaldasaude.pt/portal/contenidos/aa+saude+em+portugal/politica+da+saude/programas+nacionais/programas+prioritarios.htm#a</a>	
	National Cancer Control Plan (update)*	2009							
	National Cancer Control Plan (summary)		2007-2010						
Romania (RO)	N/A								
Slovakia (SK)	N/A								
Slovenia (SI)	Slovene National Cancer Control Programme	2010	2010-2015	✓	<ul style="list-style-type: none"> <li>• Healthy lifestyle</li> <li>• Healthy food</li> </ul>	✓	<ul style="list-style-type: none"> <li>• <i>National Nutritional Policy Programme (2005-2010)</i></li> <li>• <i>Rep. of Slovenia Government Strategy in the Field of Physical Activity (2007-2012)</i></li> </ul>	<a href="http://www.epaac.eu/from_heidi_wiki/SloveneNCCP_eng.pdf">http://www.epaac.eu/from_heidi_wiki/SloveneNCCP_eng.pdf</a> (NCP, English)	

The table lists existing (or currently active) NCPs in the European countries screened along with an analysis of their nutrition-related content. Grey rows indicate countries for which no NCP was found.

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\*\* Different versions of the same programme were counted only once. In the case of the United Kingdom, NCPs from England, Scotland, Wales and Northern Ireland were considered individually.

\*\*\* The analysis of the NCPs from Denmark, Finland, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Sweden and Switzerland may be incomplete as these plans were only partly translated by the authors of this report.

Table 1. (cont.)

	Title*	Year of Publication	Time-frame	Content				Links to NCP or other relevant plans(s)
				Does the NCP refer to dietary cancer prevention?	Does the NCP define dietary risk or protective factors related to cancer?	Does the NCP propose concrete actions targeting nutrition and cancer?	NCP refers readers to other relevant sources (including WCRF, EPAAC, or other national plans)	
Spain (ES)	The National Health System Cancer Strategy	2009		✓	<ul style="list-style-type: none"> <li>• Obesity</li> <li>• Fruit &amp; vegetables</li> <li>• Physical Activity</li> <li>• Healthy living habits</li> </ul>	✓	<ul style="list-style-type: none"> <li>• EPAAC recommendations</li> <li>• ECAC, dissemination of the Code</li> <li>• EURODIET project</li> <li>• WCRF &amp; AICR recommendation</li> <li>• Strategy for Nutrition, Physical Activity and Prevention of Obesity</li> </ul>	<a href="http://www.msc.es/organizacion/sns/planCalidadSNS/docs/NHS_cancer_strategy.pdf">http://www.msc.es/organizacion/sns/planCalidadSNS/docs/NHS_cancer_strategy.pdf</a> (NCP, English)
Sweden (SE)**	A National Cancer Strategy for the Future*	2009		✓	<ul style="list-style-type: none"> <li>• Overweight/ obesity</li> <li>• Poor diet</li> <li>• Physical Activity</li> </ul>		<ul style="list-style-type: none"> <li>• WHO – importance of cancer research</li> <li>• Food, Nutrition, Physical Activity and the Prevention of Cancer: a Global Perspective' (WCRF/AICR)</li> </ul>	<a href="http://www.cancercentrum.se/PageFiles/1510/SOU2009%2011.pdf">http://www.cancercentrum.se/PageFiles/1510/SOU2009%2011.pdf</a> (NCP, Swedish) <a href="http://www.epaac.eu/from_heidi_wiki/Sweden_National_Cancer_Strategy_Summary_English.pdf">http://www.epaac.eu/from_heidi_wiki/Sweden_National_Cancer_Strategy_Summary_English.pdf</a> (Summary of NCP, English)
United Kingdom (UK)	Improving Outcomes: A Strategy for Cancer (England)	2011		✓	<ul style="list-style-type: none"> <li>• Poor diet</li> <li>• Obesity</li> </ul>	✓	<ul style="list-style-type: none"> <li>• Public Health England (PHE) to provide information about risk factors</li> <li>• Public Health Responsibility Deal will set out actions for healthier choices</li> </ul>	<a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/135551/dh_123394.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/135551/dh_123394.pdf</a> (NCP, English) <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/134668/dh_131787.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/134668/dh_131787.pdf</a> (Progress report NCP, English) <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/136551/Improving_outcomes_second_annual_report.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/136551/Improving_outcomes_second_annual_report.pdf</a> (Progress report NCP, English)
	A Strategy for Cancer (1st Annual Report) (England)	2011						
	A Strategy for Cancer (2nd Annual Report) (England)	2012						
	Better Cancer Care, an Action Plan (Scotland)	2008		✓	<ul style="list-style-type: none"> <li>• Poor diet</li> <li>• Obesity</li> <li>• Physical Activity</li> <li>• Breastfeeding</li> <li>• Modifying diets</li> <li>• Fruit &amp; vegetables</li> </ul>	✓	<ul style="list-style-type: none"> <li>• Scottish Diet Action Plan and Physical Activity Strategy (2008)</li> <li>• Health Promotion and Nutrition in schools (Scotland) Act 2007 builds upon and reinforces Hungry for Success and health-promoting schools' policies</li> </ul>	<a href="http://www.scotland.gov.uk/Resource/Doc/242498/0067458.pdf">http://www.scotland.gov.uk/Resource/Doc/242498/0067458.pdf</a> (NCP, English) <a href="http://www.scotland.gov.uk/Resource/0039/00398267.doc">http://www.scotland.gov.uk/Resource/0039/00398267.doc</a> (Progress report NCP, English)
	Better Cancer Care, an Action Plan Progress Report (Scotland)	2010						

Table 1. (cont.)

Content							
Title*	Year of Publication	Time-frame	Does the NCP refer to dietary cancer prevention?	Does the NCP define dietary risk or protective factors related to cancer?	Does the NCP propose concrete actions targeting nutrition and cancer?	NCP refers readers to other relevant sources (including WCRF, EPAAC, or other national plans)	Links to NCP or other relevant plan(s)
<b>United Kingdom (UK)</b> (cont.)	2007		✓	<ul style="list-style-type: none"> <li>• Obesity</li> <li>• Physical Activity</li> <li>• Breastfeeding</li> <li>• Fruit &amp; vegetables</li> <li>• Healthy lifestyle</li> </ul>	✓	<ul style="list-style-type: none"> <li>• <i>Healthy Start Scheme</i></li> <li>• <i>Taskforce 'Fit Futures' (recommendations target obesity and overweight in children)</i></li> <li>• <i>Health Promotion Agency's physical activity campaign, Every Small Step is a Forward Step</i></li> </ul>	<a href="http://www.dhsspsni.gov.uk/eeu_cancer_control_programme_eqia.pdf">http://www.dhsspsni.gov.uk/eeu_cancer_control_programme_eqia.pdf</a> (NCP, English)
	2012	2012-2016	✓	<ul style="list-style-type: none"> <li>• Poor diet</li> <li>• Obesity</li> <li>• Physical Activity</li> </ul>	✓	<ul style="list-style-type: none"> <li>• <i>Plan Fairer Health Outcomes for All (Welsh Government)</i></li> </ul>	<a href="http://wales.gov.uk/docs/dhss/publications/120613cancerplanen.pdf">http://wales.gov.uk/docs/dhss/publications/120613cancerplanen.pdf</a> (NCP, English)
<b>Norway (NO)</b>		2006-2009	✓	<ul style="list-style-type: none"> <li>• Saturated fat</li> <li>• Sugar</li> <li>• Salt</li> <li>• Wholemeal bread</li> <li>• Fruit &amp; vegetables</li> <li>• Physical activity</li> </ul>	✓	<ul style="list-style-type: none"> <li>• <i>Action Plan for increased physical activity 'Together for Physical Activity'</i></li> <li>• <i>Action plan for improved diet in the population</i></li> </ul>	<a href="http://www.forskingsradet.no/servelet/Satellite?blobcol=urldata&amp;blobheader=application%2Fpdf&amp;blobheadername1=Content-Disposition%3A%26blobheadervalue1=-+attachment%3B+filename%3D%22National-CancerStrategy2006-2009.pdf%22&amp;blobkey=id&amp;blobtable=MungoBlobs&amp;blobwhere=1274460405427&amp;ssbinary=true">http://www.forskingsradet.no/servelet/Satellite?blobcol=urldata&amp;blobheader=application%2Fpdf&amp;blobheadername1=Content-Disposition%3A%26blobheadervalue1=-+attachment%3B+filename%3D%22National-CancerStrategy2006-2009.pdf%22&amp;blobkey=id&amp;blobtable=MungoBlobs&amp;blobwhere=1274460405427&amp;ssbinary=true</a> (NCP, English)
<b>Turkey (TR)</b>		2011-2015	✓	<ul style="list-style-type: none"> <li>• Obesity</li> <li>• Balanced diet</li> <li>• Physical Activity</li> </ul>	✓		<a href="http://en.calameo.com/read/000713529d4e4800f9572">http://en.calameo.com/read/000713529d4e4800f9572</a> (NCP, English)
<b>Switzerland (CH)***</b>		2010-2015	✓	<ul style="list-style-type: none"> <li>• Unhealthy diet</li> <li>• Physical inactivity</li> </ul>	✓	<ul style="list-style-type: none"> <li>• <i>National Programme on Nutrition and Movement (NP/MP)</i></li> <li>• <i>WCRF recommendations</i></li> </ul>	<a href="http://www.oncosuisse.ch/file/occosuisse/nkp/2011-2015/vollversion/NKP_Vollversion_d.pdf">http://www.oncosuisse.ch/file/occosuisse/nkp/2011-2015/vollversion/NKP_Vollversion_d.pdf</a> (NCP) (NCP, German)
<b>TOTAL</b>			<b>25**</b>	<b>23**</b>	<b>23**</b>	<b>18**</b>	

The table lists existing (or currently active) NCPs in the European countries screened along with an analysis of their nutrition-related content. Grey rows indicate countries for which no NCP was found.

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\*\* Different versions of the same programme were counted only once. In the case of the United Kingdom, NCPs from England, Scotland, Wales and Northern Ireland were considered individually.

\*\*\* The analysis of the NCPs from Denmark, Finland, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Sweden and Switzerland may be incomplete as these plans were only partly translated by the authors of this report.

### 2.3. The NCPs and their actions

Having established that the majority of the NCPs analysed refer to dietary prevention of cancer and list several dietary risk/protective factors, the question remains whether or not NCPs propose concrete actions that target these factors. A detailed analysis of the type of nutrition and physical activity-related actions proposed in NCPs is presented in *Table 2*. Twenty-three NCPs (CY, CZ, DK, EE, FR, EL, HU, IE, IT, LV, MT, NL, PL, PT, SI, ES, UK-individual NCPs, NO, TR, CH) appear to propose concrete actions targeting diets, nutrition or physical activity. However, less than half of these detail how, when or by whom will these actions be implemented. There are, nevertheless, some good examples of detailed implementation plans for these activities (*e.g.* NCPs from SI or NL). These plans define tasks and activities in the area of primary cancer prevention, allocate responsibility to particular institutions for the initiation, implementation or execution of these tasks and, importantly, reflect on priorities, objectives, barriers to implementation and monitoring. The various types of nutrition and physical activity-related actions identified in the 23 NCPs are listed in *Table 2*. For the sake of clarity, they are divided in six different categories of action detailed below.

#### 2.3.1. Awareness-raising campaigns and counselling

The most popular actions related to dietary prevention of cancer proposed among the 23 NCPs are awareness-raising campaigns and

counselling. Awareness of what constitutes a healthy diet, the importance of physical activity and of adopting healthy habits and lifestyles are some of the topics proposed in these campaigns. The NCPs offer different means, vehicles and target populations for raising awareness: from formal school education programs to broader actions including mass media campaigns.

For example, the Dutch NCP proposes the use of regular mass media campaigns in primary prevention that address – among other issues – overweight, low levels of physical activity or promoting healthy diets. Other plans, like those in Denmark, Northern Ireland and Latvia suggest campaigns to encourage and support people to be more physically active. The French NCP also targets physical activity by proposing awareness-raising actions for future retirees amongst employers and work committees. An interesting action proposed in this NCP is to also provide direct information to elected representatives and regional civil servants on the links between nutrition, physical activity and cancer. Other NCPs (Switzerland and Denmark) recommend campaigns on the promotion of the consumption of fruits and vegetables. Malta's NCP proposes to design innovative campaigns oriented to children to increase their daily consumption of fruit and vegetables. Italy includes a 'Health Day' in its actions to raise the public's awareness of healthy food and physical activity as well as campaigns to promote a healthy lifestyle. Spain's NCP includes a point on the dissemination of the *European Code Against Cancer* including dissemination campaigns for each one of the ECAC points.

Table 2. Types of nutrition and physical activity related actions proposed in European NCPs.

	Type of nutritional or physical activity related action										Others						
	Awareness raising campaigns & counselling	Availability of the healthy option								Implementing regulatory measures		Promoting related research	Implementing surveillance systems				
		Targeting overweight / obesity	Targeting physical activity	Targeting energy – dense foods & SSBs *	Targeting consumption of fruits & vegetables	Targeting red and processed meat	Targeting salt	No specific dietary targets	Others								
Austria (AT)																	
Belgium (BE)																	
Bulgaria (BG)																	
Croatia (HR)																	
Cyprus (CY)	✓	✓	✓	✓													
Czech Republic (CZ)	✓						✓										
Denmark (DK) – NCP II & NCP III****	✓	✓	✓	✓			✓					✓	✓			<ul style="list-style-type: none"> <li>• Projects that evaluate the efficacy and cost-effectiveness of prevention methods in relation to lifestyle</li> <li>• Better professional education in prevention and treatment of obesity in children and adolescents</li> </ul>	
Estonia (EE)	✓	✓	✓					✓						✓			<ul style="list-style-type: none"> <li>• Promoting healthful and safe food choices (including targeting strongly smoked products, open fire grilling, formation of acrylamide, fungal toxins and water quality)</li> </ul>
Finland (FI)*****																	
France (FR)	✓	✓													✓		<ul style="list-style-type: none"> <li>• Strengthen prevention programmes for cancers related to the environment, particularly in the workplace (including diet)</li> </ul>

This table is the result of a comprehensive but not exhaustive analysis of all NCPs cited; the entries reflect the content of each plan analysed to the best of the authors' knowledge.

\* SSB: sugar-sweetened beverages.

\*\* HFSS: foods high in fat, sugar and salt.

\*\*\* Different versions of the same programme were counted only once. Individual NCPs were considered for the United Kingdom.

\*\*\*\* The analysis of the NCPs from Denmark, Finland, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Sweden and Switzerland may be incomplete as these plans were only partly translated by the authors of this report.

Table 2. (cont.)

	Type of nutritional or physical activity related action											
	Availability of the healthy option									Others		
	Targeting overweight / obesity	Targeting physical activity	Targeting energy – dense foods & SSBs *	Targeting consumption of fruits & vegetables	Targeting red and processed meat	Targeting salt	No specific dietary targets	Others	Implementing regulatory measures	Promoting related research	Implementing surveillance systems	Others
Germany (DE)****												
Greece (EL)****	✓	✓										
Hungary (HU)	✓	✓				✓					✓	
Ireland (IE)	✓	✓	✓									• Health services should work with the food industry in order to encourage it to produce, market and improve attractive and healthy options
Italy (IT)****	✓	✓				✓					✓	• Nutrition and physical activity as integral part of health education
Latvia (LV)****	✓	✓										
Lithuania (LT)****												
Luxembourg (LU)												
Malta (MT)	✓			✓					✓		✓	• Conducting a feasibility assessment of a ban on the use of TFA in cooking oils
Netherlands (NL)	✓	✓	✓	✓						✓		• There should be an integration focus on reducing the 'obesogenic' environment (including the redesigning of the physical environment) • Agreements with food manufacturers for food reformulation, portion sizes, labelling and marketing practices

Table 2. (cont.)

	Type of nutritional or physical activity related action										Others				
	Awareness raising campaigns & counselling	Availability of the healthy option								Implementing regulatory measures		Promoting related research	Implementing surveillance systems		
		Targeting overweight / obesity	Targeting physical activity	Targeting energy – dense foods & SSBs *	Targeting consumption of fruits & vegetables	Targeting red and processed meat	Targeting salt	No specific dietary targets	Others						
Poland (PL)****	✓			✓					✓		✓				
Portugal (PT)****	✓	✓													
Romania (RO)															
Slovakia (SK)															
Slovenia (SI)	✓														<ul style="list-style-type: none"> <li>• The goals set out in the Resolution on the National Nutritional Policy Programme 2005-2010 and the Republic of Slovenia Government Strategy in the Field of Physical Activity for Strengthening Health 2007-2012 must be realised</li> </ul>
Spain (ES)	✓	✓	✓	✓	✓	✓									<ul style="list-style-type: none"> <li>• Disseminate the European Code Against Cancer</li> <li>• Support evaluation of effectiveness of nutrition education programs</li> <li>• Support detection of inappropriate eating habits</li> </ul>
Sweden (SE)****															
United Kingdom (UK)															
• England	✓		✓												
• Scotland	✓	✓	✓						✓					✓	
• Northern Ireland	✓	✓	✓							✓					
• Wales	✓	✓	✓												
Iceland (IS)															

This table is the result of a comprehensive but not exhaustive analysis of all NCPs cited; the entries reflect the content of each plan analysed to the best of the authors' knowledge.

\* SSB: sugar-sweetened beverages.

\*\* HFSS: foods high in fat, sugar and salt.

\*\*\* Different versions of the same programme were counted only once. Individual NCPs were considered for the United Kingdom.

\*\*\*\* The analysis of the NCPs from Denmark, Finland, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Sweden and Switzerland may be incomplete as these plans were only partly translated by the authors of this report.

Table 2. (cont.)

	Type of nutritional or physical activity related action												
	Awareness raising campaigns & counselling		Availability of the healthy option								Others		
	Targeting overweight / obesity	Targeting physical activity	Targeting energy – dense foods & SSBs *	Targeting consumption of fruits & vegetables	Targeting red and processed meat	Targeting salt	No specific dietary targets	Others	Implementing regulatory measures	Promoting related research	Implementing surveillance systems	Others	
Norway (NO)	✓	✓					✓						<ul style="list-style-type: none"> <li>Refers to upcoming plan to improve the nations diet</li> </ul>
Turkey (TR)	✓	✓						<ul style="list-style-type: none"> <li>Encourage breastfeeding for the first six months</li> <li>Cooking techniques</li> </ul>		✓	✓	<ul style="list-style-type: none"> <li>Establish an advisory board to study the relationship between local nutritional habits and unique cancers</li> <li>Increase the number of current dieticians and legislate this occupation</li> <li>Inclusion in educational curricula and on the job training for medical personnel on the issue of healthy nourishment</li> <li>Dissemination and continuation of trainings of trainers (dieticians etc.)</li> <li>Preparation and updating of diet and cancer modules</li> <li>Preparing of knowledge, education and communication materials</li> <li>Cover weight loss and consultancy programs</li> <li>Increase dieticians</li> </ul>	
Switzerland (CH)****	✓	✓		✓			✓				✓		
<b>TOTAL</b>	<b>22***</b>	<b>14****</b>	<b>6***</b>	<b>8***</b>	<b>1***</b>	<b>2***</b>	<b>8***</b>	<b>6***</b>	<b>4****</b>	<b>6***</b>	<b>7***</b>	<b>10****</b>	

This table is the result of a comprehensive but not exhaustive analysis of all NCPs cited; the entries reflect the content of each plan analysed to the best of the authors' knowledge.

\* SSB: sugar-sweetened beverages.

\*\* HFSS: foods high in fat, sugar and salt.

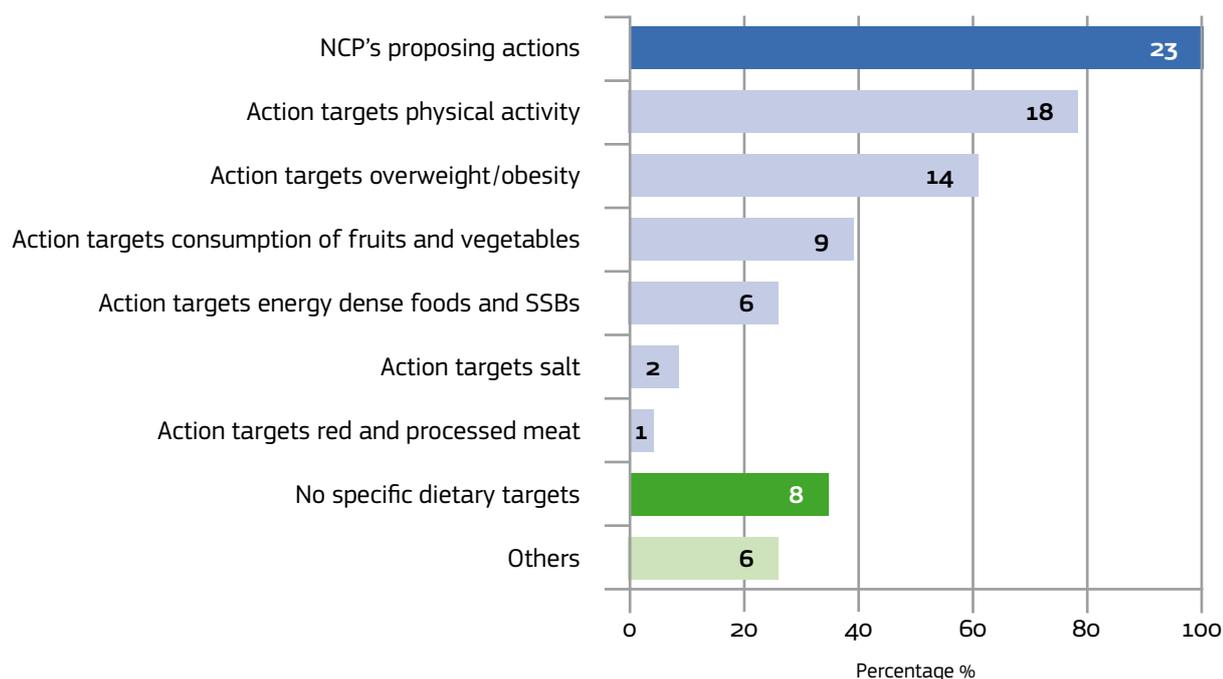
\*\*\* Different versions of the same programme were counted only once. Individual NCPs were considered for the United Kingdom.

\*\*\*\* The analysis of the NCPs from Denmark, Finland, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Sweden and Switzerland may be incomplete as these plans were only partly translated by the authors of this report.

### 2.3.2. Making the healthy option available

While providing information is certainly an essential element in primary prevention of cancer, implementing actions that facilitate healthy choices or make them the default choice for the population are also key to successful prevention. Actions that go beyond provision of information can directly target different risks or protective behaviours such as physical activity, overweight/obesity, consumption of fruits and vegetables, energy dense foods and sugar-sweetened beverages (SSBs), salt or red and processed meat. Examples of these actions are detailed in *Table 2* and *Figure 5*.

The majority of the actions detailed in the NCPs address physical activity or inactivity as well as overweight/obesity. These are also among the top issues targeted by the *European Code Against Cancer* and the WCRF recommendations. Several NCPs propose measures to increase the consumption of fruits and vegetables or reduce the consumption of energy-dense foods and sugar-sweetened beverages. Despite scientific evidence linking salt or red and processed meat consumption with an increased risk of specific cancers, these dietary risk factors were rarely targeted in the NCPs analysed.



**Figure 5 – Types of nutrition and physical activity related actions proposed in European NCPs making the healthy option available.** The bars show the number of NCPs with

content relevant to each point. 100% refers to the total number of NCPs that propose actions related to dietary or physical activity-related prevention of cancer, i.e. 23.

**Actions targeting physical activity** Measures to promote physical activity include developing specific physical activity action plans or ensuring that pupils at different school levels have access to sufficient physical activity time. Promotion of policies for exercise in the workplace or increasing access to physical activity infrastructures (e.g. sports fields or playgrounds) are some examples found in the NCPs analysed. For example, according to the Scottish NCP, only one third of women and less than half of men currently meet the recommended daily amount of physical activity which is aimed to be at least 30 minutes per day. In order to raise these numbers by 2022, ‘individuals must be supported to take a greater responsibility for their health by encouraging them and providing them with more opportunities to become more active’. Therefore, initiatives in various settings like schools, communities, homes or workplaces have been proposed.

**Actions targeting healthy diets** Several NCPs propose concrete actions to facilitate healthier food choices. However, while intending to promote healthy lifestyles and diets, some do not describe further which kind of diets or foods should be promoted or avoided in primary cancer prevention or how/where this promotion should be implemented (see *Figure 5*, no specific dietary targets). Public settings like canteens, schools or hospitals are important venues for the provision of adequate diets in primary cancer prevention; leisure centres, sports clubs and even fast food chains are also mentioned in some plans. Agreements with food manu-

facturers regarding food reformulation and revisiting portion sizes are also important concrete actions. Furthermore, the early detection of inappropriate eating habits using valid and simple tools is another interesting measure linked to diets and obesity that is proposed in the Spanish plan.

Several foods or food components appear to have a protective effect against specific cancers. Examples are non-starchy vegetables (e.g. green leafy vegetables or broccoli), fruits and foods high in dietary fibre and nutrients (e.g. vitamins) but low in energy density. Both, the *European Code Against Cancer* as well as the WCRF recommendations suggest daily consumption of at least 600g of non-starchy fruits and vegetables (or five servings) for primary cancer prevention. There are nine NCPs that propose measures to increase the consumption of fruits and vegetables—for example, by making them available at the workplace or in schools. The European Commission’s *School Fruit Scheme* can be a valuable programme in this regard.

Worldwide, the consumption of energy-dense foods, in particular ‘fast foods’ and sugary drinks, is on the rise. Such foods are often high in sugars and/or fats but low in dietary fibre, water or micronutrients. The incidence of certain types of cancer appears to be linked to the high-fat content of some foods and/or body fatness.<sup>23</sup> Six of the ana-

23. World Cancer Research Fund/American Institute for Cancer Research: *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*. Washington DC: AICR, 2007. [http://www.dietandcancerreport.org/cancer\\_resource\\_center/er\\_full\\_report\\_english.php](http://www.dietandcancerreport.org/cancer_resource_center/er_full_report_english.php) (accessed on 27 August 2013).

lysed NCPs planned actions targeting energy-dense foods and sugary drinks, mostly related to marketing practices.

As previously stated, despite the fact that some NCPs acknowledged the link between red meat or saturated fat consumption and an increased risk for developing certain cancers, the consumption of red or processed meat is only targeted by one of the NCPs analysed. As for salt, although the *salt reduction framework initiative* has been successfully implemented in several European countries,<sup>24</sup> only two NCPs refer to actions aimed at limiting salt consumption. Also in the case of breastfeeding, while studies show that breastfeeding helps preventing breast cancer in women and overweight/obesity in children, only two NCPs refer to actions supporting this behaviour.

In addition to dietary components mentioned above, several NCPs put forth actions aiming at other dietary-related factors, such as the promotion of increased water consumption, reduction of TFA in diets or reducing consumption of strongly smoked products, open fire grilling, acrylamide in foods or fungal toxins.

### 2.3.3. Regulatory measures

In addition to the measures described thus far, four NCPs refer to the implementation of regulatory measures to protect public health and favour dietary-related cancer pre-

vention. These are mostly related to limiting the marketing of HFSS foods to children as well as limiting the presence of such foods or sugary drinks in schools, school canteens and leisure centres.

### 2.3.4. Promotion of nutrition-related research

While the available evidence highlights the important role that nutrition has in cancer prevention, there are many potential avenues for dietary prevention of cancer that remain unexplored. As regards to this gap, six NCPs propose the promotion of research as one of their action points. Areas of focus range from understanding cancer inequalities (including the relationship between cancer development and environments, diets and behaviours) to examining the determinants of behaviour and determining the factors for conducting successful and effective cancer prevention interventions. An interesting example comes from the Turkish NCP which proposes to establish an advisory board to study the relationship between some local nutritional habits and particular cancers.

### 2.3.5. Implementation of surveillance systems

Six NCPs also contemplate implementation /maintenance of surveillance systems or increased monitoring and evaluation of measures that relate to various aspects of cancer prevention. These range from monitoring disease prevalence, survival and documentation of the quality of treatment to monitoring the occurrence of relevant health param-

24. [http://ec.europa.eu/health/nutrition\\_physical\\_activity/docs/salt\\_report\\_en.pdf](http://ec.europa.eu/health/nutrition_physical_activity/docs/salt_report_en.pdf) (accessed on 28 October 2013).

eters and lifestyle factors such as nutrition and physical activity patterns, overweight and obesity. Other areas include reinforcing food surveillance systems particularly in the area of food safety (*e.g.* monitoring chemical contaminants in foods).

### **2.3.6. Other nutrition-related actions**

Many NCPs refer to actions that did not clearly fit into the matrix categories de-

scribed thus far (see *Table 2*). Their analysis is interesting because these actions highlight otherwise neglected points. For example, some actions focus on specific target groups such as educating qualified health professionals who deal with obesity (DK) or increasing the number of dieticians and legislating this occupation (TK). They also highlight other relevant players such as the food industry, health services and health educators.

# 3

## . Concluding remarks

There is solid evidence that certain forms of cancer are associated with particular lifestyles, behaviours or exposure to specific external factors. For example, the effect of smoking in lung cancer or the role of human papilloma virus (HPV) in cervical cancer is well-established by researchers and well-accepted by the public as well as health authorities. Based on the evidence, public health authorities and health care workers have implemented numerous measures to target smoking and HPV vaccination. With regard to the role of diets and physical activity in cancer prevention, nutrition science is complex and often challenged. In the area of dietary prevention of cancer in particular, long-term, carefully-designed and controlled studies are needed to produce convincing evidence. In addition, cancer-related research has mostly focused on the origins of cancer and on its treatment rather than prevention. Nevertheless, a *PubMed* search of ‘dietary prevention of cancer’ retrieved over 14 000 published scientific articles. Based on such studies worldwide cancer experts have produced clear evidence-based recommendations advocating the dietary prevention of cancer (e.g. the WCRF/AICR *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective* and the *European Code Against Cancer*). It is therefore clear that, as in the cases of smoking or HPV infection, there is also a broad range of evidence demonstrating a role for dietary prevention of cancer. However, is the concept of dietary

prevention of cancer well-accepted and is it being translated into concrete measures? This is the question that the current report addresses. Rather than reviewing the evidence available for dietary prevention of cancer, this report honours previous work in this regard and aims to raise awareness of the topic and identify different types of population-based dietary prevention of cancer measures proposed in European NCPs. It analyses the current NCPs and details the level of attention each plan gives to dietary prevention of cancer and the types of measures that are proposed. The report focuses on NCPs because these plans have the potential to be far reaching. It is our hope that the measures cited here will inspire public health actors across the EU, but also health care workers, communities, industry and single individuals, to consider implementing related measures.

The answer to the question raised is not straightforward. Overall, this analysis shows that European NCPs do take into consideration cancer prevention and acknowledge a role for dietary prevention of cancer. Nearly 90% of the plans analysed refer to a link between nutrition and/or physical activity and the prevention of various types of cancer and also define cancer dietary risk or protective factors. It is therefore reasonable to conclude that yes, overall the concept of dietary prevention of cancer is well-accepted.

Concrete dietary prevention measures are also proposed; the number of NCPs proposing actions that target diets or physical activity is high (around 80%), however the majority of these actions are limited to awareness-raising campaigns. Solid measures that go beyond the provision of information and make the healthier option more easily available (*e.g.* increase the consumption of fruits and vegetables by providing them at schools) are less frequent. For example, only nine NCPs have actions in place that target the consumption of fruits and vegetables. Raising awareness and providing information are clearly essential but as in the cases of smoking and HPV vaccination above, additional actions are needed to concretely translate this knowledge into behavioural changes. Promoting research or better surveillance systems related to the link between diets or foods and cancer development are other types of measures that are seldomly proposed. The same applies to stricter regulatory measures, most often related to limiting marketing or access of high-fat sugar and salt foods or sugary drinks to children.

Clear implementation plans including resource allocation, targets and timelines as well as monitoring and evaluation are not a common practice in European NCPs. Admittedly, evaluation has to be considered within a long-term framework; the best end-point of such evaluations (*e.g.* reduction cancer incidence) will be visible only after decades of implementation. In the absence of these plans, as is the case for most NCPs, the extent of implementation of the proposed measures and their impact remains unclear.

While at European level it can be said that public health actors have proposed many different cancer prevention actions, the number of initiatives proposed by individual MSs is limited. Governments are only one of many actors in the fight against cancer and NCPs should be used to call for the involvement of other institutions. For example, healthcare and education structures, cancer societies, patient organisations, recreation centres, workplaces, the media, the food and drink industry and even single individuals all have an important role to play. The involvement of healthcare professionals, nutritionists and dieticians is important as these professionals can exert important influence on the public. NCPs can also ensure continuous training actions on dietary prevention of cancer that ensure professional development and high motivation of these professionals.

Any lessons learned from the implementation of the measures proposed in the NCPs analysed should be discussed openly. There are also other national plans in place across Europe on related issues such as obesity and food reformulation whose measures can also affect cancer prevention. Sharing hands-on knowledge, best-buys and implementation tips will allow effective replication of successful actions throughout Europe. Overall, there is much that can be done with the current knowledge of cancer prevention. An impetus for further action is needed and NCPs can provide such impetus.

# 4 . Limitations of this report

It is important to indicate here that language barriers may have affected the interpretation of the NCPs.

As previously mentioned, this report falls short of evaluating the extent to which proposed measures related to the dietary prevention of cancer in the different NCPs are implemented and therefore their subsequent impact has also not been assessed. On the other hand, it cannot be excluded that other cancer-related prevention measures not detailed in the NCPs may have taken

place in the context of different policies or actions plans (*e.g.* obesity action plans or food policies). In an attempt to address such omissions, whenever NCP actions referred to other plans/strategies which targeted nutrition, diets or physical activity the information was documented.

This report did not consider alcohol intake given the dimension of this single topic. Physical activity was included as the NCPs often dealt with diets and physical activity together.

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### Abstract

There is solid evidence demonstrating that the risk of developing cancer (or some cancers in particular) can be reduced through various measures. The present report focuses on one particular aspect of cancer prevention – diets. It aims to raise awareness of the potential of dietary cancer prevention, analyses the European National Cancer Plans (NCPs) currently in place, details the level of attention they give to dietary prevention of cancer and highlights different types of population-oriented measures to promote it. Most of the NCPs analysed acknowledge a link between diet and/or physical activity and the prevention of various types of cancer. The majority of the actions targeting nutrition and physical activity are awareness raising campaigns. Concrete measures to make the healthy option easily available and effect behaviour change towards healthier lifestyles and dietary patterns (*e.g.* increase the consumption of fruits and vegetables) are less frequent. Clear implementation plans including resource allocation, targets and timelines, monitoring and evaluation are not a default practice in European NCPs. NCPs can and should be used to call for the involvement of other actors. The food and drink industry, the media, schools, healthcare providers, recreation centres, workplaces as well as cancer societies, patient organisations and local communities all have a role to play. Any lessons learned from the implementation of the measures proposed in the NCPs analysed should be openly discussed and shared so that successful actions can be effectively replicated throughout Europe. Currently, although much is known regarding cancer prevention, there is still a lot to learn. Nevertheless, these gaps should not prevent us from applying what is already known. Importantly, measures related to dietary prevention of cancer will not only reduce cancer incidence but also contribute to the reduction of other non-communicable diseases such as type II diabetes or cardiovascular disease.

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