OECD Health Policy Studies

The Health and Economic Benefits of Tackling Non-Communicable Diseases

OECD Health Policy Studies

The Health and Economic Benefits of Tackling Non-Communicable Diseases

OECD
BETTER POLICIES FOR BETTER LIVES

This document was produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

Please cite this publication as:
OECD (2026), *The Health and Economic Benefits of Tackling Non-Communicable Diseases*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/e20cbbc3-en.

ISBN 978-92-64-76255-8 (print)
ISBN 978-92-64-82823-0 (PDF)
ISBN 978-92-64-89894-3 (HTML)

OECD Health Policy Studies
ISSN 2074-3181 (print)
ISSN 2074-319X (online)

Photo credits: Cover © Dusan Petkovic/Shutterstock.com.

Corrigenda to OECD publications may be found at: https://www.oecd.org/en/publications/support/corrigenda.html.

Foreword

This report provides a comprehensive assessment of the burden of non-communicable diseases (NCDs) across OECD and European Union countries, bringing together the latest evidence on disease burden, risk factors, health system performance and economic impacts. Despite decades of policy effort, NCDs continue to rise, driven by worsening risk factors, population ageing and improved survival with chronic conditions. In addition to their profound health consequences, NCDs impose substantial social and economic costs, weakening productivity, increasing health expenditure and constraining long-term growth.

The report goes beyond describing trends, by identifying country-specific priority areas for action. Modelling analysis highlights where countries can achieve the greatest health and economic gains by aligning with the best-performing peers. The results shows that prevention, particularly action on key risk factors such as obesity, smoking and harmful alcohol use, delivers larger and broader benefits than treatment alone. The report also sets out three core pillars for effective NCD strategies: empowering individuals, creating supportive environments, and building responsive, prevention-oriented health systems.

Acknowledgements

Many people deserve credit for the work presented in this report, which was prepared by the public health team in the OECD Directorate for Employment, Labour and Social Affairs. The production of this report benefited greatly from the inputs and comments received from national experts, member states representatives and other stakeholders.

Preliminary versions of the chapters of this book were presented and discussed at meetings of the OECD Expert Group on the Economics of Public Health (EGEPH), and at the December 2025 meeting of the OECD Health Committee, chaired by Chris Mullin. Country experts and delegates are too many to name individually, but the authors would like to thank in particular delegates from Australia, Austria, Canada, Croatia, Ireland, Luxembourg, Mexico, Slovenia, Sweden, Switzerland, and the United Kingdom for their constructive comments throughout the process.

The authors would like to thank the organisations and institutions whose data was used in the analyses presented in this report.

Special thanks go to Marianne Takki, Yvette Azzopardi, Carlos García Mayoral and Raluca Ardeleanu (European Commission) who followed the development of the project since its conceptualisation and provided inputs throughout.

The work was funded through regular contributions from OECD Member countries and received support from the Health Programme of the European Union. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the OECD Member countries or the European Union. The organisations and institutions whose data was used in this report do not bear any responsibility for the analysis or interpretation of the data.

Table of contents

FIGURES

TABLES

Executive summary

Decades of effort have not yet turned the tide on NCDs

Despite decades of national efforts, non-communicable diseases (NCDs) continue to rise. Between 1990 and 2023, the prevalence of cancer and chronic obstructive pulmonary disease (COPD) has increased by 36% and 49% respectively in the OECD (39% and 41% respectively in the 27 Member States of the European Union (EU27, hereafter "EU")), while the prevalence of cardiovascular diseases (CVDs) has increased by more than 27% (21% in the EU). Diabetes prevalence rose by 86% in the OECD, and 64% in the EU. In 2023, one in ten people in the OECD had diabetes, and one in eight lived with CVD (one in twelve and one in seven respectively in the EU).

The burden of NCDs is increasing, and projected to grow further

There are three main reasons why the prevalence of NCDs continues to grow.

- **First**, while progress has been made in reducing certain risk factors, such as air pollution, smoking, harmful alcohol consumption, and physical inactivity, this has been undermined by steep increases in obesity.
- **Second**, improvements in survival rates, an unequivocal public health success, mean that more people live for longer periods with chronic conditions, increasing the demand for care and the complexity of services.
- **Third**, population ageing means that more people are reaching the ages at which NCDs are most common. Even if risk factor prevalence, survival rates and population size remain constant, the number of new NCD cases is expected to grow by 31% in the OECD (and 29% in the EU) between 2026 and 2050 due to population ageing alone. The prevalence of multimorbidity is expected to rise by 75% in the OECD (70% in the EU) and annual per capita health spending on NCDs is projected to grow by more than 50% in the OECD (54% in the EU).

The economic, social and well-being case for action

NCDs affect far more than health outcomes: they influence how people live and work, strain families and communities, and impose a growing burden on health systems and economies.

Public health amenable NCDs (those preventable through public health interventions) account for more than four in ten premature deaths (i.e. deaths occurring before the age of 75) across OECD and EU countries. In addition to improving physical health, action on NCDs can also improve mental health outcomes, as NCDs have been shown to increase the risk of depression.

The economic opportunities are equally substantial. According to calculations using the OECD Strategic Public Health Planning for Non-Communicable Diseases (SPHeP) NCDs model, if there were no NCDs,

health expenditure would be about 40% lower, and average GDP nearly 4% higher, in the OECD and the EU over the next 25 years.

Identifying priorities for maximum impact

The challenge of addressing NCDs is complex, given the multiple risk factors and the wide range of policy entry points. However, clear priorities can be identified by assessing the relative impact of different risk factors on health and the economy, and by benchmarking performance against top performing countries. Applying a Top Quartile scenario, where each country's risk factor levels and survival rates are aligned to the level in the top performing 25% of OECD and EU countries, shows that:

- **Countries can achieve meaningful health and economic gains by addressing NCD risk factors.** If all OECD countries reached the Top Quartile levels of NCD risk factors, an ambitious but achievable target, the model estimates that the annual premature mortality would be 11.4% lower, total healthcare expenditure would be 6.2% lower, and the annual GDP would be on average 1.3% higher, on average over the period 2026 to 2050 (11.5%, 4.6% and 1.4% respectively in the EU). For example, across the EU, this would equate to avoiding one premature death every 3.5 minutes and achieving savings in healthcare spending comparable to the entire health budget of Austria.
- **Obesity offers the greatest opportunity to reduce the NCD burden in the OECD and EU.** Obesity accounts for more than half of the total impact of aligning risk factors to the Top Quartile level in the OECD (42% in the EU). If all OECD countries achieved the performance of the Top Quartile countries in terms of obesity prevalence, the annual number of new NCDs would be 11% lower, premature mortality 5.6% lower, and annual health expenditure 3.3% lower, on average over 2026-2050 (7.0%, 3.6% and 1.6% respectively, for the EU). The annual GDP would also be 0.6% higher on average over the period 2026 to 2050 across the OECD and the EU.
- **Prevention drives larger health and economic benefits than cure**. Aligning CVD and cancer survival rates in OECD and EU countries to the Top Quartile would together reduce premature mortality by 3.2% annually, on average over the period 2026 to 2050. However, reducing key risk factors such as obesity and smoking to the Top Quartile would have larger impact on premature deaths. Moreover, the economic gains from addressing risk factors are far greater than those achieved through improved survival rates: the impact of reducing obesity prevalence on GDP is more than ten times larger than the impact of increasing CVD survival rates. While improved treatment outcomes are key, addressing the root causes of NCDs delivers broader health and economic gains.
- **All countries can achieve major health results by focussing on one or two key priorities.** On average across the 51 countries analysed, addressing a country's leading NCD risk factor delivers around half of the total potential impact on NCD incidence, healthcare expenditure and GDP. Tackling the top two risk factors covers roughly 75%, while the top three account for about 90% of the total.

Successful NCD strategies are based on three interconnected pillars

Although the policy mix will differ across countries depending on their specific risk factor profiles and health priorities, there are three interlinked pillars that underpin all successful NCD strategies.

1. **Empowering individuals through information and education.** Sustained progress depends on individuals having the knowledge, motivation, and skills to make healthier choices. Information, motivation, and behavioural skills should be reinforced across all layers of society, from interpersonal relationships to public policy.

2. **Creating environments that support healthier choices.** Environments where people live, work, and learn strongly influence their risk of NCDs. Policies that create health-promoting environments, by reducing barriers, addressing the impact of social, environmental, economic, commercial and market factors, and making healthier options more accessible, are therefore key to supporting behaviour change and shifting social norms.
3. **Building responsive health systems that deliver prevention and care.** Health systems, and primary care in particular, can act across the entire NCD care pathway, not only in curing acute episodes. Primary care providers play a critical role in promoting healthier lifestyle choices, but this potential is often underused. Primary care also plays a central role in promoting screening and early detection, and in providing patient-centred long-term disease management.

1 Investing in NCD prevention is investing in social and economic prosperity

Non-communicable diseases (NCDs) continue to rise across OECD and EU countries despite decades of policy effort. Since 1990, the prevalence of cancer, chronic respiratory and cardiovascular diseases has increased markedly, while diabetes prevalence has nearly doubled in the OECD. This growing burden is driven by rising obesity rates, improved survival, and population ageing. Beyond health impacts, NCDs impose substantial economic and social costs, reducing productivity, increasing health expenditure, and constraining economic growth. Modelling using the OECD SPHeP NCDs model shows that aligning risk factors and survival rates to top-quartile country performance could significantly reduce premature mortality, lower health spending, and boost GDP. Obesity offers the greatest potential, while prevention delivers larger and broader benefits than treatment alone. Effective NCD strategies rest on empowering individuals, creating health-promoting environments, and strengthening prevention-oriented health systems.

In Brief

Investing in NCD prevention is investing in social and economic prosperity

NCDs profoundly undermine people's health, well-being and the wider economy. OECD modelling shows that four major NCDs: cancer, cardiovascular diseases, chronic obstructive pulmonary disease (COPD) and diabetes increase the risk of mental ill-health by up to 25% and will account for around 4 in 10 premature deaths over the next 25 years in the OECD and EU. Their impact extends beyond health, lowering wages, reducing productivity and increasing pressure on health systems: eliminating these NCDs would reduce health spending by 41% and contribute to a 3.8% increase in annual GDP on average over the period 2026 to 2050 (40% and 3.9% respectively in the EU).

Much of the NCD burden is avoidable, with prevention delivering greater benefits than improvements in disease management, as measured through improvements in survival. For example, aligning key risk factors to the top 25% of OECD and EU countries (Top Quartile) yields substantially larger reductions in premature mortality and stronger economic benefits than improving the management of patients who have already developed cancer or CVDs. If all OECD countries achieved the Top Quartile risk factor levels, the OECD model estimates that GDP would be 1.3% higher and premature mortality would be 11.4% lower (1.4% and 11.5% respectively in the EU). By contrast, improvements in patient management aligning both cancer and CVD survival would only reduce premature mortality by 3.2% and increase GDP by 0.1% (5% and 0.1% respectively in the EU).

Tackling obesity offers the greatest opportunity to reduce the NCD burden. If all countries in the OECD were to achieve the Top Quartile obesity prevalence, this would reduce the total NCD incidence by 11%, premature mortality by 5.6%, and total health expenditure by 3.3%, on average over 2026 to 2050 (7.0%, 3.6% and 1.6%, respectively, for the EU). It would also increase the total OECD workforce output by the equivalent of 4.5 million full-time workers and raise the annual GDP by 0.6% on average (495 000 and 0.6% respectively for the EU).

All countries can achieve substantial improvements by concentrating on just one or two top priorities. On average across the 51 countries analysed, addressing the country's leading priority alone delivers around 50% of the total potential impact on cases, healthcare expenditure and GDP. Tackling the top two covers roughly 75%, while the top three account for about 90% of the total. For premature mortality, which is affected by both risk factor and survival rates, addressing the top two priorities generates 50% of the impact on average.

To effectively tackle NCD risk factors, comprehensive strategies are useful to address the full range of underlying determinants. Any successful approach should be anchored in three interconnected pillars: empowering individuals through information and education; shaping environments that make healthier choices easier; and building responsive health systems that deliver both prevention and care.

Decades of efforts have not yet succeeded in reversing the rising trends in non-communicable diseases (NCDs) (Box 1.1). Despite international commitments, national policy initiatives and health promotion programmes, the burden of NCDs has continued to rise across OECD and European Union (EU) countries. Between 1990 and 2023, the prevalence of cancer[1] and chronic obstructive pulmonary disease (COPD) has increased by 36% and 49% in the OECD (39% and 41% respectively in the EU), while the prevalence of cardiovascular diseases (CVDs) has increased by more than 27% (21% in the EU). Diabetes prevalence rose even more: by 86% in the OECD, and 64% in the EU (Global Burden of Disease Collaborative Network, 2024[1]). As a result, NCDs now represent one of the greatest challenges to population health: in 2023, one in ten people in the OECD had diabetes, and one in eight lived with CVD (one in twelve and one in seven respectively in the EU).

Box 1.1. What are NCDs?

NCDs are long-lasting health conditions, that typically develop slowly and progress over time. NCDs include CVDs (such as heart attacks and strokes), cancers, chronic respiratory diseases (such as COPD), and diabetes. These conditions are the leading cause of death worldwide (IHME, 2025[2]).

In this report, the analyses on NCDs refer to on four disease groups: CVDs, cancers, COPD, and diabetes. This aligns with Sustainable Development Goal (SDG) 3.4*: "By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being"*, which looks at cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases (United Nations, n.d.[3]).

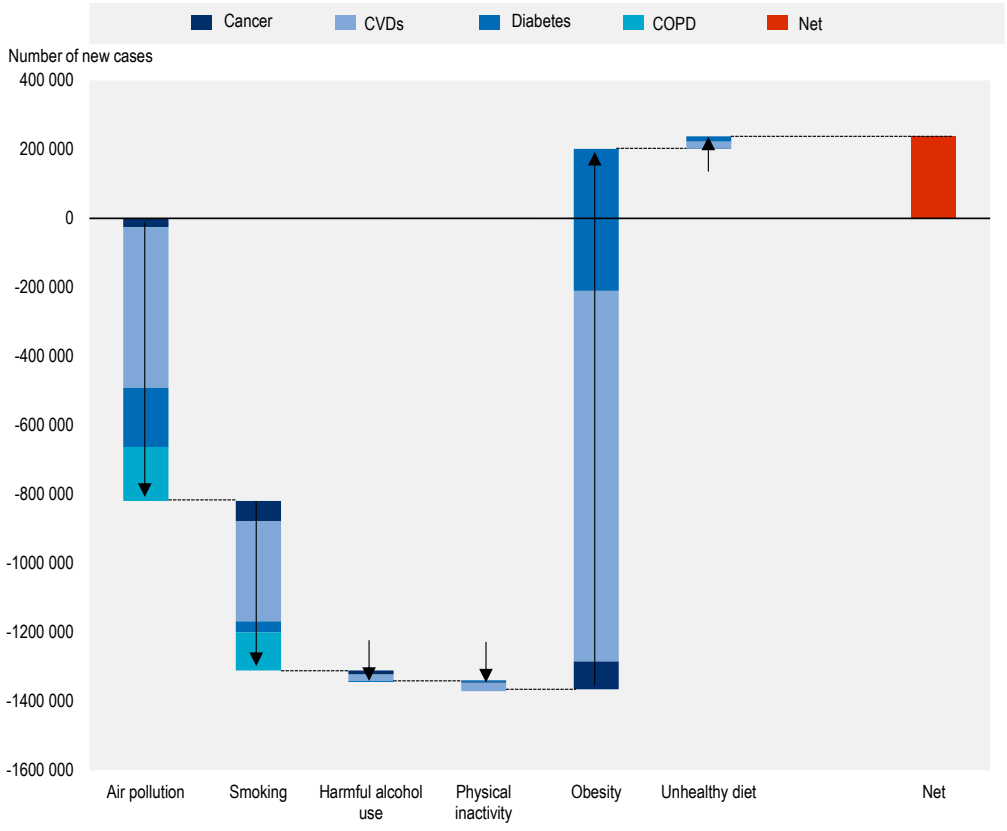
As there are a large number of different cancers and CVDs, not all could be covered in the OECD SPHeP NCDs model. The model focusses primarily on public health amenable diseases: those that are related to risk factors and more susceptible to prevention through public health interventions. The cancers covered in the model account for 71% of all cancer deaths in the OECD, and 88% of all risk factor-related cancer deaths. The CVDs included in the model account for 78% of all CVD-related deaths in the OECD, and 87% of all risk factor-related cancer deaths (IHME, 2025[2]).

There are three main reasons why the burden of NCDs continues to grow.

First, in many countries, progress in reducing certain risk factors, such as air pollution, smoking, harmful alcohol consumption, and physical inactivity, has been undermined by steep increases in obesity.[2] Analyses using the OECD Strategic Public Health Planning for Non-Communicable Diseases (SPHeP-NCDs) model (Box 1.2) show that, for the OECD as a whole, the positive impact of reductions in air pollution, smoking, harmful alcohol use and physical inactivity since 2010 are completely wiped out by the negative impact of increasing obesity prevalence (Figure 1.1). Across the 51 countries in the analysis, 57% have seen NCD incidence increase due to changes in risk factors, while in 43% it decreased. The primary driver of increasing NCD incidence is obesity, while improvements are driven mostly by reductions in air pollution and smoking.

Figure 1.1. In the OECD, progress on air pollution, smoking, harmful alcohol use and physical inactivity is outweighed by rising obesity prevalence

Impact of progress on risk factors between 2010 and 2022 (or most recent year) on the number of new cases of four major NCDs per year, on average over 2026-2050, for 38 OECD countries combined



Note: The results compare the annual number of new NCD cases in a business-as-usual scenario (which continues 2022 risk factor levels into the future) to one in which risk factors are kept at 2010 levels, reflecting the number of new NCD cases per year on average over 2026-2050. In other words, in this case there will be 233 677 more new NCDs per year in the OECD than if risk factors remained at 2010 levels. The results are adjusted for changes in population size. The impact of physical inactivity and diet on NCDs does not reflect the impact of physical activity and diet on body weight, as this is covered under obesity. The totals exclude the small changes in NCDs that are not a result of a risk factor-disease link, but that are due to the impact of risk factor changes on the population size. An EU specific figure is available in Chapter 2, Annex 2.A and a G20 specific figure in Annex Figure 2.B.1.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/xaindt

Box 1.2. The OECD model for Strategic Public Health Planning for Non-Communicable Diseases (SPHeP-NCDs)

Model structure

The OECD SPHeP-NCDs model is an advanced systems modelling tool for public health policy and strategic planning. It is used to predict the health and economic outcomes of the population of a country or a region up to 2050. The model produces a comprehensive set of key behavioural and physiological risk factors (e.g. smoking, obesity, physical activity, harmful alcohol consumption, unhealthy diet, air pollution) and their associated NCDs and other medical conditions. The model covers 51 countries, including OECD Member countries, G20 countries, EU27 countries and OECD accession and selected partner countries.

For each country, the model uses demographic and risk factor characteristics by age- and sex-specific population groups from international databases. These inputs are used to generate synthetic populations, in which each individual is assigned demographic characteristics and a risk factor profile. Based on these characteristics, an individual has a certain risk of developing a disease each year. Incidence and prevalence of diseases in a specific country's population were calibrated to match estimates from international datasets.

Model outputs

For each year, a cross-sectional representation of the population can be obtained, to calculate health status indicators such as life expectancy, disease prevalence and disability-adjusted life years using disability weights. Healthcare costs of disease treatment are estimated based on a per-case annual cost, which is extrapolated from national health-related expenditure data, using a payer perspective. The additional cost of multi-morbidity is also calculated and applied. The extra cost of end-of-life care is also considered.

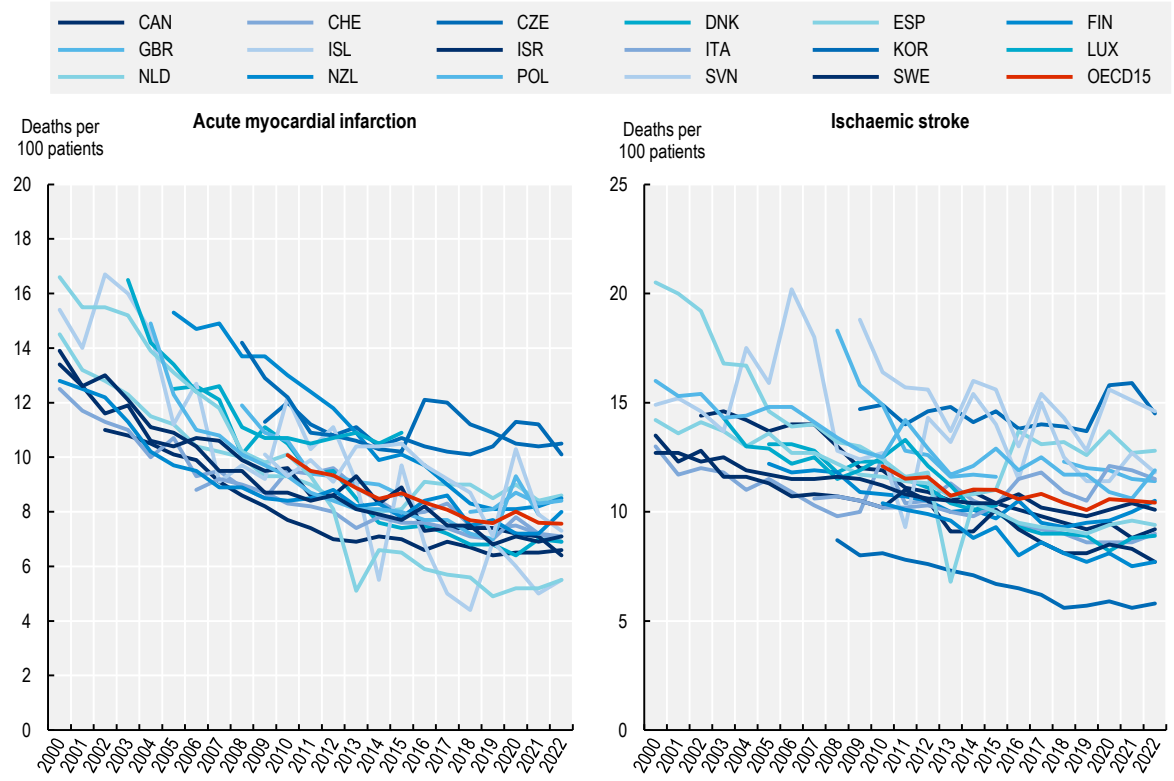
The labour market module uses relative risks to relate disease status to the risk of absenteeism, presenteeism (where sick individuals, even if physically present at work, are not fully productive), early retirement and employment. These changes in employment and productivity are estimated in number of full-time equivalent workers. The impact of demographic changes and labour force participation and productivity are translated into a change in gross domestic product (GDP) using the Cobb-Douglas production function, consistent with the OECD long-term economic forecast model (Guillemette and Turner, 2017[4]) and other established long-term models such as the World Bank Long Term Growth Model (Pennings and Loayza, 2022[5]). The GDP model also assumes that, in the long run, capital intensity remains constant, as the capital stock adjusts over time to increases in labour in order to restore its initial level.

For more information on the OECD SPHeP-NCDs model, see the online technical documentation, available at: http://oecdpublichealthexplorer.org/ncd-doc.

Second, improvements in survival mean that more people live for longer periods with chronic conditions. Case fatality rates for acute myocardial infarction (heart attacks) have decreased 23% between 2010 and 2022 across 15 OECD countries with data, and the fatality rate from stroke dropped 14% (OECD, 2025[6]) (Figure 1.2). Similarly, between 1995 and 2014, the proportion of people alive five years after their lung cancer diagnosis (5-year survival rate) increased from 10% on average across 7 OECD countries, to 19% (Arnold et al., 2019[7]). In the same period, the 5-year survival rate of colorectal cancer has gone from 52% in 1995, to 66% in 2014.

Figure 1.2. Improvements in care have reduced the fatality of heart attacks and stroke

30-day mortality (in- and out of hospital, linked data) after acute myocardial infarction and ischaemic stroke, selected countries with trend data, deaths per 100 patients



Note: In this figure, the OECD15 average represents a simple (i.e. unweighted) mean across 15 OECD countries.
Source: OECD Health Statistics 2025, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html.

StatLink https://stat.link/ymxkcz

These improvements in survival are an unequivocal public health success, but they also result in greater numbers of people requiring ongoing disease management. The rising prevalence of NCDs also increases the number of people living with multiple chronic conditions at the same time. Multimorbidity has a direct impact on people's quality of live, as people with two chronic conditions score lower on well-being, mental health and social functioning (OECD, 2025[8]). Moreover, dealing with multiple chronic conditions is more complex and resource-intensive for health systems than caring for a single illness (Box 1.3).

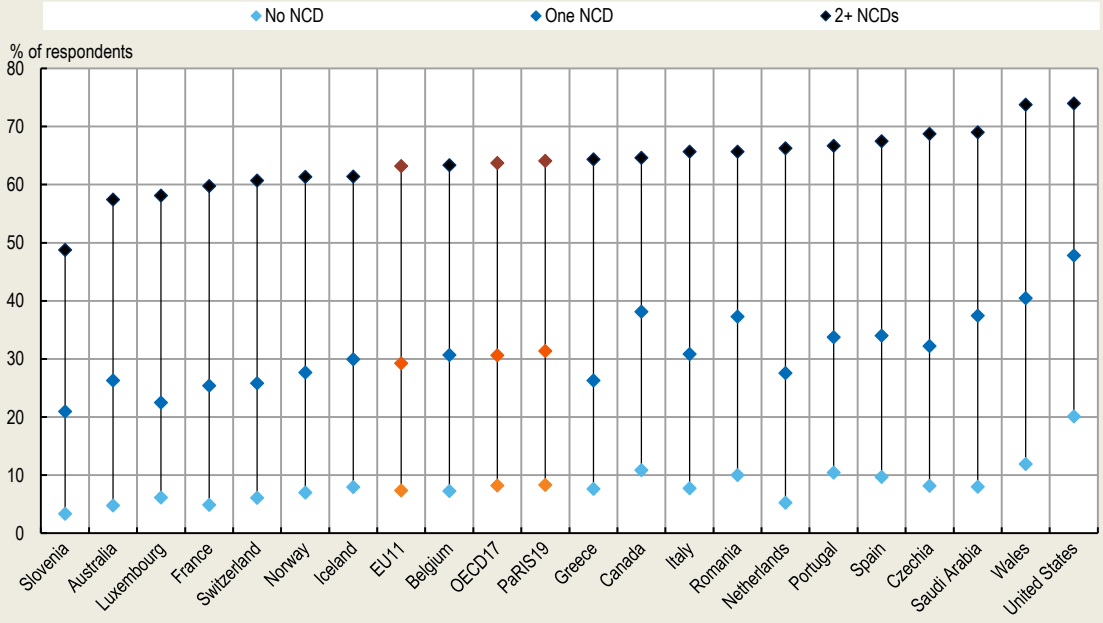
Box 1.3. The challenge of managing multimorbidity

While healthcare policy, research, professional training and clinical guidelines have traditionally focussed on single diseases, results from the OECD Patient-Reported Indicator Surveys (PaRIS) stress that multimorbidity – people living with two or more chronic conditions – is a massive challenge in healthcare, particularly in primary care. Managing these conditions is far more complex and resource-intensive than dealing with a single illness, putting pressure on healthcare systems and healthcare professionals to deliver high-quality, co-ordinated, people-centred care.

Treating multiple conditions can lead to overlapping or conflicting approaches. For example, people with multiple chronic conditions often take numerous medications. The more conditions a person has, the more complex and riskier their medication regimen becomes. This increases the likelihood of medication safety incidents and makes self-management more complex. Among people aged 45 and over who visited their primary care practice, the likelihood of someone taking five or more medications increased significantly with the number of NCDs: from less than 10% among people without an NCD, to 30% among people with one NCD and more than 60% among people with two or more NCDs (Figure 1.3).

Figure 1.3. People with multiple NCDs are much more likely to take five or more medications

Proportion of PaRIS respondents taking five or more medications, stratified by NCD status



Note: For this analysis four NCDs were included: cancer, CVD, chronic respiratory diseases (CRD, which include COPD) and diabetes. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. United States sample only includes people aged 65 years or older. In this figure, EU11, OECD17 and PaRIS19 averages are reported as simple (i.e. unweighted) means across member countries who took part in the survey.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/3doiuq

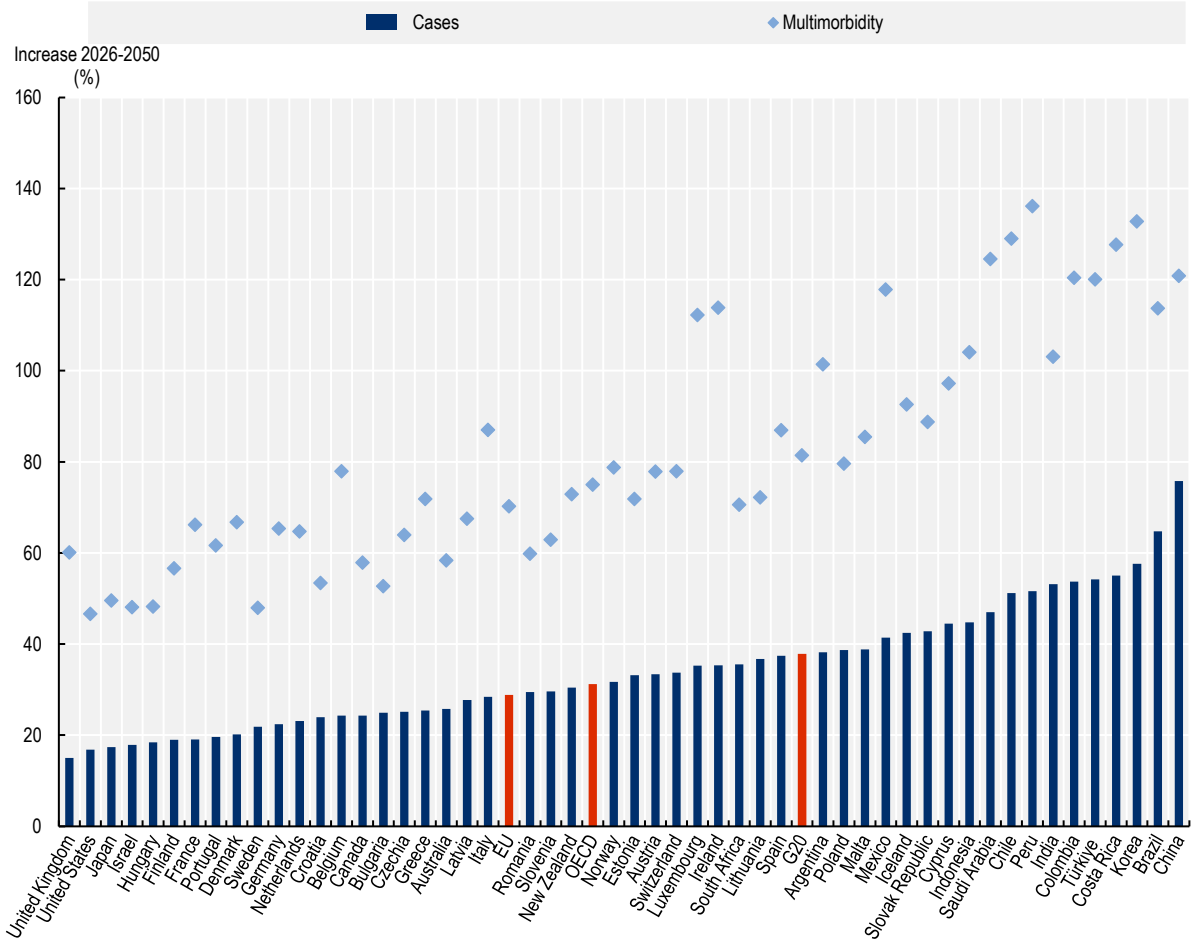
In addition, people with multiple conditions are less confident in managing their own care. In almost all countries covered by PaRIS, people with more NCDs reported a lower confidence in their ability to manage their own health and well-being. For the health system, this means that they require more information and support from their primary care physicians.

Third, population ageing means that more people are reaching the ages at which NCDs are most common. Even if risk factor prevalence and survival rates remain constant, the number of new NCD cases is expected to grow by 31% in the OECD (and 29% in the EU) between 2026 and 2050, as the incidence would increase from 1 936 per 100 000 people per year to 2 518 (2 141 to 2 755 in the EU) (Figure 1.4). The prevalence of multimorbidity is projected to increase even more: by 75% in the OECD and 70% in the

EU. The growing NCD burden will also lead to steep increases in healthcare costs, increasing per capita spending on NCDs in OECD countries by more than 50%, from USD PPP 646 to USD PPP 994 in the OECD (USD PPP 607 to USD PPP 938 in the EU).

Figure 1.4. Population ageing is expected to increase the number of new NCDs in the OECD, EU and G20 by more than 30% over the next 25 years

Increase in the number of NCDs, and the prevalence of multimorbidity, between 2026 and 2050



Note: Projections are based on current population size, and current age- and sex-specific incidence and mortality rates of the four NCDs. This analysis only looks at 4 groups of NCDs: CVDs, cancer, diabetes and COPD – both for the number of new cases and for the prevalence of multimorbidity. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/hvbx3e

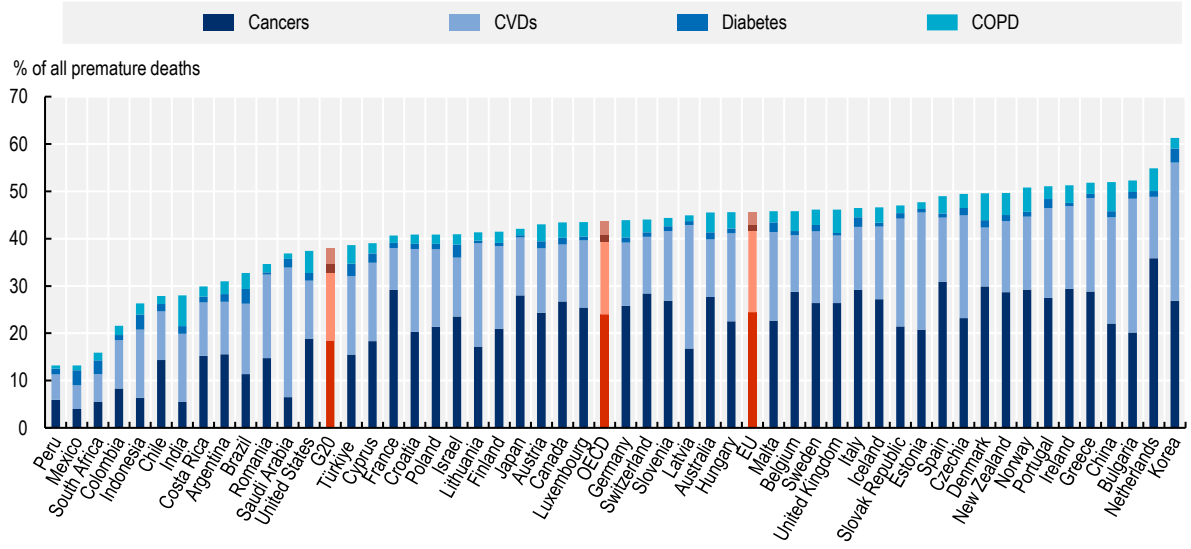
NCDs reduce quality of life, productivity and economic growth

The growing burden of NCDs is not only a public health challenge but also an economic and societal one. Effective action to prevent and manage NCDs should be seen as an investment in quality of life, productivity, and economic growth. For policymakers, understanding the wider economic and societal impact of NCDs is vital to making the case for sustained investment in the prevention and treatment of NCDs.

NCDs are a major cause of premature mortality (deaths before the age of 75) (OECD/Eurostat, 2022[9]). Premature mortality reduces life expectancy, but it also places psychological and financial strain on households and communities. The four NCDs covered in the OECD SPHeP NCD model (Box 1.1) will account for an estimated 44% of premature mortality across the OECD (46% in the EU) on average over 2026-2050, with cancers and CVDs alone accounting for around 40% (Figure 1.5). However, this is an underestimation, as this analysis only includes cancer and CVDs that are linked to behavioural risk factors or are otherwise amenable to public health interventions. When all cancers and CVDs are considered, the four NCDs accounted for 62% of all premature deaths in the OECD in 2023 (70% in the EU) (IHME, 2025[2]). Action on NCDs can also improve mental health, as NCDs have been shown to be associated with a higher risk of depression (Box 1.4).

Figure 1.5. The four NCDs covered in the analyses will account for around 4 in 10 premature deaths over the next 25 years

Premature mortality (deaths in people under the age of 75) due to public health amenable cancers, CVDs, diabetes and COPD, as a percentage of total premature mortality, average over 2026-2050



Note: the results compare premature mortality in a business-as-usual scenario to one in which the four NCDs are eliminated, and reflect the change in premature deaths from NCDs, averaged over 2026-2050. As the model focusses on public health-amenable conditions, it does not cover all cancers and CVDs. Therefore, the burden presented is an underestimation of the total premature mortality burden from those diseases. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/rdfao9

Box 1.4. NCDs and depression

NCDs diminish overall quality of life and increase the likelihood of developing depression. OECD analysis of Survey of Health, Ageing and Retirement in Europe (SHARE) data shows that – even when adjusting for confounders such as age, sex, socio-economic status, country, smoking status, and frequency of alcohol consumption – people with NCDs were more likely to go on to develop depression than people without NCDs. Depression in the survey was defined as having experienced at least four of the following 12 symptoms in the four weeks prior to the interview: depressed mood, pessimism, suicidality, guilt, sleep, interest, irritability, appetite, fatigue, concentration, enjoyment and tearfulness People with cancer or diabetes have a 15% increased risk of developing depression, 17% for heart failure, 21% for stroke and 25% for chronic lung disease. Moreover, the data shows that the risk increased with the number of NCDs. While people with one NCD have a 21% increase in the risk of depression, people with two NCDs have an 42% increased risk, and people with three or more NCDs a 50% increased risk of depression.

There are several biological, psychological and social factors that can explain a potential causal relationship between NCDs and depression. Psychologically and socially, loss of sense of self, social isolation from fatigue and lack of energy that drive loss of pursuit of normal activities, limitations to mobility, activities of daily living and chronic pain have all been associated. Fear and uncertainty of the incurable and unpredictable nature of certain NCDs contribute, as do beliefs about their NCDs and ability to self-manage their NCD. Biologically, neurodegeneration associated with certain NCDs and side effects of treatments associated with others can also play a role. An inverse relationship is also plausible, with depression increasing the risk of NCDs, for example by reducing motivation to exercise.

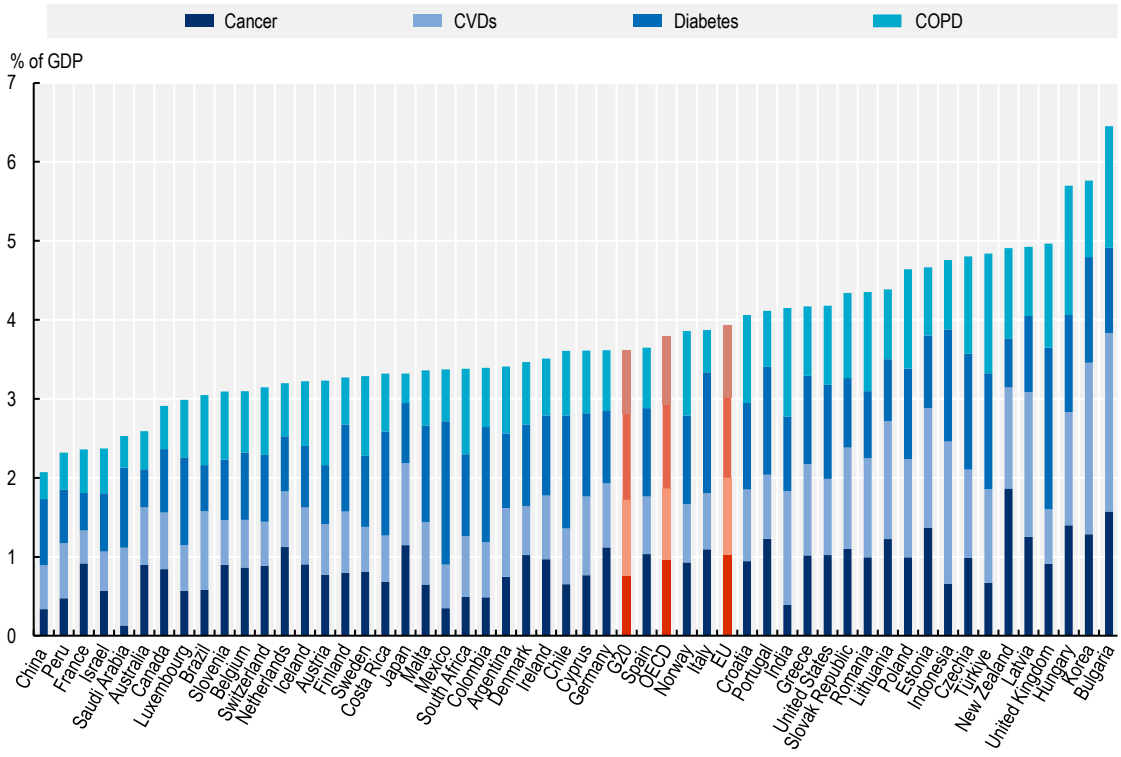
Source: Everard et al. (2025[10]), "Exploring the relationship between non-communicable diseases and depression", https://doi.org/10.1787/02a1cfc5-en.

Men bear a disproportionally large share of the NCD burden. In addition to biological factors (Regitz-Zagrosek and Gebhard, 2022[11]), men and women have different risk profiles for NCDs due to differences in behaviours. Men are generally more likely to engage in risky behaviours such as smoking and harmful alcohol use, and they are more prone to being overweight. While women are more likely to be insufficiently physically active, the difference with their male counterparts is relatively small (OECD, 2025[6]; WHO, 2025[12]). As a result, the premature mortality rate from NCDs for men in the OECD is 77% higher than that of women. In the EU, the premature death mortality rate from NCDs is almost twice as high for men compared to women, with some variation depending on NCDs. For instance, OECD modelling suggests premature mortality is almost 40% higher in men than women for cancer, and 71% higher for diabetes.

The economic impact of NCDs is equally substantial. If there were no NCDs, annual health expenditure would be 41% lower over the next 25 years in the OECD (40% in the EU). Moreover, through reduced labour force participation and productivity, NCDs reduce the workforce output by the equivalent of up to 18 million full-time workers in the OECD and 5 million in the EU, eliminating the equivalent of almost two full-time workers for every 100 working-age individuals in the OECD and EU. At the macroeconomic level, premature mortality and lower productivity are projected to reduce the average GDP of OECD and EU countries by nearly 4%, on average over 2026-2050 (Figure 1.6).

Figure 1.6. The annual GDP of OECD, EU and G20 countries will be nearly 4% lower due to NCDs, on average over 2026-2050

The reduction in annual GDP due to NCDs, expressed as percentage of GDP, on average over 2026-2050



Note: the results compare the GDP in a business-as-usual scenario to one in which the four NCDs are eliminated, and reflect the change in the annual GDP, averaged over 2026-2050. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/uhkjc4

Identifying policy priorities allows resources to be directed effectively for maximum impact

The challenge of addressing NCDs is complex, given the multiple risk factors and the wide range of policy entry points. However, clear priorities can be identified by assessing the relative impact of different risk factors on health and the economy, and by benchmarking performance against leading OECD and EU countries. Here, priority areas for action are identified by aligning NCD risk factor prevalence and NCD survival rates to level achieved in the top 25% of OECD and EU countries, for each age and sex group. This Top Quartile approach shows the areas with the greatest potential for improvement (Box 1.5).

Box 1.5. Identifying NCD priorities using the Top Quartile scenario

To understand the potential for improvement, NCD risk factor prevalence rates and NCD survival rates for each country were aligned to the top 25% levels observed across OECD and EU countries, for each age and sex group (Figure 1.7). Rather than eliminating all risk or aligning to the very best performance, this approach can be considered a realistic goal for most countries.

Figure 1.7. Schematic overview of the Top Quartile scenario

Baseline scenario

Country	Risk factor	Sex	Age	Prevalence rate
I	Smoking	Male	25-29	6.20%
E	Smoking	Male	25-29	6.30%
F	Smoking	Male	25-29	**8.50%**
B	Smoking	Male	25-29	13.20%
A	Smoking	Male	25-29	13.40%
C	Smoking	Male	25-29	14.30%
G	Smoking	Male	25-29	15.20%
…	…	…	…	…

Top 25%

Top Quartile scenario

Country	Risk factor	Sex	Age	Prevalence rate
I	Smoking	Male	25-29	6.20%
E	Smoking	Male	25-29	6.30%
F	Smoking	Male	25-29	**8.50%**
B	Smoking	Male	25-29	**8.50%**
A	Smoking	Male	25-29	**8.50%**
C	Smoking	Male	25-29	**8.50%**
G	Smoking	Male	25-29	**8.50%**
…	…	…	…	**8.50%**

Importantly, under the Top Quartile scenario a non-insignificant amount of risk remains. Firstly, aligning to the Top Quartile means countries that are already in the Top Quartile group will see no impact for that risk factor in that age and sex group. For others, it will reduce risk factor levels but only to the level of the Top Quartile, rather than fully eliminating them. Secondly, as NCDs develop over time, historic exposure to risk factors will continue to have an impact on the future NCD burden. Thirdly, reduced risk factor exposure may only delay the onset of NCDs for some individuals.

Countries can achieve meaningful health and economic gains by addressing NCD risk factors

If all OECD countries achieved the Top Quartile risk factor prevalence (an ambitious but achievable target), annual premature mortality would be 11.4% lower, total healthcare expenditure 6.2% lower and annual GDP 1.3% higher on average, over 2026-2050 (11.5%, 4.6% and 1.4%, respectively, in the EU).

While these numbers may appear modest at first glance, the impact on health and the economy is substantive. A 11.4% drop in premature mortality means one person in the OECD is saved from an early death every minute (and every 3.5 minutes in the EU). A 6.2% decrease in healthcare expenditure is a total annual saving of USD PPP 317 billion, equivalent to more than the total healthcare expenditure of Italy (USD PPP 67 billion in the EU, equivalent to the healthcare expenditure of Austria) (OECD, 2025[13]; World Bank, 2024[14]). This is more than the average spending on all preventive care, which is around 3% of overall health spending across OECD countries. A 1.3% increase in GDP across the OECD is nearly USD 1 trillion in additional economic output annually – comparable to adding the entire economies of Sweden and Portugal to the OECD's GDP (1.4% across the EU equates to USD PPP 342 billion, equivalent to adding more than the entire economy of Finland to the EU's annual economic output (World Bank, 2024[15])).

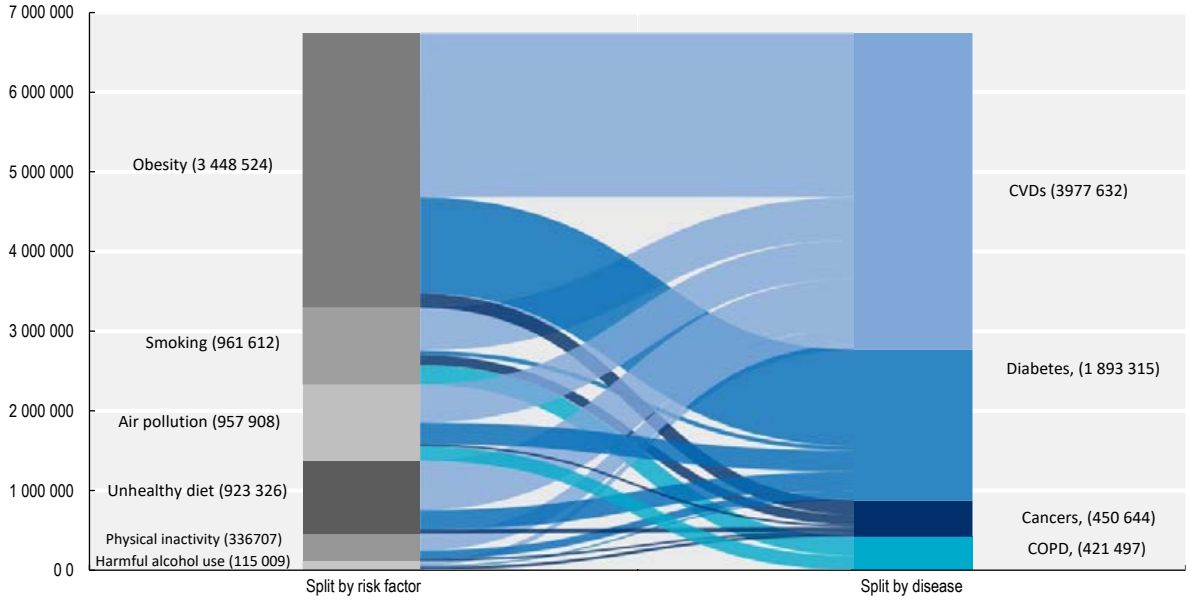
While there is considerable variation between countries, no country is in the Top Quartile for all risk factors, and for all countries there are potential health and economic gains. Even if the economic impact may be modest in some cases, the fact that prevention benefits individuals *and* yields measurable economic gains makes it valuable in itself.

Tackling obesity offers the greatest opportunity to reduce the NCD burden

Addressing obesity would have the largest impact on reducing NCD incidence in the OECD – accounting for more than half (51%) of the 6.7 million NCD cases that could be avoided per year by aligning risk factors to the Top Quartile level (42% of the 1.8 million NCDs in the EU). This is particularly driven by the impact of obesity on the incidence of cardiovascular disease (Figure 1.8).

Figure 1.8. Tackling obesity accounts for more than half of the potential impact of actions on risk factors

Impact of aligning risk factor prevalence to the Top Quartile level, expressed as the number of NCD cases avoided per year, broken down by risk factors and NCDs, total for the OECD, average over 2026-2050



Note: the results compare the number of new NCDs per year in a business-as-usual scenario to one in which all countries achieve the Top Quartile risk factor levels and reflect the change in new NCD cases per year, averaged over 2026-2050.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/btjc58

If all countries in the OECD were to achieve the Top Quartile obesity prevalence, this would reduce the total NCD incidence by 11%, premature mortality by 5.6%, and total health expenditure by 3.3%, on average between 2026 and 2050 (7.0%, 3.6% and 1.6%, respectively, for the EU). It would also increase the total OECD workforce output by the equivalent of 4.5 million full-time workers and raise the annual GDP by 0.6% on average (495 000 full-time workers and 0.6% of GDP for the EU).

Other risk factors also play significant roles. Smoking has a disproportionately large effect on premature mortality due to its strong link to cancer. Harmful alcohol use has a substantial economic impact because, in addition to contributing to a wide set of health conditions, it tends to have a larger detrimental effect on productivity and labour force participation than many other risk factors.

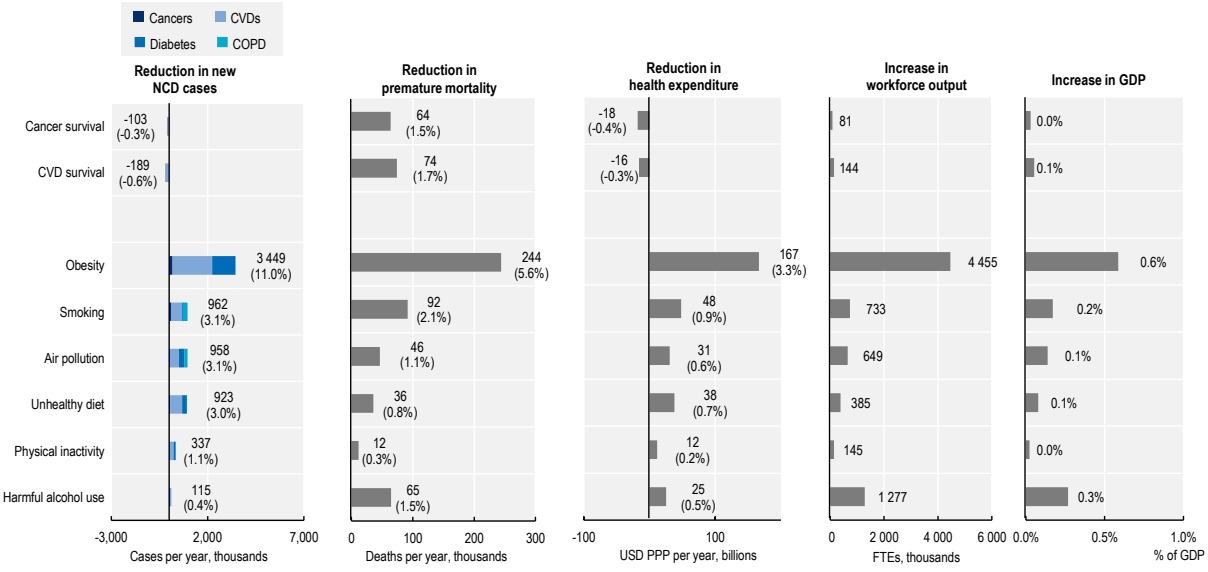
Prevention delivers larger health and economic benefits than cure

To improve health and economic outcomes, there are different levels at which policy can act. Primary prevention aims to stop diseases before they occur, by promoting healthy lifestyles and reducing environmental risks. Once a disease has already developed, the focus should be on treating it early and effectively, to prevent complications or death. The quality of care for NCDs is partially reflected in the survival rates of those who become ill. As survival rates vary significantly across countries, there remains substantial scope to improve care for NCDs, in addition to preventing NCDs in the first place. This would reduce premature mortality from NCDs, which would in turn also increase labour force output and GDP.

Aligning both cancer and CVD survival rates in OECD countries to the Top Quartile would reduce the annual premature mortality by about 3.2% and increase GDP by 0.1% (5% and 0.1% respectively in the EU), (Figure 1.9), on average over 2026-2050. However, aligning risk factors such as obesity and smoking to the Top Quartile yields larger reductions in premature mortality. Moreover, the impact of addressing these risk factors on workforce participation and GDP is significantly greater than the gains achieved through improved survival rates. While better survival outcomes contribute meaningfully to health improvements, the economic benefits of reducing key risk factors are far more substantial.

Figure 1.9. The potential health and economic gains from lower risk factor prevalence are greater than from improved survival

NCD cases prevented (thousands and as a percentage of total new NCD cases), premature deaths avoided (thousands and as a percentage of total premature deaths), health expenditure saved (USD PPP billions and as a percentage of total health expenditure), workforce output increase (full-time equivalents), GDP increase (% of GDP), if all countries achieve the Top Quartile level for risk factor prevalence and for CVD and cancer survival rates, total for OECD countries, per year, average over 2026-2050



Note: Cancer and CVD survival reflect improvements in diseases management, whereas the other indicators capture gains arising from reduced risk-factor prevalence through prevention and health promotion measures. The results compare a business-as-usual scenario to one in which all countries achieve the Top Quartile risk factor prevalence or survival rates. Cases of NCDs are specific for the four NCDs, while the impact on premature mortality, health expenditure, workforce output and GDP is a combined effect of the risk factor on all diseases (e.g. including the effects on other diseases like dementia and alcohol use disorders and including comorbidity effects) and on productivity. The increase in health expenditure shown for improved survival rates represent the increased cost of people living with NCDs for longer and does not include any expenditure required to improve the survival rates. CVDs and cancer account for 90% of deaths from NCDs, and survival rates for COPD and diabetes were therefore not considered. In this figure, percentages are calculated using OECD-wide totals, capturing the total impact across OECD countries rather than a simple average of country-level effects.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/5ca6lm

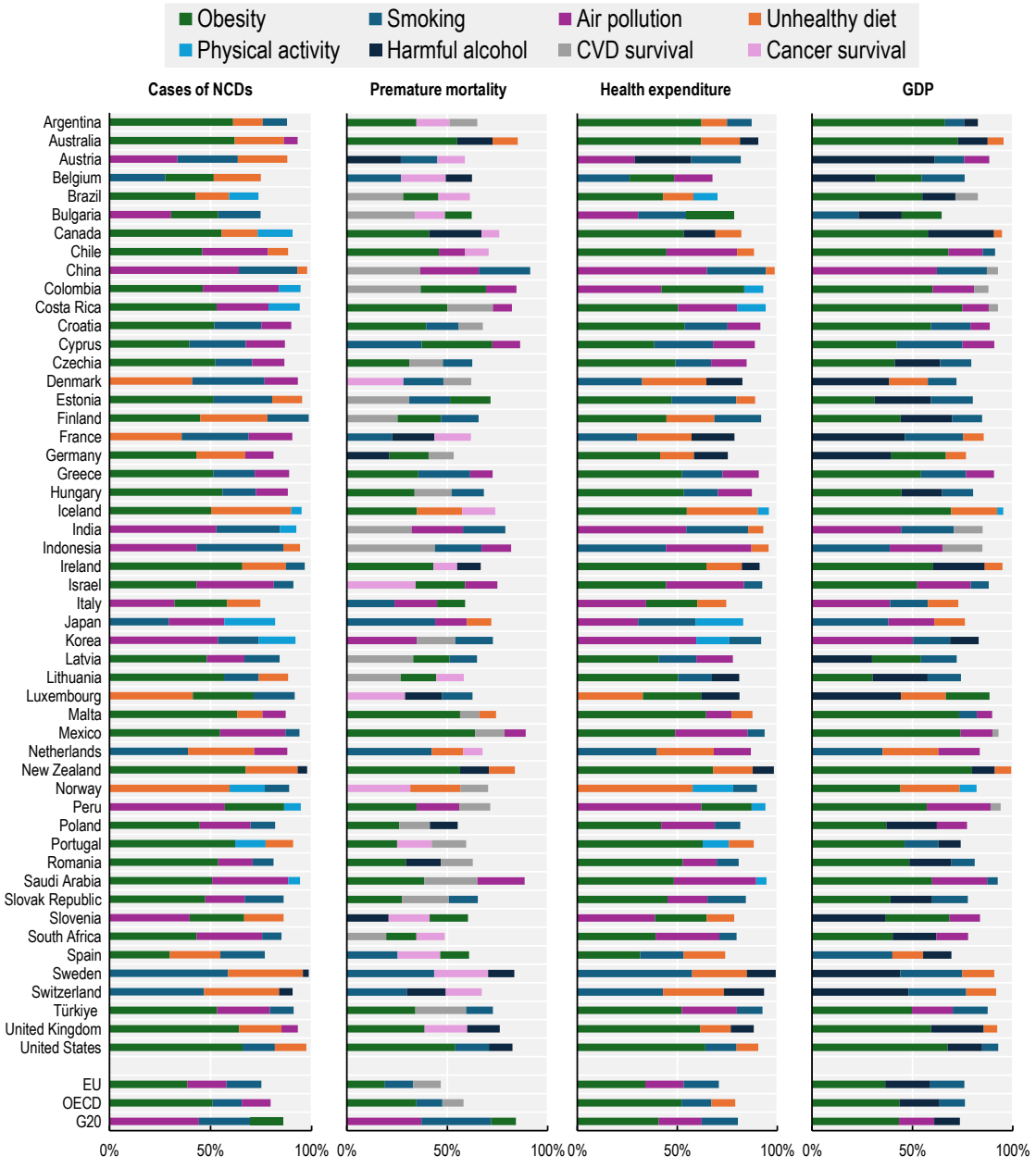
This difference arises from several key reasons. First, the results suggest that there is less scope for improvement in survival rates. As they are already relatively similar across high-performing countries, aligning to the Top Quartile survival rate only delivers limited additional gains. In other words, there is less left to gain. Second, behavioural and metabolic risk factors affect multiple diseases simultaneously, so their improvement has a wider impact on overall health. Finally, risk factors also have a direct influence on productivity and economic performance, especially in the case of harmful alcohol use, which is closely linked to absenteeism and reduced work efficiency. As a result, tackling risk factors produces broader benefits for both public health and the economy than improving survival rates alone.

All countries can achieve big results by focussing on one or two key NCD and risk factors priorities

While the greatest potential for the OECD and EU as a whole lies with obesity, country-specific priorities vary. But regardless of which risk factors take precedence and what outcomes are considered, all countries can achieve substantial improvements by concentrating on just one or two top priorities. On average across the 51 countries analysed, addressing the country's leading priority alone delivers around 50% of the total potential impact on cases, healthcare expenditure and GDP (Figure 1.10). Tackling the top two covers roughly 75%, while the top three account for about 90% of the total. For premature mortality, which is affected by both risk factor and survival rates, addressing the top two priorities generates 50% of the impact on average. These findings highlight the importance of setting clear priorities and allocating resources effectively to maximise impact.

Figure 1.10. Tackling the top three priorities in terms of reducing risk factors or improving NCDs survival rates for each country delivers the large majority of the potential impact on both health and economy

Proportion of the total impact – arising from bringing all risk factor prevalence and CVD and cancer survival rates to the Top Quartile level – that is achieved by the top three priority areas



Note: Improved survival rates do not affect the indicator on cases of NCDs and increase healthcare cost as people live longer with these conditions. Categories are shown in order of their relative importance in the country. In this figure, EU, OECD and G20 averages reflect the overall impact of addressing shared priorities across countries within each group respectively, which can result in a lower value than the average of country-specific priorities.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/8zejr9

In around two out of three countries, obesity provides the greatest opportunity to reduce the number of new cases of NCDs, health expenditure and increase GDP. Smoking, diet and air pollution are also common risk factor priorities. When it comes to reducing premature mortality, obesity remains the top priority in about half of all countries, but CVD survival rates also play a major role. In 11 countries (22%), it is the top priority to reduce premature mortality, and in more than half of all countries it is in the top three. Cancer survival rates are also in the top three of nearly half the countries, but often as a secondary or tertiary priority.

It is important to note that, while focussing on the risk factors where the largest health and economic gains can be achieved is important given the growing burden of NCDs and strain on health systems, this should not lead to neglecting other risk factors that may have a smaller aggregate impact but still carry significant consequences for certain groups. A balanced strategy should therefore combine population-level prioritisation with targeted interventions for vulnerable or high-risk groups. There may also be other societal co-benefits from addressing certain risk factors (Box 1.6). Similarly, while most gains may come from strengthening primary prevention, investment in secondary and tertiary prevention remains essential to ensure timely access to care and better outcomes for those already affected by disease.

Box 1.6. Societal co-benefits further strengthen the case for action on NCDs

Healthier diets would reduce emissions by the equivalent of 58 million cars in the OECD

There are strong links between diets and emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). About one-third of all anthropogenic (human-caused) emissions linked to food systems (Crippa et al., 2021[16]). In the Top Quartile scenario, where consumption rates of meat, fruit, vegetable and whole grain are aligned to the best 25% of countries across the OECD and EU, this is estimated to reduce emissions by 243 Mt of CO_2-equivalent per year, for the OECD as a whole (56 Mt for the EU). This is the amount of emissions associated with more than 58 million gasoline-powered passenger vehicles (US EPA, 2023[17]) or the number of cars in Germany and the Netherlands combined (13 million in the EU). Further information on the dietary module is available in the SPHeP model documentation (OECD, 2026[18]).

Addressing harmful alcohol use could prevent 5% of premature deaths due to homicide and road traffic accidents in the OECD

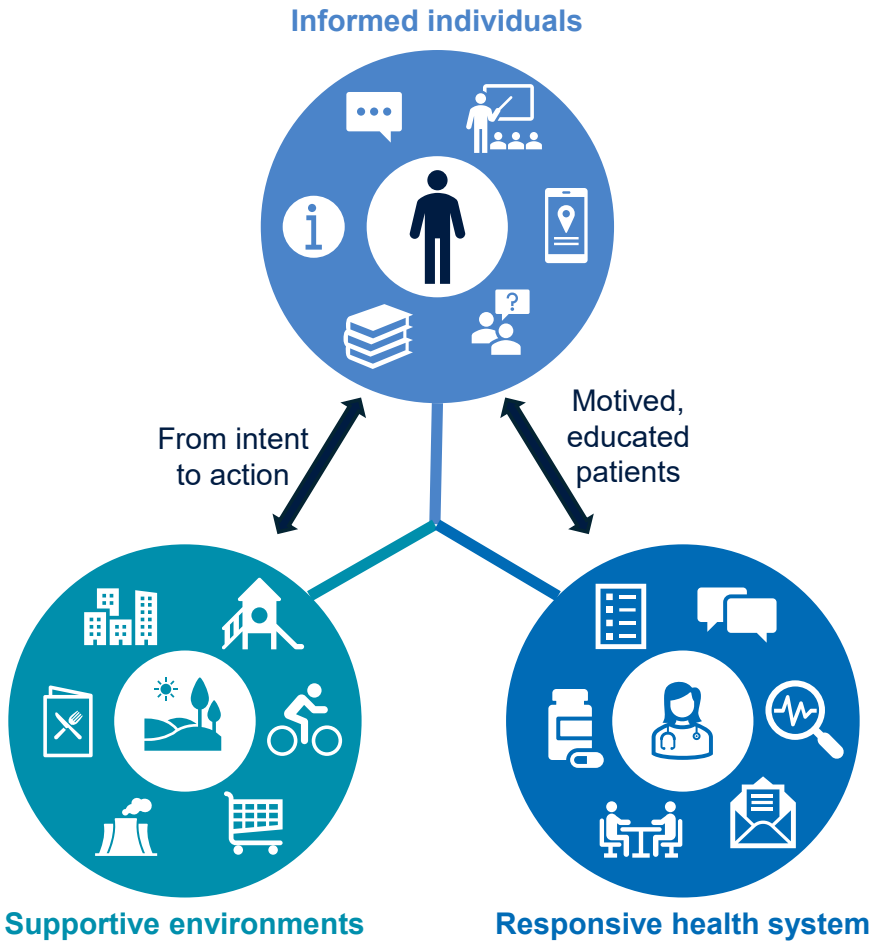
Harmful alcohol use has a direct impact on societal safety, as it can lead to road traffic accidents and violence due to its effects on cognitive function, co-ordination, and behaviour. If all countries were to align total alcohol consumption to the level observed in the best performing 25% of OECD and EU countries, this would prevent a total of 5 367 premature deaths due to road traffic accidents per year in the OECD (2 113 in the EU). This is 4.8% of the total premature mortality from road traffic accidents (6.2% in the EU). It would also prevent 2 358 premature deaths due to interpersonal violence each year in the OECD, 4.8% of the total premature mortality from this cause (327 and 5.9% in the EU). Variation between countries is driven both by current total alcohol consumption and premature mortality rates.

Source: OECD SPHeP NCDs model, 2025.

Successful NCD strategies are based on three interconnected pillars

Although the policy mix will differ across countries depending on their specific risk factor profiles and health priorities, there are three interlinked pillars that underpin all successful NCD strategies: empowered individuals, supportive environments, and responsive health systems (Figure 1.11). These three pillars are mutually reinforcing. Empowering individuals with information and education is critical, but its impact is amplified when the environment around people makes healthier choices the easier, more affordable, and more accessible ones. At the same time, even the most informed and motivated individuals may need support from a responsive health system to detect problems early and prevent complications. In turn, primary care plays a crucial role in providing individuals with information and education.

Figure 1.11. Three core policy considerations for NCD strategies

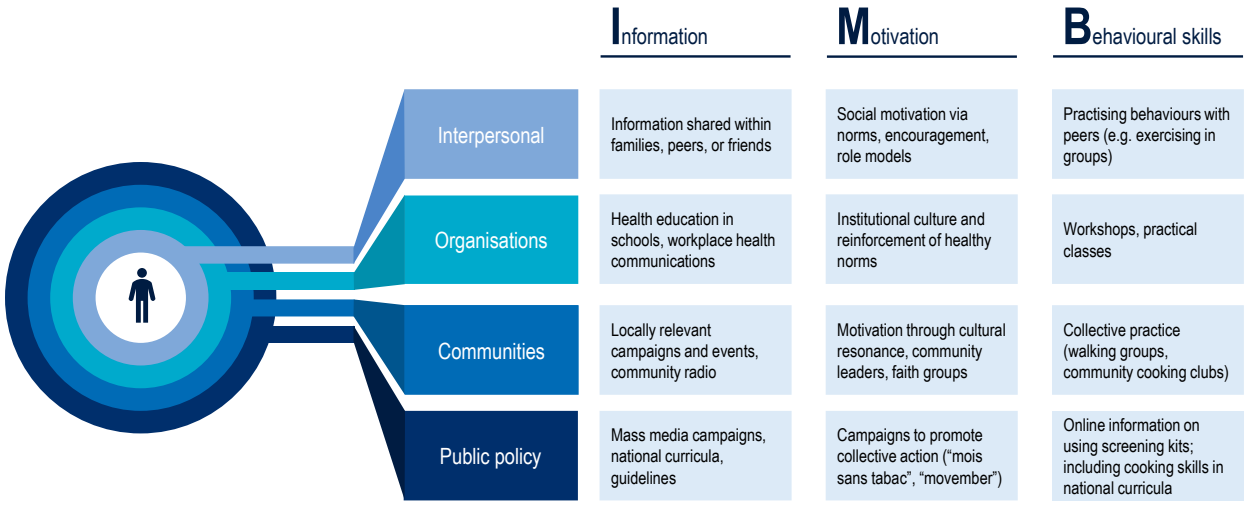


Pillar 1: Empowering individuals through information and education

Sustained progress depends on individuals having the knowledge, motivation, and skills to make healthier choices. Information should go beyond simply raising awareness of risks, by fostering motivation through personal and social incentives, and equipping people with the skills to translate intentions into action. Information, motivation, and behavioural skills should be reinforced across all layers of society, from interpersonal relationships to public policy (Figure 1.12).

Figure 1.12. Health information, motivation and behavioural skills can be delivered across different channels

Examples of health information and education delivery following the Information-Motivation-Behavioural skills (IMB) model and the socio-ecological model



Note: Examples are illustrative and non-exhaustive.
Source: OECD analysis, based on models from McLeroy et al. (1988[19]), "An Ecological Perspective on Health Promotion Programs", https://doi.org/10.1177/109019818801500401 and Fisher and Fisher (1992[20]), "Changing AIDS-risk behavior", https://doi.org/10.1037/0033-2909.111.3.455.

Pillar 2: Creating environments that support healthier choices

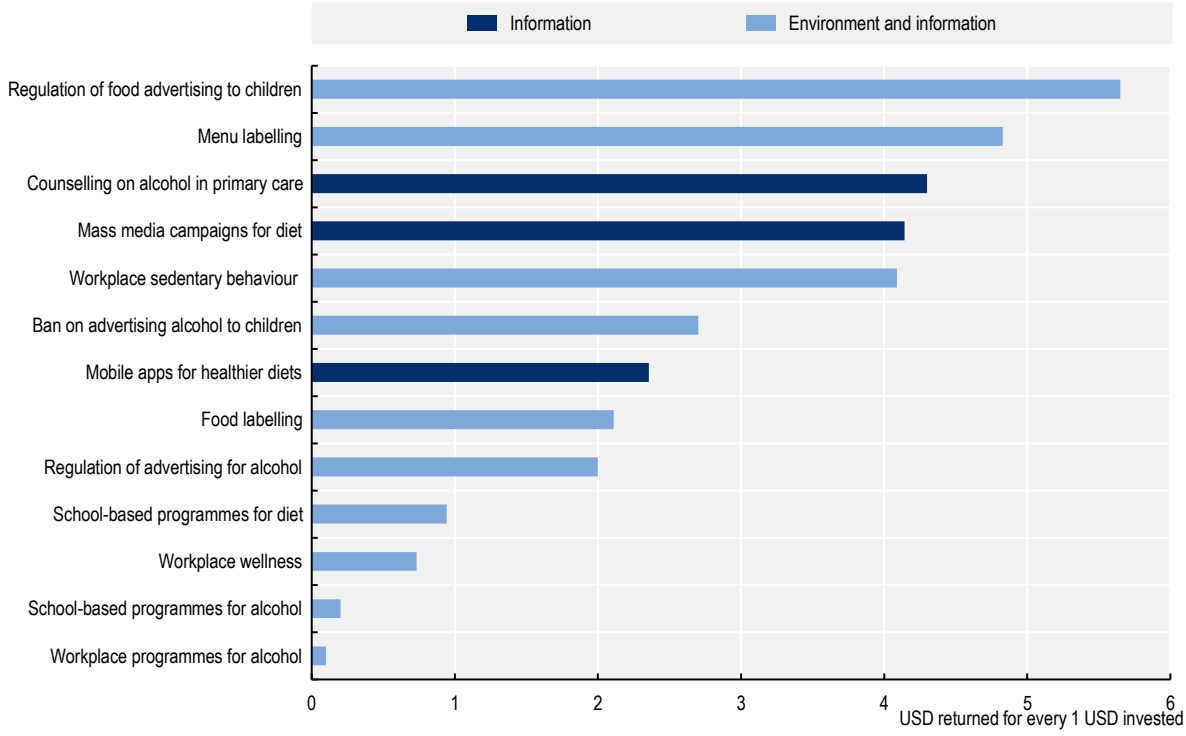
Environments where people live, work, and learn strongly influence their risk of NCDs. Policies that create health-promoting environments, by reducing barriers, addressing the impact of social, environmental, economic, commercial and market factors, and making healthier options more accessible, are therefore key to supporting behaviour change and shifting social norms. Every decision about food systems, transport, housing, education, employment, and digital environments influences health outcomes. Countries can benefit from learning from international experiences and adapting proven approaches to their own contexts.

Many environmental policies to promote healthy behaviours also contain an element of education and information. For example, food and menu labelling provide nutritional information at the point of purchase, helping consumers make more informed food choices. Workplace and school-based interventions often combine education on healthy behaviours with changes to the school or work environment, for example by improving the availability of healthy meals and increasing opportunities for exercise. Regulations on food advertising, particularly those targeting children, reduce exposure to persuasive marketing of unhealthy products, helping to shape a healthier information environment.

Previous OECD analyses have shown that environmental and informational policies have an excellent benefit-cost ratio (Figure 1.13) (OECD, 2019[21]; OECD, 2021[22]). Most policies return more in economic benefits than they cost to implement, with some returning more than USD 5 for every USD 1 invested. However, even policies that do not fully cover their cost by providing economic benefits should be considered for their health impacts.

Figure 1.13. Information and environmental policies for healthier lifestyles are an excellent investment

Benefit-cost ratios, in USD returned in GDP benefits for every USD invested in the policy, for interventions that only focus on information, and policies which combine information and environmental changes



Note: In this context, "environment" refers to the setting in which the interventions take place, such as school, workplace and community settings. Estimates are calculated by dividing the increase in GDP produced by the intervention on average over the period to 2050 by the cost of implementing the intervention in the countries analysed. Diet related interventions were analysed in 36 OECD countries, while interventions targeting harmful alcohol use interventions were analysed in selected EU and G20 countries in addition to OECD countries. For more details see the Preventing Harmful Alcohol Use and Heavy Burden of Obesity publications (OECD, 2021[22]; OECD, 2019[21]). Interventions with a comparatively lower impact on GDP (and effectiveness on population health) may have a higher return of investment if they have a low implementation cost. This list provides only examples of evaluated interventions and is not intended to be exhaustive.
Source: OECD (2019[21]), *The Heavy Burden of Obesity: The Economics of Prevention*, https://doi.org/10.1787/67450d67-en and OECD (2021[22]), *Preventing Harmful Alcohol Use*, https://doi.org/10.1787/6e4b4ffb-en.

StatLink https://stat.link/p7tnef

In addition to environmental and informational measures, regulatory and price-based policies can play a critical role in shaping healthier behaviours at the population level. OECD analyses and international evidence consistently show that interventions such as taxes on tobacco products, minimum unit pricing to address low-cost alcohol products, disproportionately consumed by individuals with problematic drinking patterns, and restrictions on marketing unhealthy products to children are among the most cost-effective policy tools available to governments (Devaux et al., 2023[23]; OECD, 2021[22]; OECD, 2019[21]; OECD, 2024[24]). When well designed, these policies not only discourage consumption of harmful products but may also help shift market incentives toward healthier alternatives. For example, the United Kingdom structured its tax on sugar-sweetened beverages to encourage reformulation by manufacturers, resulting in a 46% average reduction in sugar in soft drinks in scope of the tax between 2015 and 2020 (UK Government, 2025[25]). However, these types of policies also involve the highest degree of interference with individual choice (Sassi and Hurst, 2008[26]).

Previous OECD work on promoting healthier lifestyles shows that multi-pronged approaches consistently deliver greater impact and better value for money (OECD, 2019[21]; OECD, 2021[22]). Whether aimed at informing individuals, increasing the availability of healthier options, regulating exposure to risk factors, or increasing the price of unhealthy products, individual measures alone are unlikely to comprehensively address the complex factors that shape health. In some cases, they may also lead to unintended consequences or trade-offs among stakeholders (OECD, 2019[21]; OECD, 2021[22]). OECD analyses conclude that combining interventions into comprehensive prevention packages maximises synergies between policy components, resulting in the highest impact on population health and excellent returns on investment. Ultimately, it is for each country to determine the most appropriate mix of policies based on its own context, priorities, and institutional capacity.

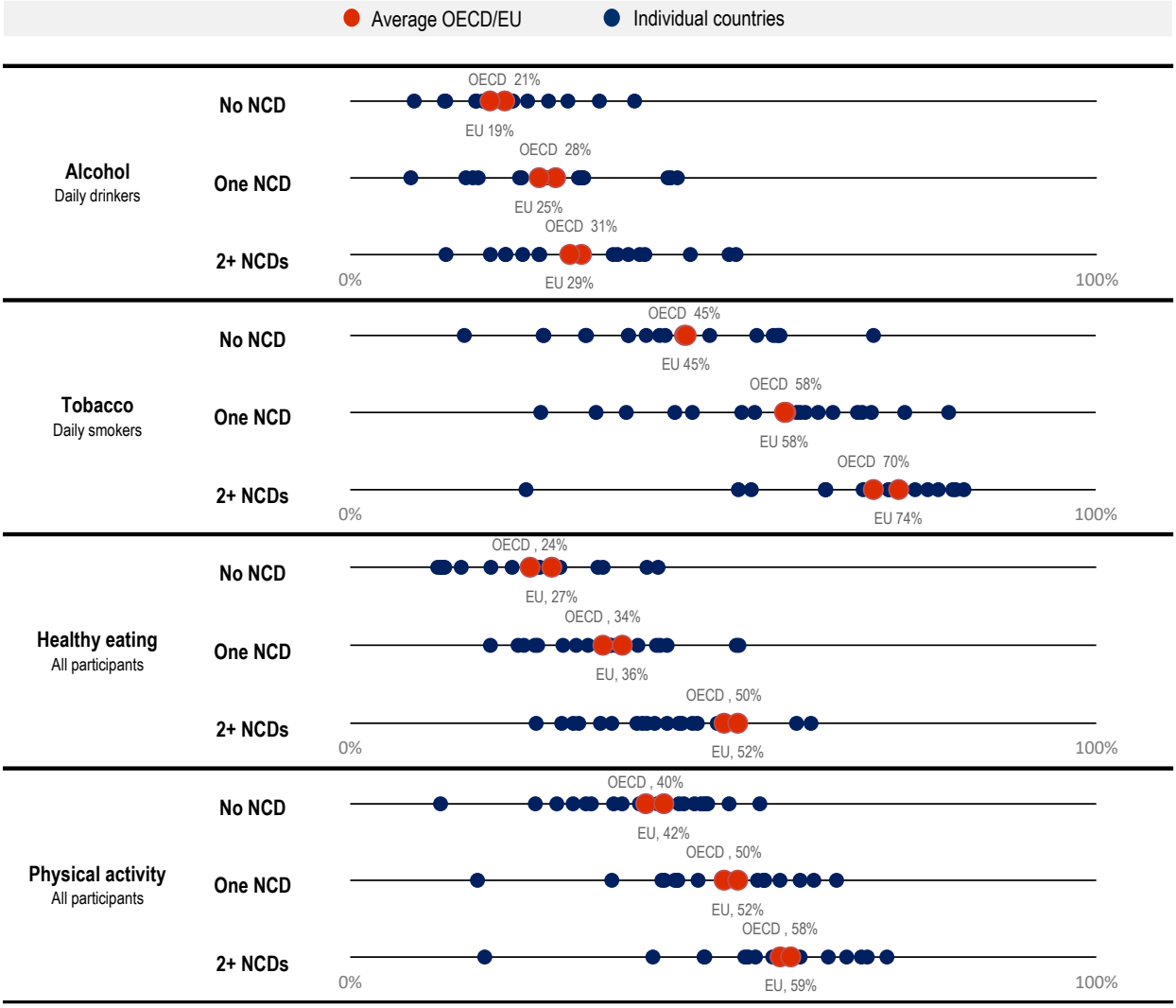
Pillar 3: Building responsive health systems that deliver prevention and care

Health systems, and primary care in particular, need to be engaged across the entire NCD care pathway, not only in curing acute episodes. Primary care providers should deliver preventive care, by promoting healthier behaviours and addressing risk factors early. The health system also plays a central role in screening and early detection, helping identify conditions such as cancer or chronic kidney disease before they progress. Once diagnosed, patient-centred long-term management in primary care is essential, through co-production of health and co-ordination of care.

Primary prevention: Primary care providers play a critical role in promoting healthier lifestyle choices, but this potential is often underused. Among people aged 45 and over who visited their primary care practice, less than one-third of daily drinkers receive counselling on alcohol use, and only about half of all daily smokers receive cessation advice (Figure 1.14).

Figure 1.14. There is considerable scope to increase lifestyle counselling in primary care

Percentage of patients receiving counselling in primary care, by country and the average across the OECD and EU countries in the PaRIS study, stratified by NCD status



Note: Average refers to the average across the 19 countries/regions included in the PaRIS analysis. In this figure, EU and OECD averages are reported as simple (i.e. unweighted) means across member countries who took part in the survey. For alcohol counselling, the average covers 17 countries, as Iceland and Saudi Arabia were excluded due to small numbers. For counselling among daily smokers, the average covers 18 countries as the United States was excluded as data on daily smoking for the United States was coded as missing to avoid identification. For this analysis four NCDs were included: cancer, CVD, CRD and diabetes. Country proportions are calculated using a PaRIS age-sex standardised population. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/1t9h7e

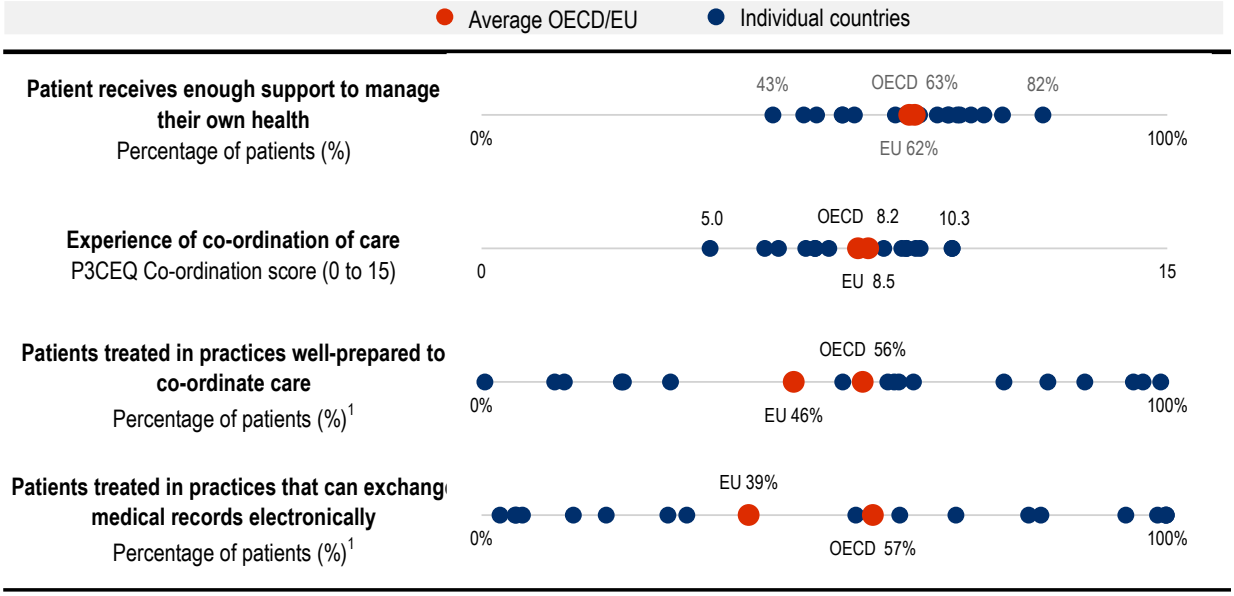
Screening and early diagnosis: Population-based screening programmes are essential for early detection of cancers, yet uptake varies widely. In 2023, only 57% of eligible women across OECD countries were screened for breast cancer, with coverage ranging from 15% in Greece to 83% in Sweden. Primary care can play a key role in providing and increasing screening uptake, as well as screening for complications of NCDs through reminders, training, and quality audits.

While universal screening programmes (i.e. screening all asymptomatic healthy adults) for certain cancer types have been well established in most OECD countries, population-wide screening for other NCDs is less common. However, many countries do recommend targeted screening for NCDs in high-risk individuals.

Patient-centred disease management: NCDs often require the co-ordinated management of multiple conditions and active patient involvement, increasing the need for integrated and people-centred health systems. However, results from PaRIS show that there is still some way to go in creating people-centred health systems (Figure 1.15). On average, patients aged 45 and over who visited their primary care provider in the survey scored their experience of care co-ordination 8.2 out of 15 (where 15 would reflect and ideal experience of co-ordination of care from the perspective of patients), but in some PaRIS countries this was as low as 5. There was even greater variation in the preparedness of primary care practices to co-ordinate care and exchange medical records electronically: ranging from none of the primary care practices participating in PaRIS in a country to all of them (OECD, 2026[27]; OECD, 2025[8]).

Figure 1.15. There is still some way to go in creating people-centred health systems for NCDs

Country performance on people-centred care for people with NCDs, for countries in the PaRIS study, and the OECD16/17 and EU11 averages



Note: 1. Calculated by matching patient data with primary care practice data: number of patients in practices reported as well-prepared to co-ordinate care (practice questionnaire) divided by the total number of patients per country (patient questionnaire). Results are age and sex-standardised across countries. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey. 19 countries participated in the PaRIS survey, of which 18 OECD countries. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. United States sample only includes people aged 65 years or older and does not include data collected from practices. The OECD average for the last two indicators therefore only covers 16 countries. In this figure, EU and OECD averages are reported as simple (i.e. unweighted) means across member countries who took part in the survey.
Source: OECD (2025[8]), *Does Healthcare Deliver? Results from the Patient-Reported Indicator Surveys (PaRIS)*, https://doi.org/10.1787/c8af05a5-en.

StatLink https://stat.link/8fcwrx

Another key element of patient-centred disease management for NCDs is regular medication reviews. By regularly reviewing treatment plans, primary care providers can deprescribe unnecessary medications, simplify regimens, and ensure that prescriptions are evidence-based and tailored to the patient's evolving health status. This is particularly important for people with multiple NCDs, who are often on a large number of different medications at once.

References

Arnold, M. et al. (2019), "Progress in cancer survival, mortality, and incidence in seven high-income countries 1995–2014 (ICBP SURVMARK-2): a population-based study", *The Lancet Oncology*, Vol. 20/11, pp. 1493-1505, https://doi.org/10.1016/s1470-2045(19)30456-5. [7]

Crippa, M. et al. (2021), "Food systems are responsible for a third of global anthropogenic GHG emissions", *Nature Food*, Vol. 2/3, pp. 198-209, https://doi.org/10.1038/s43016-021-00225-9. [16]

Devaux, M. et al. (2023), "Évaluation du programme national de lutte contre le tabagisme en France", *Documents de travail de l'OCDE sur la santé*, No. 155, Éditions OCDE, Paris, https://doi.org/10.1787/b656e9ac-fr. [23]

Everard, C. et al. (2025), "Exploring the relationship between non-communicable diseases and depression", *OECD Health Working Papers*, No. 178, OECD Publishing, Paris, https://doi.org/10.1787/02a1cfc5-en. [10]

Fisher, J. and W. Fisher (1992), "Changing AIDS-risk behavior", *Psychological Bulletin*, Vol. 111/3, pp. 455-474, https://doi.org/10.1037/0033-2909.111.3.455. [20]

Global Burden of Disease Collaborative Network (2024), *Global Burden of Disease Study 2023 Results*, https://vizhub.healthdata.org/gbd-results/. (accessed on 17 October 2025). [1]

Guillemette, Y. and D. Turner (2017), "The fiscal projection framework in long-term scenarios", *OECD Economics Department Working Papers*, No. 1440, OECD Publishing, Paris, https://doi.org/10.1787/8eddfa18-en. [4]

IHME (2025), *GBD Results Tool*, Institute for Health Metrics and Evaluation, http://ghdx.healthdata.org/gbd-results-tool (accessed on 4 September 2025). [2]

IHME (2025), *Global Burden of Disease Study 2023 (GBD 2023) Causes of Death and Nonfatal Causes Mapped to ICD Codes | GHDx*, Institute for Health Metrics and Evaluation, https://ghdx.healthdata.org/record/ihme-data/gbd-2023-cause-icd-code-mappings (accessed on 19 March 2026). [29]

McLeroy, K. et al. (1988), "An Ecological Perspective on Health Promotion Programs", *Health Education Quarterly*, Vol. 15/4, pp. 351-377, https://doi.org/10.1177/109019818801500401. [19]

OECD (2026), *Building people-centred digital health systems: Lessons from PaRIS*, OECD Publishing, Paris, https://doi.org/10.1787/a1df0046-en. [27]

OECD (2026), *Welcome to SPHeP-NCDs's documentation! — SPHeP-NCDs documentation*, http://oecdpublichealthexplorer.org/ncd-doc/ (accessed on 26 February 2026). [18]

OECD (2025), *Does Healthcare Deliver?: Results from the Patient-Reported Indicator Surveys (PaRIS)*, OECD Publishing, Paris, https://doi.org/10.1787/c8af05a5-en. [8]

OECD (2025), *Health at a Glance 2025: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/8f9e3f98-en. [13]

OECD (2025), *OECD Health Statistics 2025*, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html (accessed on 4 December 2025). [6]

OECD (2024), *Tobacco Taxation in Latin America and the Caribbean: A Call for Tobacco Tax Reform*, OECD Publishing, Paris, https://doi.org/10.1787/080cd662-en. [24]

OECD (2021), *Preventing Harmful Alcohol Use*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/6e4b4ffb-en. [22]

OECD (2019), *The Heavy Burden of Obesity: The Economics of Prevention*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/67450d67-en. [21]

OECD/Eurostat (2022), *Avoidable mortality: OECD/Eurostat lists of preventable and treatable causes of death (January 2022 version)*, https://www.oecd.org/health/health-systems/Avoidable-mortality-2019-Joint-OECD-Eurostat-List-preventable-treatable-causes-of-death.pdf?_ga=2.68722321.1471485303.1679671412-417290248.1637500244 (accessed on 24 March 2023). [9]

Pennings, S. and N. Loayza (2022), *The Long Term Growth Model : Fundamentals, Extensions, and Applications (English)*, World Bank Group. [5]

Regitz-Zagrosek, V. and C. Gebhard (2022), "Gender medicine: effects of sex and gender on cardiovascular disease manifestation and outcomes", *Nature Reviews Cardiology 2022 20:4*, Vol. 20/4, pp. 236-247, https://doi.org/10.1038/s41569-022-00797-4. [11]

Sassi, F. and J. Hurst (2008), "The Prevention of Lifestyle-Related Chronic Diseases: an Economic Framework", *OECD Health Working Papers*, No. 32, OECD Publishing, Paris, https://doi.org/10.1787/243180781313. [26]

UK Government (2025), *Strengthening the Soft Drinks Industry Levy — Summary of responses*, https://www.gov.uk/government/consultations/strengthening-the-soft-drinks-industry-levy/outcome/strengthening-the-soft-drinks-industry-levy-summary-of-responses (accessed on 2 February 2026). [25]

United Nations (n.d.), *Sustainable Development Goal 3*, https://sdgs.un.org/goals/goal3#targets_and_indicators (accessed on 6 November 2025). [3]

US EPA (2023), *Greenhouse Gas Equivalencies Calculator*, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results (accessed on 30 November 2023). [17]

WHO (2025), *Obesity and overweight*, World Health Organization, https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight. [28]

WHO (2025), *WHO Global Health Observatory*, World Health Organization, https://www.who.int/data/gho. [12]

World Bank (2024), *GDP, PPP (constant 2021 international $) - European Union, Finland | Data*, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD?locations=EU-FI (accessed on 24 March 2026). [15]

World Bank (2024), *GDP, PPP (constant 2021 international $) - OECD members, Portugal, Sweden, Italy, Spain, France, Denmark, Belgium, Poland, Austria | Data*, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD?end=2022&locations=OE-PT-SE-IT-ES-FR-DK-BE-PL-AT&most_recent_year_desc=false&start=2022&view=bar&year=2023 (accessed on 24 March 2026). [14]

Notes

[1] Changes in cancer prevalence were calculated by changes in the prevalence of neoplasms as categorised by IHME (IHME, 2025[29]).

[2] Obesity is a chronic, relapsing disease arising from complex biological, behavioural and environmental drivers, and it is also a major risk factor for a wide range of non-communicable diseases. In this publication, obesity is defined as a body mass index (BMI) of 30 or higher, in line with internationally adopted NCD targets (Global Burden of Disease Collaborative Network, 2024[1]; WHO, 2025[28]). However, it should be noted that overweight (a BMI of 25 or higher and less than 30) also poses health risks. Obesity as a risk factor in this study includes the impact of physical activity and diet on BMI. The impact of physical inactivity and diet on NCDs does not reflect their impact on BMI, as this is already covered under obesity.

2 The growing NCD burden will escalate unless decisive action is taken

Over the past century, the global burden of disease has shifted from infectious diseases to NCDs. Despite sustained efforts, NCD prevalence continues to rise across OECD and EU countries. Since 1990, rates of cancer, chronic respiratory and cardiovascular diseases have increased substantially, while diabetes prevalence has risen particularly sharply. This persistent growth is driven by three interrelated forces. First, gains from reductions in smoking, air pollution and harmful alcohol use have been offset by worsening obesity trends, now the dominant driver of rising NCD incidence. Second, major improvements in early detection and treatment have increased survival, resulting in more people living longer with chronic and multiple conditions, increasing care complexity and costs. Third, population ageing will further accelerate NCD incidence, multimorbidity and health expenditure. Without decisive action, the health and economic burden of NCDs will continue to escalate in the coming decades.

In Brief

The growing NCD burden will escalate unless decisive action is taken

Over the past century, global health has undergone a profound transformation. Once dominated by infectious diseases, illness and death are now primarily caused by NCDs. These long-lasting conditions are the result of genetic, environmental and behavioural risks.

Despite national and international efforts to reduce NCD risk factors, the burden of NCDs continues to rise. Between 1990 and 2023, the prevalence of cancer and COPD has increased by 36% and 49% in the OECD, respectively (by 39% and 41% respectively in the EU), while the prevalence of CVDs has increased by more than 27% (21% in the EU). Diabetes prevalence rose even more: by 86% in the OECD, and 64% in the EU. In 2023, one in ten people in the OECD had diabetes, and one in eight lived with CVD (one in twelve and one in seven respectively in the EU).

Three key factors explain this persistent growth. First, while some risk factors such as smoking and air pollution have improved, obesity levels have worsened in many countries. Analyses using the OECD Strategic Public Health Planning for Non-Communicable Diseases (SPHeP-NCDs) model show that, for the OECD, the positive impact of reductions in air pollution, smoking, harmful alcohol consumption and physical inactivity since 2010 are completely wiped out by the negative impact of increasing obesity levels. Across the 51 countries in the analysis, the primary driver of increasing NCD incidence is obesity, while improvements are driven mostly by reductions in air pollution and smoking.

Second, thanks to advances in early detection, treatment, and disease management, survival rates have improved markedly over recent decades. Between 2010 and 2022, the fatality rate from heart attacks in 15 OECD countries dropped from 10.1% to 7.8% (a 23% reduction) while stroke fatality rates fell by 14%. Cancer survival has also improved: between 1995 and 2014, five-year survival for lung cancer nearly doubled (from 10% to 19%) and colorectal cancer survival increased from 52% to 66%. While these are unequivocal successes, it does mean that more people now live longer with chronic conditions, increasing demand for care and monitoring.

Moreover, multimorbidity (having multiple chronic diseases) is becoming more common and poses major challenges. People with multiple chronic conditions report poorer mental health and social functioning. For healthcare providers, multimorbidity increases complexity and cost. For example, the risk of medication errors rises sharply with the number of conditions: fewer than 10% of people without an NCD take five or more medications, compared to over 60% of those with two or more.

Thirdly, rising life expectancy, a major public health achievement, has also contributed to the expanding NCD burden. As people live longer, they are more likely to develop chronic diseases. This demographic shift will continue in the coming decades. Even if risk factor trends and survival rates remain constant, the number of new NCD cases is expected to grow by 31% in the OECD (and 29% in the EU) between 2026 and 2050. The incidence rate would increase from 1 936 per 100 000 people per year to 2 518 in the OECD, and from 2 141 to 2 755 in the EU. The prevalence of multimorbidity is projected to increase even more: by 75% in the OECD and 70% in the EU. The growing NCD burden will also lead to steep increases in healthcare costs, increasing per capita spending on NCDs in OECD countries by more than 50%, from USD PPP 646 to USD PPP 994 in the OECD (USD PPP 607 to USD PPP 938 in the EU).

Decades of effort have not yet turned the tide on NCDs

Over the past century, the global health landscape has undergone a profound transformation. While infectious diseases once dominated as the primary cause of illness and death, advances in medicine, sanitation, and public health have significantly reduced their impact. In their place, NCDs have emerged as the defining health challenge of the 20th and 21st centuries, driven by changes in population ageing, urbanisation, and lifestyles (Box 2.1).

Box 2.1. What are NCDs?

NCDs are long-lasting health conditions. Unlike infectious diseases, they typically develop slowly and progress over time. NCDs include CVDs (such as heart attacks and strokes), cancers, chronic respiratory diseases (such as COPD), and diabetes. These conditions are the leading cause of death worldwide (IHME, 2025[1]).

NCDs arise from a complex interaction of genetic, physiological, environmental, and behavioural risk factors. The primary modifiable risk factors are smoking, harmful use of alcohol, unhealthy diet, and physical inactivity, which contribute to obesity, high blood pressure, raised blood sugar, and abnormal blood lipids. An important environmental cause is air pollution, in particular inhaled particulate matter (PM).

While prevention through addressing risk factors is critical, effective management of NCDs is equally important to reduce disability and avoid life-threatening complications. Early detection, timely treatment, and continuous care help prevent severe outcomes such as heart failure, kidney disease, blindness, amputations, and premature death.

In this report, the analyses on NCDs refer to four disease groups: CVDs, cancers, COPD, and diabetes. This aligns with Sustainable Development Goal (SDG) 3.4*: "By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being"*, which looks at cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases (United Nations, n.d.[2]).

As there are a large number of different cancers and CVDs, not all could be covered in the OECD SPHeP NCDs model. The model focusses primarily on public health amenable diseases: those that are more susceptible to prevention through public health interventions. The cancers covered in the model account for 71% of all cancer deaths in the OECD, and 88% of all risk factor-related cancer deaths. The CVDs included in the model account for 78% of all CVD-related deaths in the OECD, and 87% of all risk factor-related cancer deaths (IHME, 2025[1]).

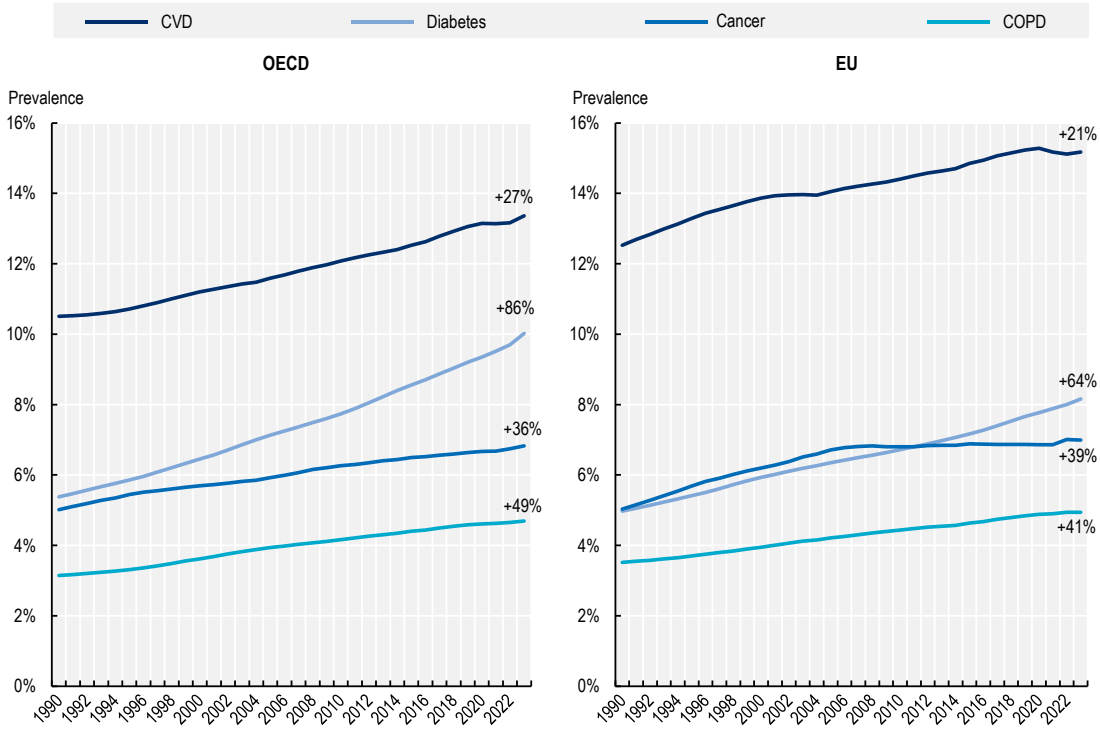
The rise in NCDs has forced health systems to adapt beyond acute care toward chronic disease management and prevention. In 1986, the Ottawa Charter for Health Promotion marked an early global call to action on lifestyle-related risks. The adoption of the Framework Convention on Tobacco Control in 2003 (WHO, 2003[3]) was the first binding global agreement on a risk factor. Broader strategies on diet, physical activity, and harmful alcohol use followed, and the UN High-Level Meeting on NCDs in 2011 made it clear that these were not just health issues but also development priorities. Since then, NCDs and their risk factors have been embedded in the Sustainable Development Goals, reflecting the fact that NCDs are now one of the biggest global health threats.

Despite international and national action on NCDs, their burden has continued to grow (Figure 2.1). Between 1990 and 2023, the prevalence of cancer and COPD has increased by 36% and 49% in the OECD, respectively (and by 39% and 41% respectively in the EU), while the prevalence of CVDs has

increased by more than 27% (21% in the EU). Diabetes prevalence has grown 86% in the OECD, and 64% in the EU. As a result, NCDs now represent one of the greatest challenges to health: in 2023, one in ten people in the OECD had diabetes, and one in eight lived with CVD (one in twelve and one in seven respectively in the EU).

Figure 2.1. The prevalence of NCDs has continued to grow over the past three decades

Prevalence of CVD, COPD, diabetes and cancer (% of population) over time, in the OECD and the EU



Note: labels show the change in prevalence between 1990 and 2023.
Source: Global Burden of Disease Collaborative Network (2024[4]), *Global Burden of Disease 2023*, https://vizhub.healthdata.org/gbd-results/.

StatLink https://stat.link/63b89g

There are three main reasons for the growing prevalence of NCDs. Firstly, while some progress has been made on certain risk factors, others have significantly worsened. Secondly, as survival rates have improved, people live with chronic diseases for longer. Thirdly, population ageing means more people reach the ages at which NCDs are most prevalent.

While some risk factors have improved, the health benefits are undermined by rising obesity levels

Prevention of NCDs primarily focusses on addressing key modifiable risk factors: smoking, harmful alcohol consumption, obesity, unhealthy diets, low physical activity and air pollution. Many countries have made undeniable strides in addressing these NCD key risk factors. Smoking prevalence is being curbed. Total alcohol consumption is down in many countries. Air quality is improving. However, other risk factors have significantly worsened. Obesity levels have increased in nearly all countries, and still too few people get enough physical activity (Table 2.1) (Box 2.2).

Table 2.1. While some NCD risk factors have improved, others have significantly worsened

Risk factor prevalence for 2023 or nearest year (2020 for air pollution), compared to 2010 or nearest year (2015 for vegetable consumption)

	Daily smokers (%)		Alcohol consumption (L/year)		Obesity (%)		Daily vegetables (%)		Insufficient physical activity (%)		Air pollution (PM2.5)	
Australia	8.5	↓	10.5	↑	25.4	X	98.0	↓	28.0	↓	8.1	↑
Austria	20.6	X	11.4	↓	16.6	X		X	22.9	↓	10.9	↓
Belgium	12.8	X	7.8	↓	17.0	X	75.9	X	28.8	↓	11.1	↓
Canada	9.4	↓	8.1	↓	22.4	↑	75.6	↓	40.4	↑	6.3	↓
Chile	16.0	X	7.1	↓	27.0	X		X	39.8	↑	23.2	↑
Colombia	9.8	X	4.2	↑		X		X	34.5	↑	13.9	↓
Costa Rica	5.6	↓	3.5	↓		X		X	50.5	↑	14.1	↓
Czechia	16.2	↓	11.6	↑	19.3	X		X	27.1	↑	14.1	↓
Denmark	11.7	↓	9.7	↓	18.7	↑		X	14.5	↓	8.9	↓
Estonia	15.9	↓	11.2	↓	21.0	↑		X	19.5	↑	6.1	↓
Finland	11.3	↓	7.6	↓	24.0	↑	44.0	↑	12.0	↓	4.9	↓
France	24.5	↓	10.8	↓	14.4	↑		X	27.1	↓	9.5	↓
Germany	14.6	X	10.6	↓	16.7	X		X	15.0	↓	10.3	↓
Greece	24.9	X	6.7	↓	12.2	X		X	39.8	↑	14.2	↓
Hungary	24.9	X	10.8	→	22.2	X		X	33.1	↑	14.0	↓
Iceland	6.2	↓	8.1	↑	21.4	↑	57.0	↑	27.7	↓	5.5	↓
Ireland	14.0	X	10.3	↓	21.4	X	75.0	↑	23.9	↓	8.0	↓
Israel	16.1	↓	2.7	↑	18.0	↑	86.4	↑	27.9	↓	18.6	↓
Italy	19.8	↓	8.0	↑	11.4	↑	58.5	↓	45.2	↓	14.3	↓
Japan	14.8	↓	6.8	↓		X		X	50.6	↑	12.6	↑
Korea	14.7	↓	8.0	↓	4.7	↑	98.9	↓	60.7	↑		X
Latvia	22.6	X	11.9	↑		X	45.9	↑	18.2	↓	11.8	↓
Lithuania	18.9	X	11.2	↓	20.3	X		X	24.3	↓	9.2	↓
Luxembourg	20.3	↑	10.7	↓	16.5	X		X	15.5	↓	8.7	↓
Mexico	8.5	↓	6.3	↑		X	50.7	X	28.0	↑	14.4	↓
Netherlands	12.7	↓	8.3	↓	14.6	↑	33.6	↑	11.4	↓	10.8	↓
New Zealand	8.6	↓	8.7	↓		X	95.4	↓	20.7	↓	6.3	↓
Norway	8.0	↓	6.6	→	16.0	↑	67.0	↑	38.1	↑	6.1	↓
Poland	17.1	X	10.5	↑	18.5	X		X	40.4	↑	17.8	↓
Portugal	14.2	X	11.9	↑	15.9	X		X	56.1	↑	8.3	↓
Slovak Republic	21.0	X	9.5	↓	19.4	X		X	25.8	↓	15.3	↓
Slovenia	17.4	X	10.0	↓	19.4	X		X	22.7	↑	14.0	↓
Spain	19.8	↓	11.6	↑	14.9	↓	46.6	↑	25.3	↓	9.7	↓
Sweden	8.7	↓	7.5	↑	16.1	↑	65.6	↓	10.7	↓	5.6	↓
Switzerland	16.1	↓	8.4	↓	12.1	↑	64.4	↓	21.9	↓	9.0	↓
Türkiye	28.3	↑	1.6	↑	20.2	↑	41.2	↓	44.5	↑	22.1	↓
United Kingdom	11.2	↓	9.9	↓	29.0	X		X	21.9	↓	9.7	↓
United States	8.9	↓	9.5	↑	33.8	↑		X	36.4	↑	7.7	↓
Bulgaria	29.1	X	11.2	↑	13.6	X		X	37.0	↑	17.2	↓
Croatia	22.1	X	10.8	↑	22.6	X		X	33.0	↑	15.8	↓
Cyprus		X		X		X		X	43.0	↑	13.4	↓
Malta		X		X		X		X	43.7	↓	11.8	↓
Romania	18.7	X	11.6	↑	10.5	X		X	40.4	↑	13.8	↓
Argentina	23.1	↓	9.0	↑		X		X	39.8	↑	14.3	↑
Brazil	9.1	↓	8.2	↓	22.4	↑		X	40.9	↑	11.6	↓
China	25.3	↓	3.5	↓		X		X	23.3	↑		X

	Daily smokers (%)		Alcohol consumption (L/year)		Obesity (%)		Daily vegetables (%)		Insufficient physical activity (%)		Air pollution (PM2.5)	
India	8.1	↓	3.1	↑		X		X	48.7	↑	47.4	↓
Indonesia	32.6	↑	0.1	→		X		X	18.3	↑	17.5	↓
Saudi Arabia		X		X		X		X	49.6	↓	55.5	↓
South Africa	20.2	↓	7.3	↑		X		X	43.6	↓	22.9	↓
Peru	1.4	X	5.1	↓		X		X	34.5	↑	26.0	↓
EU	18.2	↓	10.1	↓	17.4	↑	55.6	↑	28.0	↓	11.5	↓
OECD	15.1	↓	8.7	↓	18.8	↑	65.5	↑	29.8	↓	11.2	↓
G20	15.7	↓	7.0	↑	20.0	↑	70.5	↓	33.7	↑	18.3	↓

Note: Colours indicate whether the country performs better (green) or worse (red) versus the other countries. Arrows indicate whether the risk factor has increased or decreased vs. 2010 or nearest year (X indicates that data were not available). EU and OECD averages for each indicator represent unweighted averages and exclude countries with missing values for that indicator. Share of population who are daily smokers (%); alcohol consumption in litres per person per year; share of population who are obese (%, self-reported); share of population consuming vegetables daily (%); share of population engaging in insufficient physical activity (%); mean population-weighted exposure to PM2.5 (microgrammes per cubic metre). While daily vegetable consumption is shown to represent diet, there are other dietary risk factors, such as low fruit and whole grain consumption, and high red meat, processed meat and sodium consumption.
Source: OECD Health Statistics (2025[5]), https://www.oecd.org/en/data/datasets/oecd-health-statistics.html; OECD data on exposure to air pollution (2025[6]), https://www.oecd.org/en/topics/environmental-statistics-accounts-and-indicators.html; WHO Global Health Observatory data on physical activity (2025[7]), https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-insufficient-physical-activity-among-adults-aged-18-years-(crude-estimate)-(-).

Box 2.2. A note on OECD Health Statistics and the data used in the OECD SPHeP NCDs model

The OECD SPHeP NCDs model requires highly detailed data, broken down by year, age, and sex, for all 51 countries it covers. As a result, it relies on international datasets such as those from WHO, IARC, IHME, and NCD-RISC rather than on OECD Health Statistics. When comparing these data sources, several important differences are worth keeping in mind:

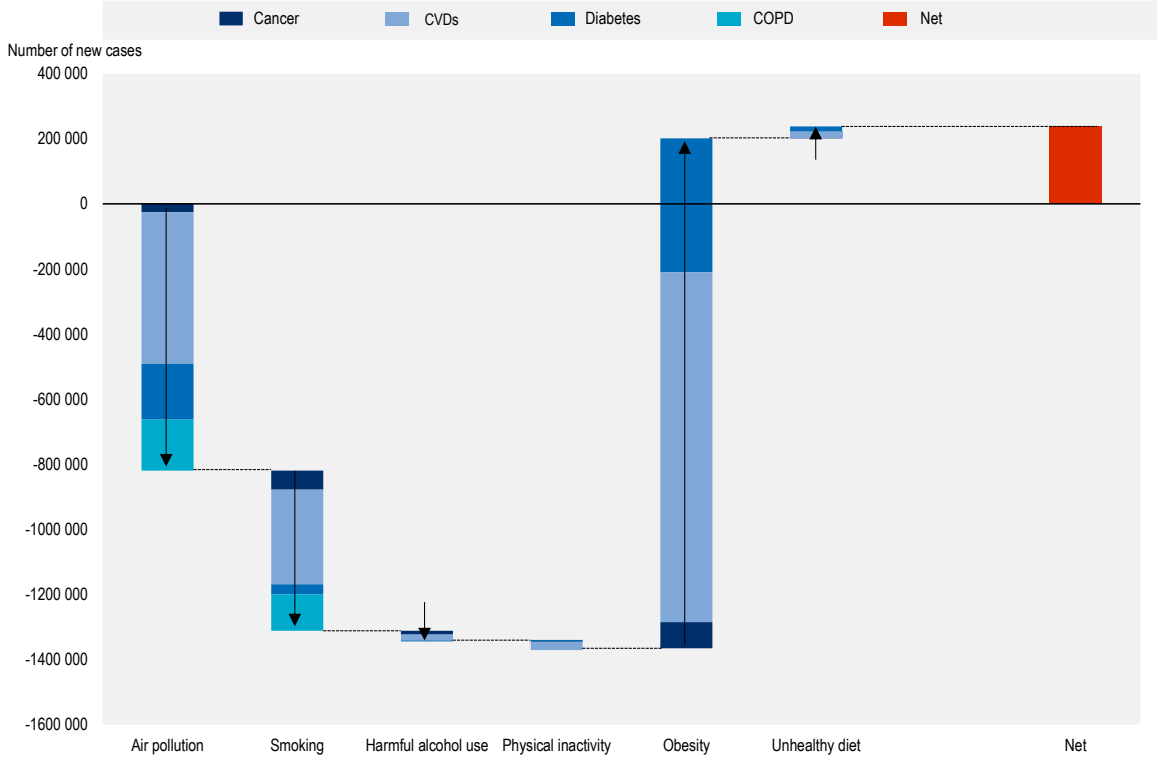
- **Differences in metrics:** OECD Health Statistics may report indicators that are not directly comparable with those used in international sources (e.g. *daily smokers* vs. *current smokers*).
- **Differences in measurement methods:** Some variables (such as obesity) are self-reported in OECD Health Statistics, whereas international sources often use measured data.
- **Differences in data construction:** OECD Health Statistics draw directly from national sources, whereas other data sources calculate harmonised estimates, including imputation where national data are missing.
- **Differences in granularity:** The OECD SPHeP NCDs model incorporates more detailed inputs (e.g. specific BMI values, linked to specific relative risks, or smoking data by age group), while OECD Health Statistics provide higher-level aggregates (e.g. percentage of the population that is obese, percentage that smokes).
- **Differences in time trends:** The OECD SPHeP NCDs model uses annual risk factor data, which may fluctuate year-to-year. It may go up and then down again. This can result in trends that look different from a simple comparison of two points in time, such as 2022 versus 2010.

Due to the difference in data sources and methods, the values reported in the OECD Health Statistics and those used in the OECD SPHeP NCDs model can be different. However, similar trends across countries can be observed (see Annex A for a comparison of the different datasets).

Analyses using the OECD SPHeP-NCD model show that the positive impact of reductions in air pollution, smoking, harmful alcohol consumption and physical inactivity since 2010 are completely wiped out by the negative impact of increasing obesity prevalence (Figure 2.2) (see Annex A for more details on the OECD SPHeP NCDs model). Progress made between 2010 and 2022 in reducing air pollution and smoking will result in 820 000 and 490 000 fewer new NCD cases, respectively, annually over 2026-2050 across the OECD. Together, changes in total alcohol consumption and physical activity levels will prevent another 60 000 cases yearly. However, this benefit is outweighed by worsening obesity levels, which are projected to lead to an additional NCD 1.6 million cases per year over the same period. The combined impact of changes in the six risk factors between 2010 and 2022 will result in 240 000 additional cases of the four major NCDs across the OECD every year. CVDs and diabetes caused by obesity are the foremost driver of this increase in NCD burden. See Annex Figure 2.A.1 for EU results and Annex Figure 2.B.1 for G20 specific results.

Figure 2.2. In the OECD, progress on air pollution, smoking, harmful alcohol consumption and physical activity is outweighed by rising obesity levels

Impact of progress on risk factors between 2010 and 2022 on the number of new cases of four major NCDs per year, on average over 2026-2050, for 38 OECD countries combined



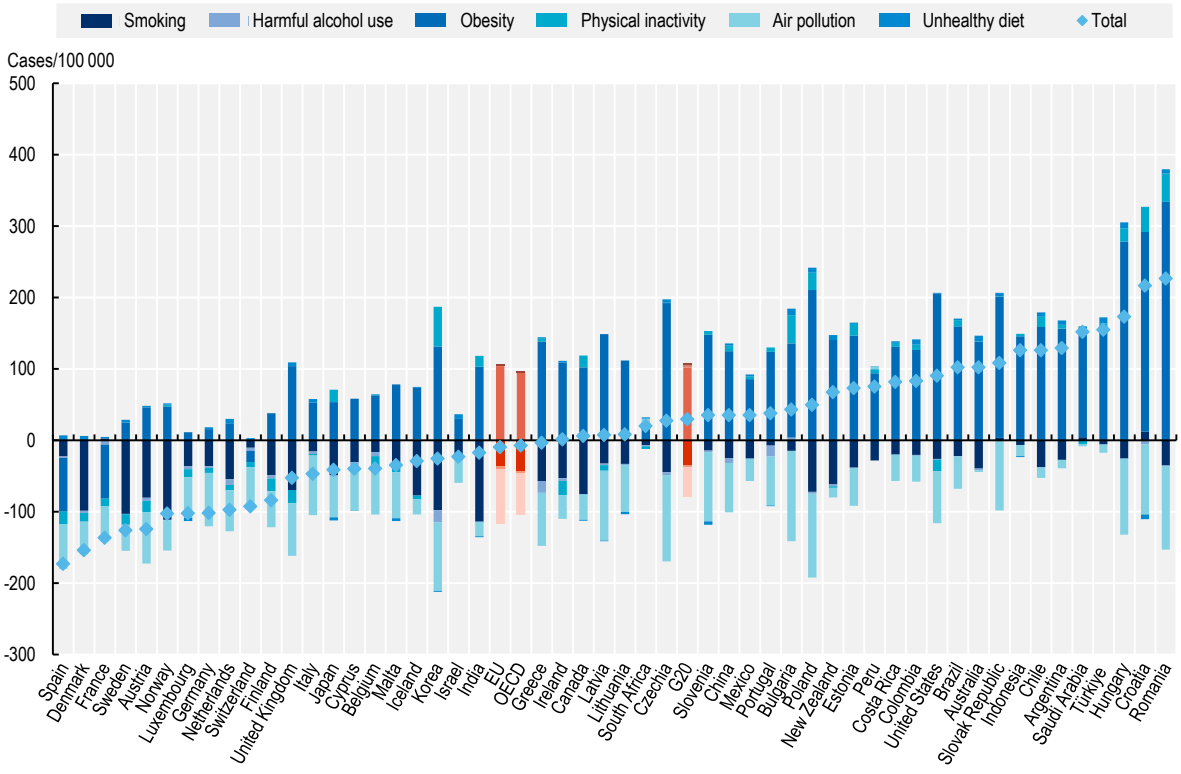
Note: The results compare the annual number of new NCD cases in a scenario where 2022 risk-factor levels continue against a scenario in which risk-factor levels remain at their 2010 values. Figures show the average number of new cases per year between 2026 and 2050. The estimates for physical inactivity and unhealthy diet exclude their effects on body weight, which are captured under obesity. Totals also exclude the small changes in NCD cases that stem from population-size shifts rather than direct links between risk factors and diseases. For results for the EU, see Annex Figure 2.A.1 and for G20 see Annex Figure 2.B.1.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/6fdq93

Across the 51 countries in the analysis, 57% have seen NCD incidence increase due to changes in risk factors, while in 43% it decreased. The primary driver of increasing NCD incidence is obesity, while improvements are driven mostly by reductions in air pollution and smoking (Figure 2.3). In the EU, changes in risk factors since 2010 have lowered the incidence of NCDs, primarily due to improvements in air quality. However, the improvements resulting from reductions in smoking, harmful alcohol consumption and physical inactivity combined are smaller than the worsening in NCD incidence due to obesity (see also Annex 2.A).

Figure 2.3. Rising obesity prevalence is driving up the number of NCDs in the majority of countries

Impact of progress on risk factors between 2010 and 2022 (or most recent year) on the number of new cases of four major NCDs per year between 2026 and 2050, split by risk factor



Note: Results are adjusted for changes in population size. The impact of physical inactivity on NCDs does not reflect the impact of physical activity on body weight, as this is covered under obesity. The totals exclude the small changes in NCDs that are not a result of a risk factor-disease link, but that are due to the impact of risk factor changes on the population size. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/xce0h5

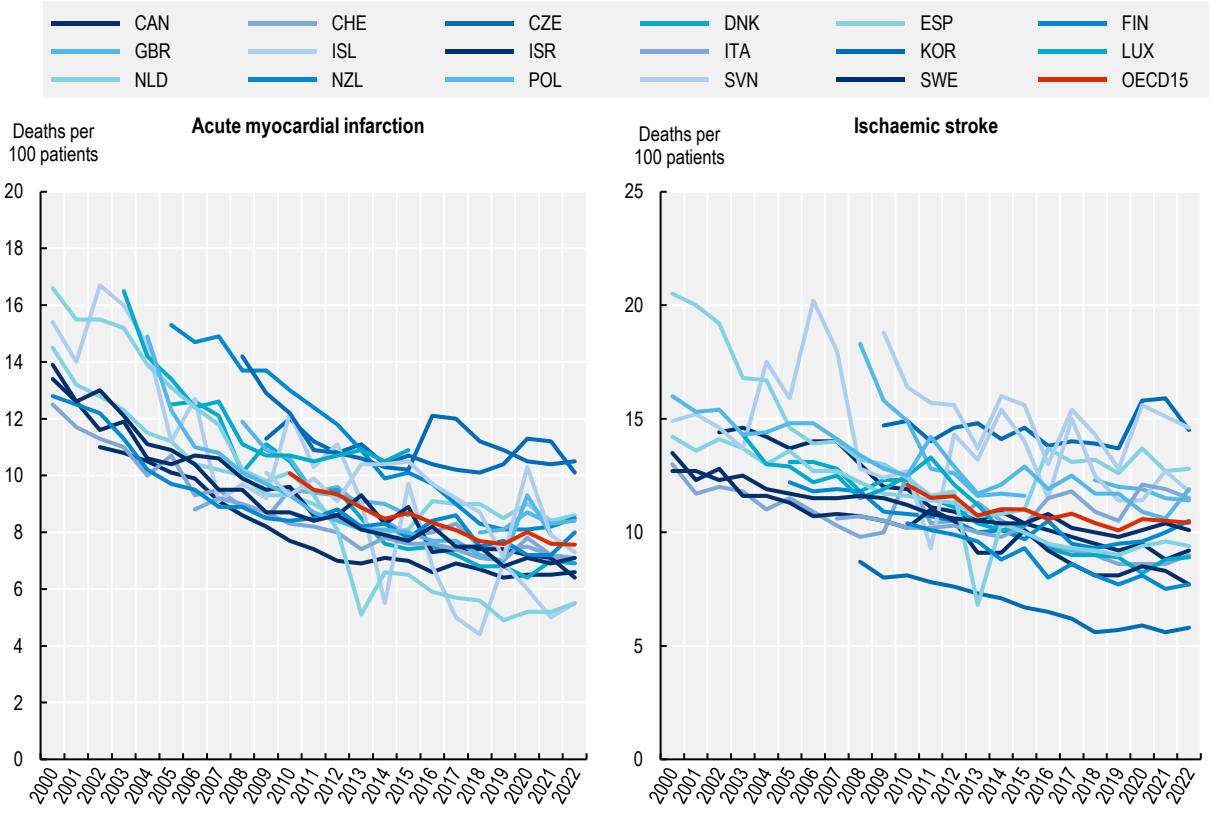
Improvements in care mean people live longer with chronic conditions, increasing the burden on the health system

Despite the rising disease incidence, mortality from NCDs has declined markedly over the past several decades. This has been driven by significant advances in early detection, management and treatment. Improved access to medicines, improved surgical techniques, and innovative therapies have contributed to millions of lives saved.

Case fatality rates for acute myocardial infarction (heart attacks) and ischaemic stroke have improved substantially in recent decades (Figure 2.4). Across 15 OECD countries with data between 2010 and 2022, the fatality rate from heart attacks decreased 23%, from 10.1% to 7.8%. The fatality rate from stroke dropped 14%, from 12.1% to 10.4%. Similarly, between 1995 and 2014, the proportion of people alive five years after their lung cancer diagnosis (5-year survival rate) increased from 10% on average across 7 OECD countries, to 19% (Arnold et al., 2019[8]). In the same period, the 5-year survival rate of colorectal cancer has gone from 52% in 1995, to 66% in 2014. Although CVD mortality rates have improved in the EU (Annex Figure 2.A.2), CVD remains the leading cause of morbidity and mortality in the EU (OECD, 2025[9]).

Figure 2.4. Improvements in care have reduced the fatality of heart attacks and stroke

30-day mortality (in- and out of hospital, linked data) after acute myocardial infarction and ischaemic stroke, selected countries with trend data, deaths per 100 patients



Note: In this figure, the OECD15 average represents a simple (i.e. unweighted) mean across 15 OECD countries.
Source: OECD Health Statistics 2025, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html.

StatLink https://stat.link/ymxkcz

While these improvements in survival are an unequivocal public health success, it does mean that there are more people living with NCDs. OECD's PaRIS found that currently, among people aged 45+ who saw a primary care professional in the previous six months, 8 in 10 have at least one chronic condition (OECD, 2025[10]). For health systems, this means a greater demand on resources to provide ongoing disease management and treatment for potential complications.

The rising prevalence of NCDs also increases the number of people that have multiple NCDs at the same time. Multimorbidity has a direct impact on people's well-being: people with two chronic conditions scored five points lower on the WHO-5 well-being scale (a scale from 0 to 100) compared to those with only one chronic condition, and people with three or more chronic conditions scored 14 points lower (OECD, 2025[10]). Patients with multiple NCDs also report lower mental health and social functioning. Moreover, dealing with multiple chronic conditions is more complex and resource-intensive for health systems than caring for a single illness (Box 2.3).

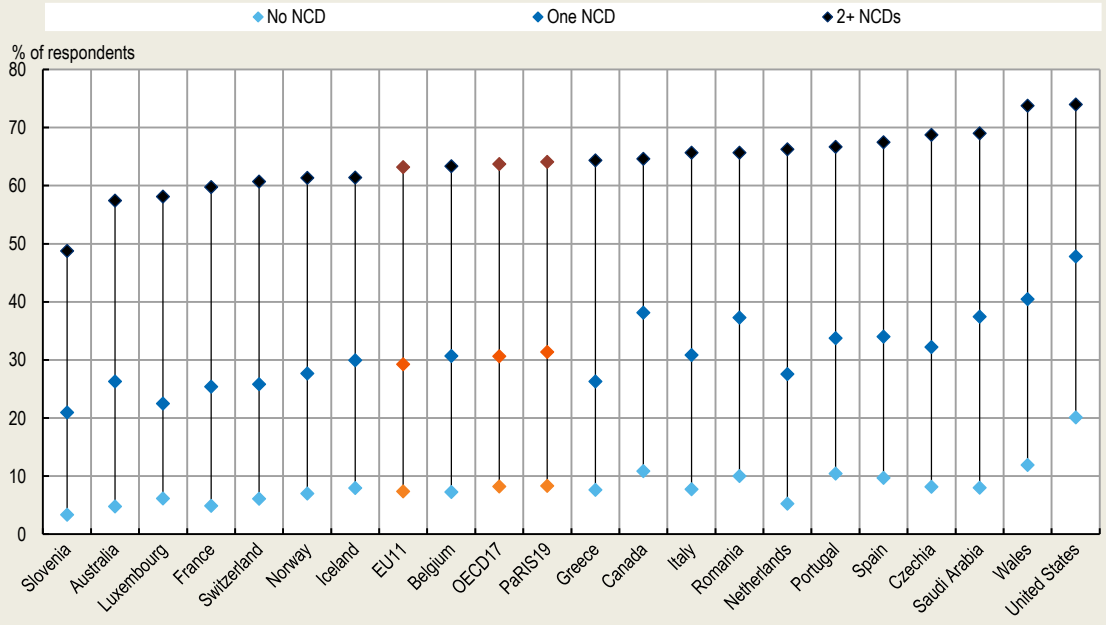
Box 2.3. The challenge of managing multimorbidity

While healthcare policy, research, professional training and clinical guidelines have traditionally focussed on single diseases, PaRIS results stress that multimorbidity – people living with two or more chronic conditions – is a massive challenge in healthcare, particularly in primary care. Managing these conditions is far more complex and resource-intensive than dealing with a single illness, putting pressure on healthcare systems and healthcare professionals to deliver high-quality, co-ordinated, people-centred care.

Treating multiple conditions can lead to overlapping or conflicting approaches. For example, people with multiple chronic conditions often take numerous medications. As well as contributing to higher healthcare expenditure, the more conditions a person has, the more complex and riskier their medication regimen becomes. This increases the likelihood of medication safety incidents and makes self-management more complex. Among people aged 45 and over who visited their primary care provider, the likelihood of someone taking five or more medications increased significantly with the number of NCDs: from less than 10% among people without an NCD, to 30% among people with one NCD and more than 60% among people with two or more NCDs (Figure 2.5).

Figure 2.5. People with multiple NCDs are much more likely to take five or more medications

Proportion of PaRIS respondents taking five or more medications, stratified by NCD status



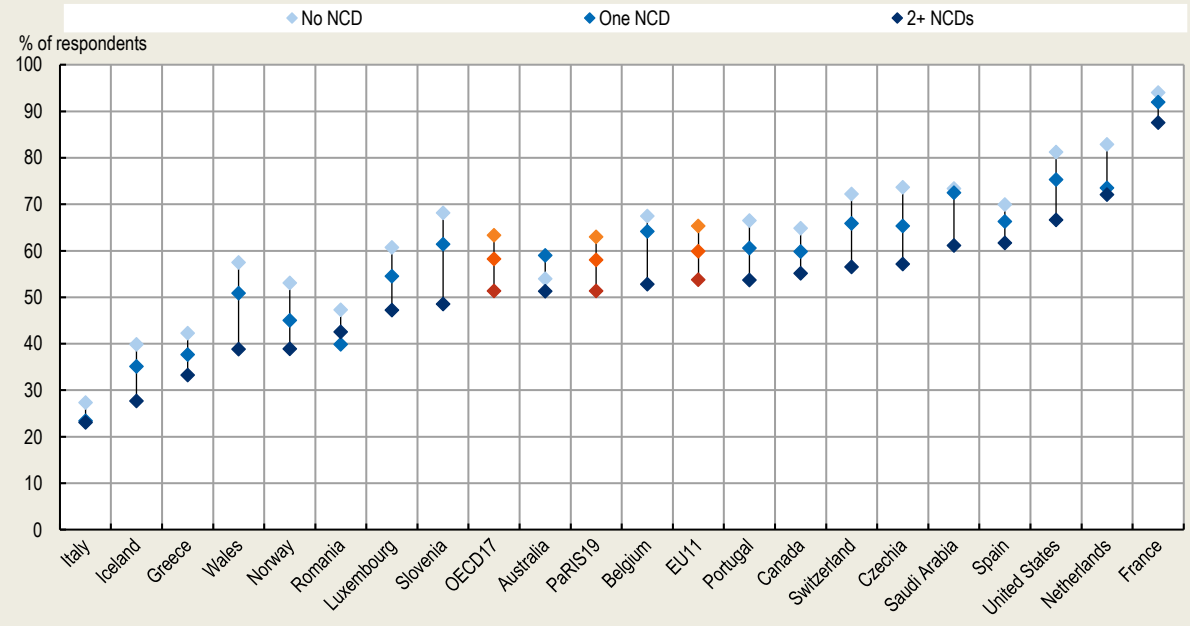
Note: For this analysis four NCDs were included: cancer, CVD, CRD and diabetes. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. United States sample only includes people aged 65 years or older. In this figure, EU11, OECD17 and PaRIS19 averages are reported as simple (i.e. unweighted) means across member countries who took part in the survey.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/3doiuq

In addition, people with multiple conditions are less confident in managing their own care (Figure 2.6). In almost all countries covered by PaRIS, people with more NCDs reported a lower confidence in their ability to manage their own health and well-being. For the health system, this means that they require more information and support from their primary care physicians.

Figure 2.6. People with multiple NCDs are less confident in their ability to manage their health and well-being

Proportion of people who are confident or very confident in their ability to manage their health and well-being (%), stratified by NCD status



Note: For this analysis four NCDs were included: cancer, CVD, CRD and diabetes. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. United States sample only includes people aged 65 years or older. In this figure, EU11, OECD17 and PaRIS19 averages are reported as simple (i.e. unweighted) means across member countries who took part in the survey.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/gt4h6o

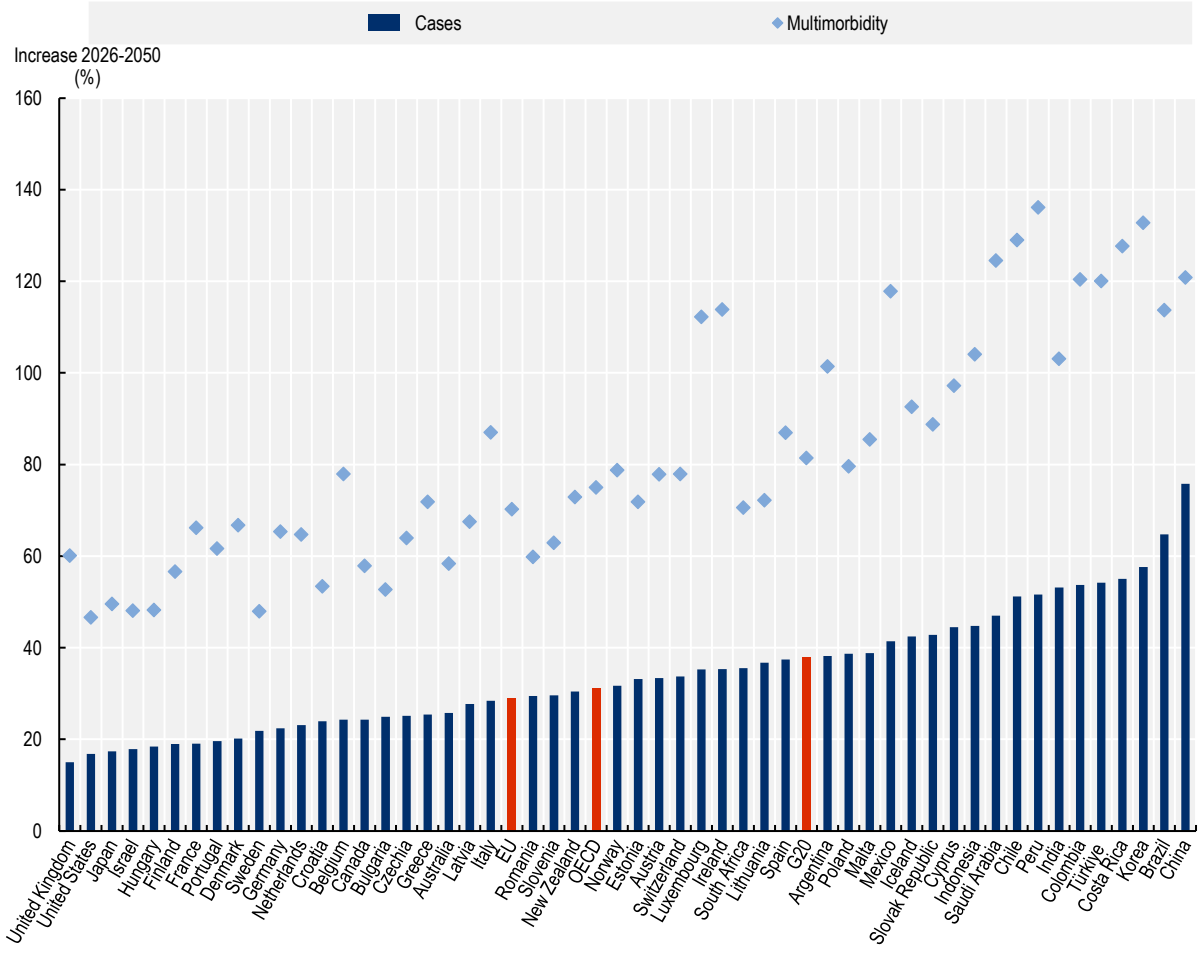
Population ageing will continue to increase the NCD burden and associated healthcare cost

Rising life expectancy has been one of the great public health achievements of recent decades, but it has also contributed to a growing burden of NCDs. Higher life expectancy means that more people will live into the ages at which NCDs are most prevalent. While people of all ages can develop NCDs, they are commonly associated with older age groups (WHO, 2025[11]). The incidence of NCDs increases with age because of gradual wear and tear over time, accumulated long-term exposure to risk, weakened immunity, hormonal shifts, and slower metabolism.

Importantly, this trend will continue as populations are expected to continue ageing. While in 2024 19% of the OECD population was 65 years or older, by 2050 this is expected to be 25% – a 36% increase (OECD, 2025[12]). Across the EU, the proportion of 65+ year olds is expected to increase from 22% to 28%. Even if the other drivers of the NCD burden – risk factor levels, survival rates, population size – remain unchanged going forward, the annual number of new NCDs is expected to increase by 31% between 2026 and 2050, on average in the OECD (29% in the EU) (Figure 2.7). The incidence rate would increase from 1 936 per 100 000 people per year to 2 518 in the OECD, and from 2 141 to 2 755 in the EU. In addition, the prevalence of multimorbidity is expected to increase by 75% by 2050, on average in the OECD (70% in the EU).

Figure 2.7. Population ageing is expected to increase the number of new NCDs in the OECD by more than 30% over the next 25 years

Increase in the number of NCDs, and the prevalence of multimorbidity, between 2026 and 2050



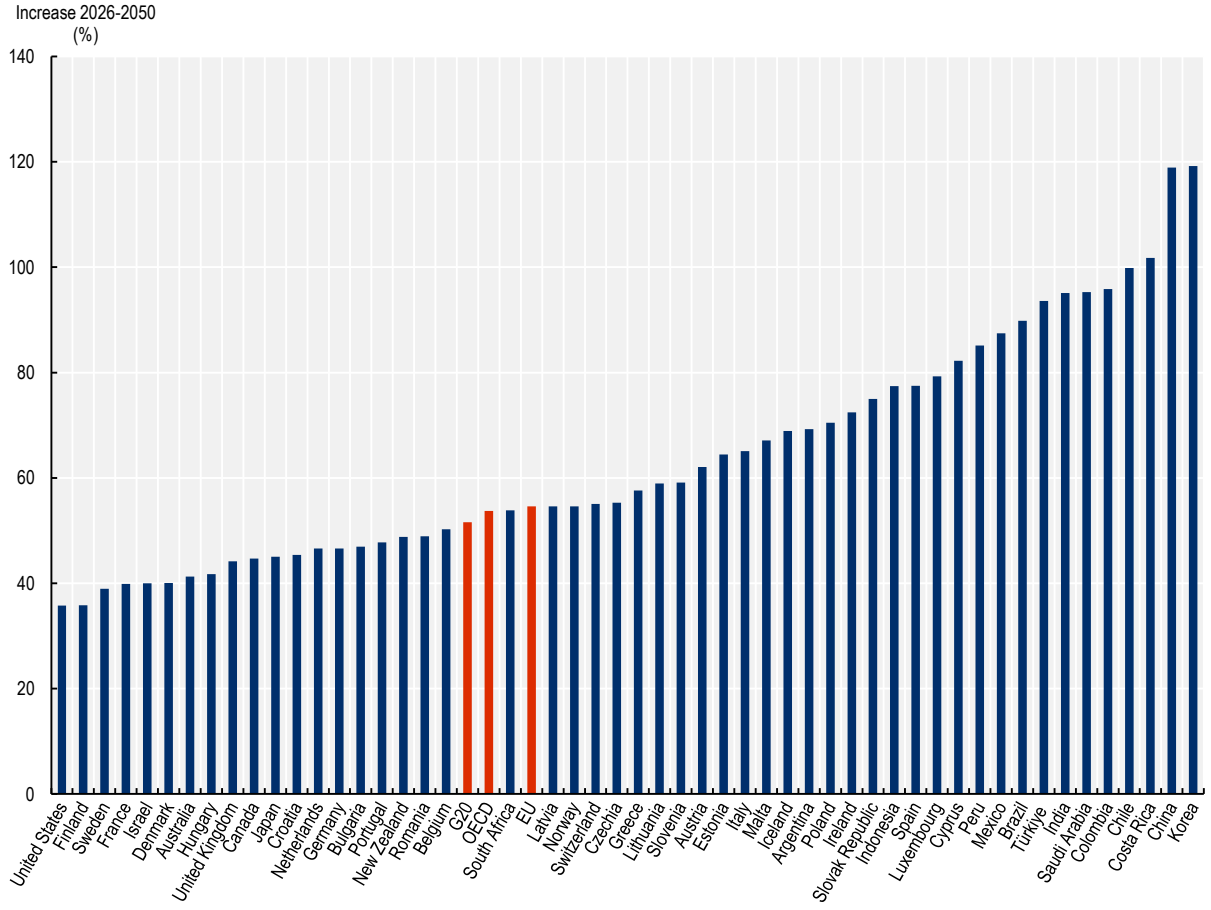
Note: Projections are based on current population size, and current age- and sex-specific incidence and mortality rates of NCDs. This analysis only looks at 4 groups of NCDs: CVDs, cancer, diabetes and COPD – both for the number of new cases and for the prevalence of multimorbidity. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/dvqk8z

The rising NCD burden is associated with significant increased cost for the healthcare system. The per capita healthcare expenditure on the four NCDs included in this analysis is predicted to increase by more than 50% solely due to population ageing, from USD PPP 646 to USD PPP 994 in the OECD, and from USD PPP 607 to USD PPP 938 in the EU (Figure 2.8). At constant population size, this equates to a total increase of USD PPP 532 billion per year, for the OECD as a whole (USD PPP 170 billion for the EU).

Figure 2.8. Healthcare expenditure on NCDs is predicted to increase by more than 50% in the OECD due to population ageing

Increase in the per capita healthcare expenditure on the four NCDs included in this analysis, between 2026 and 2050



Note: Projections are based on current population size, and current age- and sex-specific incidence and mortality rates of NCDs. In this figure, EU, OECD and G20 averages are based on percentage differences using simple (i.e. unweighted) means of the per capita healthcare expenditure in USD PPP of the member countries in each grouping, in 2026 and 2050.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/orplei

References

Arnold, M. et al. (2019), "Progress in cancer survival, mortality, and incidence in seven high-income countries 1995–2014 (ICBP SURVMARK-2): a population-based study", *The Lancet Oncology*, Vol. 20/11, pp. 1493-1505, https://doi.org/10.1016/s1470-2045(19)30456-5. [8]

Global Burden of Disease Collaborative Network (2024), *Global Burden of Disease Study 2023 Results*, https://vizhub.healthdata.org/gbd-results/. (accessed on 17 October 2025). [4]

IHME (2025), *GBD Results Tool*, http://ghdx.healthdata.org/gbd-results-tool (accessed on 4 September 2025). [1]

OECD (2025), *Does Healthcare Deliver?: Results from the Patient-Reported Indicator Surveys (PaRIS)*, OECD Publishing, Paris, https://doi.org/10.1787/c8af05a5-en. [10]

OECD (2025), *OECD data on exposure to air pollution*, https://www.oecd.org/en/topics/environmental-statistics-accounts-and-indicators.html. [6]

OECD (2025), *OECD Health Statistics 2025*, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html (accessed on 4 December 2025). [5]

OECD (2025), *Population projections*, https://data-explorer.oecd.org/ (accessed on 8 September 2025). [12]

OECD (2025), *The State of Cardiovascular Health in the European Union*, OECD Publishing, Paris, https://doi.org/10.1787/ea7a15f4-en. [9]

United Nations (n.d.), *Sustainable Development Goal 3*, https://sdgs.un.org/goals/goal3#targets_and_indicators (accessed on 6 November 2025). [2]

WHO (2025), *Noncommunicable diseases*, World Health Organization, https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases (accessed on 21 August 2025). [11]

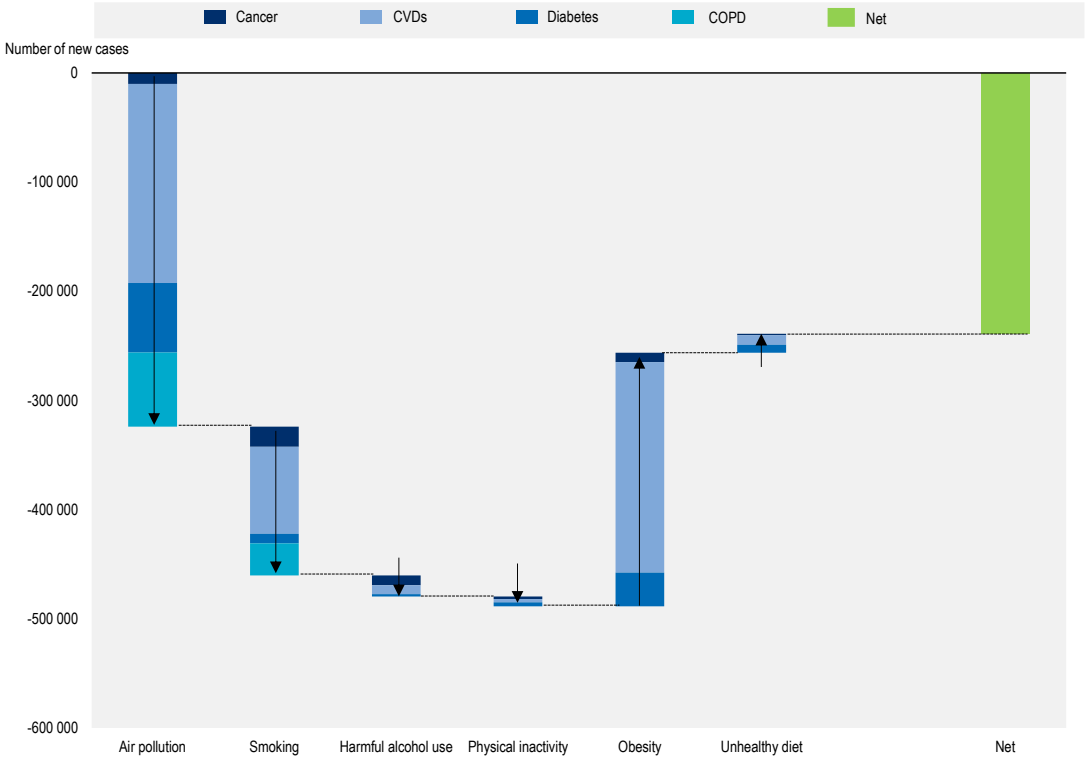
WHO (2025), "Prevalence of insufficient physical activity among adults aged 18+ years (crude estimate) (%)", https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-insufficient-physical-activity-among-adults-aged-18-years-(crude-estimate)-(-) (accessed on 13 March 2025). [7]

WHO (2003), *WHO Framework Convention on Tobacco Control (WHO FCTC)*, https://iris.who.int/bitstream/handle/10665/42811/9241591013.pdf?sequence=1 (accessed on 9 February 2024). [3]

Annex 2.A. EU results

Annex Figure 2.A.1. In the EU, progress on air pollution, smoking, harmful alcohol use and physical inactivity is undermined by rising obesity prevalence

Impact of progress on risk factors between 2010 and 2022 on the number of new cases of four major NCDs per year, on average over 2026-2050, for the 27 EU countries combined

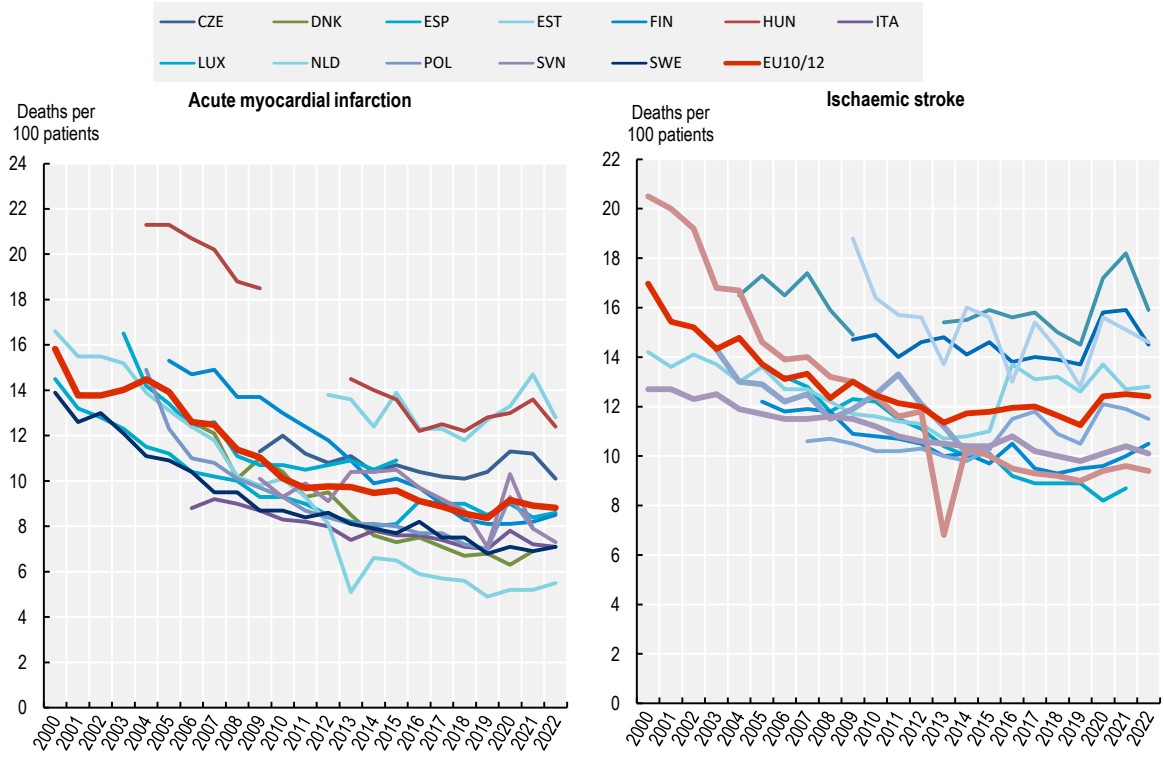


Note: The results compare the annual number of new NCD cases in a scenario where 2022 risk-factor levels continue against a scenario in which risk-factor levels remain at their 2010 values. The figure shows the number of new cases per year on average over 2026-2050. The estimates for physical inactivity and unhealthy diet exclude their effects on body weight, which are captured under obesity. Totals also exclude the small changes in NCD cases that stem from population-size shifts rather than direct links between risk factors and diseases.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/peun48

Annex Figure 2.A.2. Improvements in care have reduced the fatality of heart attacks and stroke in the EU

30-day mortality (in- and out of hospital, linked data) after acute myocardial infarction and ischaemic stroke, selected countries with trend data, deaths per 100 patients



Note: EU12 represents the average of the 12 countries included for mortality post-acute myocardial infarction, with EU10 representing the average of the 10 countries included for stroke. In this figure, EU12 and EU10 averages are reported as simple (i.e. unweighted) means across member countries shown.

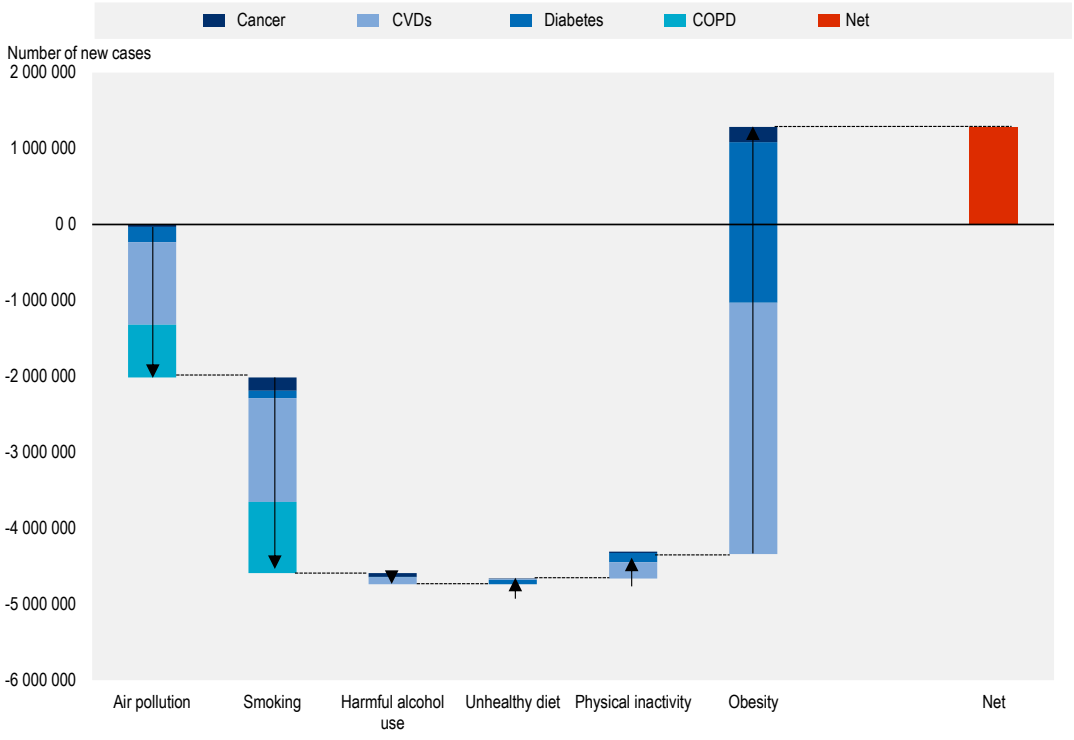
Source: OECD Health Statistics 2025, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html.

StatLink https://stat.link/z5rg0y

Annex 2.B. G20 results

Annex Figure 2.B.1. In the G20, progress on air pollution, smoking and harmful alcohol consumption is outweighed by rising obesity levels

Impact of progress on risk factors between 2010 and 2022 on the number of new cases of four major NCDs per year, on average over 2026-2050, for G20 countries combined



Note: The results compare the annual number of new NCD cases in a scenario where 2022 risk-factor levels continue against a scenario in which risk-factor levels remain at their 2010 values. The figure shows the number of new cases per year, on average over 2026-2050. The estimates for physical inactivity and unhealthy diet exclude their effects on body weight, which are captured under obesity. Totals also exclude the small changes in NCD cases that stem from population-size shifts rather than direct links between risk factors and diseases.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/gz4oqy

3 NCDs reduce quality of life, productivity and economic growth

NCDs are the leading cause of death across OECD and EU countries and impose a substantial burden that extends well beyond mortality. NCDs reduce quality of life, drive long-term disability, and place sustained pressure on health systems through ongoing treatment and care needs. They also have wide-ranging social and economic consequences, contributing to premature mortality, poorer mental health, and widening inequalities, including marked gender gaps linked to differential exposure to risk factors. NCDs weaken labour markets by reducing employment, working hours and productivity through absenteeism, presenteeism and early retirement, thereby constraining economic growth. The cumulative impact on health expenditure and economic output is large, highlighting that NCDs are not only a public health challenge but also a major economic one. Sustained and effective action to prevent and better manage NCDs should therefore be seen as an investment in population well-being, economic performance and health system resilience.

In Brief

The economic and societal burden of NCDs

NCDs are the leading cause of death in OECD and EU countries, responsible for six to seven in ten deaths. Yet their impact extends far beyond mortality. NCDs are chronic illnesses that reduce quality of life, cause long-term disability, increase healthcare spending, and weaken economic productivity. Understanding these broader social and economic consequences is essential for policymakers to justify sustained investment in prevention and management. Preventing NCDs is not only a public health priority but also an economic strategy that can produce significant returns through healthier populations, stronger economies, and more resilient health systems.

NCDs are a major cause of premature mortality (defined as deaths before age 75). The public health amenable NCDs covered in the OECD SPHeP NCDs model account for 44% of premature deaths across the OECD and 46% in the EU. Cancers and cardiovascular diseases together account for about 40%.

The burden is heavier among men, who engage in more risky behaviours such as smoking, harmful alcohol use, and being overweight. In the OECD, the premature death rate from NCDs for men is 162 per 100 000, which is 77% higher than the rate for women at 92 per 100 000. In the EU, the premature death mortality rate from NCDs is almost twice as high for men compared to women.

Beyond physical illness, NCDs also take a major toll on mental health. OECD analysis shows that people with NCDs are significantly more likely to develop depression, even after accounting for factors such as age, income, and lifestyle. The risk rises sharply with multimorbidity: those with one NCD have a 21% higher likelihood of depression, two NCDs raise the risk by 42%, and three or more increase it by 50%.

NCDs also impose a heavy and sustained financial burden on health systems, because they are long-term conditions requiring continuous treatment and management. Health expenditure over the next 25 years would be about 40% lower if there were no NCDs, equivalent to USD PPP 2.2 trillion annually across the OECD and USD PPP 561 billion in the EU. This total spending equals roughly the entire GDP of Italy.

NCDs reduce employment rates, working hours, and productivity through absenteeism, presenteeism, and early retirement. When these effects are aggregated, the labour force of OECD countries effectively loses the output of 18 million full-time workers to NCDs, while the EU loses the equivalent of 5 million workers.

Premature mortality, reduced employment, and lower productivity all weaken economic growth. Overall, annual GDP would be nearly 4% higher across the OECD and EU on average over the period 2026 to 2050 if there were no NCDs. Each of the four major NCD groups, cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes, accounts for roughly one-quarter of this total economic loss.

NCDs are the main cause of mortality in the OECD and the EU (OECD, 2025[1]). In 2023, more than six in ten deaths in the OECD were due to CVDs, cancer, diabetes or COPD, and nearly seven in ten in the EU (Global Burden of Disease Collaborative Network, 2024[2]). But their burden goes well beyond mortality: NCDs cause long-term disability, reduce quality of life, increase healthcare costs, and lower economic productivity.

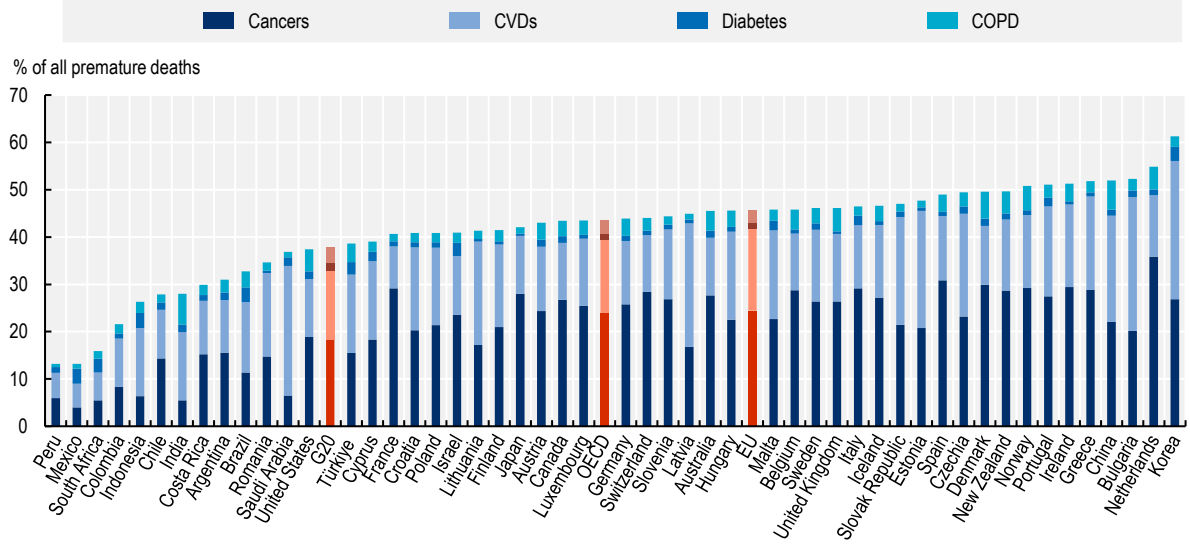
For policymakers, understanding the wider economic and societal impact of NCDs is vital to making the case for sustained investment in the prevention and treatment of NCDs. By quantifying the economic, social and well-being costs, policymakers can make the case that prevention is not only a health imperative but also a sound investment: effective measures on NCDs can yield substantial returns in the form of healthier populations, stronger economies, and more resilient health systems.

NCDs reduce quality of life, cause depression and early death

NCDs are a major cause of premature mortality, defined as deaths before the age of 75 (OECD/Eurostat, 2022[3]). Premature mortality reduces life expectancy, but it also puts a significant psychological and financial strain on households and communities. The four NCDs covered in the OECD SPHeP NCDs model (Chapter 2, Box 2.1) account for an estimated 44% of premature mortality across the OECD (46% in the EU), with cancers and cardiovascular diseases alone account for around 40% (Figure 3.1). This burden is even greater among men (Box 3.1). When all cancers and CVDs are considered, the four NCDs accounted for 62% of all premature deaths in the OECD in 2023 (70% in the EU) (IHME, 2025[4]).

Figure 3.1. The four NCDs covered in the analyses will account for more than 4 in 10 premature deaths in the OECD over the next 25 years

Premature mortality (deaths in people under the age of 75) due to public health amenable cancers, CVDs, diabetes and COPD, as a percentage of total premature mortality, average over 2026-2050



Note: the results compare premature mortality in a business-as-usual scenario to one in which the four NCDs are eliminated, and reflect the change in premature deaths from NCDs, averaged over 2026-2050. As the OECD SPHeP NCDs model focusses on public health-amenable conditions, it does not cover all cancers and CVDs. Therefore, the premature mortality burden presented is an underestimation of the total premature mortality burden from those diseases. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/sqx81k

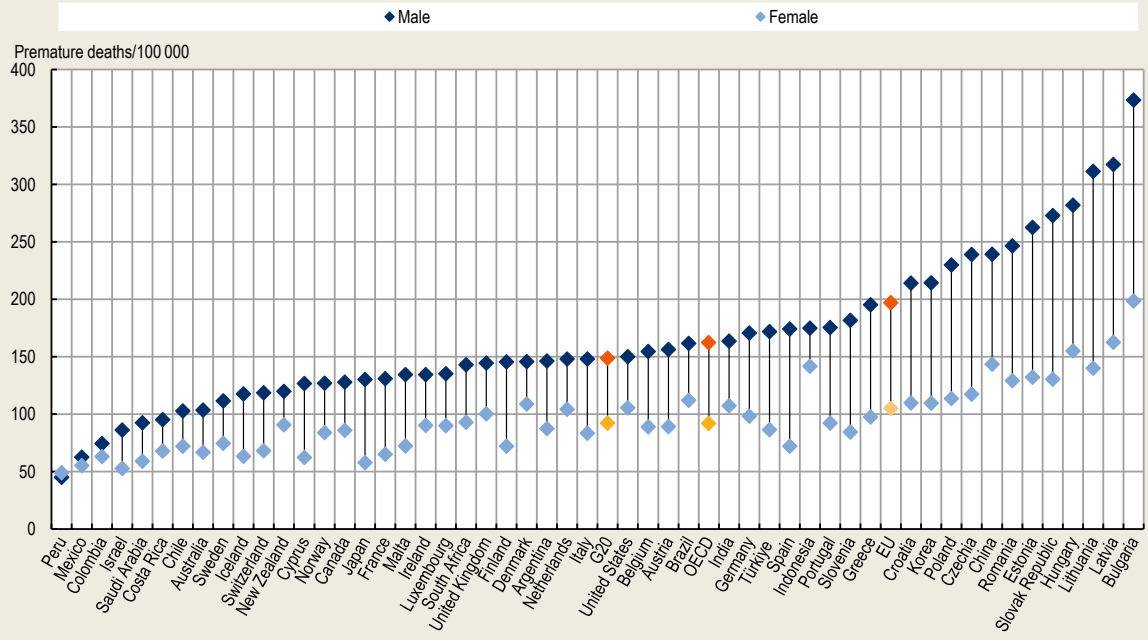
Box 3.1. Men bear a disproportionately heavy burden of NCDs

In addition to biological factors, men and women have different risk profiles for NCDs due to differences in behaviours. Men are generally more likely to engage in risky behaviours such as smoking and harmful alcohol use, and they are more prone to being overweight. While women are more likely to be insufficiently physically active, the difference with their male counterparts is relatively small (OECD, 2025[1]; WHO, 2025[5]).

As a result, men experience a higher burden of NCDs than women. The premature mortality rate from NCDs for men is 162 per 100 000 in the OECD, 77% higher than that of women at 92 per 100 000 (Figure 3.2). Almost every country sees this same trend, the only exception being Peru. In the EU, the premature death mortality rate from NCDs is almost twice as high for men compared to women, with some variation depending on NCDs. For instance, premature mortality is almost 40% higher in men than women for cancer, and 71% higher for diabetes.

Figure 3.2. Men in the OECD are nearly 80% more likely to die prematurely from NCDs than women

Premature mortality (deaths in people under the age of 75) due to public health amenable cancers, CVDs, diabetes and COPD combined, rate per 100 000 population, average over 2026-2050



Note: the results compare premature mortality in a business-as-usual scenario to one in which the four NCDs are eliminated, and reflect the change in premature deaths from NCDs, averaged over 2026-2050. As the OECD SPHeP NCDs model focusses on public health-amenable conditions, it does not cover all cancers and CVDs. Therefore, the premature mortality burden presented is an underestimation of the total premature mortality burden from those diseases. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/axyb9o

NCDs also contribute to declines in mental health and diminishes overall quality of life. OECD analysis of SHARE data shows that – even when adjusting for confounders such as age, sex, socio-economic status, country, smoking status, and frequency of alcohol consumption – people with NCDs were more likely to go on to develop depression than people without NCDs (Everard et al., 2025[6]). People with cancer or diabetes have a 15% increased risk of developing depression, 17% for heart failure, 21% for stroke and 25% for chronic lung disease. Moreover, the data shows that the risk increased with the number of NCDs. While people with one NCD have a 21% increase in the risk of depression, people with two NCDs have an 42% increased risk, and people with three or more NCDs a 50% increased risk of depression. It is estimated that the presence of NCDs contributes to hundreds of thousands of cases of depression in the OECD and EU every year.

There are several biological, psychological and social factors that can explain a potential causal relationship between NCDs and depression (Everard et al., 2025[6]). Psychologically and socially, loss of sense of self, social isolation from fatigue and lack of energy that drive loss of pursuit of normal activities, limitations to mobility, activities of daily living and chronic pain have all been associated. Fear and uncertainty of the incurable and unpredictable nature of certain NCDs contribute, as do beliefs about their NCDs and ability to self-manage their NCD. Biologically, neurodegeneration associated with certain NCDs and side effects of treatments can also play a role. An inverse relationship is also plausible, with depression increasing the risk of NCDs, for example by reducing motivation to exercise.

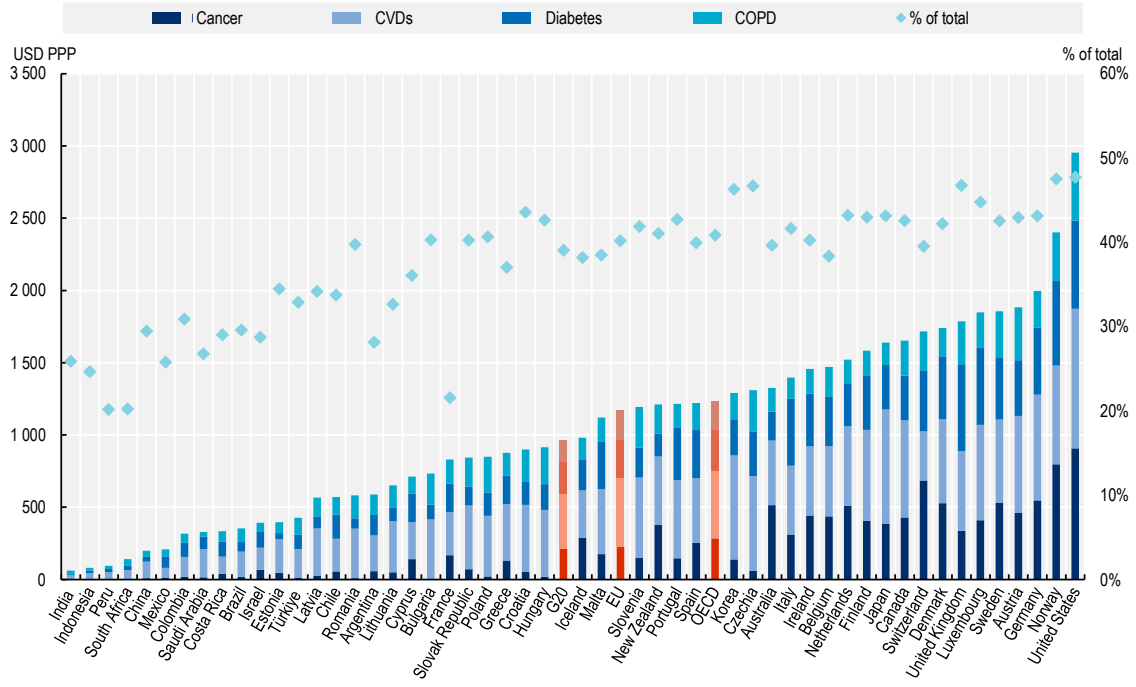
NCDs increase health spending, reduce workforce productivity, and weaken economic growth

Non-communicable diseases place a sustained and growing burden on health systems because they are largely chronic conditions that require long-term management rather than short-term treatment. The costs of ongoing medication, regular monitoring, hospital care for complications, and the need for specialised services such as oncology or dialysis all drive up health expenditure.

If there were no NCDs, health expenditure would be 41% lower over the next 25 years (40% in the EU) (Figure 3.3). This adds up to a total of USD PPP 2.2 trillion annually across the OECD (USD PPP 561 billion in the EU) – equivalent to the total GDP of Italy. Despite cancer being a costly disease to treat at a case-by-case basis, health expenditure on CVDs is greater, due to their large prevalence and lower mortality (meaning people live with the disease for longer, requiring ongoing care).

Figure 3.3. If there were no NCDs, health expenditure would be 41% lower in the OECD

The impact of NCDs on overall health expenditure, in USD PPP per capita and as a percentage of total health expenditure, per year, average over 2026-2050



Note: the results compare healthcare expenditure in a business-as-usual scenario to one in which the four NCDs are eliminated, and reflect the change in healthcare expenditure averaged over 2026-2050. The cost per disease shown here should not be interpreted as treatment cost of the disease. The model includes competing diseases, meaning that eliminating one disease leads to people living longer and developing other diseases. Moreover, the model includes comorbidity cost. In this figure, EU, OECD and G20 averages are based on using simple (i.e. unweighted) means of the per capita healthcare expenditure in USD PPP of the member countries in each grouping.
Source: OECD SPHeP NCDs model, 2025.

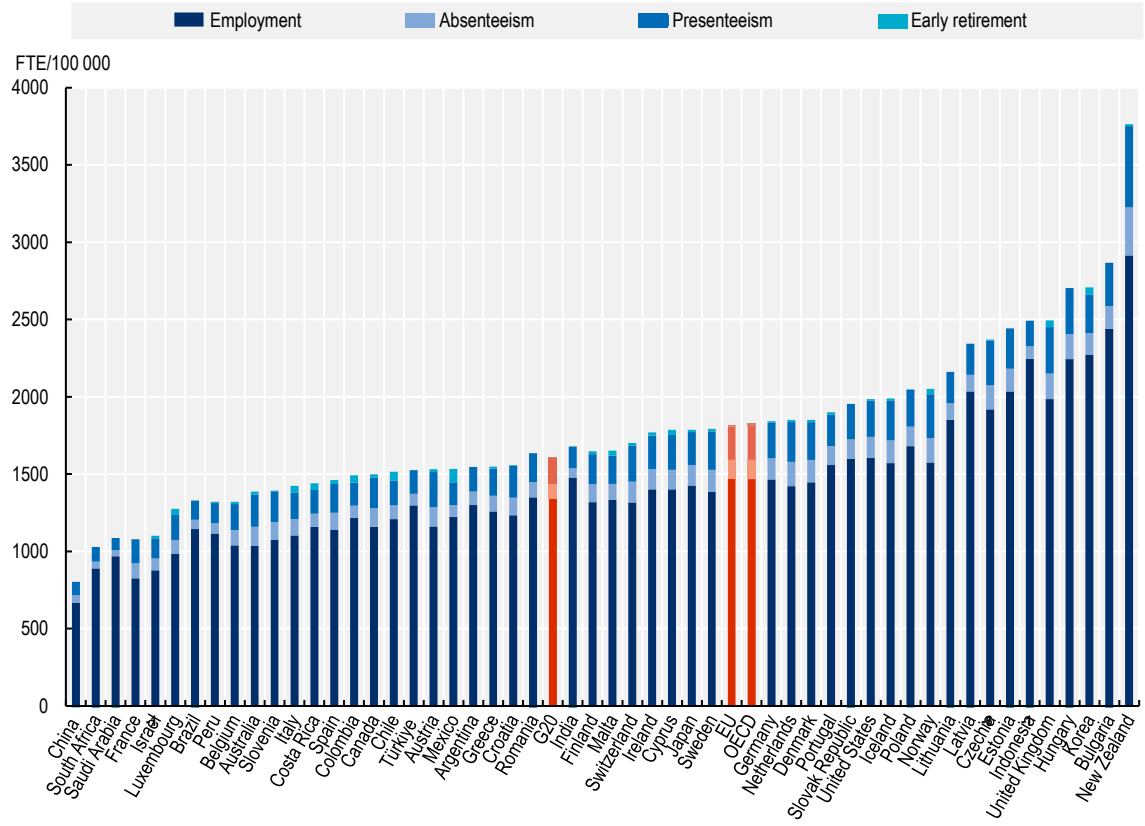
StatLink https://stat.link/tcau57

Through their impact on the size of the workforce, unemployment, part-time work, absenteeism, presenteeism and early retirement, NCDs reduce a country's workforce participation and productivity. OECD analysis has shown that, adjusted for confounders, men and women with diabetes are 10% and 12% less likely to be employed compared to people without diabetes, respectively. Men and women with cancer who are in employment work on average 92% and 81% of the full-time equivalent, respectively, compared to 95% and 83% for men and women without any NCDs. When it comes to absenteeism, women with chronic lung disease have a 2.4% increased absence as a proportion of their usual hours worked, compared to women without chronic lung disease. Men with heart disease have a 3.2% increased absenteeism compared to men without.

Combining these effects, the labour force output of OECD and EU countries loses the equivalent of 18 million and 5 million full-time workers to NCDs, respectively (Figure 3.4).

Figure 3.4. NCDs reduced the workforce output, primarily by decreasing the number of people in employment

Reduction in workforce output due to NCDs, including employment (combining unemployment and part-time work), absenteeism, presenteeism, and early retirement, full-time equivalents (FTE) per 100 000 working age population, average over 2026-2050



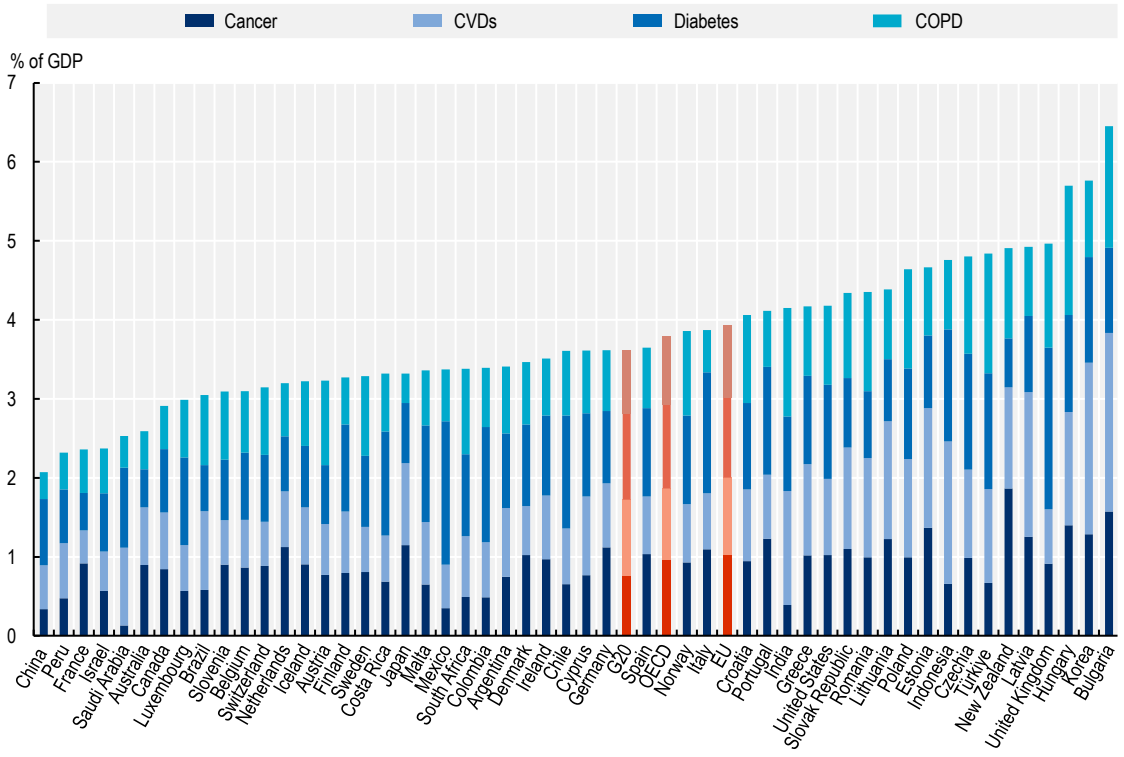
Note: the results compare the effective size of the workforce in a business-as-usual scenario to one in which there are no NCD. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/zweop6

At the macroeconomic level, the combined effects of premature mortality and lower productivity weaken economic growth and the gross domestic product (GDP). It is estimated that, on average across the OECD and the EU, the annual GDP will be nearly 4% lower due to the consequences of NCDs (Figure 3.5). All four NCDs have a considerable impact on GDP, each accounting for about a quarter of the impact.

Figure 3.5. The average annual GDP of OECD and EU countries will be nearly 4% lower due to NCDs

The reduction in annual GDP due to NCDs, as a percentage of GDP, on average over 2026-2050



Note: The results compare the GDP in a business-as-usual scenario to one in which the four NCDs are eliminated, and reflect the change in the annual GDP, averaged over 2026-2050. In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/1j5mnr

References

Everard, C. et al. (2025), "Exploring the relationship between non-communicable diseases and depression", *OECD Health Working Papers*, No. 178, OECD Publishing, Paris, https://doi.org/10.1787/02a1cfc5-en. [6]

Global Burden of Disease Collaborative Network (2024), *Global Burden of Disease Study 2023 Results*, https://vizhub.healthdata.org/gbd-results/. (accessed on 17 October 2025). [2]

IHME (2025), *GBD Results Tool*, http://ghdx.healthdata.org/gbd-results-tool (accessed on 4 September 2025). [4]

OECD (2025), *OECD Health Statistics 2025*, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html (accessed on 4 December 2025). [1]

OECD/Eurostat (2022), *Avoidable mortality: OECD/Eurostat lists of preventable and treatable causes of death (January 2022 version)*, https://www.oecd.org/health/health-systems/Avoidable-mortality-2019-Joint-OECD-Eurostat-List-preventable-treatable-causes-of-death.pdf?_ga=2.68722321.1471485303.1679671412-417290248.1637500244 (accessed on 24 March 2023). [3]

WHO (2025), *WHO Global Health Observatory*, World Health Organization, https://www.who.int/data/gho. [5]

4 Focusing on key priorities maximises impact on health and the economy

Tackling NCDs is inherently complex, given their multiple risk factors and the wide range of possible policy entry points from prevention to treatment. To help identify priorities, a comparative “Top Quartile” approach benchmarks countries against the best-performing 25% of OECD and EU peers on both risk factor prevalence and survival rates. This ambitious but achievable standard highlights where policy action can deliver the greatest returns. Obesity emerges as the most powerful lever for reducing NCD incidence, premature mortality and health expenditure, while smoking and harmful alcohol use also play important roles through their impacts on mortality and productivity. Overall, action on key risk factors delivers larger and broader benefits than improvements in survival alone. The evidence shows that focussing on a small number of national priorities can capture most of the potential gains, while also delivering wider societal and environmental co-benefits.

In Brief

Focusing on key priorities maximises impact on health and the economy

Tackling NCDs is complex because they stem from a wide range of risk factors, including obesity, smoking, poor diet, harmful alcohol consumption, and air pollution, and action can be taken at multiple levels, from prevention to treatment. Identifying which interventions yield the greatest benefits is therefore crucial for effective policymaking.

A comparative approach helps clarify priorities. Rather than focussing on the absolute prevalence of risk factors, the OECD's "Top Quartile" method compares each country's performance with the best 25% of OECD and EU peers, for both risk factor prevalence and NCD survival rates. This ambitious but achievable benchmark highlights where the potential for improvement is greatest, and hence the payoff from policy action.

By aligning with top performers, countries can achieve notable health, economic, and social gains. If all OECD countries reached the Top Quartile levels of NCD risk factors, the model estimates a 11.4% drop in premature mortality, a 6.2% reduction in healthcare expenditure, and a 1.3% rise in GDP (11.5%, 4.6% and 1.4%, respectively, in the EU).

While these numbers may appear modest at first glance, their impact is consequential. A 11.4% drop in premature mortality means one person is saved from an early death every minute (every 3.5 minutes in the EU). A 6.2% decrease in healthcare expenditure is a total annual saving of USD PPP 317 billion, equivalent to more than the total healthcare expenditure of Italy. This is more than the average spending on all preventive care, which is around 3% of overall health spending across OECD countries. A 1.3% increase in GDP across the OECD is nearly USD 1 trillion in additional economic output annually – comparable to adding the entire economies of Sweden and Portugal to the OECD's GDP (1.4% across the EU equates to USD PPP 342 billion, equivalent to adding more than the entire economy of Finland to the EU's annual economic output).

Obesity emerges as the single greatest lever for improvement, accounting for 51% of the total reduction in new NCD cases under the Top Quartile risk factor scenario (42% for the EU). Achieving the Top Quartile obesity level would prevent 11% of new NCD cases each year, reduce premature deaths by 5.6%, and cut health spending by 3.3% (7.0%, 3.6% and 1.6%, respectively, for the EU). These improvements would boost the OECD workforce by the equivalent of 4.5 million full-time workers and raise GDP by 0.6% on average (495 000 workers and 0.6% of GDP for the EU).

Other risk factors also play significant roles. Smoking has a disproportionate effect on premature mortality due to its strong link to cancer. Harmful alcohol use, meanwhile, has a relatively large economic impact because it reduces productivity and labour force participation.

While improving survival rates for NCDs through better healthcare remains vital, primary prevention offers greater health and economic returns. Aligning CVD survival rates with the Top Quartile would reduce premature mortality by about 1.7% (2.6% in the EU), while improved cancer survival rates would decrease premature mortality by 1.5% (2.3% in the EU). However, addressing risk factors like obesity and smoking can achieve larger reductions in premature mortality, along with much greater gains in GDP and productivity.

There are three main reasons for this difference. First, survival rates are already relatively high in many OECD countries, leaving less room for improvement. Second, behavioural and metabolic risk factors influence multiple diseases simultaneously, multiplying their overall impact on health outcomes. Third, many risk factors, particularly harmful alcohol use, affect productivity directly through absenteeism, disability, and reduced work efficiency.

Every country can achieve substantial progress by focussing on one or two priority areas rather than spreading resources too thinly. On average, tackling a single top priority accounts for about half of the total possible improvement in disease incidence, health spending, and GDP. Addressing two priorities achieves about 75% of the potential, and three cover around 90%.

Beyond the direct health and economic effects, action on NCD risk factors yields broader societal and environmental benefits. Healthier diets can significantly lower emissions, while alcohol control policies can enhance public safety by reducing premature deaths from accidents and violence by 5%.

Action on NCDs is not only a public health priority but also an economic necessity. By investing in prevention, governments can protect the financial sustainability of health systems, strengthen economic resilience, and improve productivity and well-being. However, this can present a daunting challenge. NCDs are shaped by many different risk factors, and action can be taken at multiple levels, from preventing disease in the first place to improving treatment and care once disease develops. With such a wide range of possible entry points, it is not always obvious where to start or which actions will make the greatest difference.

Simply listing risk factor prevalence side by side does little to show which ones matter most. Risk factors influence different diseases and to varying degrees. In turn, those NCDs affect health, mortality, and economic performance in distinct ways. The health system's performance in treating NCDs further complicates the picture.

The relative importance of different risk factors, and of prevention and treatment, becomes clear when looking at the impact on lives, on well-being, and on the economy. But rather than focussing on the overall size of the impact, it is important to see how a country performs compared with others, and the consequences of any gaps. Where performance falls short, the potential for improvement is greatest, revealing which areas offer the biggest opportunities for change.

This chapter identifies priority areas for action by aligning NCD risk factor prevalence and NCD survival rates to levels achieved in the top 25% of OECD and EU countries, for each age and sex group. This ambitious but achievable Top Quartile approach shows the areas with the greatest potential for improvement (see Box 4.1 and Annex A for more details on the Top Quartile scenario).

Box 4.1. Identifying NCD priorities using the Top Quartile scenario

To understand the potential for improvement, NCD risk factor prevalence rates and NCD survival rates for each country were aligned to the top 25% levels observed across OECD and EU countries, for each age and sex group (Figure 4.1). Rather than eliminating all risk or aligning to the very best performance, which may not be achievable, this approach can be considered a realistic goal for most countries.

Figure 4.1. Schematic overview of the Top Quartile scenario

Baseline scenario

Country	Risk factor	Sex	Age	Prevalence rate
I	Smoking	Male	25-29	6.20%
E	Smoking	Male	25-29	6.30%
F	Smoking	Male	25-29	**8.50%**
B	Smoking	Male	25-29	13.20%
A	Smoking	Male	25-29	13.40%
C	Smoking	Male	25-29	14.30%
G	Smoking	Male	25-29	15.20%
D	Smoking	Male	25-29	16.50%
J	Smoking	Male	25-29	16.80%
K	Smoking	Male	25-29	19.00%
H	Smoking	Male	25-29	19.20%
L	Smoking	Male	25-29	20.00%

Top 25%

Top Quartile scenario

Country	Risk factor	Sex	Age	Prevalence rate
I	Smoking	Male	25-29	6.20%
E	Smoking	Male	25-29	6.30%
F	Smoking	Male	25-29	**8.50%**
B	Smoking	Male	25-29	**8.50%**
A	Smoking	Male	25-29	**8.50%**
C	Smoking	Male	25-29	**8.50%**
G	Smoking	Male	25-29	**8.50%**
D	Smoking	Male	25-29	**8.50%**
J	Smoking	Male	25-29	**8.50%**
K	Smoking	Male	25-29	**8.50%**
H	Smoking	Male	25-29	**8.50%**
L	Smoking	Male	25-29	**8.50%**

Note: Illustrative, not real data.

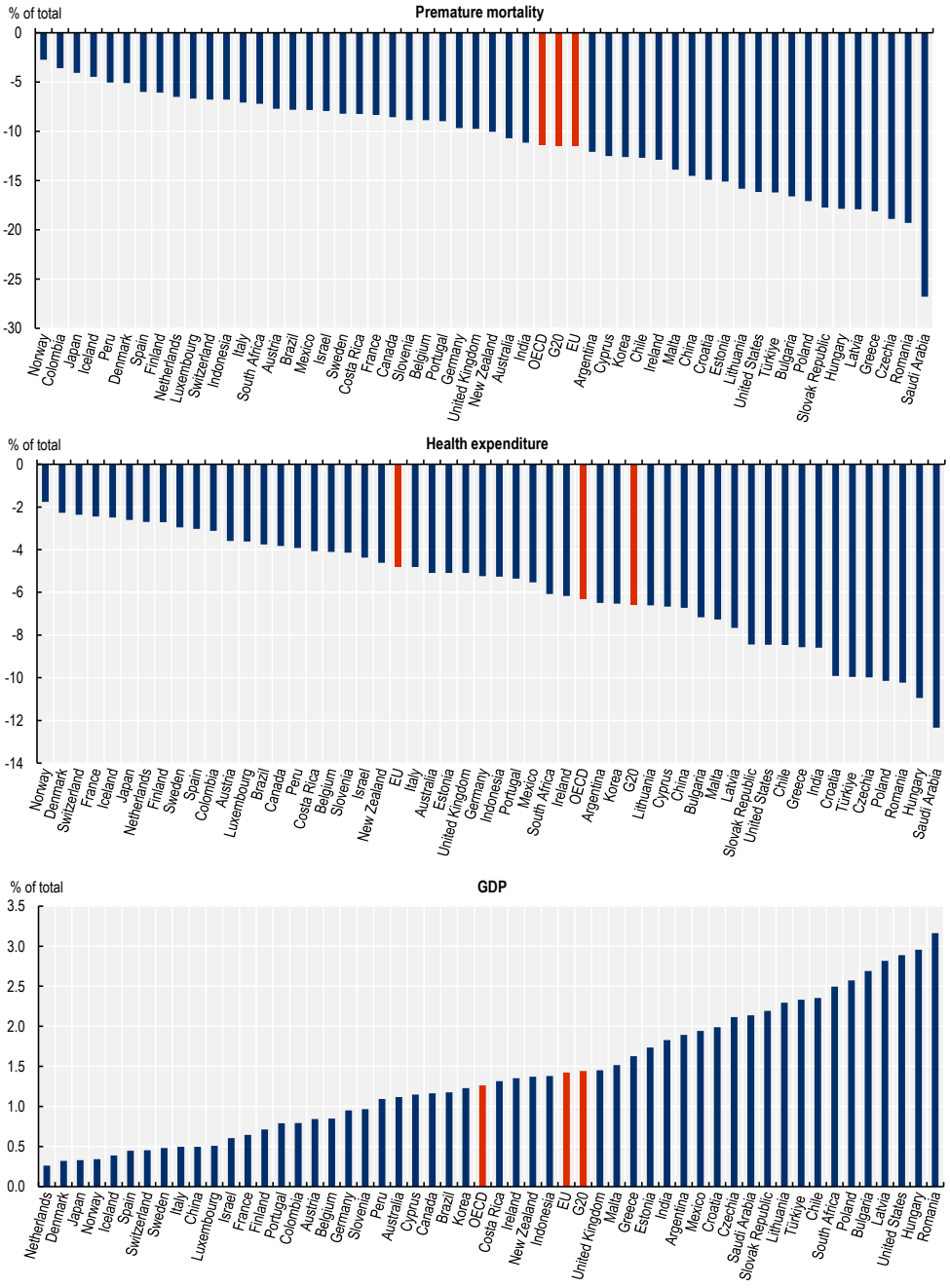
It should be noted though, that under the Top Quartile scenario a non-insignificant amount of risk remains. Firstly, aligning to the Top Quartile means countries that are already in the Top Quartile group will see no impact for that risk factor in that age and sex group. For others, it will reduce risk factor levels but only to the level of the Top Quartile, rather than fully eliminating them. Secondly, as NCDs develop over time, historic exposure to risk factors will continue to have an impact on the future NCD burden. Thirdly, reduced risk factor exposure may only delay the onset of NCDs for some individuals.

Addressing NCD risk factors can yield notable health and economic gains

By reaching the Top Quartile risk factor levels, countries would see notable health and economic gains. On average in the OECD, achieving the Top Quartile levels for NCD risk factors would decrease premature mortality by 11.4%, healthcare expenditure by 6.2% and raise GDP by 1.3% (11.5%, 4.6% and 1.4%, respectively, in the EU) (Figure 4.2). While there is considerable variation between countries, all have room for improvement. This means that no country is in the Top Quartile for all risk factors.

Figure 4.2. Achieving the Top Quartile risk factor levels would decrease premature mortality by 11.4%, healthcare expenditure by 6.2% and raise GDP by 1.3% in the OECD

Impact from aligning prevalence of all six risk factors to the Top Quartile levels on premature mortality (as a percentage of total premature mortality), health expenditure (as a percentage of total health expenditure) and GDP (as a percentage of total GDP), average over 2026-2050



Note: The impact shown is a combined effect of aligning all risk factors prevalence to the Top Quartile level and shows the total impact across all diseases (e.g. including the effects on other diseases like dementia and alcohol use disorder and including comorbidity effects) and on productivity. This figure reports the EU, OECD and G20 averages based on the total impact across countries in each group (e.g. overall premature mortality), implicitly weighting countries within these groups by their share of total impact when calculating the average.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/eybpz2

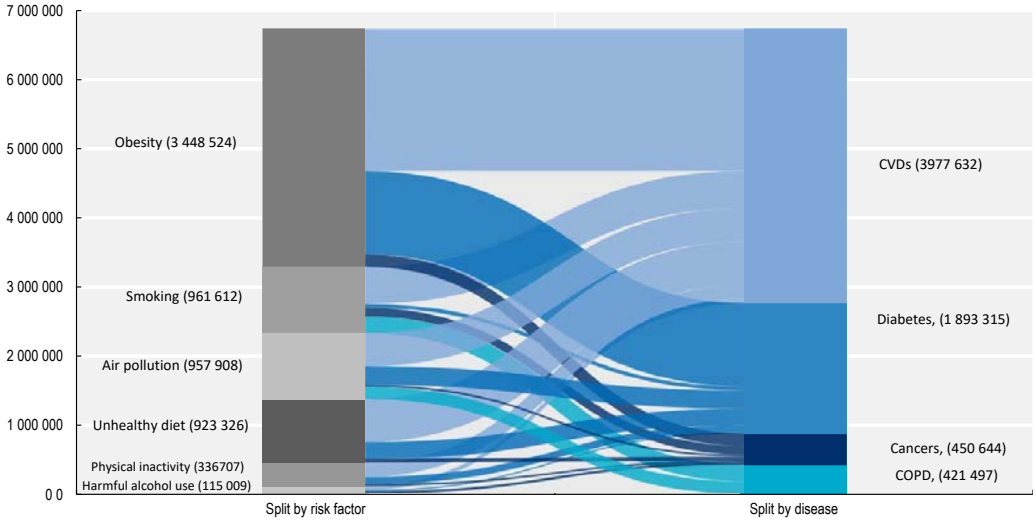
While these numbers may appear modest at first glance, their impact is consequential. A 11.4% drop in premature mortality means one person is saved from an early death every minute (every 3.5 minutes in the EU). A 6.2% decrease in healthcare expenditure is a total annual saving of USD PPP 317 billion, equivalent to more than the total healthcare expenditure of Italy (USD PPP 67 billion in the EU, equivalent to the healthcare expenditure of Austria) (OECD, 2025[1]; World Bank, 2024[2]). This is more than the average spending on all preventive care, which is around 3% of overall health spending across OECD countries (OECD, 2025[1]). A 1.3% increase in GDP across the OECD is nearly USD 1 trillion in additional economic output annually – comparable to adding the entire economies of Sweden and Portugal to the OECD's GDP (World Bank, 2024[3]). For the EU, a 1.4% GDP boost across the region equates to USD PPP 342 billion, equivalent to adding more than the entire economy of Finland to the EU's annual economic output (World Bank, 2024[4]). Moreover, even if the economic impact may be modest in some cases, the fact that prevention benefits individuals *and* yields measurable economic gains makes it valuable in itself.

Tackling obesity offers the greatest opportunity to reduce the NCD burden in the OECD and EU

For the OECD as a whole, obesity offers the greatest opportunity to reduce the NCD burden. Obesity accounts for 51% of the total impact of aligning risk factor prevalence to the Top Quartile level on new disease incidence (42% for the EU) (Figure 4.3). This is driven primarily by its link to CVDs and diabetes. Improvements in smoking, air pollution and diet account for 14% of the total impact each. Across the OECD, aligning risk factor prevalence to the Top Quartile would prevent 6.7 million new cases of NCDs every year, including nearly 4 million cases of CVDs, 2 million cases of diabetes and 500 000 new cancers. In the EU, it would prevent over 3.2 million cases of NCDs, including over 1 million cases of CVD, 1.8 million cases of diabetes and almost 150 000 new cancers (see Annex Figure 4.A.1 for EU results and Annex Figure 4.B.1 for G20 results).

Figure 4.3. Tackling obesity accounts for more than half the potential impact of action on risk factors

Impact of aligning risk factor prevalence to the Top Quartile level on the number of new NCD cases per year, broken down by risk factors and NCDs, total for the OECD, average over 2026-2050



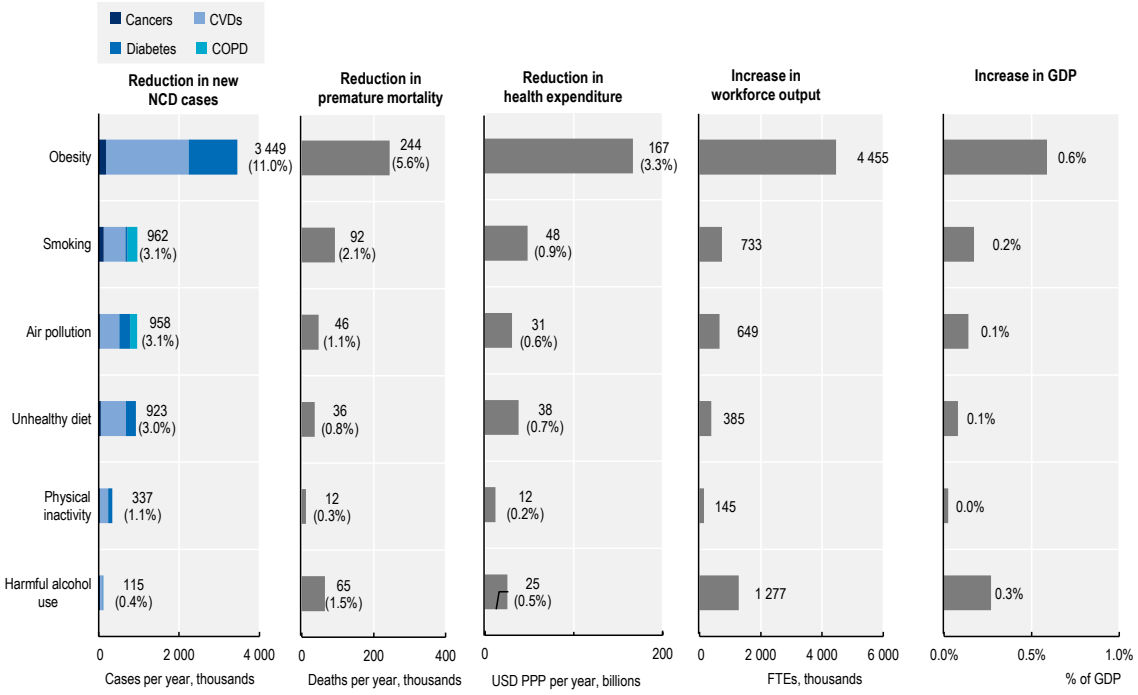
Note: The results compare the number of new NCDs per year in a business-as-usual scenario to one in which all countries achieve the Top Quartile risk factor levels and reflect the change in new NCD cases per year, averaged over 2026-2050. This change is shown split by risk factor and by disease. See Annex Figure 4.A.1 for EU level results and Annex Figure 4.B.1 for G20 results.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/hls51f

When looking at other measures of the disease burden, such as the impact of healthcare expenditure and GDP, obesity remains the most important risk factor (Figure 4.4). If all countries in the OECD were to achieve the Top Quartile level of obesity prevalence, this would avoid the occurrence of more than 3.4 million cases of NCDs per year, which corresponds to 11% of the total number of new NCD cases recorded each year across the OECD. Similarly, premature mortality would be reduced by 5.6%, and total health expenditure by 3.3%, on average between 2026 and 2050 (7.0%, 3.6% and 1.6%, respectively, for the EU). It would also increase the total OECD workforce output by the equivalent of 4.5 million workers and raise GDP by 0.6% on average (495 000 workers and 0.6% of GDP for the EU).

Figure 4.4. Action on obesity also has the greatest economic impact

NCD cases prevented (thousands and as a percentage of total new NCD cases), premature deaths avoided (thousands and as a percentage of total premature deaths), health expenditure saved (USD PPP billions and as a percentage of total health expenditure), workforce output increase (full-time equivalents), GDP increase (% of GDP), if all countries achieve the Top Quartile levels for risk factor prevalence, total for OECD countries, per year, average over 2026-2050



Note: Cases are specific for the four NCDs, while the impact on premature mortality, health expenditure, workforce output and GDP is a combined effect of the risk factor on all diseases (e.g. including the effects on other diseases like dementia and alcohol use disorder and including comorbidity effects) and on productivity. In this figure, percentages are calculated using OECD-wide totals, capturing the total impact across OECD countries rather than a simple average of country-level effects. For country-level results, see Annex 4.C.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/ibrf8l

While the impact of lower smoking prevalence, improved diet and less air pollution on the number of new NCD cases is similar, smoking has a greater impact on premature mortality, due to its strong link with cancer, which has a high case fatality rate compared to other major NCDs. Through its impact on productivity and labour force participation, harmful alcohol use has a relatively large impact on workforce output – and by extension on GDP.

Prevention delivers larger health and economic benefits than cure

To improve health and economic outcomes, there are different levels at which policy can act. Primary prevention aims to stop diseases before they occur, by promoting healthy lifestyles and reducing environmental risks. Once a disease has already developed, the focus should be on treating it early and effectively, to prevent complications or death. The quality of care for NCDs is partially reflected in the survival rates of those who become ill. As survival rates vary significantly across countries, there remains substantial scope to improve care for NCDs, in addition to preventing NCDs in the first place. This would reduce premature mortality from NCDs, which would in turn also increase labour force output and GDP.

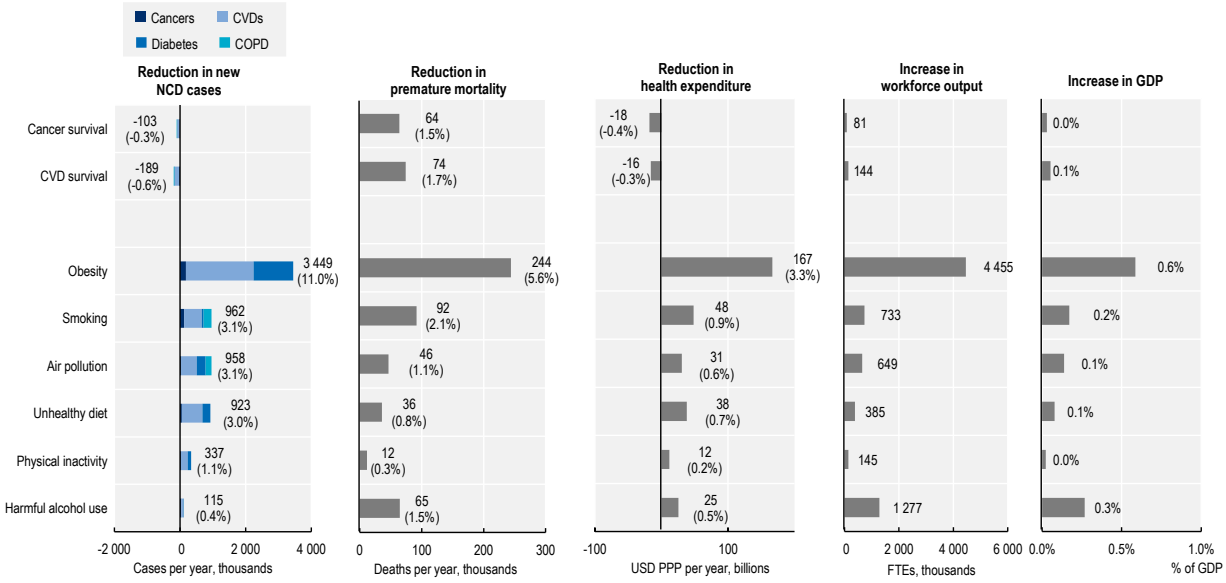
Aligning survival rates across OECD countries to the Top Quartile would reduce premature mortality from CVDs by 15%, and premature mortality from cancer by 9% (19% and 10% in the EU). Looking at overall premature mortality, aligning CVD survival rates would reduce premature mortality by about 1.7% (2.6% in the EU), while improved cancer survival rates would decrease NCD premature mortality by 1.5% (2.3% in the EU) (Figure 4.5) (see Annex Figure 4.A.1 and Annex Figure 4.B.1 for EU and G20 results respectively). However, aligning risk factors such as obesity and smoking to the Top Quartile yields even larger reductions in premature mortality. Moreover, the impact of addressing these risk factors on workforce participation and GDP is significantly greater than the gains achieved through improved survival rates. While better survival outcomes contribute meaningfully to health improvements, the economic benefits of reducing key risk factors are far more substantial.

This difference arises from several key reasons. First, the results suggest that there is less scope for improvement in survival rates, as these are already relatively similar across high-performing countries, meaning that aligning to the Top Quartile only delivers limited additional gains. In other words, there is less left to gain. Second, behavioural and metabolic risk factors affect multiple diseases simultaneously, so their improvement has a wider impact on overall health. Finally, risk factors also have a direct influence on productivity and economic performance, especially in the case of harmful alcohol use, which is closely linked to absenteeism and reduced work efficiency. As a result, tackling risk factors produces broader benefits for both public health and the economy than improving survival rates alone.

For some countries, focussing on improving survival rates does deliver the largest benefit in terms of premature mortality (Table 4.1). This is typically the case in countries where survival outcomes for cancer or CVDs are well below those of other countries, or where the potential gains from addressing risk factors are relatively modest. In these contexts, strengthening healthcare systems, expanding access to timely diagnosis and treatment, and improving disease management can substantially reduce premature mortality and close critical gaps in health outcomes. However, even in these countries, improving survival rates does not produce a significant economic gain. The broader economic returns from reducing key NCD risk factors outweighs the gains achievable from better survival in all countries analysed.

Figure 4.5. The potential health and economic gains from lower risk factor prevalence are greater than from improved survival

NCD cases prevented (thousands and as a percentage of total new NCD cases), premature deaths avoided (thousands and as a percentage of total premature deaths), health expenditure saved (USD PPP billions and as a percentage of total health expenditure), workforce output increase (full-time equivalents), GDP increase (% of GDP), if all countries achieve the Top Quartile levels for risk factor prevalence and for CVD and cancer survival rates, total for OECD countries, per year, average over 2026-2050



Note: Cancer and CVD survival reflect improvements in diseases management, whereas the final six rows capture gains arising from reduced risk-factor prevalence through prevention. The results compare a business-as-usual scenario to one in which countries achieve the Top Quartile risk factor prevalence or survival rates. Cases of NCDs are disease-specific, while the impact on premature mortality, health expenditure, workforce output and GDP is a combined effect of the risk factor on all diseases (e.g. including the effects on other diseases like dementia and alcohol use disorder and including comorbidity effects) and on productivity. The increase in health expenditure shown for improved survival rates represent the increased cost of people living with NCDs for longer and does not include any expenditure required to improve the survival rates. CVDs and cancer account for 90% of deaths from NCDs, and survival rates for COPD and diabetes were therefore not considered. In this figure, percentages are calculated using OECD-wide totals, capturing the total impact across OECD countries rather than a simple average of country-level effects. Please see Annex 4.A for results for the European Union and Annex Figure 4.B.2 for results for the G20.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/5ca6lm

Table 4.1. Reducing key NCD risk factors is an economic priority in all countries

Country-specific top three priority areas in terms of reduction of premature mortality, increase in workforce output and increase in average GDP, based on the impact of aligning risk factor prevalence and CVD and cancer survival rates to the Top Quartile level, average over 2026-2050

	Premature Mortality			Workforce output			GDP		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Argentina	Obesity	Cancer survival	CVD survival	Obesity	Smoking	Harmful alcohol use	Obesity	Smoking	Harmful alcohol use
Australia	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet
Austria	Harmful alcohol use	Smoking	Cancer survival	Harmful alcohol use	Smoking	Air pollution	Harmful alcohol use	Smoking	Air pollution
Belgium	Smoking	Cancer survival	Harmful alcohol use	Harmful alcohol use	Obesity	Smoking	Harmful alcohol use	Obesity	Smoking
Brazil	CVD survival	Obesity	Cancer survival	Obesity	CVD survival	Unhealthy diet	Obesity	Harmful alcohol use	CVD survival
Bulgaria	CVD survival	Cancer survival	Obesity	Smoking	Harmful alcohol use	Obesity	Smoking	Harmful alcohol use	Obesity
Canada	Obesity	Harmful alcohol use	Cancer survival	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet
Chile	Obesity	Air pollution	Cancer survival	Obesity	Air pollution	Smoking	Obesity	Air pollution	Smoking
China	CVD survival	Air pollution	Smoking	Air pollution	Smoking	CVD survival	Air pollution	Smoking	CVD survival
Colombia	CVD survival	Obesity	Air pollution	Obesity	Air pollution	CVD survival	Obesity	Air pollution	CVD survival
Costa Rica	Obesity	CVD survival	Air pollution	Obesity	Air pollution	CVD survival	Obesity	Air pollution	CVD survival
Croatia	Obesity	Smoking	CVD survival	Obesity	Smoking	Air pollution	Obesity	Smoking	Air pollution
Cyprus	Smoking	Obesity	Air pollution	Obesity	Smoking	Air pollution	Obesity	Smoking	Air pollution
Czechia	Obesity	CVD survival	Smoking	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
Denmark	Cancer survival	Smoking	CVD survival	Harmful alcohol use	Unhealthy diet	Smoking	Harmful alcohol use	Unhealthy diet	Smoking
Estonia	CVD survival	Smoking	Obesity	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
Finland	CVD survival	Obesity	Smoking	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
France	Smoking	Harmful alcohol use	Cancer survival	Harmful alcohol use	Smoking	Unhealthy diet	Harmful alcohol use	Smoking	Unhealthy diet
Germany	Harmful alcohol use	Obesity	CVD survival	Harmful alcohol use	Obesity	Unhealthy diet	Harmful alcohol use	Obesity	Unhealthy diet
Greece	Obesity	Smoking	Air pollution	Obesity	Smoking	Air pollution	Obesity	Smoking	Air pollution
Hungary	Obesity	CVD survival	Smoking	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
Iceland	Obesity	Unhealthy diet	Cancer survival	Obesity	Unhealthy diet	Physical activity	Obesity	Unhealthy diet	Physical activity
India	CVD survival	Air pollution	Smoking	Air pollution	Smoking	CVD survival	Air pollution	Smoking	CVD survival
Indonesia	CVD survival	Smoking	Air pollution	Smoking	Air pollution	CVD survival	Smoking	Air pollution	CVD survival
Ireland	Obesity	Cancer survival	Harmful alcohol use	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet
Israel	Cancer survival	Obesity	Air pollution	Obesity	Air pollution	Smoking	Obesity	Air pollution	Smoking
Italy	Smoking	Air pollution	Obesity	Air pollution	Smoking	Unhealthy diet	Air pollution	Smoking	Unhealthy diet

	Premature Mortality			Workforce output			GDP		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Japan	Smoking	Air pollution	Unhealthy diet	Smoking	Air pollution	Physical activity	Smoking	Air pollution	Unhealthy diet
Korea	Air pollution	CVD survival	Smoking	Air pollution	Smoking	Harmful alcohol use	Air pollution	Smoking	Harmful alcohol use
Latvia	CVD survival	Obesity	Smoking	Harmful alcohol use	Obesity	Smoking	Harmful alcohol use	Obesity	Smoking
Lithuania	CVD survival	Obesity	Cancer survival	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
Luxembourg	Cancer survival	Harmful alcohol use	Smoking	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet	Obesity
Malta	Obesity	CVD survival	Unhealthy diet	Obesity	Smoking	Air pollution	Obesity	Smoking	Air pollution
Mexico	Obesity	CVD survival	Air pollution	Obesity	Air pollution	CVD survival	Obesity	Air pollution	CVD survival
Netherlands	Smoking	Unhealthy diet	Cancer survival	Smoking	Unhealthy diet	Air pollution	Smoking	Unhealthy diet	Air pollution
New Zealand	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet
Norway	Cancer survival	Unhealthy diet	CVD survival	Obesity	Unhealthy diet	Physical activity	Obesity	Unhealthy diet	Physical activity
Peru	Obesity	Air pollution	CVD survival	Obesity	Air pollution	CVD survival	Obesity	Air pollution	CVD survival
Poland	Obesity	CVD survival	Harmful alcohol use	Obesity	Harmful alcohol use	Air pollution	Obesity	Harmful alcohol use	Air pollution
Portugal	Obesity	Cancer survival	CVD survival	Obesity	Smoking	Harmful alcohol use	Obesity	Smoking	Harmful alcohol use
Romania	Obesity	Harmful alcohol use	CVD survival	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
Saudi Arabia	Obesity	CVD survival	Air pollution	Obesity	Air pollution	Smoking	Obesity	Air pollution	Smoking
Slovak Republic	Obesity	CVD survival	Smoking	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
Slovenia	Harmful alcohol use	Cancer survival	Obesity	Harmful alcohol use	Obesity	Air pollution	Harmful alcohol use	Obesity	Air pollution
South Africa	CVD survival	Obesity	Cancer survival	Obesity	Harmful alcohol use	Air pollution	Obesity	Harmful alcohol use	Air pollution
Spain	Smoking	Cancer survival	Obesity	Smoking	Unhealthy diet	Harmful alcohol use	Smoking	Unhealthy diet	Harmful alcohol use
Sweden	Smoking	Cancer survival	Harmful alcohol use	Harmful alcohol use	Smoking	Unhealthy diet	Harmful alcohol use	Smoking	Unhealthy diet
Switzerland	Smoking	Harmful alcohol use	Cancer survival	Harmful alcohol use	Smoking	Unhealthy diet	Harmful alcohol use	Smoking	Unhealthy diet
Türkiye	Obesity	CVD survival	Smoking	Obesity	Air pollution	Smoking	Obesity	Air pollution	Smoking
United Kingdom	Obesity	Cancer survival	Harmful alcohol use	Obesity	Harmful alcohol use	Unhealthy diet	Obesity	Harmful alcohol use	Unhealthy diet
United States	Obesity	Smoking	Harmful alcohol use	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
OECD	Obesity	Smoking	CVD survival	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
EU	Obesity	Smoking	CVD survival	Obesity	Harmful alcohol use	Smoking	Obesity	Harmful alcohol use	Smoking
G20	CVD survival	Air pollution	Smoking	Air pollution	Obesity	Smoking	Obesity	Air pollution	Harmful alcohol use

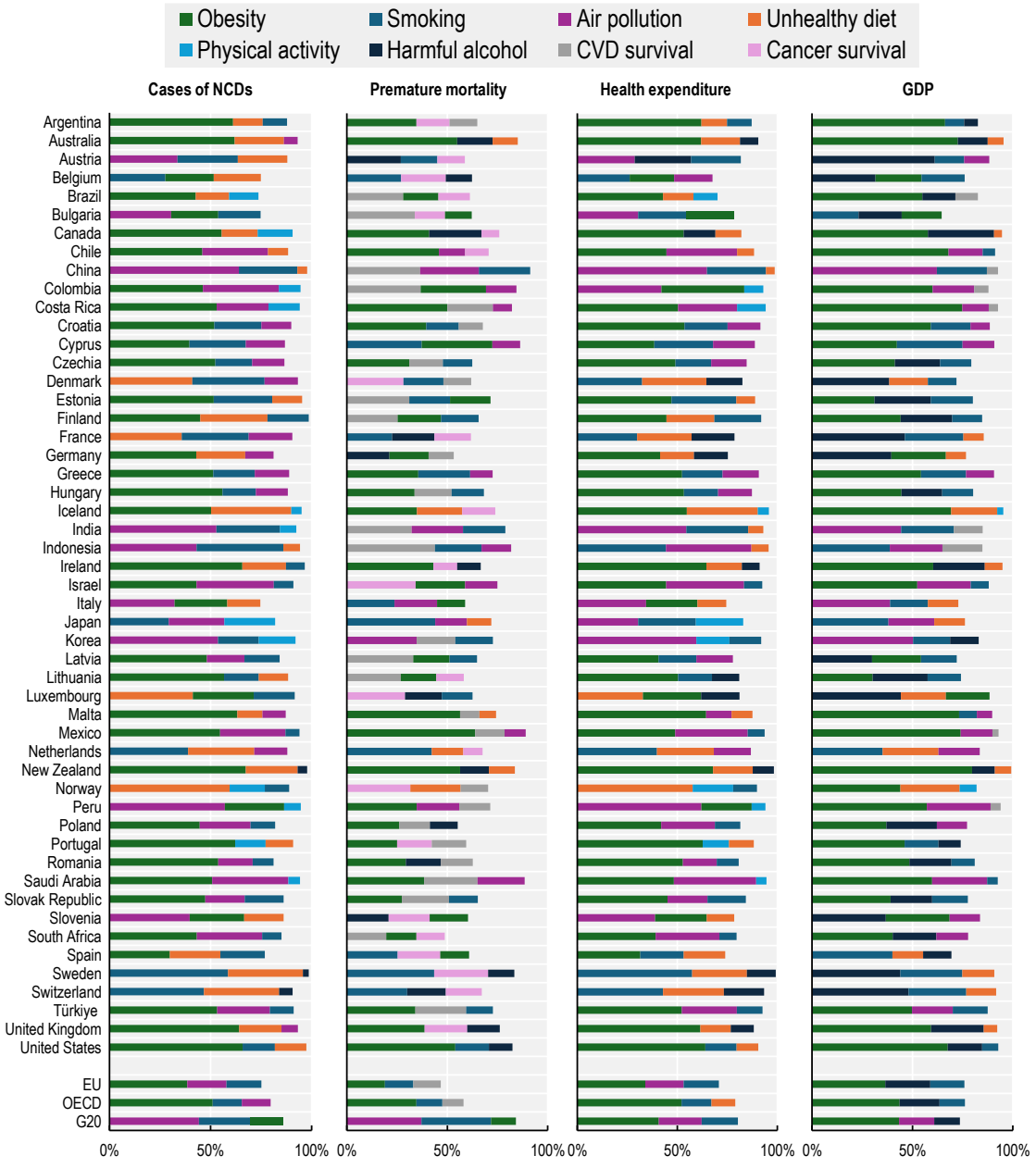
Note: For detailed country-level results, please see Annex Figure 4.C.1.
Source: OECD SPHeP NCDs model, 2025.

All countries can achieve big results by focussing on one or two key priorities

While the greatest potential for the OECD and EU as a whole lies with obesity, country-specific priorities vary. But regardless of which risk factors take precedence and what outcomes are considered, all countries can achieve substantial improvements by concentrating on just one or two top priorities. On average across the 51 countries analysed, addressing the leading priority alone delivers around 50% of the total potential impact on cases, healthcare expenditure and GDP (Figure 4.6). Tackling the top two covers roughly 75%, while the top three account for about 90% of the total. For premature mortality, where survival rates offer additional policy levers, addressing the top two priorities generates 50% of the impact on average. These findings highlight the importance of setting clear priorities and allocating resources effectively to maximise impact.

Figure 4.6. Tackling the top three priorities in terms of reducing risk factors or improving NCDs survival rates for each country delivers the large majority of the potential impact on both health and economy

Proportion of the total impact – arising from bringing all risk factor prevalence and CVD and cancer survival rates to the Top Quartile level – that is achieved by the top three priority areas



Note: Improved survival rates do not affect the indicator on cases of NCDs and increase healthcare cost as people live longer with these conditions. Categories are shown in order of their relative importance in the country. In this figure, EU, OECD and G20 averages reflect the overall impact of addressing shared priorities across countries within each group respectively, which can result in a lower value than the average of country-specific priorities. For detailed country-level results, please see Annex 4.A.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/8zejr9

In around 2 out of 3 countries, obesity provides the greatest opportunity to reduce the number of new cases of NCDs, health expenditure and increase GDP. Smoking, diet and air pollution are also common risk factor priorities. When it comes to reducing premature mortality, obesity remains the top priority in about half of all countries, but CVD survival rates also play a major role. In 11 countries (22%), it is the top priority to reduce premature mortality, and in more than half of all countries it is in the top three. Cancer survival rates are also in the top three of nearly half the countries, but often as a secondary or tertiary priority.

It is important to note that, while focussing on the risk factors where the largest health and economic gains can be achieved is important given the growing burden of NCDs and strain on health systems, this should not lead to neglecting other risk factors that may have a smaller aggregate impact but still carry significant consequences for certain groups. A balanced strategy should therefore combine population-level prioritisation with targeted interventions for vulnerable or high-risk groups. Similarly, while most gains may come from strengthening primary prevention, investment in secondary and tertiary prevention remains essential to ensure fair access to care and better outcomes for those already affected by disease.

Societal co-benefits further strengthen the case for action on NCD risk factors

In addition to reducing the burden of NCDs, action on risk factors such as harmful alcohol use and diet can produce wider societal benefits. Policies on diet can help reduce emissions associated with the food system, and policies to prevent harmful alcohol use can improve safety by reducing road traffic accidents and violence. These societal co-benefits make an even stronger case for action.

Healthier diets would reduce emissions by the equivalent of 58 million cars in the OECD

There are strong links between diets and emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). About one-third of all anthropogenic (human-caused) emissions are linked to food systems (Crippa et al., 2021[5]). This includes land-use, production (farming and harvesting), processing, transporting and distribution, packaging, cooking, and disposing of waste. To reflect the relationship between diet and emissions, the OECD SPHeP NCDs model links dietary risk factors to emissions using data from the WHO Diet Impact Assessment model (WHO, 2023[6]).

In the Top Quartile scenario, where consumption of meat, fruit, vegetables and whole grains are aligned to the best 25% of countries across the OECD and EU, this is estimated to reduce emissions by 243 Mt of CO_2-equivalent per year, for the OECD as a whole (56 Mt for the EU). This is the amount of emissions associated with more than 58 million gasoline-powered passenger vehicles (US EPA, 2023[7]) or the number of cars in Germany and the Netherlands combined (13 million in the EU).

Addressing harmful alcohol use could prevent 5% of premature deaths due to homicide and road traffic accidents in the OECD

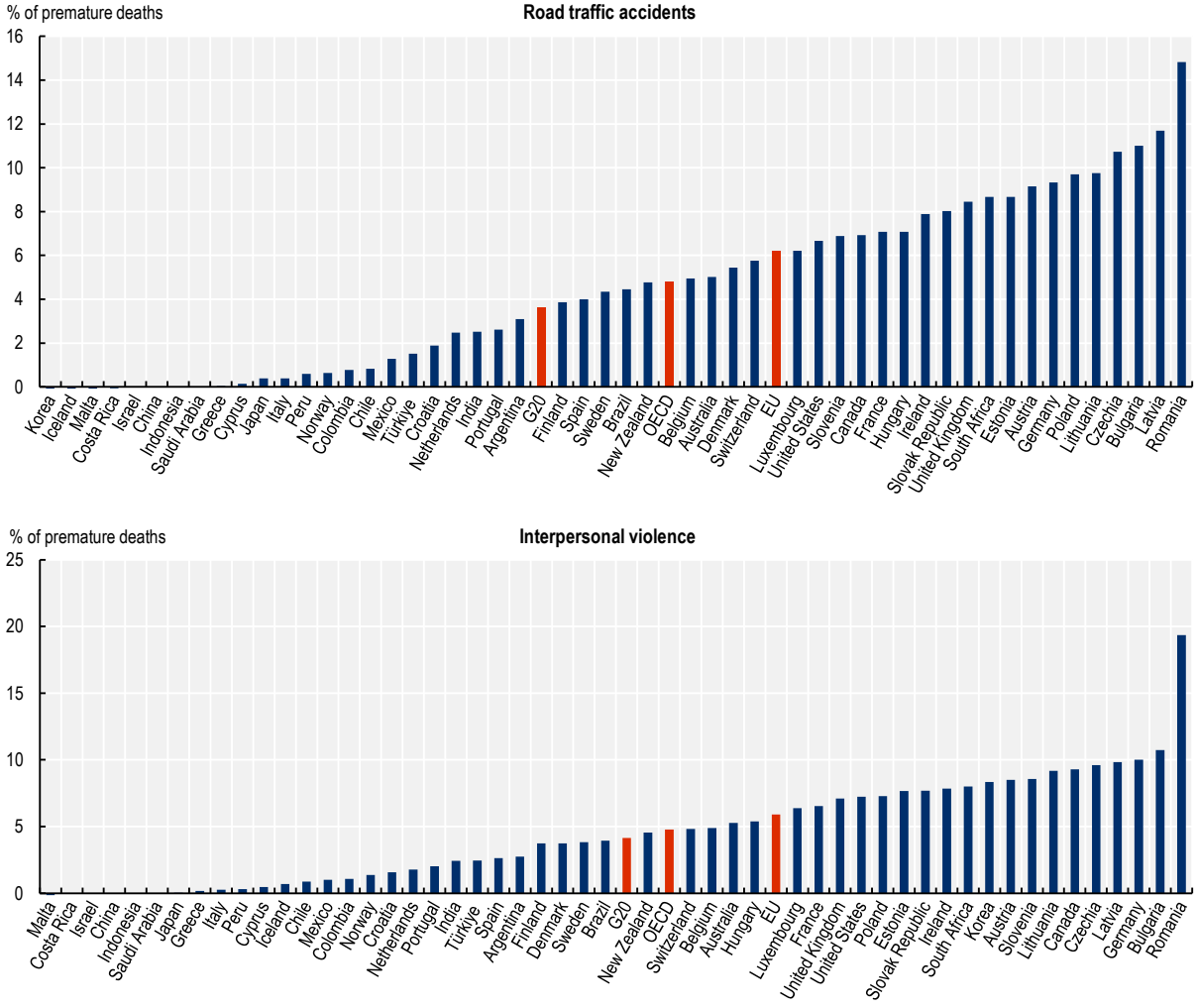
Harmful alcohol use has a direct impact on societal safety, as it can lead to road traffic accidents and violence due to its effects on cognitive function, co-ordination, and behaviour. When individuals consume too much alcohol, it impairs their ability to make rational decisions, slows reaction times, and impairs motor skills, all of which are critical for safe driving. Similarly, alcohol can lower inhibitions and increase impulsivity, making individuals more prone to engage in confrontations and escalate conflicts. In some cases, alcohol-induced aggression can lead to physical altercations, assaults, and even homicides.

If all countries were to align total alcohol consumption to the level observed in the best performing 25% of OECD and EU countries, this would prevent a total of 5 367 premature deaths due to road traffic accidents per year in the OECD (2 113 in the EU). This is 4.8% of the total premature mortality from road traffic accidents (6.2% in the EU) (Figure 4.7). It would also prevent 2 358 premature deaths due to interpersonal

violence each year in the OECD, 4.8% of the total premature mortality from this cause (327 and 5.9% in the EU). Variation between countries is driven both by current total alcohol consumption levels and premature mortality rates.

Figure 4.7. Action on harmful alcohol use could reduce premature mortality from road traffic accidents and interpersonal violence by around 5%

Reduction in premature mortality from road traffic accidents and interpersonal violence (as a percentage of total premature mortality from those causes) from achieving Top Quartile total alcohol consumption level, average over 2026-2050



Note: In this figure, EU, OECD and G20 averages are reported as simple (i.e. unweighted) means across member countries.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/9ng62u

References

Crippa, M. et al. (2021), "Food systems are responsible for a third of global anthropogenic GHG emissions", *Nature Food*, Vol. 2/3, pp. 198-209, https://doi.org/10.1038/s43016-021-00225-9. [5]

OECD (2025), *Health at a Glance 2025: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/8f9e3f98-en. [1]

US EPA (2023), *Greenhouse Gas Equivalencies Calculator*, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results (accessed on 30 November 2023). [7]

WHO (2023), *The Diet Impact Assessment model: a tool for analyzing the health, environmental and affordability implications of dietary change*, World Health Organization Regional Office for Europe, Copenhagen. [6]

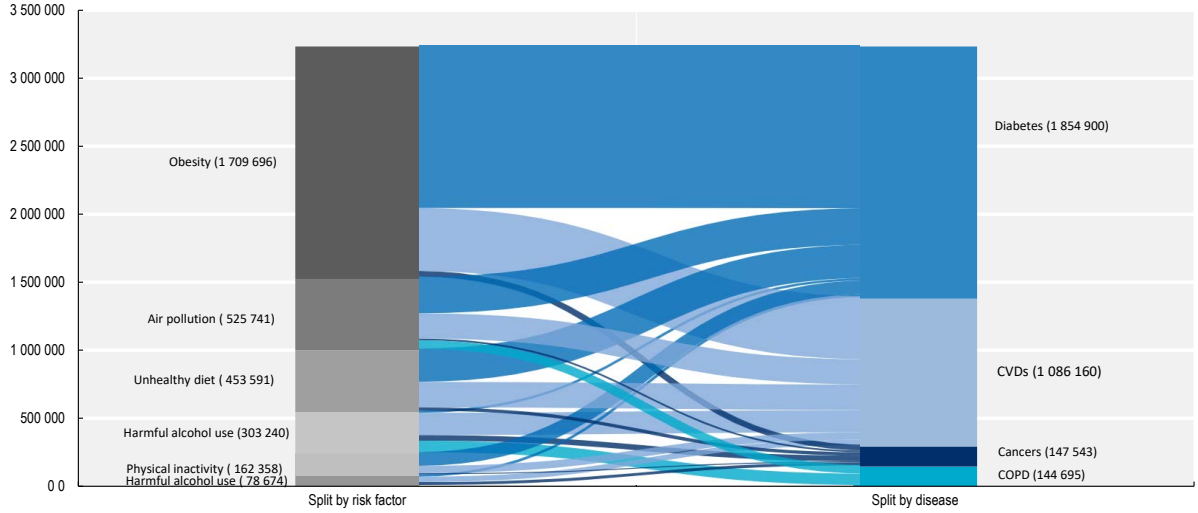
World Bank (2024), *GDP, PPP (constant 2021 international $) - European Union, Finland | Data*, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD?locations=EU-FI (accessed on 24 March 2026). [4]

World Bank (2024), *GDP, PPP (constant 2021 international $) - OECD members*, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD?end=2024&locations=OE-PT-SE&most_recent_value_desc=false&start=2024&view=bar&year=2023 (accessed on 10 March 2026). [3]

World Bank (2024), *GDP, PPP (constant 2021 international $) - OECD members, Portugal, Sweden, Italy, Spain, France, Denmark, Belgium, Poland, Austria | Data*, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD?end=2022&locations=OE-PT-SE-IT-ES-FR-DK-BE-PL-AT&most_recent_year_desc=false&start=2022&view=bar&year=2023 (accessed on 24 March 2026). [2]

Annex 4.A. EU results

Annex Figure 4.A.1. Tackling obesity accounts for more than half the potential impact of action on risk factors in the EU

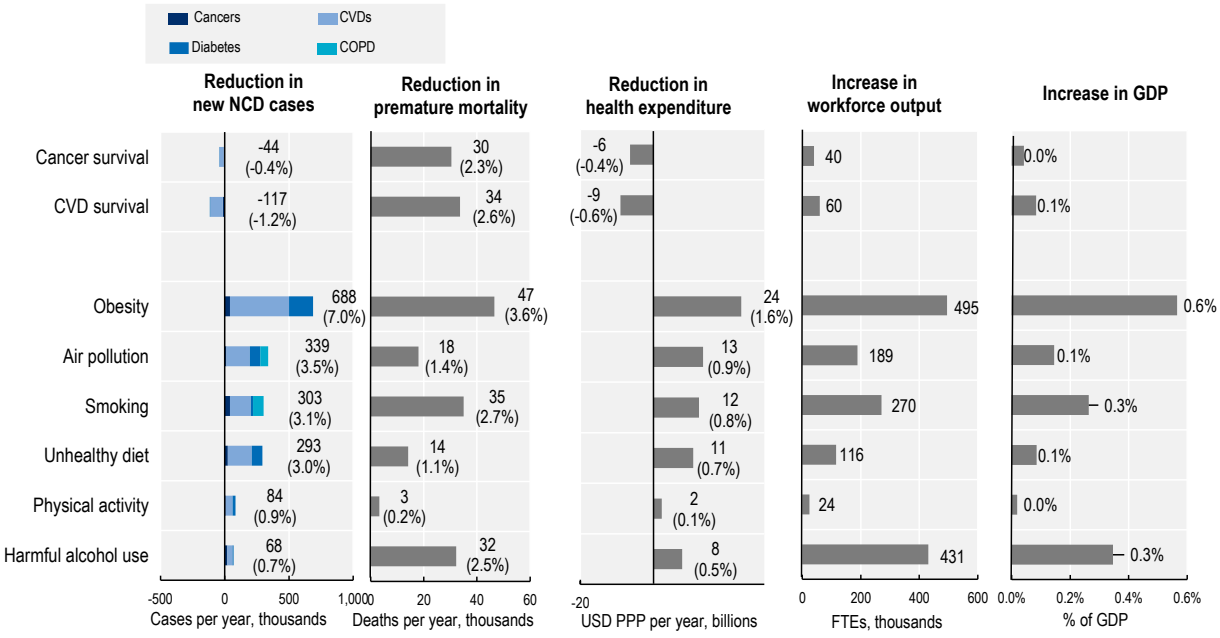


Note: The results compare the number of new NCDs per year in a business-as-usual scenario to one in which all countries achieve the Top Quartile risk factor levels and reflect the change in new NCD cases per year, averaged over 2026-2050. This change is shown split by risk factor and by disease.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/0gqrtc

Annex Figure 4.A.2. The potential economic gains from preventing disease are greater than from improving survival in the EU

NCD cases prevented (thousands and as a percentage of total new NCD cases), premature deaths avoided (thousands and as a percentage of total premature deaths), health expenditure saved (USD PPP billions and as a percentage of total health expenditure), workforce output increase (full-time equivalents), GDP increase (% of GDP), if all countries achieve the Top Quartile levels for risk factor prevalence and for CVD and cancer survival rates, total for EU countries, per year, average over 2026-2050



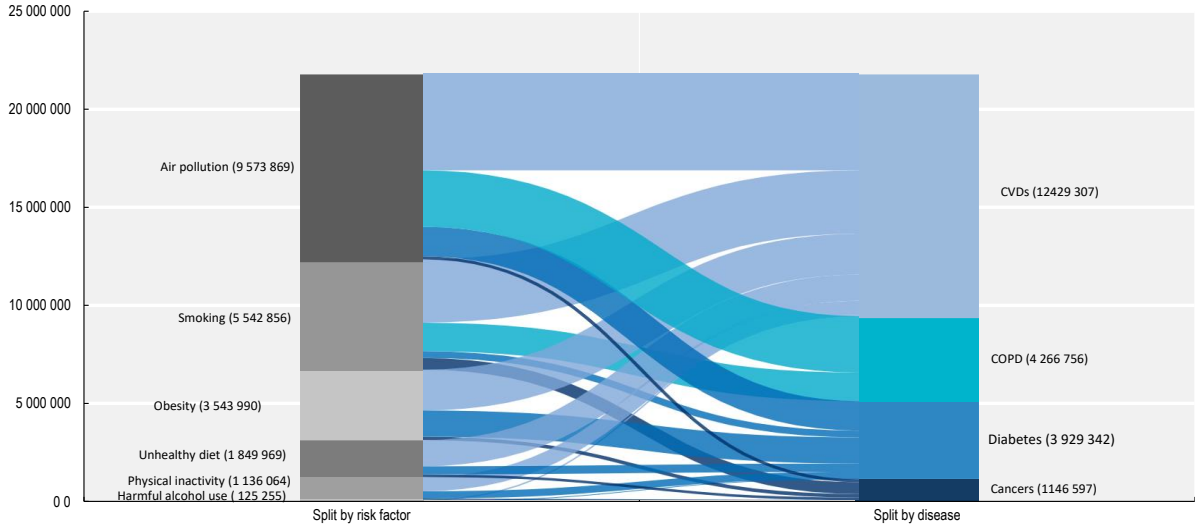
Note: Cancer and CVD survival reflect improvements in diseases management, whereas the final six rows capture gains arising from reduced risk-factor prevalence through prevention.The results compare a business-as-usual scenario to one in which countries achieve the Top Quartile risk factor prevalence or survival rates.Cases of NCDs are disease-specific, while the impact on premature mortality, health expenditure, workforce output and GDP is a combined effect of the risk factor on all diseases (e.g. including the effects on other diseases like dementia and alcohol use disorder, and including comorbidity effects) and on productivity. The increase in health expenditure shown for improved survival rates represent the increased cost of people living with NCDs for longer and does not include any expenditure required to improve the survival rates. CVDs and cancer account for 90% of deaths from NCDs, and survival rates for COPD and diabetes were therefore not considered. In this figure, percentages are calculated using EU-wide totals, capturing the total impact across EU countries rather than a simple average of country-level effects.

Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/578ve4

Annex 4.B. G20 results

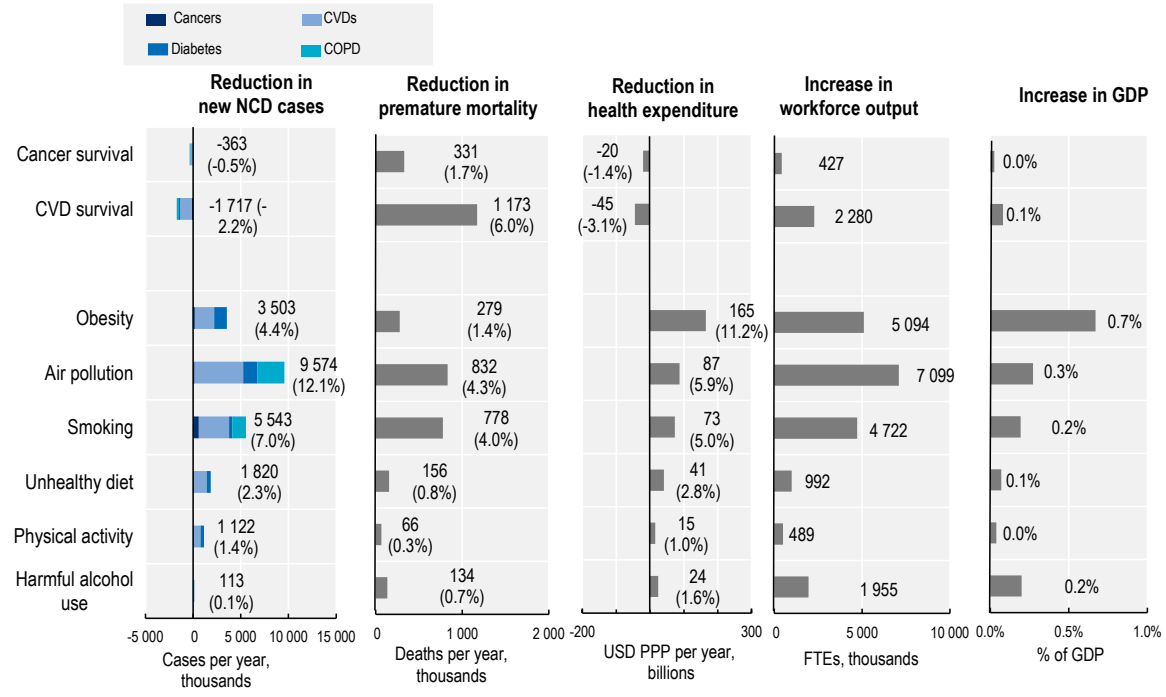
Annex Figure 4.B.1. Tackling air pollution offers the greatest potential impact of action on risk factors in the G20



Note: The results compare the number of new NCDs per year in a business-as-usual scenario to one in which all countries achieve the Top Quartile risk factor levels and reflect the change in new NCD cases per year, averaged over 2026-2050. This change is shown split by risk factor and by disease.
Source: OECD SPHeP NCDs model, 2025.

Annex Figure 4.B.2. The potential economic gains from preventing disease are greater than from improving survival in the G20

NCD cases prevented (thousands and as a percentage of total new NCD cases), premature deaths avoided (thousands and as a percentage of total premature deaths), health expenditure saved (USD PPP billions and as a percentage of total health expenditure), workforce output increase (full-time equivalents), GDP increase (% of GDP), if all countries achieve the Top Quartile levels for risk factor prevalence and for CVD and cancer survival rates, total for G20 countries, per year, average over 2026-2050



Note: Cancer and CVD survival reflect improvements in diseases management, whereas the final six rows capture gains arising from reduced risk-factor prevalence through prevention. The results compare a business-as-usual scenario to one in which countries achieve the Top Quartile risk factor prevalence or survival rates. Cases of NCDs are disease-specific, while the impact on premature mortality, health expenditure, workforce output and GDP is a combined effect of the risk factor on all diseases (e.g. including the effects on other diseases like dementia and alcohol use disorder, and including comorbidity effects) and on productivity. The increase in health expenditure shown for improved survival rates represent the increased cost of people living with NCDs for longer and does not include any expenditure required to improve the survival rates. CVDs and cancer account for 90% of deaths from NCDs, and survival rates for COPD and diabetes were therefore not considered. In this figure, percentages are calculated using G20-wide totals, capturing the total impact across G20 countries rather than a simple average of country-level effects.

Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/0xpjrz

Annex 4.C. Country-level results

Annex Figure 4.C.1. Impact of achieving the Top Quartile rates by country

Premature deaths avoided per year (number and as a percentage of total premature deaths), annual health expenditure saved (USD PPP millions and as a percentage of total health expenditure), GDP increase (% of GDP), if country achieves the Top Quartile rate for each risk factor and survival rate, average over 2026-2050

Argentina	Premature mortality	Health expenditure	GDP
Obesity	13,274 (7%)	3,948.4m (4.0%)	1.4%
Smoking	3,202 (2%)	782.9m (0.8%)	0.2%
Air pollution	742 (0%)	366.8m (0.4%)	0.1%
Unhealthy diet	1,995 (1%)	822.8m (0.8%)	0.1%
Physical activity	532 (0%)	290.2m (0.3%)	0.0%
Harmful alcohol use	1,647 (1%)	161.0m (0.2%)	0.1%
CVD survival	5,323 (3%)	-1,112.3m (-1.1%)	0.1%
Cancer survival	6,287 (4%)	-760.1m (-0.8%)	0.1%

Australia	Premature mortality	Health expenditure	GDP
Obesity	3,624 (7%)	3,128.0m (3.2%)	0.8%
Smoking	16 (0%)	58.2m (0.1%)	0.0%
Air pollution	246 (0%)	329.9m (0.3%)	0.0%
Unhealthy diet	827 (1%)	979.8m (1.0%)	0.1%
Physical activity	62 (0%)	96.5m (0.1%)	0.0%
Harmful alcohol use	1,169 (2%)	458.6m (0.5%)	0.2%
CVD survival	111 (0%)	-39.0m (0.0%)	0.0%
Cancer survival	554 (1%)	-104.8m (-0.1%)	0.0%

Austria	Premature mortality	Health expenditure	GDP
Obesity	32 (0%)	28.8m (0.1%)	0.0%
Smoking	575 (2%)	348.5m (0.9%)	0.1%
Air pollution	286 (1%)	400.2m (1.0%)	0.1%
Unhealthy diet	206 (1%)	215.0m (0.6%)	0.1%
Physical activity	8 (0%)	11.8m (0.0%)	0.0%
Harmful alcohol use	844 (3%)	394.5m (1.0%)	0.5%
CVD survival	340 (1%)	-193.2m (-0.5%)	0.0%
Cancer survival	429 (2%)	-176.1m (-0.5%)	0.0%

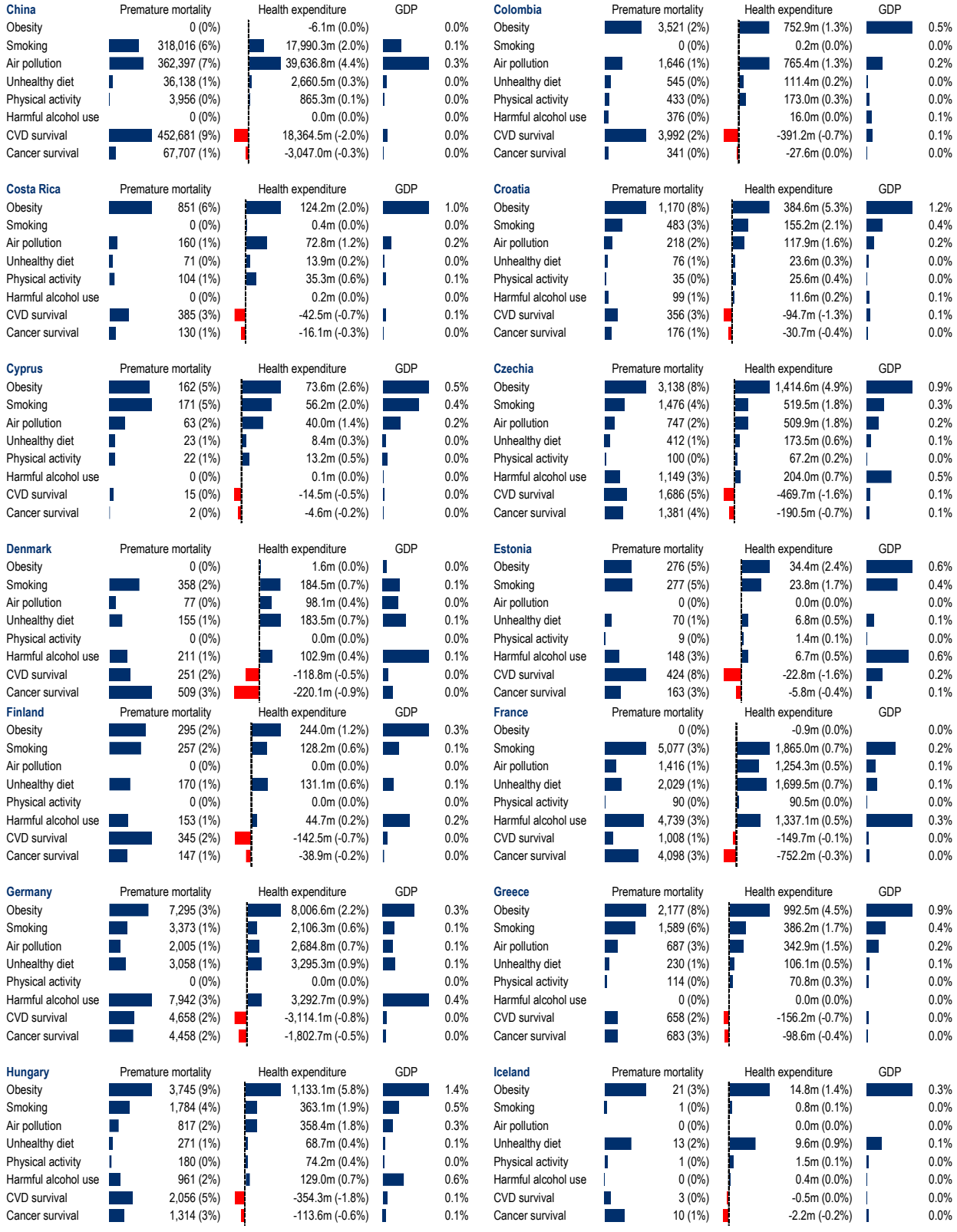
Belgium	Premature mortality	Health expenditure	GDP
Obesity	411 (1%)	411.4m (0.9%)	0.2%
Smoking	1,144 (4%)	485.7m (1.1%)	0.2%
Air pollution	328 (1%)	355.2m (0.8%)	0.1%
Unhealthy diet	320 (1%)	342.2m (0.8%)	0.1%
Physical activity	29 (0%)	56.1m (0.1%)	0.0%
Harmful alcohol use	549 (2%)	202.1m (0.4%)	0.3%
CVD survival	511 (2%)	-196.6m (-0.4%)	0.0%
Cancer survival	944 (3%)	-333.4m (-0.7%)	0.0%

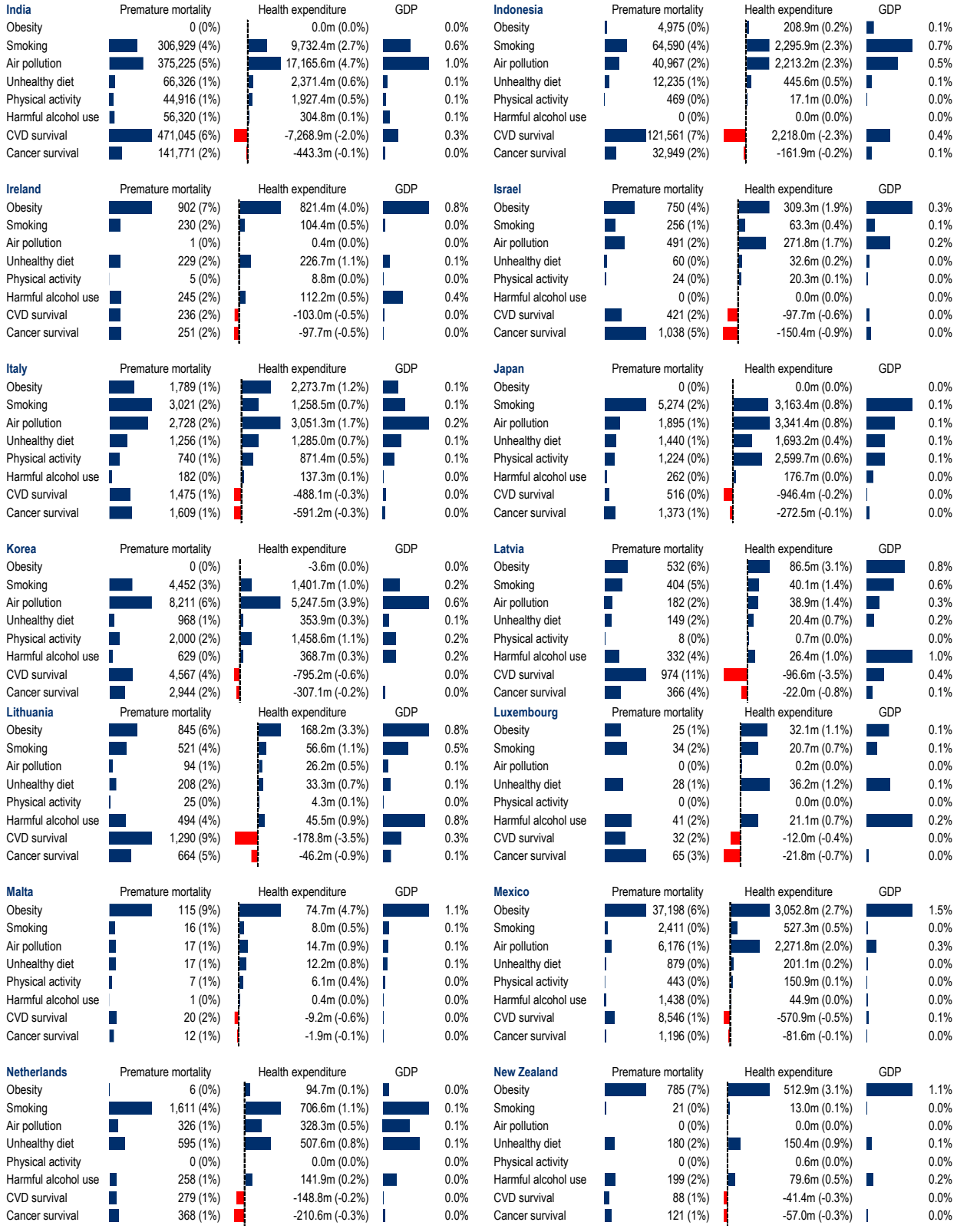
Brazil	Premature mortality	Health expenditure	GDP
Obesity	30,453 (3%)	4,151.1m (1.6%)	0.8%
Smoking	7,723 (1%)	1,085.6m (0.4%)	0.0%
Air pollution	4,399 (0%)	1,103.4m (0.4%)	0.1%
Unhealthy diet	8,306 (1%)	1,464.5m (0.6%)	0.1%
Physical activity	4,492 (0%)	1,163.1m (0.5%)	0.0%
Harmful alcohol use	15,003 (2%)	713.9m (0.3%)	0.2%
CVD survival	48,508 (5%)	-3,413.7m (-1.3%)	0.2%
Cancer survival	27,265 (3%)	-1,453.6m (-0.6%)	0.1%

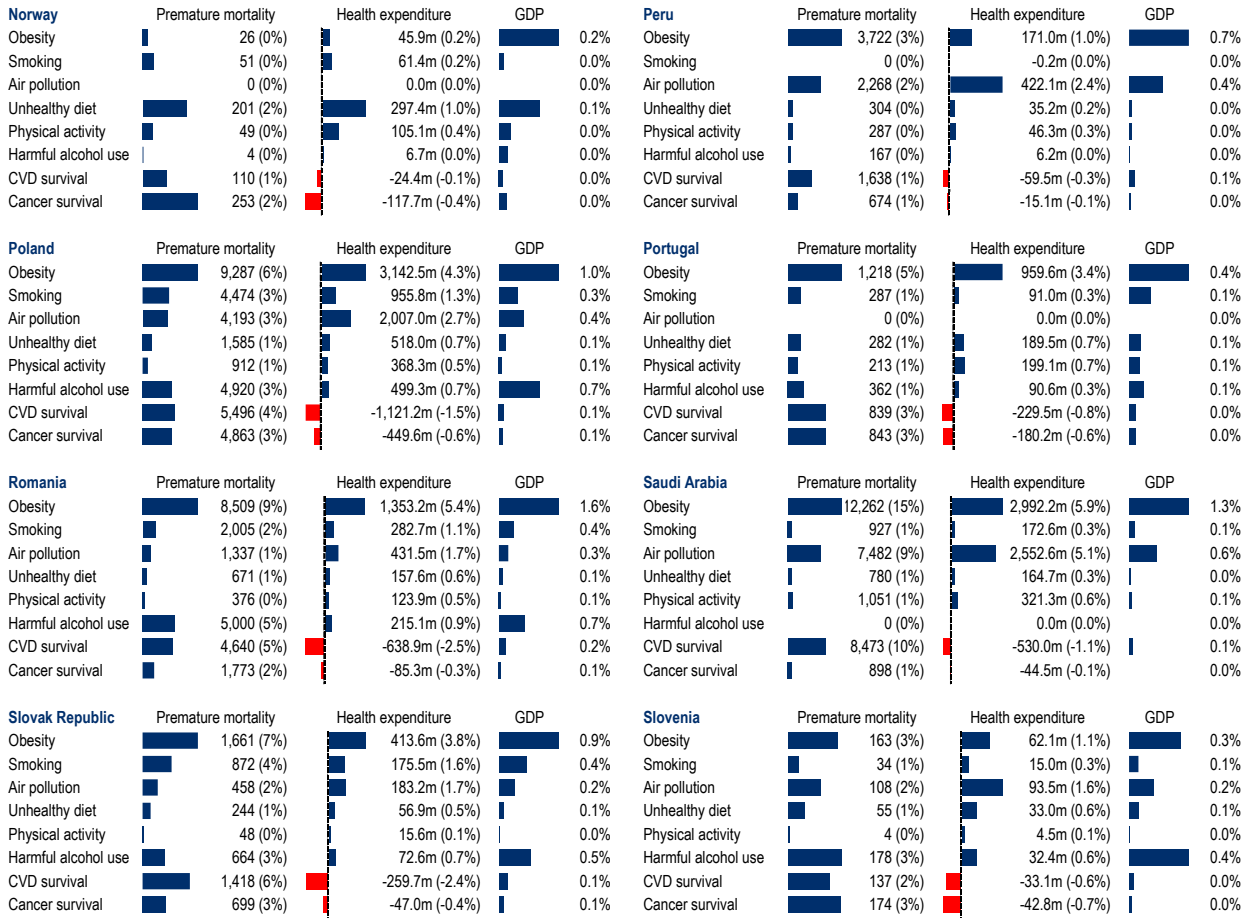
Bulgaria	Premature mortality	Health expenditure	GDP
Obesity	1,431 (4%)	186.8m (1.7%)	0.6%
Smoking	1,279 (4%)	190.7m (1.7%)	0.7%
Air pollution	1,030 (3%)	238.8m (2.2%)	0.5%
Unhealthy diet	458 (1%)	70.0m (0.6%)	0.1%
Physical activity	199 (1%)	34.0m (0.3%)	0.0%
Harmful alcohol use	1,082 (3%)	66.7m (0.6%)	0.7%
CVD survival	3,625 (11%)	-490.4m (-4.5%)	0.3%
Cancer survival	1,598 (5%)	-88.9m (-0.8%)	0.2%

Canada	Premature mortality	Health expenditure	GDP
Obesity	4,635 (4%)	3,375.4m (2.0%)	0.7%
Smoking	82 (0%)	101.4m (0.1%)	0.0%
Air pollution	165 (0%)	234.7m (0.1%)	0.0%
Unhealthy diet	702 (1%)	822.4m (0.5%)	0.0%
Physical activity	497 (0%)	812.8m (0.5%)	0.0%
Harmful alcohol use	2,957 (3%)	1,013.3m (0.6%)	0.4%
CVD survival	296 (0%)	-103.5m (-0.1%)	0.0%
Cancer survival	1,001 (1%)	-509.6m (-0.3%)	0.0%

Chile	Premature mortality	Health expenditure	GDP
Obesity	5,120 (8%)	1,276.7m (3.8%)	1.6%
Smoking	491 (1%)	162.5m (0.5%)	0.1%
Air pollution	1,452 (2%)	1,016.8m (3.0%)	0.4%
Unhealthy diet	461 (1%)	241.9m (0.7%)	0.1%
Physical activity	197 (0%)	138.5m (0.4%)	0.0%
Harmful alcohol use	251 (0%)	34.5m (0.1%)	0.0%
CVD survival	575 (1%)	-95.9m (-0.3%)	0.0%
Cancer survival	1,312 (2%)	-129.2m (-0.4%)	0.0%


China
Premature mortality
Health expenditure
GDP
Obesity 0 (0%) -6.1m (0.0%) 0.0%
Smoking 318,016 (6%) 17,990.3m (2.0%) 0.1%
Air pollution 362,397 (7%) 39,636.8m (4.4%) 0.3%
Unhealthy diet 36,138 (1%) 2,660.5m (0.3%) 0.0%
Physical activity 3,956 (0%) 865.3m (0.1%) 0.0%
Harmful alcohol use 0 (0%) 0.0m (0.0%) 0.0%
CVD survival 452,681 (9%) 18,364.5m (-2.0%) 0.0%
Cancer survival 67,707 (1%) -3,047.0m (-0.3%) 0.0%
Colombia
Premature mortality
Health expenditure
GDP
Obesity 3,521 (2%) 752.9m (1.3%) 0.5%
Smoking 0 (0%) 0.2m (0.0%) 0.0%
Air pollution 1,646 (1%) 765.4m (1.3%) 0.2%
Unhealthy diet 545 (0%) 111.4m (0.2%) 0.0%
Physical activity 433 (0%) 173.0m (0.3%) 0.0%
Harmful alcohol use 376 (0%) 16.0m (0.0%) 0.1%
CVD survival 3,992 (2%) -391.2m (-0.7%) 0.1%
Cancer survival 341 (0%) -27.6m (0.0%) 0.0%
Costa Rica
Premature mortality
Health expenditure
GDP
Obesity 851 (6%) 124.2m (2.0%) 1.0%
Smoking 0 (0%) 0.4m (0.0%) 0.0%
Air pollution 160 (1%) 72.8m (1.2%) 0.2%
Unhealthy diet 71 (0%) 13.9m (0.2%) 0.0%
Physical activity 104 (1%) 35.3m (0.6%) 0.1%
Harmful alcohol use 0 (0%) 0.2m (0.0%) 0.0%
CVD survival 385 (3%) -42.5m (-0.7%) 0.1%
Cancer survival 130 (1%) -16.1m (-0.3%) 0.0%
Croatia
Premature mortality
Health expenditure
GDP
Obesity 1,170 (8%) 384.6m (5.3%) 1.2%
Smoking 483 (3%) 155.2m (2.1%) 0.4%
Air pollution 218 (2%) 117.9m (1.6%) 0.2%
Unhealthy diet 76 (1%) 23.6m (0.3%) 0.0%
Physical activity 35 (0%) 25.6m (0.4%) 0.0%
Harmful alcohol use 99 (1%) 11.6m (0.2%) 0.1%
CVD survival 356 (3%) -94.7m (-1.3%) 0.1%
Cancer survival 176 (1%) -30.7m (-0.4%) 0.0%
Cyprus
Premature mortality
Health expenditure
GDP
Obesity 162 (5%) 73.6m (2.6%) 0.5%
Smoking 171 (5%) 56.2m (2.0%) 0.4%
Air pollution 63 (2%) 40.0m (1.4%) 0.2%
Unhealthy diet 23 (1%) 8.4m (0.3%) 0.0%
Physical activity 22 (1%) 13.2m (0.5%) 0.0%
Harmful alcohol use 0 (0%) 0.1m (0.0%) 0.0%
CVD survival 15 (0%) -14.5m (-0.5%) 0.0%
Cancer survival 2 (0%) -4.6m (-0.2%) 0.0%
Czechia
Premature mortality
Health expenditure
GDP
Obesity 3,138 (8%) 1,414.6m (4.9%) 0.9%
Smoking 1,476 (4%) 519.5m (1.8%) 0.3%
Air pollution 747 (2%) 509.9m (1.8%) 0.2%
Unhealthy diet 412 (1%) 173.5m (0.6%) 0.1%
Physical activity 100 (0%) 67.2m (0.2%) 0.0%
Harmful alcohol use 1,149 (3%) 204.0m (0.7%) 0.5%
CVD survival 1,686 (5%) -469.7m (-1.6%) 0.1%
Cancer survival 1,381 (4%) -190.5m (-0.7%) 0.1%
Denmark
Premature mortality
Health expenditure
GDP
Obesity 0 (0%) 1.6m (0.0%) 0.0%
Smoking 358 (2%) 184.5m (0.7%) 0.1%
Air pollution 77 (0%) 98.1m (0.4%) 0.0%
Unhealthy diet 155 (1%) 183.5m (0.7%) 0.1%
Physical activity 0 (0%) 0.0m (0.0%) 0.0%
Harmful alcohol use 211 (1%) 102.9m (0.4%) 0.1%
CVD survival 251 (2%) -118.8m (-0.5%) 0.0%
Cancer survival 509 (3%) -220.1m (-0.9%) 0.0%
Estonia
Premature mortality
Health expenditure
GDP
Obesity 276 (5%) 34.4m (2.4%) 0.6%
Smoking 277 (5%) 23.8m (1.7%) 0.4%
Air pollution 0 (0%) 0.0m (0.0%) 0.0%
Unhealthy diet 70 (1%) 6.8m (0.5%) 0.1%
Physical activity 9 (0%) 1.4m (0.1%) 0.0%
Harmful alcohol use 148 (3%) 6.7m (0.5%) 0.6%
CVD survival 424 (8%) -22.8m (-1.6%) 0.2%
Cancer survival 163 (3%) -5.8m (-0.4%) 0.1%
Finland
Premature mortality
Health expenditure
GDP
Obesity 295 (2%) 244.0m (1.2%) 0.3%
Smoking 257 (2%) 128.2m (0.6%) 0.1%
Air pollution 0 (0%) 0.0m (0.0%) 0.0%
Unhealthy diet 170 (1%) 131.1m (0.6%) 0.1%
Physical activity 0 (0%) 0.0m (0.0%) 0.0%
Harmful alcohol use 153 (1%) 44.7m (0.2%) 0.2%
CVD survival 345 (2%) -142.5m (-0.7%) 0.0%
Cancer survival 147 (1%) -38.9m (-0.2%) 0.0%
France
Premature mortality
Health expenditure
GDP
Obesity 0 (0%) -0.9m (0.0%) 0.0%
Smoking 5,077 (3%) 1,865.0m (0.7%) 0.2%
Air pollution 1,416 (1%) 1,254.3m (0.5%) 0.1%
Unhealthy diet 2,029 (1%) 1,699.5m (0.7%) 0.1%
Physical activity 90 (0%) 90.5m (0.0%) 0.0%
Harmful alcohol use 4,739 (3%) 1,337.1m (0.5%) 0.3%
CVD survival 1,008 (1%) -149.7m (-0.1%) 0.0%
Cancer survival 4,098 (3%) -752.2m (-0.3%) 0.0%
Germany
Premature mortality
Health expenditure
GDP
Obesity 7,295 (3%) 8,006.6m (2.2%) 0.3%
Smoking 3,373 (1%) 2,106.3m (0.6%) 0.1%
Air pollution 2,005 (1%) 2,684.8m (0.7%) 0.1%
Unhealthy diet 3,058 (1%) 3,295.3m (0.9%) 0.1%
Physical activity 0 (0%) 0.0m (0.0%) 0.0%
Harmful alcohol use 7,942 (3%) 3,292.7m (0.9%) 0.4%
CVD survival 4,658 (2%) -3,114.1m (-0.8%) 0.0%
Cancer survival 4,458 (2%) -1,802.7m (-0.5%) 0.0%
Greece
Premature mortality
Health expenditure
GDP
Obesity 2,177 (8%) 992.5m (4.5%) 0.9%
Smoking 1,589 (6%) 386.2m (1.7%) 0.4%
Air pollution 687 (3%) 342.9m (1.5%) 0.2%
Unhealthy diet 230 (1%) 106.1m (0.5%) 0.1%
Physical activity 114 (0%) 70.8m (0.3%) 0.0%
Harmful alcohol use 0 (0%) 0.0m (0.0%) 0.0%
CVD survival 658 (2%) -156.2m (-0.7%) 0.0%
Cancer survival 683 (3%) -98.6m (-0.4%) 0.0%
Hungary
Premature mortality
Health expenditure
GDP
Obesity 3,745 (9%) 1,133.1m (5.8%) 1.4%
Smoking 1,784 (4%) 363.1m (1.9%) 0.5%
Air pollution 817 (2%) 358.4m (1.8%) 0.3%
Unhealthy diet 271 (1%) 68.7m (0.4%) 0.1%
Physical activity 180 (0%) 74.2m (0.4%) 0.0%
Harmful alcohol use 961 (2%) 129.0m (0.7%) 0.6%
CVD survival 2,056 (5%) -354.3m (-1.8%) 0.1%
Cancer survival 1,314 (3%) -113.6m (-0.6%) 0.1%
Iceland
Premature mortality
Health expenditure
GDP
Obesity 21 (3%) 14.8m (1.4%) 0.3%
Smoking 1 (0%) 0.8m (0.1%) 0.0%
Air pollution 0 (0%) 0.0m (0.0%) 0.0%
Unhealthy diet 13 (2%) 9.6m (0.9%) 0.1%
Physical activity 1 (0%) 1.5m (0.1%) 0.0%
Harmful alcohol use 0 (0%) 0.4m (0.0%) 0.0%
CVD survival 3 (0%) -0.5m (0.0%) 0.0%
Cancer survival 10 (1%) -2.2m (-0.2%) 0.0%


India
Premature mortality
Health expenditure
GDP
Obesity 0 (0%) 0.0m (0.0%) 0.0%
Smoking 306,929 (4%) 9,732.4m (2.7%) 0.6%
Air pollution 375,225 (5%) 17,165.6m (4.7%) 1.0%
Unhealthy diet 66,326 (1%) 2,371.4m (0.6%) 0.1%
Physical activity 44,916 (1%) 1,927.4m (0.5%) 0.1%
Harmful alcohol use 56,320 (1%) 304.8m (0.1%) 0.1%
CVD survival 471,045 (6%) -7,268.9m (-2.0%) 0.3%
Cancer survival 141,771 (2%) -443.3m (-0.1%) 0.0%
Indonesia
Premature mortality
Health expenditure
GDP
Obesity 4,975 (0%) 208.9m (0.2%) 0.1%
Smoking 64,590 (4%) 2,295.9m (2.3%) 0.7%
Air pollution 40,967 (2%) 2,213.2m (2.3%) 0.5%
Unhealthy diet 12,235 (1%) 445.6m (0.5%) 0.1%
Physical activity 469 (0%) 17.1m (0.0%) 0.0%
Harmful alcohol use 0 (0%) 0.0m (0.0%) 0.0%
CVD survival 121,561 (7%) 2,218.0m (-2.3%) 0.4%
Cancer survival 32,949 (2%) -161.9m (-0.2%) 0.1%
Ireland
Premature mortality
Health expenditure
GDP
Obesity 902 (7%) 821.4m (4.0%) 0.8%
Smoking 230 (2%) 104.4m (0.5%) 0.0%
Air pollution 1 (0%) 0.4m (0.0%) 0.0%
Unhealthy diet 229 (2%) 226.7m (1.1%) 0.1%
Physical activity 5 (0%) 8.8m (0.0%) 0.0%
Harmful alcohol use 245 (2%) 112.2m (0.5%) 0.4%
CVD survival 236 (2%) -103.0m (-0.5%) 0.0%
Cancer survival 251 (2%) -97.7m (-0.5%) 0.0%
Israel
Premature mortality
Health expenditure
GDP
Obesity 750 (4%) 309.3m (1.9%) 0.3%
Smoking 256 (1%) 63.3m (0.4%) 0.1%
Air pollution 491 (2%) 271.8m (1.7%) 0.2%
Unhealthy diet 60 (0%) 32.6m (0.2%) 0.0%
Physical activity 24 (0%) 20.3m (0.1%) 0.0%
Harmful alcohol use 0 (0%) 0.0m (0.0%) 0.0%
CVD survival 421 (2%) -97.7m (-0.6%) 0.0%
Cancer survival 1,038 (5%) -150.4m (-0.9%) 0.0%
Italy
Premature mortality
Health expenditure
GDP
Obesity 1,789 (1%) 2,273.7m (1.2%) 0.1%
Smoking 3,021 (2%) 1,258.5m (0.7%) 0.1%
Air pollution 2,728 (2%) 3,051.3m (1.7%) 0.2%
Unhealthy diet 1,256 (1%) 1,285.0m (0.7%) 0.1%
Physical activity 740 (1%) 871.4m (0.5%) 0.1%
Harmful alcohol use 182 (0%) 137.3m (0.1%) 0.0%
CVD survival 1,475 (1%) -488.1m (-0.3%) 0.0%
Cancer survival 1,609 (1%) -591.2m (-0.3%) 0.0%
Japan
Premature mortality
Health expenditure
GDP
Obesity 0 (0%) 0.0m (0.0%) 0.0%
Smoking 5,274 (2%) 3,163.4m (0.8%) 0.1%
Air pollution 1,895 (1%) 3,341.4m (0.8%) 0.1%
Unhealthy diet 1,440 (1%) 1,693.2m (0.4%) 0.1%
Physical activity 1,224 (0%) 2,599.7m (0.6%) 0.1%
Harmful alcohol use 262 (0%) 176.7m (0.0%) 0.0%
CVD survival 516 (0%) -946.4m (-0.2%) 0.0%
Cancer survival 1,373 (1%) -272.5m (-0.1%) 0.0%
Korea
Premature mortality
Health expenditure
GDP
Obesity 0 (0%) -3.6m (0.0%) 0.0%
Smoking 4,452 (3%) 1,401.7m (1.0%) 0.2%
Air pollution 8,211 (6%) 5,247.5m (3.9%) 0.6%
Unhealthy diet 968 (1%) 353.9m (0.3%) 0.1%
Physical activity 2,000 (2%) 1,458.6m (1.1%) 0.2%
Harmful alcohol use 629 (0%) 368.7m (0.3%) 0.2%
CVD survival 4,567 (4%) -795.2m (-0.6%) 0.0%
Cancer survival 2,944 (2%) -307.1m (-0.2%) 0.0%
Latvia
Premature mortality
Health expenditure
GDP
Obesity 532 (6%) 86.5m (3.1%) 0.8%
Smoking 404 (5%) 40.1m (1.4%) 0.6%
Air pollution 182 (2%) 38.9m (1.4%) 0.3%
Unhealthy diet 149 (2%) 20.4m (0.7%) 0.2%
Physical activity 8 (0%) 0.7m (0.0%) 0.0%
Harmful alcohol use 332 (4%) 26.4m (1.0%) 1.0%
CVD survival 974 (11%) -96.6m (-3.5%) 0.4%
Cancer survival 366 (4%) -22.0m (-0.8%) 0.1%
Lithuania
Premature mortality
Health expenditure
GDP
Obesity 845 (6%) 168.2m (3.3%) 0.8%
Smoking 521 (4%) 56.6m (1.1%) 0.5%
Air pollution 94 (1%) 26.2m (0.5%) 0.1%
Unhealthy diet 208 (2%) 33.3m (0.7%) 0.1%
Physical activity 25 (0%) 4.3m (0.1%) 0.0%
Harmful alcohol use 494 (4%) 45.5m (0.9%) 0.8%
CVD survival 1,290 (9%) -178.8m (-3.5%) 0.3%
Cancer survival 664 (5%) -46.2m (-0.9%) 0.1%
Luxembourg
Premature mortality
Health expenditure
GDP
Obesity 25 (1%) 32.1m (1.1%) 0.1%
Smoking 34 (2%) 20.7m (0.7%) 0.1%
Air pollution 0 (0%) 0.2m (0.0%) 0.0%
Unhealthy diet 28 (1%) 36.2m (1.2%) 0.1%
Physical activity 0 (0%) 0.0m (0.0%) 0.0%
Harmful alcohol use 41 (2%) 21.1m (0.7%) 0.2%
CVD survival 32 (2%) -12.0m (-0.4%) 0.0%
Cancer survival 65 (3%) -21.8m (-0.7%) 0.0%
Malta
Premature mortality
Health expenditure
GDP
Obesity 115 (9%) 74.7m (4.7%) 1.1%
Smoking 16 (1%) 8.0m (0.5%) 0.1%
Air pollution 17 (1%) 14.7m (0.9%) 0.1%
Unhealthy diet 17 (1%) 12.2m (0.8%) 0.1%
Physical activity 7 (1%) 6.1m (0.4%) 0.0%
Harmful alcohol use 1 (0%) 0.4m (0.0%) 0.0%
CVD survival 20 (2%) -9.2m (-0.6%) 0.0%
Cancer survival 12 (1%) -1.9m (-0.1%) 0.0%
Mexico
Premature mortality
Health expenditure
GDP
Obesity 37,198 (6%) 3,052.8m (2.7%) 1.5%
Smoking 2,411 (0%) 527.3m (0.5%) 0.0%
Air pollution 6,176 (1%) 2,271.8m (2.0%) 0.3%
Unhealthy diet 879 (0%) 201.1m (0.2%) 0.0%
Physical activity 443 (0%) 150.9m (0.1%) 0.0%
Harmful alcohol use 1,438 (0%) 44.9m (0.0%) 0.0%
CVD survival 8,546 (1%) -570.9m (-0.5%) 0.1%
Cancer survival 1,196 (0%) -81.6m (-0.1%) 0.0%
Netherlands
Premature mortality
Health expenditure
GDP
Obesity 6 (0%) 94.7m (0.1%) 0.0%
Smoking 1,611 (4%) 706.6m (1.1%) 0.1%
Air pollution 326 (1%) 328.3m (0.5%) 0.1%
Unhealthy diet 595 (1%) 507.6m (0.8%) 0.1%
Physical activity 0 (0%) 0.0m (0.0%) 0.0%
Harmful alcohol use 258 (1%) 141.9m (0.2%) 0.0%
CVD survival 279 (1%) -148.8m (-0.2%) 0.0%
Cancer survival 368 (1%) -210.6m (-0.3%) 0.0%
New Zealand
Premature mortality
Health expenditure
GDP
Obesity 785 (7%) 512.9m (3.1%) 1.1%
Smoking 21 (0%) 13.0m (0.1%) 0.0%
Air pollution 0 (0%) 0.0m (0.0%) 0.0%
Unhealthy diet 180 (2%) 150.4m (0.9%) 0.1%
Physical activity 0 (0%) 0.6m (0.0%) 0.0%
Harmful alcohol use 199 (2%) 79.6m (0.5%) 0.2%
CVD survival 88 (1%) -41.4m (-0.3%) 0.0%
Cancer survival 121 (1%) -57.0m (-0.3%) 0.0%


Norway
Premature mortality
Health expenditure
GDP
Obesity 26 (0%) 45.9m (0.2%) 0.2%
Smoking 51 (0%) 61.4m (0.2%) 0.0%
Air pollution 0 (0%) 0.0m (0.0%) 0.0%
Unhealthy diet 201 (2%) 297.4m (1.0%) 0.1%
Physical activity 49 (0%) 105.1m (0.4%) 0.0%
Harmful alcohol use 4 (0%) 6.7m (0.0%) 0.0%
CVD survival 110 (1%) -24.4m (-0.1%) 0.0%
Cancer survival 253 (2%) -117.7m (-0.4%) 0.0%
Peru
Premature mortality
Health expenditure
GDP
Obesity 3,722 (3%) 171.0m (1.0%) 0.7%
Smoking 0 (0%) -0.2m (0.0%) 0.0%
Air pollution 2,268 (2%) 422.1m (2.4%) 0.4%
Unhealthy diet 304 (0%) 35.2m (0.2%) 0.0%
Physical activity 287 (0%) 46.3m (0.3%) 0.0%
Harmful alcohol use 167 (0%) 6.2m (0.0%) 0.0%
CVD survival 1,638 (1%) -59.5m (-0.3%) 0.1%
Cancer survival 674 (1%) -15.1m (-0.1%) 0.0%
Poland
Premature mortality
Health expenditure
GDP
Obesity 9,287 (6%) 3,142.5m (4.3%) 1.0%
Smoking 4,474 (3%) 955.8m (1.3%) 0.3%
Air pollution 4,193 (3%) 2,007.0m (2.7%) 0.4%
Unhealthy diet 1,585 (1%) 518.0m (0.7%) 0.1%
Physical activity 912 (1%) 368.3m (0.5%) 0.1%
Harmful alcohol use 4,920 (3%) 499.3m (0.7%) 0.7%
CVD survival 5,496 (4%) -1,121.2m (-1.5%) 0.1%
Cancer survival 4,863 (3%) -449.6m (-0.6%) 0.1%
Portugal
Premature mortality
Health expenditure
GDP
Obesity 1,218 (5%) 959.6m (3.4%) 0.4%
Smoking 287 (1%) 91.0m (0.3%) 0.1%
Air pollution 0 (0%) 0.0m (0.0%) 0.0%
Unhealthy diet 282 (1%) 189.5m (0.7%) 0.1%
Physical activity 213 (1%) 199.1m (0.7%) 0.1%
Harmful alcohol use 362 (1%) 90.6m (0.3%) 0.1%
CVD survival 839 (3%) -229.5m (-0.8%) 0.0%
Cancer survival 843 (3%) -180.2m (-0.6%) 0.0%
Romania
Premature mortality
Health expenditure
GDP
Obesity 8,509 (9%) 1,353.2m (5.4%) 1.6%
Smoking 2,005 (2%) 282.7m (1.1%) 0.4%
Air pollution 1,337 (1%) 431.5m (1.7%) 0.3%
Unhealthy diet 671 (1%) 157.6m (0.6%) 0.1%
Physical activity 376 (0%) 123.9m (0.5%) 0.1%
Harmful alcohol use 5,000 (5%) 215.1m (0.9%) 0.7%
CVD survival 4,640 (5%) -638.9m (-2.5%) 0.2%
Cancer survival 1,773 (2%) -85.3m (-0.3%) 0.1%
Saudi Arabia
Premature mortality
Health expenditure
GDP
Obesity 12,262 (15%) 2,992.2m (5.9%) 1.3%
Smoking 927 (1%) 172.6m (0.3%) 0.1%
Air pollution 7,482 (9%) 2,552.6m (5.1%) 0.6%
Unhealthy diet 780 (1%) 164.7m (0.3%) 0.0%
Physical activity 1,051 (1%) 321.3m (0.6%) 0.1%
Harmful alcohol use 0 (0%) 0.0m (0.0%) 0.0%
CVD survival 8,473 (10%) -530.0m (-1.1%) 0.1%
Cancer survival 898 (1%) -44.5m (-0.1%) 0.0%
Slovak Republic
Premature mortality
Health expenditure
GDP
Obesity 1,661 (7%) 413.6m (3.8%) 0.9%
Smoking 872 (4%) 175.5m (1.6%) 0.4%
Air pollution 458 (2%) 183.2m (1.7%) 0.2%
Unhealthy diet 244 (1%) 56.9m (0.5%) 0.1%
Physical activity 48 (0%) 15.6m (0.1%) 0.0%
Harmful alcohol use 664 (3%) 72.6m (0.7%) 0.5%
CVD survival 1,418 (6%) -259.7m (-2.4%) 0.1%
Cancer survival 699 (3%) -47.0m (-0.4%) 0.1%
Slovenia
Premature mortality
Health expenditure
GDP
Obesity 163 (3%) 62.1m (1.1%) 0.3%
Smoking 34 (1%) 15.0m (0.3%) 0.1%
Air pollution 108 (2%) 93.5m (1.6%) 0.2%
Unhealthy diet 55 (1%) 33.0m (0.6%) 0.1%
Physical activity 4 (0%) 4.5m (0.1%) 0.0%
Harmful alcohol use 178 (3%) 32.4m (0.6%) 0.4%
CVD survival 137 (2%) -33.1m (-0.6%) 0.0%
Cancer survival 174 (3%) -42.8m (-0.7%) 0.0%

South Africa	Premature mortality	Health expenditure	GDP
Obesity	11,059 (2%)	1,195.8m (2.4%)	1.1%
Smoking	5,728 (1%)	265.5m (0.5%)	0.3%
Air pollution	7,749 (1%)	973.3m (1.9%)	0.4%
Unhealthy diet	2,264 (0%)	191.9m (0.4%)	0.1%
Physical activity	1,404 (0%)	178.0m (0.4%)	0.0%
Harmful alcohol use	10,361 (2%)	253.4m (0.5%)	0.6%
CVD survival	14,528 (3%)	-615.3m (-1.2%)	0.2%
Cancer survival	10,484 (2%)	-272.9m (-0.5%)	0.1%

Spain	Premature mortality	Health expenditure	GDP
Obesity	1,406 (1%)	1,345.6m (1.0%)	0.0%
Smoking	2,473 (2%)	929.7m (0.7%)	0.2%
Air pollution	861 (1%)	773.6m (0.5%)	0.1%
Unhealthy diet	910 (1%)	886.6m (0.6%)	0.1%
Physical activity	72 (0%)	72.0m (0.1%)	0.0%
Harmful alcohol use	1,263 (1%)	270.3m (0.2%)	0.1%
CVD survival	734 (1%)	-155.9m (-0.1%)	0.0%
Cancer survival	2,084 (2%)	-484.9m (-0.3%)	0.0%

Sweden	Premature mortality	Health expenditure	GDP
Obesity	5 (0%)	11.4m (0.0%)	0.0%
Smoking	1,146 (5%)	814.0m (1.7%)	0.2%
Air pollution	0 (0%)	0.0m (0.0%)	0.0%
Unhealthy diet	336 (2%)	388.5m (0.8%)	0.1%
Physical activity	0 (0%)	0.0m (0.0%)	0.0%
Harmful alcohol use	343 (2%)	205.3m (0.4%)	0.2%
CVD survival	99 (0%)	-126.2m (-0.3%)	0.0%
Cancer survival	712 (3%)	-329.2m (-0.7%)	0.0%

Switzerland	Premature mortality	Health expenditure	GDP
Obesity	4 (0%)	5.7m (0.0%)	0.0%
Smoking	629 (3%)	402.8m (1.0%)	0.1%
Air pollution	41 (0%)	54.5m (0.1%)	0.0%
Unhealthy diet	244 (1%)	286.6m (0.7%)	0.1%
Physical activity	0 (0%)	2.5m (0.0%)	0.0%
Harmful alcohol use	404 (2%)	190.0m (0.5%)	0.2%
CVD survival	27 (0%)	-12.1m (0.0%)	0.0%
Cancer survival	374 (2%)	-148.7m (-0.4%)	0.0%

Türkiye	Premature mortality	Health expenditure	GDP
Obesity	25,095 (8%)	6,059.3m (5.2%)	1.2%
Smoking	9,782 (3%)	1,479.7m (1.3%)	0.4%
Air pollution	9,750 (3%)	3,197.1m (2.7%)	0.5%
Unhealthy diet	660 (0%)	155.7m (0.1%)	0.0%
Physical activity	1,972 (1%)	659.0m (0.6%)	0.1%
Harmful alcohol use	1,300 (0%)	53.4m (0.0%)	0.1%
CVD survival	18,679 (6%)	-1,435.3m (-1.2%)	0.2%
Cancer survival	6,475 (2%)	-286.2m (-0.2%)	0.0%

United Kingdom	Premature mortality	Health expenditure	GDP
Obesity	10,578 (6%)	8,655.4m (3.1%)	0.9%
Smoking	912 (0%)	441.5m (0.2%)	0.0%
Air pollution	825 (0%)	1,188.8m (0.4%)	0.1%
Unhealthy diet	2,013 (1%)	2,138.8m (0.8%)	0.1%
Physical activity	0 (0%)	27.3m (0.0%)	0.0%
Harmful alcohol use	4,429 (2%)	1,622.2m (0.6%)	0.4%
CVD survival	2,830 (1%)	-777.7m (-0.3%)	0.0%
Cancer survival	5,787 (3%)	2,061.9m (-0.7%)	0.0%

United States	Premature mortality	Health expenditure	GDP
Obesity	116,855 (10%)	17,674.5m (5.4%)	2.0%
Smoking	36,417 (3%)	28,625.9m (1.3%)	0.2%
Air pollution	86 (0%)	64.8m (0.0%)	0.0%
Unhealthy diet	13,693 (1%)	20,083.9m (0.9%)	0.1%
Physical activity	2,031 (0%)	3,526.8m (0.2%)	0.0%
Harmful alcohol use	25,226 (2%)	13,911.0m (0.6%)	0.5%
CVD survival	8,136 (1%)	-2,761.1m (-0.1%)	0.0%
Cancer survival	14,100 (1%)	-7,458.9m (-0.3%)	0.0%

Note: If a country is in the Top Quartile for a certain risk factor across all ages and sexes, the potential will be zero.
Source: OECD SPHeP NCDs model, 2025.

StatLink https://stat.link/mjqv7c

5 Effective NCD action requires an integrated approach across individuals, environments, and health systems

Effective action on NCDs requires a tailored policy mix that reflects national risk factor profiles and health priorities. Nevertheless, successful NCD strategies rest on three interconnected pillars: empowering individuals, creating supportive environments, and building responsive health systems. Empowerment depends not only on providing information, but also on strengthening motivation and practical skills that enable sustained behaviour change. At the same time, environments strongly shape health choices, and policies that make healthy options accessible, affordable and attractive are essential. Health systems, particularly primary care, must operate across the full NCD continuum, from prevention and early detection to long-term management. Strengthening screening, counselling and people-centred care can substantially improve outcomes. Together, these three pillars provide a coherent framework for integrated, high-impact NCD strategies that deliver lasting health, economic and societal benefits.

In Brief

Three core policy considerations for tackling NCDs

Addressing NCDs requires a tailored policy mix that reflects each country's health priorities and the distribution of risk factors in the population. But although the emphasis differs, all successful NCD strategies share three interconnected pillars: empowering individuals, creating supportive environments, and building responsive health systems.

Empowered individuals: Sustained progress in controlling NCDs depends on individuals having the knowledge, motivation, and skills to make healthier choices. Accessible information helps people understand the risks of unhealthy behaviours, or the potential benefit of participation in screening. However, awareness alone is insufficient. The Information – Motivation – Behavioural Skills (IMB) model highlights that effective health education must not only provide information but also foster motivation and teach practical skills. Policymakers should therefore design health information initiatives that combine facts with motivation and actionable guidance, delivered through diverse and equitable channels.

Supportive environments: Environments heavily influence exposure to NCD risk factors. Even motivated individuals struggle to make healthy choices when confronted with environments that encourage unhealthy behaviour. To reduce NCDs, policymakers must therefore design environments that make the healthy choice the easy, accessible, and affordable one, and address the impact of social, environmental, economic, commercial and market factors. Countries can learn from international experience but must adapt interventions to local cultural, political, and economic contexts to ensure feasibility and acceptance.

Many environmental policies to promote healthy behaviours also contain an element of education and information. Previous OECD analyses have shown that environmental and informational policies have an excellent benefit-cost ratio (Figure 5.3). (OECD, 2019[1]; OECD, 2021[2]). Most policies return more in economic benefits than they cost to implement, with some returning more than USD 5 for every USD 1 invested. In addition, regulatory and price-based policies are also commonly used to influence healthier behaviours by discouraging harmful product use and encouraging healthier market choices. Evidence suggests that multi-pronged approaches, tailored to each country's context, deliver the greatest impact and value by combining interventions that work together to address complex health determinants.

Responsive health systems: Health systems, particularly primary care, must engage across the full NCD continuum: prevention, early detection, and long-term management. Primary care providers are trusted sources of advice and play a key role in counselling patients about healthy behaviours. Yet opportunities are often missed: fewer than half of adults over 45 report receiving advice on physical activity, and only a third receive guidance on healthy eating.

Screening and early diagnosis are essential components of responsive health systems. Primary care supports cancer screening programmes by performing tests, referring patients, and motivating participation. However, uptake remains uneven: across OECD countries, around 57% of eligible women were screened for breast or cervical cancer in 2023, and only 46% for colon cancer. Letters or reminders from general practitioners significantly increase screening rates. Screening is also crucial for detecting complications, such as chronic kidney disease in people with diabetes, allowing for early intervention and better outcomes.

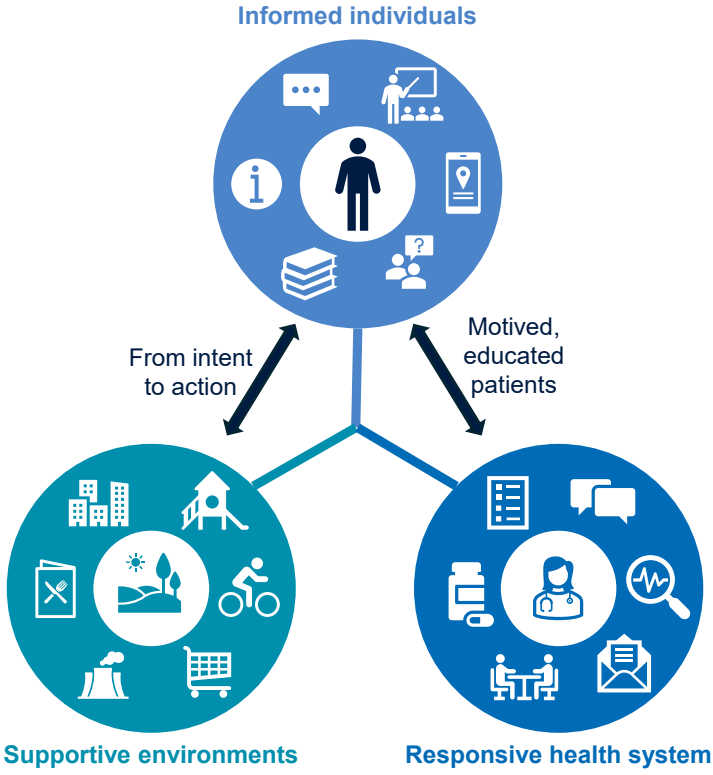
Effective NCD care requires people-centred approaches that treat patients as partners in managing their health. Evidence from OECD's *PaRIS* shows progress but also gaps: On average, patients scored their experience of care co-ordination 8.2 out of 15, but in some PaRIS countries this was as low as 5. There was even greater variation in the preparedness of primary care practices to co-ordinate care and exchange medical records electronically: ranging from none of the primary care practices participating in PaRIS in a country to all of them.

Addressing NCDs requires a tailored policy mix that reflects each country's health priorities and the distribution of risk factors in the population. For instance, some countries may decide to invest heavily in reducing smoking prevalence, while others may instead prefer to focus on increasing the uptake of cancer screening. Although the priorities may differ, there are three core policy considerations that underpin all successful NCD strategies:

- Empowering individuals through information and education,
- Creating environments that support healthier choices,
- Building responsive health systems that deliver NCD prevention and care.

These three pillars – empowered individuals, supportive environments, and responsive health systems – are mutually reinforcing (Figure 5.1). Empowering individuals with information and education is critical, but its impact is amplified when the environment around people makes healthier choices the easier, more affordable, and more accessible ones. At the same time, even the most informed and motivated individuals may need support from a responsive health system to detect problems early and prevent complications. In turn, primary care plays a crucial role in providing individuals with information and education. Together, they create a comprehensive foundation for sustainable NCD prevention and control (Box 5.1).

Figure 5.1. Three core policy considerations for NCD strategies



Box 5.1. A comprehensive plan to reduce the burden of cardiovascular diseases in the EU

Like many other regions, the European Union faces a significant and growing burden of CVDs. CVDs already account for 17% of all premature deaths, and this burden is expected to rise sharply in the coming decades. Between 2026 and 2050, population ageing alone is projected to increase the annual number of new CVD cases by 43%. Even if the population size remains stable, health expenditures related to CVDs are expected to rise by more than 75%.

CVDs have therefore become a central focus of the European Union's health strategy, aimed at improving public health and fostering economic growth. In December 2024, the 27 EU Health Ministers adopted the Council Conclusions on the Improvement of Cardiovascular Health in the EU, signalling a strong political commitment to tackling CVDs (Council of the European Union, 2024[3]). The Council called for intensified efforts in prevention, early detection, treatment, and rehabilitation. Key priorities include:

- Preventive measures: enhancing health literacy, raising awareness about cardiovascular health, and discouraging harmful behaviours such as smoking, harmful alcohol consumption, and unhealthy diets.
- Equitable access and workforce training: ensuring equal access to cardiovascular care, integrating screening into routine health checks, and strengthening training for healthcare professionals.
- Co-ordinated and comprehensive action: integrating efforts to address all key aspects of cardiovascular health, from health promotion and disease prevention to screening, early detection, treatment, rehabilitation, and the advancement of research and innovation.

When it comes to preventing CVD, a major priority should be addressing obesity rates. While other risk factors have improved since 2010, obesity rates have increased. This rise in obesity will result in nearly 200 000 additional cases of CVD every year, between 2026 and 2050.

Aligning obesity rates to the Top Quartile across the EU could prevent nearly 500 000 cases of CVD every year, between 2026 and 2050, and 30 000 premature deaths per year. In addition, it would save USD PPP 24 billion per year in healthcare expenditure, and increase GDP by more than half a per cent. This is more than 40% of the total potential impact of improving risk factors, with diet, air pollution and smoking making up 15-17% each.

But improving access to care for CVDs, as well as the quality of care, is also vital. In nearly half of all EU countries, improving CVD survival rate is in the top three of priority actions to reduce premature mortality. For the EU as a whole, aligning CVD survival rates to the Top Quartile would save 35 000 premature deaths per year.

Source: OECD SPHeP NCDs model 2025.

Empowering individuals through information and education

Lasting progress in preventing and controlling NCDs depends on individuals having the knowledge and skills to make healthier choices. Clear, accurate, and accessible information enables people to understand the risks associated with smoking, harmful alcohol consumption, unhealthy diets, and physical inactivity, and to take steps to reduce them. By raising awareness of the importance of regular screening, individuals are more likely to participate. Equipping people with the knowledge to recognise early symptoms empowers them to take timely action, reducing the risk of complications and improving outcomes.

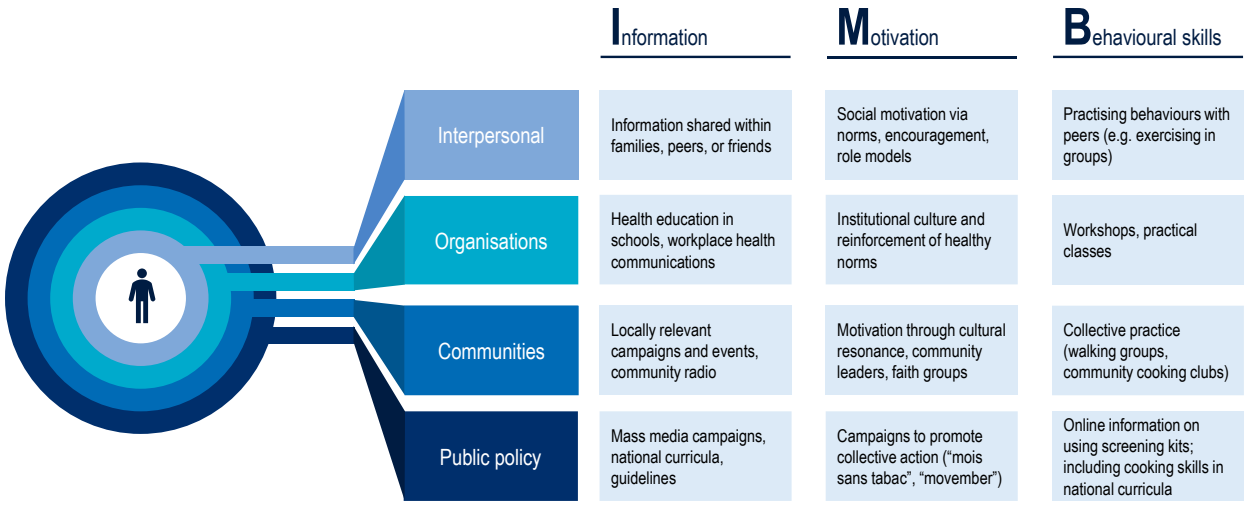
However, education and information should not just tell individuals about their risks. Individuals are more likely to act when they not only understand what is at stake, but also feel motivated, and possess the skills to translate intentions into practice. This is the Information – Motivation – Behavioural Skills (IMB) model. The IMB model was first developed to change AIDS-risk behaviour, and has since been widely used for health behaviour change (Fisher and Fisher, 1992[4]; Chang et al., 2014[5]).

Using colorectal cancer screening as an example, individuals first need information about their cancer risk and the available methods. Yet knowledge alone is insufficient; they also require motivation, both personal (such as recognising their vulnerability and valuing the potential life-saving benefit) and social, for instance encouragement from family, peers, or trusted health professionals. Finally, individuals must have the behavioural skills to act on this knowledge and motivation, such as understanding how to use a stool kit correctly or navigating the healthcare system to book a colonoscopy.

As for any type of health promotion, there are multiple, interacting levels of influence, including interpersonal relationships, organisational settings, community environments, and public policy (McLeroy et al., 1988[6]). Information, motivation, and behavioural skills should be reinforced across all these layers of society. For example, while an individual may receive information about cancer screening from a physician, uptake is more likely when peers and family encourage it, workplaces allow time off, community leaders endorse it, and public campaigns provide information on how to use the test kit (Figure 5.2).

Figure 5.2. Health information, motivation and behavioural skills can be delivered across different channels

Examples of health information and education delivery following the Information – Motivation – Behavioural Skills model and the socio-ecological model



Note: Examples are illustrative and non-exhaustive.
Source: OECD analysis, based on models from McLeroy et al. (1988[6]), "An Ecological Perspective on Health Promotion Programs", https://doi.org/10.1177/109019818801500401 and Fisher and Fisher (1992[4]), "Changing AIDS-risk behavior", https://doi.org/10.1037/0033-2909.111.3.455.

For policymakers, this means that health information campaigns should be designed not only to convey facts but also to build motivation and provide actionable guidance. Moreover, for these messages to achieve broad and equitable impact, they must be delivered through multiple channels across the different layers of society. Such a comprehensive approach to empower individuals to improve their health and well-being can be very cost-effective (Box 5.2).

Box 5.2. *Mois sans tabac* in France

Mois sans tabac ("Tobacco-Free Month"), launched in France in 2016, provides a strong example of a health information initiative that operates across multiple levels of society, and addresses information, motivation and skills.

- **Interpersonal:** The campaign encourages participants to sign up with friends, family, or colleagues, creating social support networks that reinforce motivation.
- **Organisational**: Pharmacies, healthcare providers, and employers are mobilised to distribute materials, advise participants, and normalise quitting in everyday settings.
- **Community**: Local events, regional health agencies, and community organisations run workshops, support groups, and outreach activities, particularly in high-prevalence areas.
- **Public policy**: The Ministry of Health and Public Health France co-ordinate national media campaigns, fund resources, and align the initiative with broader tobacco control legislation. To motivate participants, an online calculator allows people to estimate monthly and yearly cost savings. To build the required skills, Public Health France provides quit kits, which include a 40-day program, tips, flyers, and information about quitting tools.

An OECD analysis of the Mois sans tabac programme in France found that it was very cost-effective. It is estimated that the programme saves EUR 94 million per year in health expenditure, compared to a running cost of EUR 12.5 million – returning seven euros for every one euro invested.

Source: Sante Publique France (2023[7]), *Mois sans tabac: le kit pour arreter de fumer*, https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/outils-d-intervention/mois-sans-tabac-le-kit-pour-arreter-de-fumer (accessed on 26 September 2025); Tabac Info Service (n.d.[8]), *Combien pourriez-vous economiser?*, https://www.tabac-info-service.fr/ (accessed on 26 September 2025) ; Sante Publique France (2025[9]), *Mois sans tabac*, https://mois-sans-tabac.tabac-info-service.fr/ (accessed on 26 September 2025) ; Devaux et al. (2023[10]), Devaux et al. (2023), "Évaluation du programme national de lutte contre le tabagisme en France", https://doi.org/10.1787/b656e9ac-fr.

Creating environments that support healthier choices

The Ottawa Charter for Health Promotion, adopted in 1986 at the first International Conference on Health Promotion, marked a turning point in how health was understood and advanced (WHO, 1986[11]). Until then, much of public health and healthcare policy focussed narrowly on medical care and individual responsibility. The Charter was among the first to clearly state that health is created and lived in the settings of everyday life: in schools, workplaces, homes, and communities.

This insight remains highly relevant today (Box 5.3). The everyday settings where people live, work, and learn continue to shape their exposure to risk factors for NCDs. While individual knowledge and motivation are important, they alone are not sufficient when environmental factors steer people toward unhealthy choices. Creating environments that promote health is therefore essential to reducing NCDs and improving well-being. Policymakers can create health-promoting environments by making the healthier choice the easier and more accessible one, and addressing the impact of social, environmental, economic, commercial and market factors. Such efforts not only support individual behaviour change but also help shift norms and expectations.

Box 5.3. Equity and integration: Transforming lives and livelihoods through leadership and action on noncommunicable diseases and the promotion of mental health and well-being

In September 2025, at the Fourth High-Level Meeting of the United Nations General Assembly on the prevention and control of non-communicable diseases and the promotion of mental health and well-being, member states negotiated a political declaration titled "Equity and integration: transforming lives and livelihoods through leadership and action on noncommunicable diseases and the promotion of mental health and well-being", which was formally adopted in December 2025. The declaration sets specific global targets for 2030, including 150 million fewer tobacco users, 150 million more people with controlled hypertension and 150 million more with access to mental health care.

The declaration explicitly recognises that NCDs and mental health conditions are shaped not just by individual behaviour but also by wider social, economic and environmental factors. It therefore calls for multisectoral action to create health-promoting environments that make healthy choices easier and reduce harmful exposures. It also recognises the value of implementing the World Health Organization's evidence-based "Best Buy" interventions.

Source: WHO (2025[12]), "Political declaration of the fourth high-level meeting of the General Assembly on the prevention and control of noncommunicable diseases and the promotion of mental health and well-being", https://cdn.who.int/media/docs/default-source/ncds/finalized-pd-on-ncds-and-mental-health-rev4-3-september-2025.pdf?sfvrsn=78ae5b05_1.

As health is shaped by the full spectrum of social, economic, and physical settings in which people live their daily lives, the ways to improve environments for better health are effectively endless. Every decision about food systems, transport, housing, education, employment, and even digital spaces has the potential to influence NCD risk factors. Countries can draw valuable lessons from international experience, learning from policies that have proven effective elsewhere (Box 5.4). However, no single model can be applied universally. Each country must adapt these approaches to its own social, cultural, political, and economic context, ensuring that interventions are feasible, acceptable, and aligned with local priorities.

Box 5.4. The OECD Best Practices in Public Health initiative

The OECD Best Practices in Public Health initiative supports countries in identifying and implementing best and promising interventions across key NCD risk factors, such as smoking, harmful alcohol consumption, obesity and physical inactivity. This includes interventions on integrated care, focussing on how patients and health professionals can work together to deliver high quality care aligned with patient preferences and values (OECD, 2023[13]), interventions that promote healthy eating and active lifestyles (OECD, 2022[14]), urban planning policies aimed to increase physical activity (OECD, forthcoming[15]) and interventions that address addictive behaviours such as smoking and harmful alcohol use (OECD, forthcoming[16]).

One example of an initiative that aims to create a health promotion environment is the **Young People at a Healthy Weight (JOGG)** project. JOGG is a community-based programme targeting children under 19 years old by reshaping the environment to promote healthy lifestyles with a focus on tackling excess weight and obesity.

- Over 500 schools covering close to 52 000 children participate in "The Daily Mile" which encourages kids to move for 15 minutes every day during schools hours, equivalent to walking one mile.

- Approximately 750 schools have adopted healthy canteens under the Healthy Nutrition in Schools Agreement (e.g. substituting a puff pastry snack for a whole-wheat sandwich or panini).
- Over 1 200 companies and organisations have signed up to the healthy workplace initiative, which encourages companies to implement initiatives such as healthy work canteens and facilities to promote active modes of transport. This activity is designed for young adults (18-19) who may begin working directly out of school.

OECD analyses show that over 95 000 LYs and 13 089 DALYs are expected to be gained by scaling up JOGG across the Netherlands by 2050. JOGG is expected to be both cost-effective and cost-saving in most OECD and EU27 countries, with estimated health expenditure savings of EUR 51.94 per person in the Netherlands by 2050 and savings equivalent to 0.06% of total health expenditure per year when transferred to all OECD and EU27 countries.

For further details on these interventions, along with additional best practice case studies, please refer to: https://www.oecd.org/en/about/projects/best-practices-in-public-health.html.

Air pollution in particular requires a focus on creating a healthier environment. There are some actions that individuals can take – reduce their use of motorised transport, improve energy use, limit outside activities during high pollution days – but the largest gains are made at the national level. This however depends on the active involvement of other key sectors, including energy, transport, and urban planning. Shifting energy systems toward cleaner sources, redesigning cities to reduce reliance on polluting transport, and integrating green infrastructure into urban planning can all significantly lower exposure to harmful pollutants. By bringing these sectors together, governments can tackle the root causes of air pollution (Box 5.5).

Box 5.5. Cross-sectoral action to improve air quality

The European Environmental Bureau commissioned a study to explore whether the EU can meet the new air quality standards by 2030 through the implementation of 10 policies, across the energy, agriculture and transport sectors (Ricardo, 2025[17]). It found that both the measures in the energy sector and the transport sector delivered significant reductions in PM2.5 levels (the focus of air pollution in this report):

- Strengthened introduction of non-combustion renewable energy
- Ban on solid fossil fuel heating
- Improved energy efficiency
- More support for active mobility
- Low or zero emission zones for traffic
- Full Emission Control Areas in all European seas
- Introduction of Low emission zones for non-road mobile machinery

Urban design can also contribute to lower air pollution, while increasing physical activity at the same time. For example, the Superblocks model in Barcelona introduces functional and structural changes to the streets and layout to make the city more people centric and less reliant on motor vehicles.

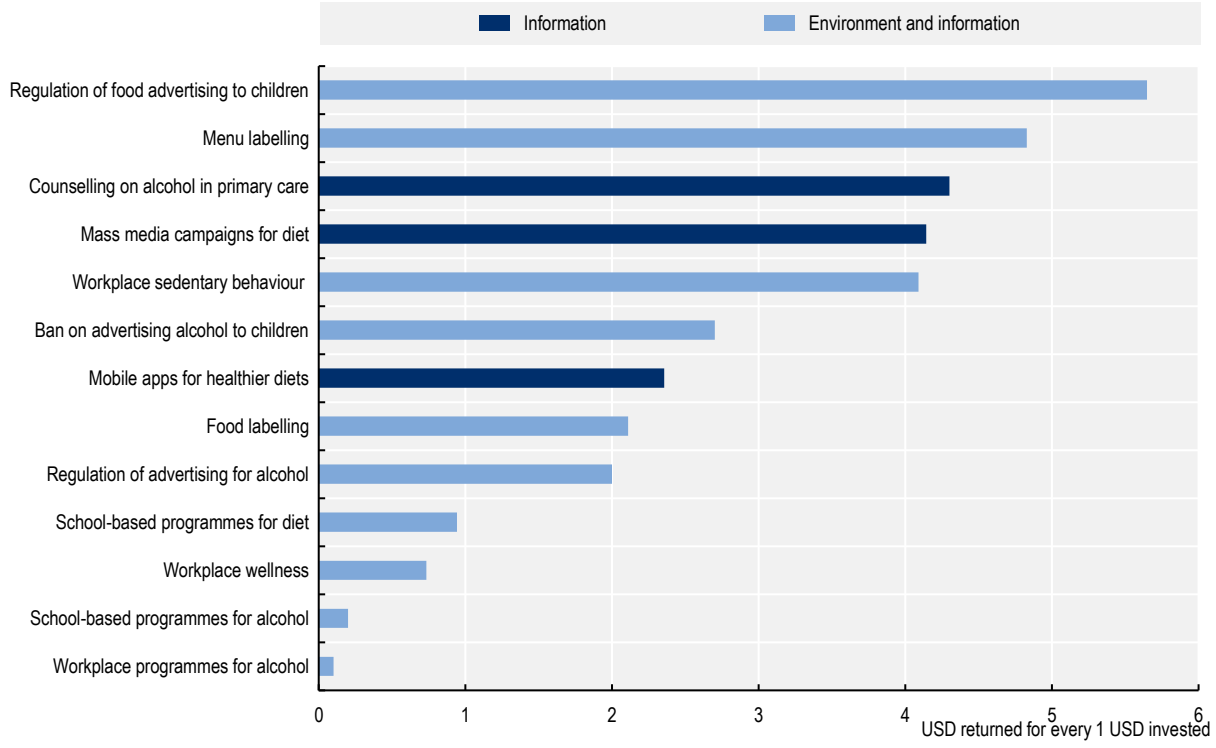
Source: Ricardo-AEA (2025[17]), Climate impact of air pollution levels aligning with European Commision's proposed air quality standards – report for European Environmental Bureau, https://eeb.org/wp-content/uploads/2025/02/Final_Merged_Report.pdf and OECD (forthcoming), *Healthy and Sustainable Cities*.

Many environmental policies to promote healthy behaviours also contain an element of education and information. For example, menu labelling provides nutritional information at the point of purchase, helping consumers make more informed food choices. Workplace and school-based interventions often combine education on healthy behaviours with changes to the school or work environment, for example by improving the availability of healthy meals and increasing opportunities for exercise. Regulations on food advertising, particularly those targeting children, reduce exposure to persuasive marketing of unhealthy products, helping to shape a healthier information environment.

Previous OECD analyses have shown that environmental and informational policies have an excellent benefit-cost ratio (Figure 5.3) (OECD, 2019[1]; OECD, 2021[2]). Most policies return more in economic benefits than they cost to implement, with some returning more than USD 5 for every USD 1 invested. However, even policies that do not fully cover their cost by providing economic benefits should be considered for their health impacts.

Figure 5.3. Information and environmental policies for healthier lifestyles are an excellent investment

Benefit-cost ratio, in USD returned in GDP benefits for every USD invested in the policy, for interventions that only focus on information, and policies which combine information and environmental changes



Note: In this context, "environment" refers to the setting in which the interventions take place, such as school, workplace and community settings. Estimates are calculated by dividing the increase in GDP produced by the intervention on average over the period to 2050 by the cost of implementing the intervention in the countries analysed. Diet related interventions were analysed in 36 OECD countries, while interventions targeting harmful alcohol use interventions were analysed in selected EU and G20 countries in addition to OECD countries. For more details see the Preventing Harmful Alcohol Use and Heavy Burden of Obesity publications (OECD, 2021[2]; OECD, 2019[1]). Interventions with a comparatively lower impact on GDP (and effectiveness on population health) may have a higher return of investment if they have a low implementation cost. This list provides only examples of evaluated interventions and is not intended to be exhaustive.
Source: OECD (2019[1]), *The Heavy Burden of Obesity: The Economics of Prevention*, https://doi.org/10.1787/67450d67-en and OECD (2021[2]), *Preventing Harmful Alcohol Use*, https://doi.org/10.1787/6e4b4ffb-en.

StatLink https://stat.link/p7tnef

In addition to environmental and informational measures, regulatory and price-based policies are also commonly used to promote healthier behaviours at the population level. OECD analyses and international evidence consistently show that interventions such as taxes on tobacco products, minimum unit pricing to address cheap alcohol products, disproportionately consumed by individuals with problematic drinking patterns, and restrictions on marketing unhealthy products to children are among the most cost-effective policy tools available to governments (Devaux et al., 2023[10]; OECD, 2021[2]; OECD, 2019[1]). When well designed, these policies not only discourage consumption of harmful products but may also help shift market incentives toward healthier alternatives. For example, the United Kingdom structured its tax on sugar-sweetened beverages to encourage reformulation by manufacturers, resulting in a 47% average reduction in sugar in soft drinks in scope of the tax between 2015 and 2024 (UK Government, 2025[18]). However, these types of policies also involve the highest degree of interference with individual choice (Sassi and Hurst, 2008[19]).

Previous OECD work on promoting healthier lifestyles shows that multi-pronged approaches consistently deliver greater impact and better value for money (OECD, 2019[1]; OECD, 2021[2]). Whether aimed at informing individuals, increasing the availability of healthier options, regulating exposure to risk factors, or increasing the price of unhealthy products, individual measures alone are unlikely to comprehensively address the complex factors that shape health. In some cases, they may also lead to unintended consequences or trade-offs among stakeholders (OECD, 2019[1]; OECD, 2021[2]). OECD analyses conclude that combining interventions into comprehensive prevention packages maximises synergies between policy components, resulting in the highest impact on population health and excellent returns on investment. Ultimately, it is for each country to determine the most appropriate mix of policies based on its own context, priorities, and institutional capacity.

Building responsive health systems

Health systems, and primary care in particular, need to be engaged across the entire NCD care pathway, not only in curing acute episodes. Primary care providers should deliver preventive care, by promoting healthier behaviours and addressing risk factors early. The health system also plays a central role in screening and early detection, helping identify conditions such as cancer or chronic kidney disease before they progress. Once diagnosed, patient-centred long-term management in primary care is essential, through co-production of health and co-ordination of care.

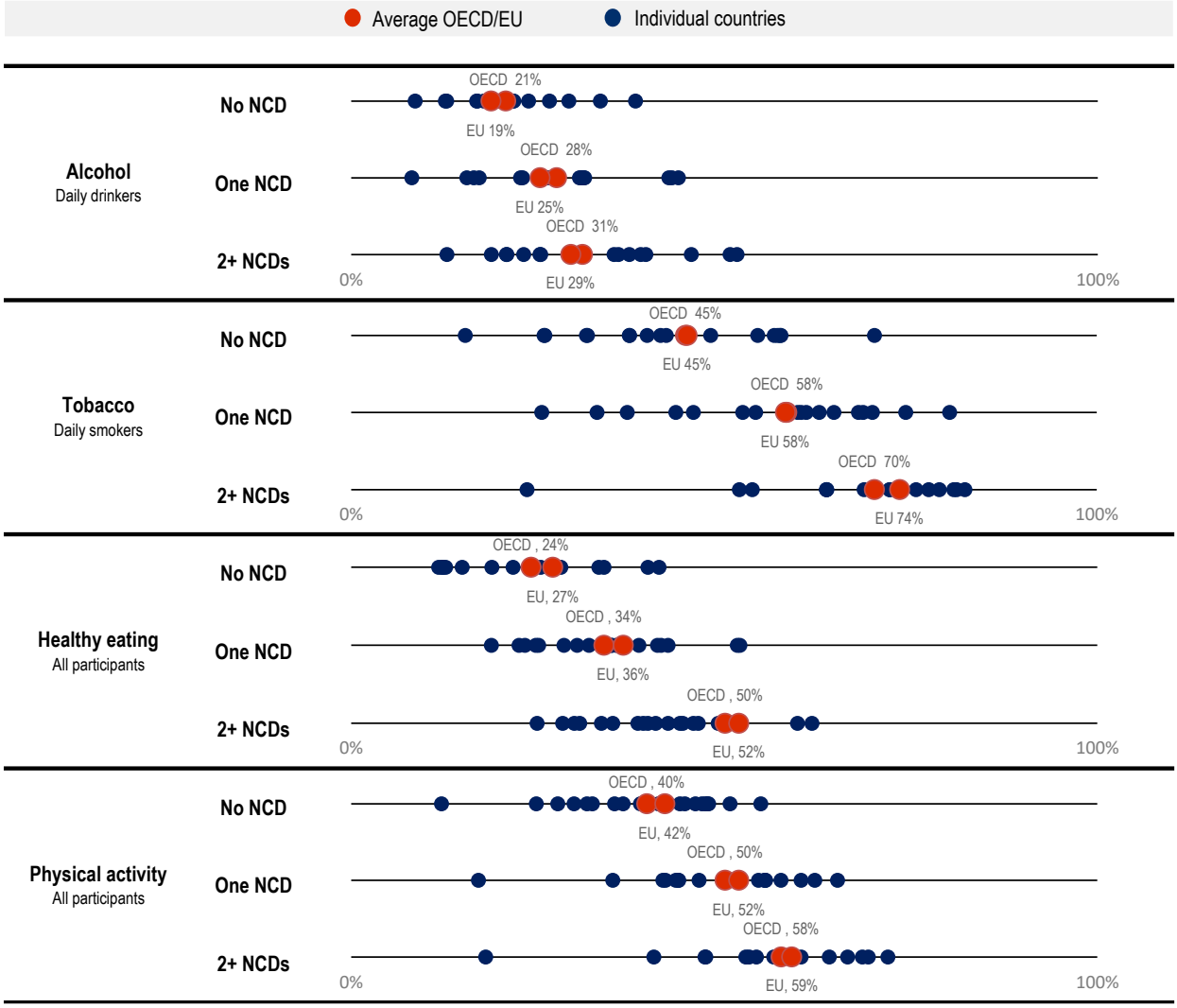
Primary prevention

As trusted and regular points of contact, primary care physicians are ideally placed to offer personalised guidance on healthy lifestyle choices. Doctors are credible sources of health information: people trust their doctor more than the healthcare system as a whole, and 78% of the patients with chronic health conditions indicated that they trusted the last care professional they saw (OECD, 2025[20]). Indeed, a poll across 28 countries found that people are perceived as the most trustworthy profession, ahead of scientists, teachers and all other occupations (IPSOS, 2021[21]). This trust means that patients are more likely to listen to the advice of their healthcare professionals, making every contact with a primary care professional a value opportunity for health promotion.

However, this opportunity is frequently missed. For example, findings from the OECD's PaRIS suggest that less than half of people aged 45 and older who visited a primary care physician received lifestyle advice on physical activity in the previous 12 months (Figure 5.4). Even fewer received advice on healthy eating, at less than a third of PaRIS respondents. Only one-quarter of people who were daily or nearly daily drinkers received advice on alcohol. The most commonly offered counselling in primary care was on smoking, with just over half of smokers receiving advice on smoking cessation. For all four areas of lifestyle advice, people living with NCDs were more likely to receive advice than people without NCDs. Nevertheless, even for people with NCDs there remains considerable scope for improvement.

Figure 5.4. There is considerable scope to increase lifestyle counselling in primary care

Percentage of patients receiving counselling in primary care, by country and the average across the OECD and EU countries in the PaRIS study, stratified by NCD status



Note: Average refers to the average across the 19 countries/regions included in the PaRIS analysis. For alcohol counselling, the average covers 17 countries, as Iceland and Saudi Arabia were excluded due to small numbers. For counselling among daily smokers, the average covers 18 countries as the United States was excluded as data on daily smoking for the United States was coded as missing to avoid identification. In this figure, EU and OECD averages are reported as simple (i.e. unweighted) means across member countries who took part in the survey. For this analysis four NCDs were included: cancer, CVD, CRD and diabetes. Country proportions are calculated using a PaRIS age-sex standardised population. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/1t9h7e

Screening and early diagnosis

Primary care plays a critical role in the early detection of NCDs and their complications (Box 5.6). For cancer, population-based screening programmes play a crucial role in the early diagnosis of disease. However, uptake varies substantially across countries, leaving room for improvement (Figure 5.5). For example, among OECD countries providing data, only 57% of eligible women were screened for breast cancer in 2023 – ranging from 15% in Greece to 83% in Sweden. Equally, only 57% of women were screened for cervical cancer, varying from 4% in Costa Rica to 78% in Sweden. For colon cancer, the uptake is even lower, with only 46% of the eligible population screened, varying from 9% in Hungary to 74% in Finland (OECD, 2023[22]).

Box 5.6. Screening for NCDs in high-risk populations

While universal screening programmes (i.e. screening all asymptomatic healthy adults) for certain cancer types have been well established in most OECD countries, population-wide screening for other NCDs is less common. However, many countries do recommend targeted screening for NCDs in high-risk individuals.

Most OECD countries do not recommend universal screening for type 2 diabetes, as the evidence of benefit is generally judged weak or insufficient (Peer, Balakrishna and Durao, 2020[23]; Jonas et al., 2021[24]). However, many countries do have guidelines for diabetes screening in people with known risk factors – such as older age, obesity, a family history of diabetes, certain ethnicities, or specific lifestyle factors. For example, primary care guidelines in the Netherlands recommended that people over the age of 45, who also have another risk factor, are opportunistically screened with a blood glucose test when they visit their doctor (NHG, 2025[25]).

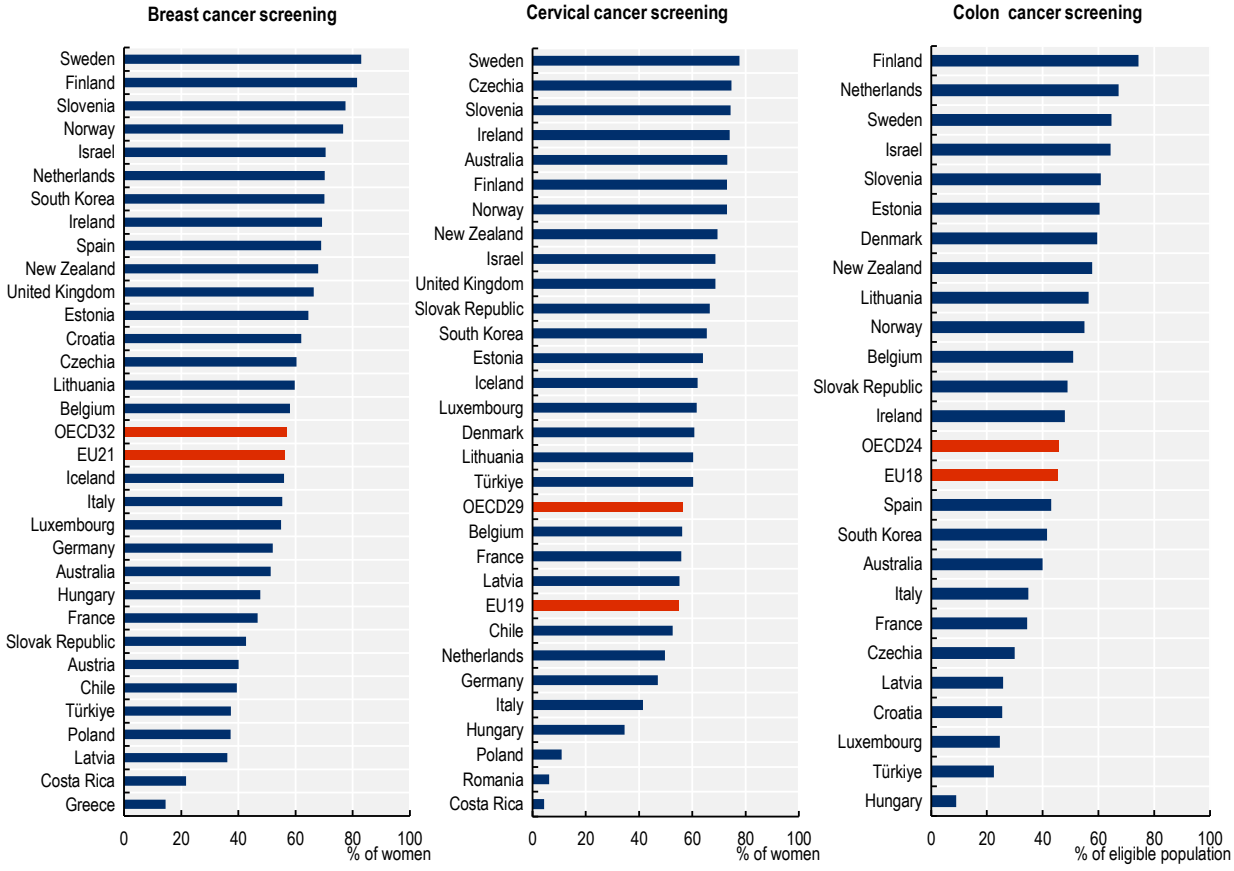
For COPD, the focus tends to be on case finding (testing people with symptoms) rather than screening (testing asymptomatic individuals) (Haute Autorité de Santé, 2020[26]; Agustí et al., 2023[27]; NHG, 2025[28]; US Preventive Services Task Force, 2016[29]). For example, France recommends that a spirometry test is done in all patients over 40 years of age with a symptom and a risk factor (smoking and occupational exposure in particular) (Haute Autorité de Santé, 2020[26]).

Screening for cardiovascular diseases is also primarily focussed on individuals at higher risk. The European Society of Cardiology recommends a CVD risk assessment to be systematically done in individuals with any major vascular risk factor (i.e. family history of premature CVD, familial hypercholesterolemia, CVD risk factors such as smoking, arterial hypertension, diabetes mellitus, raised lipid level, obesity, or comorbidities increasing CVD risk) (ESC Scientific Document Group, 2021[30]).

It is important to note that screening for NCDs is an evolving space, informed by shifts in country specific disease patterns, age of onset, and advances in early detection and treatment. At present, however, cancer screening remains the most evidence-based and systematically promoted form of population-wide NCD screening.

Figure 5.5. Cancer screening rates vary substantially across countries, showing room for improvement

Population coverage of breast, cervical and colorectal cancer screening programmes, 2023



Note: Based on programme data provided by countries to OECD Health Statistics. Screening rates are based on survey or programme data. Programme data are collected to monitor national screening programmes, capturing participation among the eligible population. It does not include examinations outside the national programme and may not capture exams that effectively function as screening but cannot be reliably distinguished. For cervical and colorectal cancer, the differences between countries in target age groups, screening frequency and screening methods lead to variations in the data coverage reported across countries. Survey data may be affected by recall bias. In this figure, EU and OECD averages for each indicator are reported as simple (i.e. unweighted) means across member countries with data for the indicator.
Source: OECD Health Statistics, 2025.

StatLink https://stat.link/t7j0vs

Primary care can play a vital role in improving cancer screening uptake. Of the 26 countries responding to the 2023 OECD Policy Survey on Cancer Care Performance, 15 reported that they rely considerably on primary healthcare providers to deliver cancer screening activities for cervical cancer, while 12 do so for colorectal cancer (OECD, 2024[31]). For cervical cancer, the screening itself often takes place in primary care settings, whereas for colorectal cancer, specialists, hospitals or GPs are involved, depending on the country.

In addition to delivering screening, primary care can also help increase uptake by encouraging and reminding patients to attend screening. Letters from GPs encouraging participation in screening have been shown to increase uptake, as did reminder letters sent out by GPs, telephone outreach and group health information session at the GP (Hewitson et al., 2011[32]; Benton et al., 2017[33]; Shankleman et al., 2014[34]).

The health system also plays a key role screening for NCD complications. For example, diabetes is a leading cause of chronic kidney disease (CKD) worldwide (Francis et al., 2024[35]), and almost half of patients with diabetes have CKD (Thomas, Cooper and Zimmet, 2015[36]). Without appropriate treatment, CKD can progress to end stage kidney disease (ESKD), which can be life threatening, and may require dialysis or kidney transplant. Screening for protein in urine (albuminuria) can help detect the early stages of kidney dysfunction in individuals with diabetes, allowing for early intervention that delay or prevent the development of CKD (Galea et al., 2025[37]; WHO, 2025[38]). There are various ways to encourage screening for complications in primary care, such as incorporating reminders into the patient electronic medical record, physician training and quality control audits (Anabtawi and Mathew, 2013[39]).

Person-centred disease management

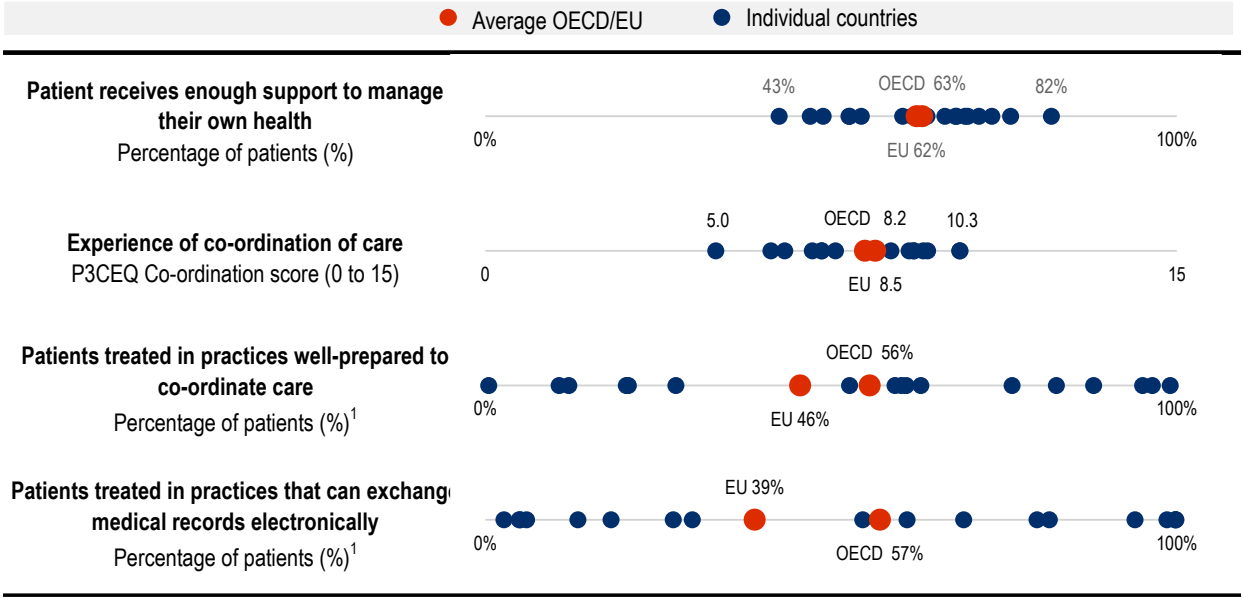
Putting people at the centre of their care has been a priority for health systems in recent decades (OECD, 2021[40]), but it is particularly important when addressing NCDs. NCDs frequently require the management of multiple conditions at once, making standard, disease-specific care insufficient. Moreover, NCD management often depends on active patient involvement: patients need to monitor their own health, such as checking blood pressure or blood glucose levels; manage and adhere to multiple medications; adopt and sustain lifestyle changes like healthier eating or increased physical activity; and recognise warning signs that require medical attention.

Health systems can provide person-centred disease management through personalised care plans, medication reviews, counselling, digital tools, and ongoing communication that helps patients feel equipped and confident. When patients are engaged as partners in these ways, they are better able to manage their conditions, improve outcomes, and maintain quality of life, while the health system benefits from more efficient, co-ordinated, and sustainable care.

Results from PaRIS show that there is still some way to go in creating people-centred health systems (Figure 5.6). Among people age 45 and over who visited their primary care provider, around three in five said they receive enough support to self-manage. However, in some PaRIS countries this is as low as two in five respondents. On average, patients scored their experience of care co-ordination 8.2 out of 15 (where 15 would reflect and ideal experience of co-ordination of care from the perspective of patients), but in some PaRIS countries this was as low as 5. There was even greater variation in the preparedness of primary care practices to co-ordinate care and exchange medical records electronically: ranging from none of the primary care practices participating in PaRIS in a country to all of them (OECD, 2025[20]).

Figure 5.6. There is still some way to go in creating people-centred health systems for NCDs

Country performance on people-centred care for people with NCDs, for countries in the PaRIS study, and the OECD16/17 and EU11 averages



Note: 1. Calculated by matching patient data with primary care practice data: number of patients in practices reported as well-prepared to co-ordinate care (practice questionnaire) divided by the total number of patients per country (patient questionnaire). Results are age and sex-standardised across countries. PaRIS data included people aged 45 years and older who had at least one primary care contact in the six months prior to the survey, and who lived in a private household in the community (i.e. not in a nursing home or other residential institution) at the time of the survey. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. United States sample only includes people aged 65 years or older and does not include data collected from practices. The OECD average for the last two indicators therefore only covers 16 countries. In this figure, EU and OECD averages are reported as simple (i.e. unweighted) means across member countries with data shown for the indicator.

Source: OECD (2025[20]), *Does Healthcare Deliver? Results from the Patient-Reported Indicator Surveys (PaRIS)*, https://doi.org/10.1787/c8af05a5-en.

StatLink https://stat.link/8fcwrx

Another key element of patient-centred disease management for NCDs is regular medication reviews. By regularly reviewing treatment plans, primary care providers can deprescribe unnecessary medications, simplify regimens, and ensure that prescriptions are evidence-based and tailored to the patient's evolving health status (Box 5.7). This is particularly important for people with multiple NCDs, who are often on a large number of different medications at once.

Box 5.7. Medication safety

Almost 1 in 10 hospitalisations in OECD countries may be caused by a medication related event and as many as 20% of inpatients experience medication-related harms during their hospital stay, together costing over USD 54 billion in OECD countries.

In addition to medication-related harms, almost half of all patients receive prescriptions for medications that do not meet their clinical needs, due to inappropriate dose or duration, inappropriate medication or medication given when an alternative intervention may be equally or more effective. Going further, half of all medicines are not taken appropriately, increasing hospital costs and worsening patient outcomes.

Medication safety is especially important in patients with NCDs, as they tend to have polypharmacy and have increased hospitalisations compared to patients without NCDs. Each hospital visit carries the chance of changing a patient's list of medication, and up to two errors per patient have been reported in medication documentation in discharge summaries in Australia (Roughead, Semple and Rosenfeld, 2016[18]). Additionally, patients living with certain NCDs such as diabetes have an increased risk of chronic kidney disease development and progression, which can increase the potential for harm as dosing requirements change given many medications are cleared through the kidneys. Regular medication review is important to reduce those harms in particular at transition points such as hospital to home.

Several mechanisms exist to promote appropriate prescribing, including clinical guidelines, digital innovations, drug utilisation review and audit and feedback mechanisms. Health information infrastructure is key to improving medication safety, with innovations in digitisation such as drug administration systems and e-prescribing coupled with improvements to data infrastructure such as electronic health record (EHR) capacity, bar coding, and post-marketing surveillance having significant potential to improve medication safety.

Source: Slawomirski et al. (2025[41]), "The economics of diagnostic safety", https://doi.org/10.1787/fc61057a-en.

References

Agustí, A. et al. (2023), "Global Initiative for Chronic Obstructive Lung Disease 2023 Report: GOLD Executive Summary", *European Respiratory Journal*, Vol. 61/4, p. 2300239, https://doi.org/10.1183/13993003.00239-2023. [27]

Anabtawi, A. and L. Mathew (2013), "Improving Compliance with Screening of Diabetic Patients for Microalbuminuria in Primary Care Practice", *International Scholarly Research Notices*, Vol. 2013/1, p. 893913, https://doi.org/10.1155/2013/893913. [39]

Benton, S. et al. (2017), "GP participation in increasing uptake in a national bowel cancer screening programme: the PEARL project", *British Journal of Cancer*, Vol. 116/12, pp. 1551-1557, https://doi.org/10.1038/bjc.2017.129. [33]

Chang, S. et al. (2014), "Intervention Strategies Based on Information-Motivation-Behavioral Skills Model for Health Behavior Change: A Systematic Review", *Asian Nursing Research*, Vol. 8/3, pp. 172-181, https://doi.org/10.1016/j.anr.2014.08.002. [5]

Council of the European Union (2024), *Conclusions on the improvement of cardiovascular health in the European Union*, https://data.consilium.europa.eu/doc/document/ST-15315-2024-INIT/en/pdf (accessed on 16 July 2025). [3]

Devaux, M. et al. (2023), "Évaluation du programme national de lutte contre le tabagisme en France", *Documents de travail de l'OCDE sur la santé*, No. 155, Éditions OCDE, Paris, https://doi.org/10.1787/b656e9ac-fr. [10]

ESC Scientific Document Group (2021), "2021 ESC Guidelines on cardiovascular disease prevention in clinical practice", *European Heart Journal*, Vol. 42/34, pp. 3227-3337, https://doi.org/10.1093/eurheartj/ehab484. [30]

Fisher, J. and W. Fisher (1992), "Changing AIDS-risk behavior", *Psychological Bulletin*, Vol. 111/3, pp. 455-474, https://doi.org/10.1037/0033-2909.111.3.455. [4]

Francis, A. et al. (2024), "Chronic kidney disease and the global public health agenda: an international consensus", *Nature Reviews Nephrology 2024 20:7*, Vol. 20/7, pp. 473-485, https://doi.org/10.1038/s41581-024-00820-6. [35]

Galea, G. et al. (2025), "Quick buys for prevention and control of noncommunicable diseases", *The Lancet Regional Health - Europe*, Vol. 52, https://doi.org/10.1016/J.LANEPE.2025.101281/ATTACHMENT/4978B34E-FA45-4256-85CA-744D191D3861/MMC1.PDF. [37]

Haute Autorité de Santé (2020), *Guide du parcours de soins bronchopneumopathie chronique obstructive (BPCO)*, https://www.has-sante.fr/jcms/c_1242507/fr/guide-du-parcours-de-soins-bronchopneumopathie-chronique-obstructive-bpco (accessed on 11 September 2025). [26]

Hewitson, P. et al. (2011), "Primary care endorsement letter and a patient leaflet to improve participation in colorectal cancer screening: results of a factorial randomised trial", *British Journal of Cancer*, Vol. 105/4, pp. 475-480, https://doi.org/10.1038/bjc.2011.255. [32]

IPSOS (2021), *Doctors become the world's most trusted profession | Ipsos*, https://www.ipsos.com/en-uk/doctors-become-worlds-most-trusted-profession (accessed on 26 August 2025). [21]

Jonas, D. et al. (2021), "Screening for Prediabetes and Type 2 Diabetes: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force", *JAMA*, Vol. 326/8, pp. 744-760, https://doi.org/10.1001/JAMA.2021.10403. [24]

McLeroy, K. et al. (1988), "An Ecological Perspective on Health Promotion Programs", *Health Education Quarterly*, Vol. 15/4, pp. 351-377, https://doi.org/10.1177/109019818801500401. [6]

NHG (2025), *COPD | NHG-Richtlijnen*, https://richtlijnen.nhg.org/standaarden/copd (accessed on 11 September 2025). [28]

NHG (2025), *Diabetes mellitus type 2 | NHG-Richtlijnen*, https://richtlijnen.nhg.org/standaarden/diabetes-mellitus-type-2 (accessed on 11 September 2025). [25]

OECD (2025), *Does Healthcare Deliver?: Results from the Patient-Reported Indicator Surveys (PaRIS)*, OECD Publishing, Paris, https://doi.org/10.1787/c8af05a5-en. [20]

OECD (2024), *Beating Cancer Inequalities in the EU: Spotlight on Cancer Prevention and Early Detection*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/14fdc89a-en. [31]

OECD (2023), *Cancer Screening (dataset)*, https://data-explorer.oecd.org/s/476 (accessed on 19 August 2025). [22]

OECD (2023), *Integrating Care to Prevent and Manage Chronic Diseases: Best Practices in Public Health*, OECD Publishing, Paris, https://doi.org/10.1787/9acc1b1d-en. [13]

OECD (2022), *Healthy Eating and Active Lifestyles: Best Practices in Public Health*, OECD Publishing, Paris, https://doi.org/10.1787/40f65568-en. [14]

OECD (2021), *Health for the People, by the People: Building People-centred Health Systems*, https://doi.org/10.1787/c259e79a-en. [40]

OECD (2021), *Preventing Harmful Alcohol Use*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/6e4b4ffb-en. [2]

OECD (2019), *The Heavy Burden of Obesity: The Economics of Prevention*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/67450d67-en. [1]

OECD (forthcoming), *Best Practices in Preventing and Treating Addictions*, OECD Publishing, Paris. [16]

OECD (forthcoming), *Healthy and Sustainable Cities*, OECD Publishing, Paris. [15]

Peer, N., Y. Balakrishna and S. Durao (2020), "Screening for type 2 diabetes mellitus", *Cochrane Database of Systematic Reviews*, Vol. 2020/5, https://doi.org/10.1002/14651858.CD005266.PUB2/MEDIA/CDSR/CD005266/IMAGE_T/TCD005266-CMP-001.04.PNG. [23]

Ricardo (2025), *Climate impact of air pollution levels aligning with European Commision's proposed air quality standards - report for European Environmental Bureau*, https://eeb.org/wp-content/uploads/2025/02/Final_Merged_Report.pdf (accessed on 23 September 2025). [17]

Sante Publique France (2025), *Mois sans tabac*, https://mois-sans-tabac.tabac-info-service.fr/ (accessed on 26 September 2025). [9]

Sante Publique France (2023), *Mois sans tabac: le kit pour arreter de fumer*, https://www.santepubliquefrance.fr/determinants-de-sante/tabac/documents/outils-d-intervention/mois-sans-tabac-le-kit-pour-arreter-de-fumer (accessed on 26 September 2025). [7]

Sassi, F. and J. Hurst (2008), "The Prevention of Lifestyle-Related Chronic Diseases: an Economic Framework", *OECD Health Working Papers*, No. 32, OECD Publishing, Paris, https://doi.org/10.1787/243180781313. [19]

Shankleman, J. et al. (2014), "Evaluation of a service intervention to improve awareness and uptake of bowel cancer screening in ethnically-diverse areas", *British Journal of Cancer*, Vol. 111/7, pp. 1440-1447, https://doi.org/10.1038/bjc.2014.363. [34]

Slawomirski, L. et al. (2025), "The economics of diagnostic safety", *OECD Health Working Papers*, No. 176, OECD Publishing, Paris, https://doi.org/10.1787/fc61057a-en. [41]

Tabac Info Service (n.d.), *Combien pourriez-vous economiser?*, https://www.tabac-info-service.fr/ (accessed on 26 September 2025). [8]

Thomas, M., M. Cooper and P. Zimmet (2015), "Changing epidemiology of type 2 diabetes mellitus and associated chronic kidney disease", *Nature Reviews Nephrology 2015 12:2*, Vol. 12/2, pp. 73-81, https://doi.org/10.1038/nrneph.2015.173. [36]

UK Government (2025), *Strengthening the Soft Drinks Industry Levy — Summary of responses*, https://www.gov.uk/government/consultations/strengthening-the-soft-drinks-industry-levy/outcome/strengthening-the-soft-drinks-industry-levy-summary-of-responses (accessed on 2 February 2026). [18]

US Preventive Services Task Force (2016), "Screening for Chronic Obstructive Pulmonary Disease", *JAMA*, Vol. 315/13, p. 1372, https://doi.org/10.1001/jama.2016.2638. [29]

WHO (2025), *NCD quick buys: 25 interventions delivering public health impact in five years or less*, World Health Organization, https://www.who.int/europe/publications/m/item/ncd-quick-buys-25-interventions-five-years-or-less (accessed on 31 July 2025). [38]

WHO (2025), *Political declaration of the fourth high-level meeting of the General Assembly on the prevention and control of noncommunicable diseases and the promotion of mental health and well-being*, World Health Organization, https://cdn.who.int/media/docs/default-source/ncds/finalized-pd-on-ncds-and-mental-health-rev4-3-september-2025.pdf?sfvrsn=78ae5b05_1 (accessed on 6 February 2026). [12]

WHO (1986), *The 1st International Conference on Health Promotion, Ottawa, 1986*, World Health Organization, https://www.who.int/teams/health-promotion/enhanced-wellbeing/first-global-conference (accessed on 10 September 2025). [11]

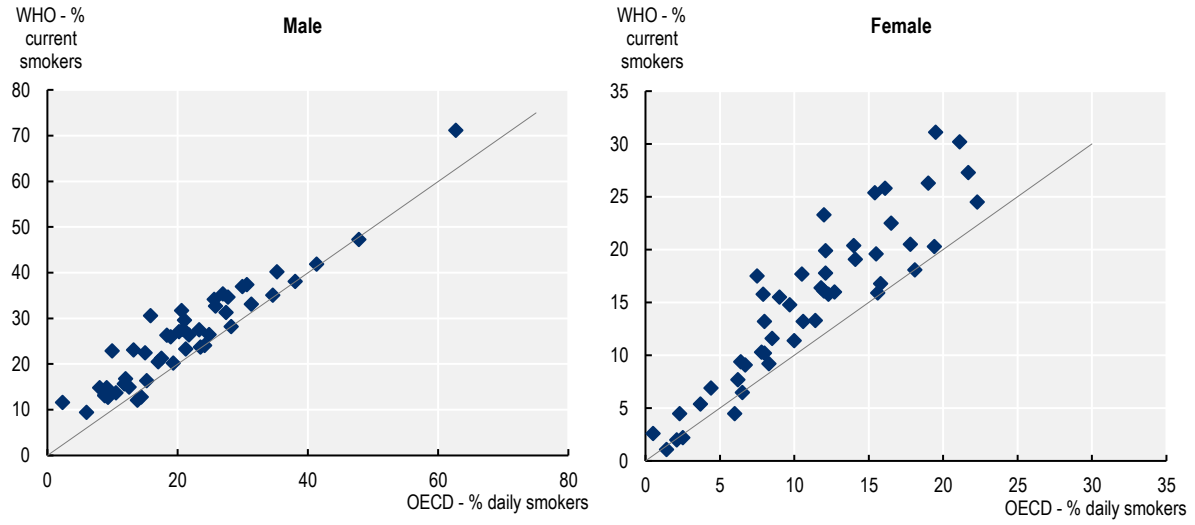
Annex A. Comparing OECD and WHO data on risk factors

Tobacco smoking

OECD collects data on the percentage of the population that smokes daily, while WHO reports on the proportion of the population who are current smokers. Despite this difference in indicator, the data largely aligns (Figure A A.1). Notably, there are more occasional (non-daily) smokers among women than men.

Figure A A.1. Data on tobacco smoking prevalence

OECD: Share of population who are daily smokers (%, 2022 or most recent year), vs. WHO: Estimate of current tobacco smoking prevalence (%, 2022)



Note: Grey line represents exact correspondence between OECD and WHO data.
Source: OECD Health Statistics 2025, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html; WHO Global Health Observatory, https://www.who.int/data/gho.

StatLink https://stat.link/jlnaw3

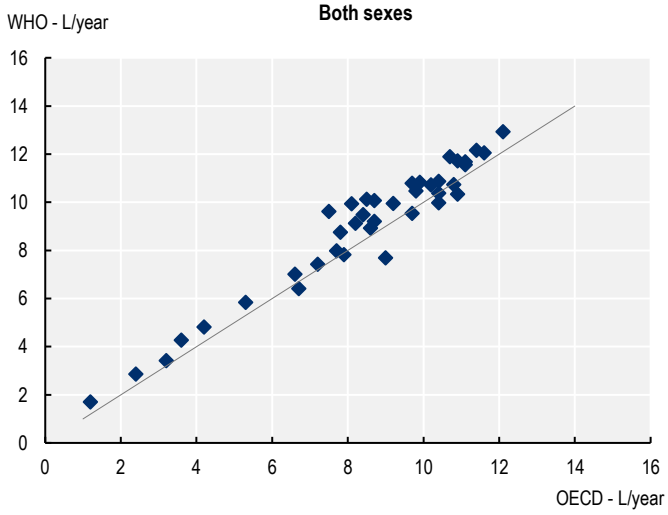
Alcohol consumption

There are different ways of measuring alcohol consumption in a country. The World Health Organization (WHO) Global Information System on Alcohol and Health (GISAH) database contains both recorded and total consumption. Recorded alcohol consumption only takes into account the consumption recorded in country statistics from production, import, export and sales data, often via taxation. Recorded alcohol consumption is expressed in litres of pure alcohol per person aged 15 years and over. Total alcohol consumption also looks at unrecorded (and untaxed) alcohol, and subtracts the amount of alcohol consumed by tourists.

The OECD also reports data on recorded alcohol consumption in its Health Statistics. For some countries GISAH data are used, while for others data are supplied to the OECD by the country's government. For selected countries, the Health Statistics may differ from the data in this report because they only relate to recorded alcohol consumption (Figure A A.2).

Figure A A.2. Data on alcohol consumption

OECD: Recorded alcohol consumption in litres per person per year (2022 or most recent year), vs. WHO: Average daily intake in grammes of alcohol (converted into litres per year) (2022)



Note: For the graph, alcohol consumption in grammes per day was converted into litres per year by multiplying by 0.463. Grey line represents exact correspondence between OECD and WHO data.
Source: OECD Health Statistics 2025, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html; WHO Global Health Observatory, https://www.who.int/data/gho.

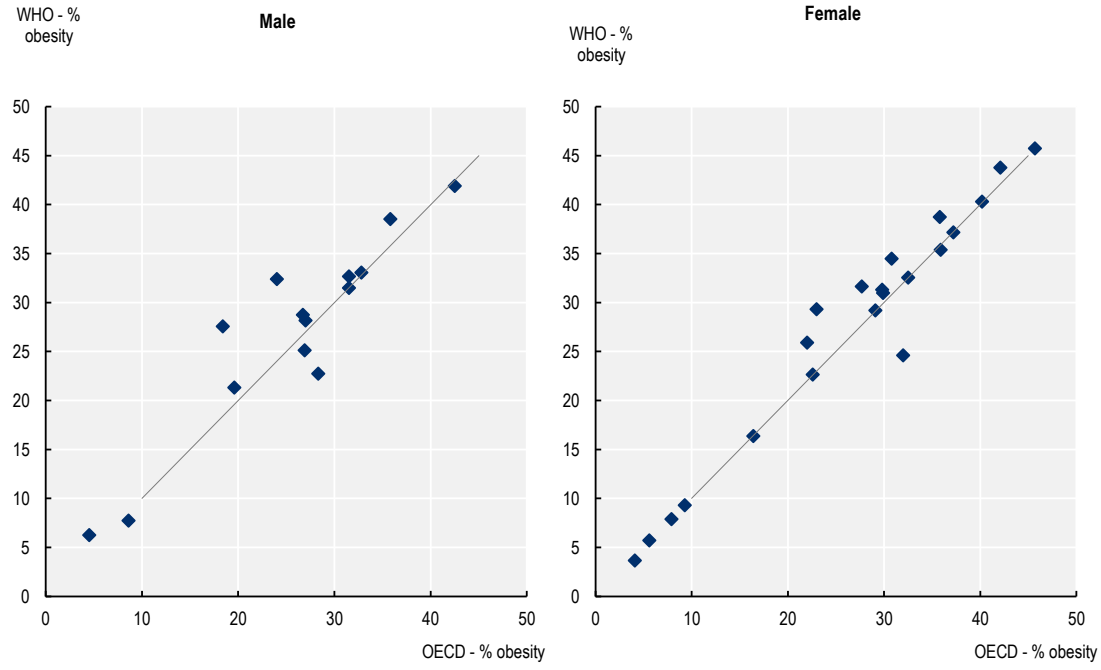
StatLink https://stat.link/ibock0

Obesity

The WHO reports obesity estimates from NCD-RisC (Phelps et al., 2024[1]). These are calculated estimates, based on measured body-mass index (BMI) data and using a Bayesian hierarchical model to estimate trends. For its Health Statistics, the OECD also collects data on overweight and obesity prevalence. This data comes from national surveys, is presented only for available years, and split by measured and self-reported estimates. BMI estimates based on self-reported data are typically lower and less reliable than those based on measured data. The obesity prevalence based on measured data largely aligns between OECD and WHO data (Figure A A.3).

Figure A A.3. Data on obesity

OECD: Measured prevalence of obesity (BMI greater than or equal to 30) among adults (2022 or most recent year), vs. WHO: Percentage of adults aged 18+ years with a body mass index (BMI) of 30 kg/m2 or higher (2022)



Note: Grey line represents exact correspondence between OECD and WHO data.
Source: OECD Health Statistics 2025, https://www.oecd.org/en/data/datasets/oecd-health-statistics.html; WHO Global Health Observatory, https://www.who.int/data/gho.

StatLink https://stat.link/mp6f1k

References

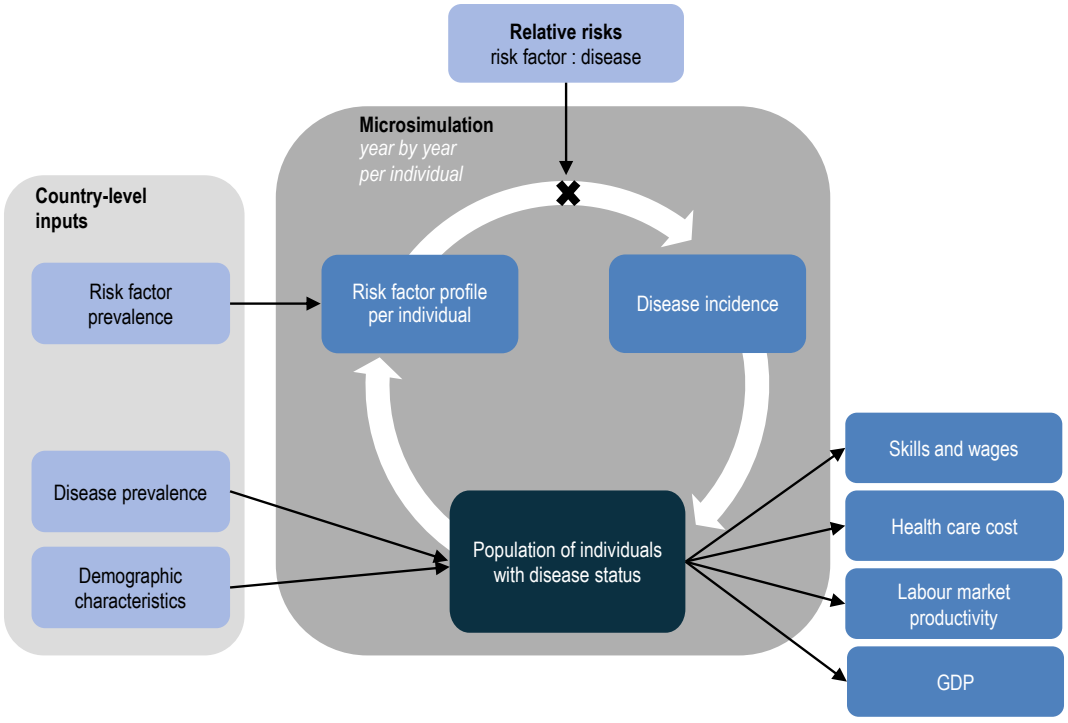
Phelps, N. et al. (2024), "Worldwide trends in underweight and obesity from 1990 to 2022: a pooled analysis of 3663 population-representative studies with 222 million children, adolescents, and adults", *The Lancet*, Vol. 403/10431, pp. 1027-1050, https://doi.org/10.1016/s0140-6736(23)02750-2. [1]

Annex B. The OECD SPHeP NCDs model

The OECD Strategic Public Health Planning for Non-Communicable Diseases (SPHeP-NCDs) model is an advanced systems modelling tool for public health policy and strategic planning. The model is used to predict the health and economic outcomes of the population of a country up to 2050. The model analyses a comprehensive set of key risk factors (e.g. obesity, alcohol use, smoking, diet, air pollution, physical activity) and their associated NCDs. The model covers 51 countries, including OECD Member countries, G20 countries, EU27 countries and OECD accession and selected partner countries.

For each of the 51 countries, the model uses demographic and risk factor characteristics by age- and sex-specific population groups from international databases. These inputs are used to generate synthetic populations, in which each individual is assigned demographic characteristics and a risk factor profile (Figure A B.1). The risk factors are distributed independently, and no mediators are modelled between the risk factors and the diseases. Based on these characteristics, an individual has a certain risk of developing a disease each year. These relative risks are based on the Global Burden of Disease study, amongst others. Note that the model uses population predictions to adjust the size and demographic profile of country populations in the future, but maintains current (age- and gender-specific) rates for risk factors. In other words, it does not predict any future trends in risk factor prevalence, other than those caused by changes in demographics.

Figure A B.1. Schematic overview of the OECD SPHeP-NCDs model

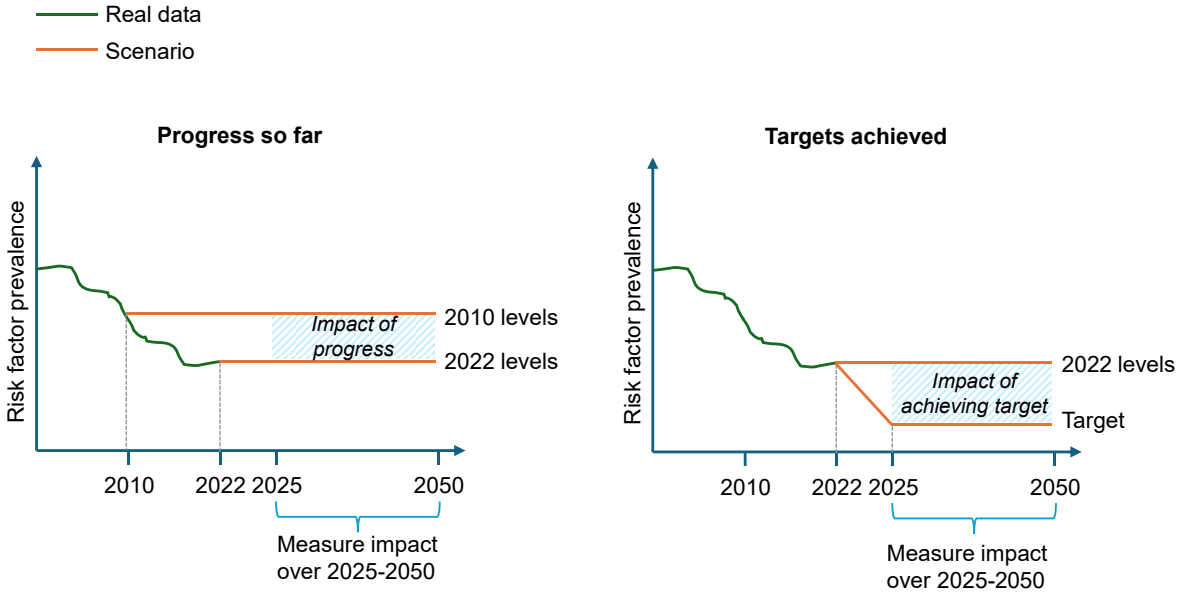


Note: This schematic is highly simplified and focusses on the disease component – it does not reflect some other components of the model (including births, immigration, emigration, death, remission and fatality).

For each year modelled, a cross-sectional representation of the population can be obtained, to calculate health status indicators such as life expectancy, disease prevalence, mortality, and disability-adjusted life years (DALYs). The disease and demographic profile of the population also form the basis for the healthcare cost, labour market and other well-being outputs. The impact of demographic changes and labour force participation and productivity are translated into a change in GDP using the Cobb-Douglas production function, consistent with the OECD long-term economic forecast model (Guillemette and Turner, 2017[1]) and other established long-term models such as the World Bank Long Term Growth Model (Pennings and Loayza, 2022[2]).

To estimate the burden of NCDs, a hypothetical scenario is modelled in which the incidence of NCDs was set to zero before age 75. To understand the progress that has been made on NCD risk factors in recent years, the risk factor levels achieved in 2022 were compared to a hypothetical scenario in which risk factors remain at the 2010 level (Figure A B.2).

Figure A B.2. Schematic overview of scenarios looking at risk factor progress since 2010



Note: Illustrative, not based on real data. Year for latest data (here 2022) varies.

These scenarios are projected into the future to be able to see the impact of the specific risk factor level on NCDs, which takes time to materialise (e.g. being overweight does not cause heart disease instantly but may do so after ten years or so). The impacts are measured over the period 2026 to 2050, with risk factor rates and survival rates that are maintained constant at either 2010 or 2022 level, throughout the modelled period. The model accounts for population ageing and the analysis is designed to avoid any misleading conclusion from demographic change.

To understand the potential for improvement, NCD risk factor prevalence rates and NCD survival rates are aligned to the top 25% rates observed across OECD countries, for each age and sex group (Figure A B.3). Rather than predetermined international policy targets, which may or may not be achievable, this approach shows what some countries have achieved and could therefore be a realistic goal for others.

Figure A B.3. Schematic overview of the Top Quartile scenarios

Baseline scenario

Country	Risk factor	Sex	Age	Prevalence rate	
I	Tobacco	Male	25-29	6.20%	Top 25%
E	Tobacco	Male	25-29	6.30%	
F	Tobacco	Male	25-29	8.50%	
B	Tobacco	Male	25-29	13.20%	
A	Tobacco	Male	25-29	13.40%	
C	Tobacco	Male	25-29	14.30%	
G	Tobacco	Male	25-29	15.20%	
D	Tobacco	Male	25-29	16.50%	
J	Tobacco	Male	25-29	16.80%	
K	Tobacco	Male	25-29	19.00%	
H	Tobacco	Male	25-29	19.20%	
L	Tobacco	Male	25-29	20.00%	
...	...	...	...	...	
E	Tobacco	Male	30-34	4.30%	Top 25%
I	Tobacco	Male	30-34	7.20%	
B	Tobacco	Male	30-34	7.50%	
F	Tobacco	Male	30-34	8.20%	
D	Tobacco	Male	30-34	11.50%	
C	Tobacco	Male	30-34	12.30%	
G	Tobacco	Male	30-34	14.20%	
A	Tobacco	Male	30-34	14.40%	
L	Tobacco	Male	30-34	15.00%	
K	Tobacco	Male	30-34	17.00%	
J	Tobacco	Male	30-34	17.80%	
H	Tobacco	Male	30-34	18.20%	

Top Quartile scenario

Country	Risk factor	Sex	Age	Prevalence rate
I	Tobacco	Male	25-29	6.20%
E	Tobacco	Male	25-29	6.30%
F	Tobacco	Male	25-29	8.50%
B	Tobacco	Male	25-29	8.50%
A	Tobacco	Male	25-29	8.50%
C	Tobacco	Male	25-29	8.50%
G	Tobacco	Male	25-29	8.50%
D	Tobacco	Male	25-29	8.50%
J	Tobacco	Male	25-29	8.50%
K	Tobacco	Male	25-29	8.50%
H	Tobacco	Male	25-29	8.50%
L	Tobacco	Male	25-29	8.50%
...	...	...	...	...
E	Tobacco	Male	30-34	4.30%
I	Tobacco	Male	30-34	7.20%
B	Tobacco	Male	30-34	7.50%
F	Tobacco	Male	30-34	7.50%
D	Tobacco	Male	30-34	7.50%
C	Tobacco	Male	30-34	7.50%
G	Tobacco	Male	30-34	7.50%
A	Tobacco	Male	30-34	7.50%
L	Tobacco	Male	30-34	7.50%
K	Tobacco	Male	30-34	7.50%
J	Tobacco	Male	30-34	7.50%
H	Tobacco	Male	30-34	7.50%

Note: Illustrative, not based on real data.

Since the OECD SHPeP NCDs model contains more granular risk factor data than the headline indicators generally reported, the results can, in certain cases, look counterintuitive. For example, while reports often look at the prevalence of obesity (BMI ≥ 30), the model also contains information on the prevalence of severe obesity (BMI ≥ 40). This category carries an increased risk of disease vis-à-vis a BMI between 30 and 40. This means that, even if a country saw no change in overall obesity, the incidence of disease could still increase if severe obesity increased.

The analyses presented in this study focus on six major risk factors (smoking, alcohol consumption, obesity, physical inactivity, diet and air pollution) and four major NCDs (cancer, CVD, COPD and diabetes). Diet includes fruit, vegetables, whole grains, legumes, processed meat, red meat, sugar sweetened beverages and sodium. CVDs include ischaemic heart disease/myocardial infarction, ischaemic and haemorrhagic stroke and atrial fibrillation. It is important to note that changes in risk factors will also affect other NCDs, and the impact estimated in this report is therefore an underestimation of the overall effect.

For more information on the OECD SPHeP NCDs model, see the SPHeP NCDs Technical Documentation, available at: http://oecdpublichealthexplorer.org/ncd-doc.

References

Guillemette, Y. and D. Turner (2017), "The fiscal projection framework in long-term scenarios", *OECD Economics Department Working Papers*, No. 1440, OECD Publishing, Paris, https://doi.org/10.1787/8eddfa18-en. [1]

Pennings, S. and N. Loayza (2022), *The Long Term Growth Model : Fundamentals, Extensions, and Applications (English)*, World Bank Group. [2]

OECD Health Policy Studies

The Health and Economic Benefits of Tackling Non-Communicable Diseases

Non-communicable diseases (NCDs) are reshaping our societies. Heart disease, cancer, diabetes and chronic lung conditions now affect millions more people than a generation ago, and the trend is still moving in the wrong direction. Today, more people are living longer lives, but often with multiple long-term illnesses.

This report shows why this matters beyond the health sector. NCDs cut lives short, affect quality of people's life, and reduce their ability to work. This raises health expenditure and reduces workers' productivity and economic output. Yet many of these impacts are avoidable, through action on health risk factors, early diagnosis of disease and improved treatment.

The analyses in this report show that preventing illness delivers far greater social and economic benefits than treating it later. Countries that succeed in reducing key health risks such as obesity and tobacco use can save lives, ease pressure on health budgets and unlock substantial economic gains.

Co-funded by the European Union

PRINT ISBN 978-92-64-76255-8
PDF ISBN 978-92-64-82823-0

9 789264 762558