

Cancer prevention: Modifiable risk factors

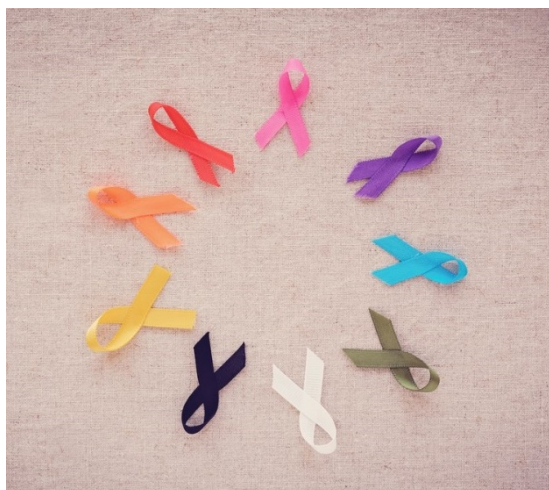
On 18 February 2020, the Health Working Group of the Committee on Environment, Public Health and Food Safety (ENVI) held a workshop on cancer prevention, focussing on modifiable risk factors. Dolores Montserrat and Sara Cerdas MEPs, the Co-Chairs of the Health Working Group, presided over the meeting. The workshop was organised by DG IPOL, Policy Department for Economic, Scientific and Quality of Life Policies, and ECCO, the European Cancer Organisation. ECCO is currently working on an in-depth analysis for the ENVI Committee, covering cancer from a holistic perspective (causes, screening, prevention, treatment, access to therapies); the workshop featured presentations on topics that form part of that in-depth analysis.

This briefing summarises the presentations, that were delivered by the invited experts. The full slide-deck of the presentations and the biography of the speakers are available on the [dedicated page](#) of the ENVI Committee's website, and the video recording of the event can be downloaded from the [Multimedia Centre](#) of the Parliament.

Context

Cancer is the **second leading cause of mortality** in the EU, after cardiovascular diseases. Each year there are **3.5 million new diagnosis**; and every year 1.3 million people die from cancer, accounting for **25% of all deaths**. If the current trend continues, the projection is that by 2035 cancer cases will have doubled in number, and cancer will have become the leading cause of death in the EU. Prevention and modifiable risk factors are a key element in this discussion, as 40% of cancer are due to preventable causes.

Though public health is the primary responsibility of the Member States, the EU has a strong role in **supporting, coordinating and complementing Member States' efforts**. The Commission launched [Europe's Beating Cancer Plan](#) on 4 February 2020, on World Cancer Day. The Plan aims to **reduce the cancer burden** for patients and families, and the health care systems. The Plan is ambitious in addressing **cancer-related inequalities** between and within the Member States. The European Parliament, as law-maker and policy-maker, will play an active role in shaping the new Cancer Plan and related legislative proposals and policy initiatives.



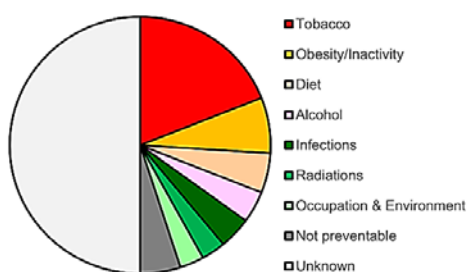
Dr Joachim Schüz: Modifiable risk factors and prevention: overview of current knowledge and main challenges; European Code against Cancer

Under the umbrella of cancer, there are very different diseases; **cancer types differ in terms of aetiology/causes, symptoms and when they are detectable, treatments, prognosis and after-care.**

Based on current trends, Europe can expect more than 100 million new cancer cases appearing in the next twenty years. A balanced, integrated approach is needed, encompassing prevention, early detection and treatment. Prevention is a key factor, as the cancer burden is simply too big to rely on advances in treatment, and most cancers are treatable only in early stages. What is more, cancer and many non-communicable diseases (NCDs) share the same causes; therefore, there are **synergies to exploit between cancer control and NCD control.**

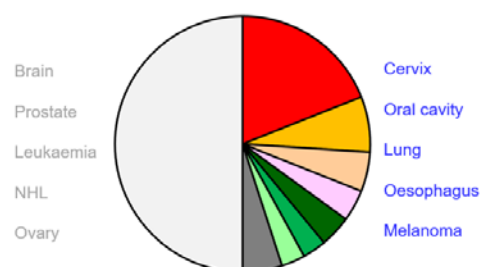
The examples of lung cancer in Nordic countries over the period 1965-2015, and prostate cancer mortality in Spain and Denmark between 1995 and 2015, were showcased to demonstrate the link between age and the number of cases. With Europe's ageing population, more people are at risk, and despite increasing treatment success, the absolute number of deaths is increasing; prevention therefore is crucial.

Potential for primary prevention by risk factor



Source: Slide 11 of the [presentation](#)

Potential for primary prevention by cancer type



Source: Slide 12 of the [presentation](#)

The **causes of cancer are unknown for about half of the cases.** From the remaining half of the cases that are caused by known factors, the big majority is attributable to preventable causes, with **tobacco- and obesity/inactivity-related causes** being the main risk factors. Looking at it from the angle of the types of cancer, the known and preventable risk factors are responsible for cervical, oral cavity, lung, oesophagus and melanoma cancers. Proper implementation of **organised screening programmes and vaccination programmes** are crucial. Those who are formulating health policies have to keep in mind that **primary prevention is an urgent, long-term investment**; it takes decades for the results to show. In addition to primary prevention, research also plays an essential role in identifying the currently unknown causes of cancer.

Stefan Gijssels: Prevention in Practice: Digestive Cancers

There are 800.000 new digestive cancer diagnosis each year in Europe; and currently there are 1.500.000 digestive cancer survivors. Every year 500.000 digestive cancer patients die.

Various causes of digestive cancer come with different prevention methods:

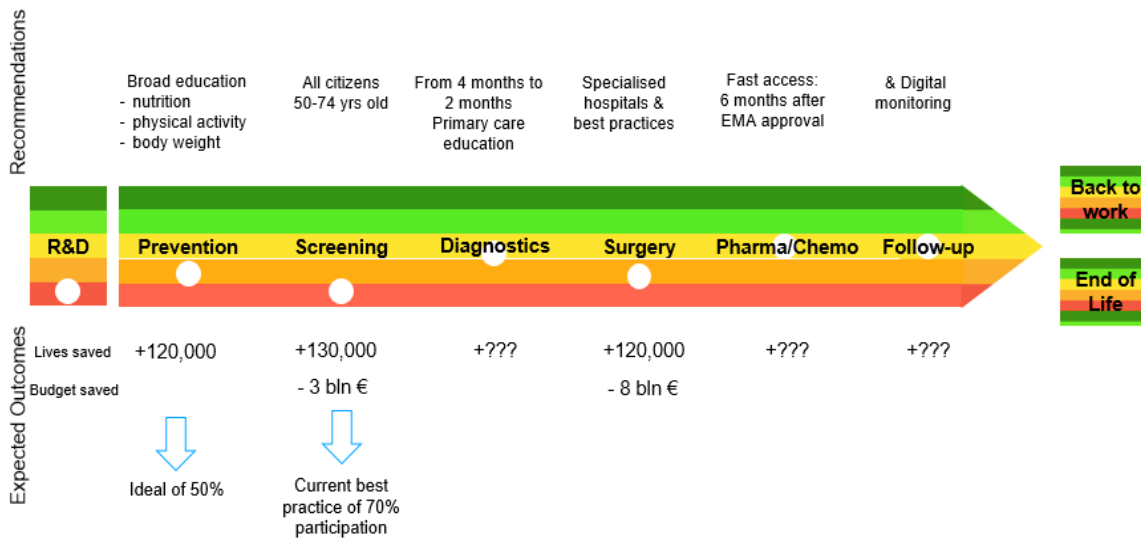
- In 10-15% of the cases, we can observe **family history**; education, informing the family doctor about the family's cancer history, and early colonoscopy are key in prevention. In 3-5% of the cases, there

is an **identified genetic cause**; genetics tests can confirm it. **Inflammatory bowel disease (IBD)** is also among the major causes.

- However, **75-85% of digestive cancer cases are due to unknown causes**, including lifestyle risk factors and unchangeable circumstances such as age, gender, body height, ethnics. In those cases health education of the public, lifestyle changes and screening are the most efficient prevention methods.

The **roadmap of colorectal cancer** shows the various stages of the cancer journey. It includes recommendations to improve prevention and outcome for diagnosed cancer patients, and shows the expected outcome if those recommendations were followed, i.e. how many more lives could be saved, and what budgetary savings it would result in.

Roadmap for colorectal cancer screening

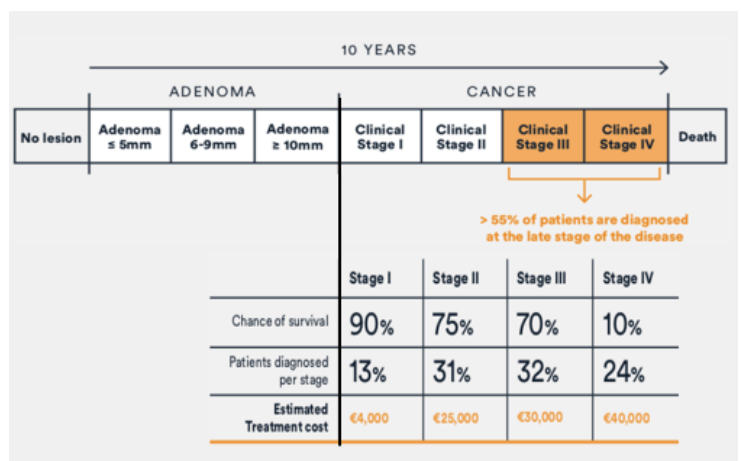


Source: Slide 14 of the [presentation](#)

Education and lifestyle changes are of key importance for prevention. However, their efficiency is limited by the fact that though almost everyone is aware of lifestyle recommendations (the importance of physical activity and a balanced diet, limited alcohol intake, etc.), only 3% of the population acts on it.

Therefore **screening** plays a crucial role in the early detection of that colorectal cancer which could not be prevented. It takes approximately 10 years for a polyp to develop into cancer, and screening can detect it at an early stage. Without screening, most patients discover their symptoms only when the cancer has already reached stage III-IV, where the chances for survival are significantly lower.

The case for colorectal cancer screening



Source: Slide 11 of the [presentation](#)

A **follow-up on the national screening programmes** reveals that only one country in Europe, Slovenia, conducts colorectal cancer screening in accordance with the [2003 Council recommendations](#) and guidelines (evaluation based on the age group and outreach/coverage). In The Netherlands the participation rate (outreach) is even higher than what is set in the recommendation, but screening starts at a later age.

Prof Daniel Kelly: Eliminating HPV-caused cancers in Europe as a public health problem

Human papillomavirus (HPV) is a very common sexually transmitted infection, about 90% of sexually active women and men will acquire it at some point in their life. **HPV is implicated in almost all cervical cancer cases, and is expected to cause the vast majority of oropharyngeal, anal, penile, and vaginal and vulvar cancers.**

HPV-caused cancers can be prevented by vaccination, but to work efficiently, **vaccination has to be universal, or in other words, gender-neutral.** Universal vaccination prevents the transmission of the virus between the sexes and in same-sex couples; through this, it reduces the circulation of the virus and creates herd immunity. Currently all EU countries, except Poland, have a HPV vaccination programme for girls, but only ten countries offer it for boys.

Universal HPV vaccination programmes in Europe



Source: Slide 6 of the [presentation](#)

The **WHO** is currently working on a [global strategy](#) for the elimination of cervical cancer; some individual countries are making great progress, that is the case e.g. with [Australia](#), whose elimination strategy is ahead of track. In the EU, the **Europe's Beating Cancer Plan** presents an ideal means for EU-wide cooperation for eliminating HPV-caused cancers. For the Plan to bring the expected results, it has to be **'SMART'**, i.e. its goals and targets have to be specific, measurable, attainable, relevant and time-based. In 2019 the European Cancer Organisation, **ECCO**, adopted its [resolution](#) and called for the implementation of effective strategies for the elimination of HPV-caused cancers by 2030:

- actions towards achieving population-based and gender-neutral vaccination plans should be included in the national cancer plans by 2025, and
- gender-neutral HPV vaccination plans should be in place by 2030. The target vaccination rate should be at least 90%.

Prof Pamela Kearns: The challenge of understanding modifiable risk factors in paediatric oncology, and the potential role of EU initiatives in addressing it

More than 35.000 new paediatric cancer cases emerge in Europe every year; with over 100 types of childhood cancer, **each case is considered as rare cancer.** Annually over 6.000 children are lost for cancer, and the majority of cancer survivors live with long-term adverse effects. Due to **inequalities in access to care and expertise**, we can observe a 20% difference in survival rates across the EU.

Today there are **no known modifiable risk factors for most paediatric cancers**. Though high dose ionising radiation and prior chemotherapy are accepted causes, apart from those, no further environmental risk factors, i.e. exposure originating outside the body, have been identified. That is due to

- the **low patient numbers**, which makes it hard to conduct meaningful prospective risk factor studies (a prospective study focuses on the outcome, analyses the development of the disease and links it to suspected risk factors); and
- the fact that most childhood cancer studies are **retrospective case-control** ones (a retrospective study looks backwards, and uses existing data to compare two groups).

What concerns known risk factors, genetic predisposition account for approximately 10% of paediatric cancers. A **Cancer Predisposition Syndrome (CPS)** diagnosis is important, because that opens the door to prevention, surveillance, counselling and psychological support, and adapted therapy; though these are currently underdeveloped services in Europe.

Childhood Cancer Predisposition Syndrome



Source: Slide 10 of the [presentation](#)

More research is needed on predisposition, and to understand molecular and genomic drivers of childhood cancers. **Data-sharing** and providing **access to scientific and healthcare databases**, together with **artificial intelligence**, are crucial in this aspect.

The rare nature of paediatric cancers and the collective health burden in Europe necessitate **coordinated EU-level approach**, and the **Europe's Beating Cancer Plan** holds a great promise. The **Strategic Plan of SIOPE**, the European Society for Paediatric Oncology, with its seven objectives and key areas for joint efforts could serve as a blueprint for the upcoming EU strategies.

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IP/A/ENVI/2020-05; Manuscript completed: March, 2020; Date of publication: April, 2020
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 This document is available on the internet at: www.europarl.europa.eu/supporting-analyses

Print ISBN 978-92-846-6384-2 | doi:10.2861/169496 | QA-01-20-154-EN-C
 PDF ISBN 978-92-846-6385-9 | doi:10.2861/491635 | QA-01-20-154-EN-N