Cancer in Slovenia

Summary

- *In 2022, around 19,000 Slovenians were diagnosed with cancer, more than 10,000 men and almost 9,000 women. Of these, 5,500 patients were diagnosed with non-melanoma skin cancer. This year's report introduces additional reporting on all cancers excluding non-melanoma skin cancers, enabling direct international comparison of indicators. Non-melanoma skin cancers are common, usually non-fatal, and mostly treated in outpatient facilities, often in private institutions with incomplete reporting of cases, and are therefore excluded from many countries' cancer statistics.*
- *About 6,300 Slovenians (3,500 men and 2,800 women) died of cancer in 2022.*
- *Currently, there are already over 136,000 people living in Slovenia who have been diagnosed with cancer at some point in their lives (prevalence).*
- *Among those born in 2022, one in three Slovenians are expected to develop cancer by the age of 75. The risk of developing cancer increases gradually with age and is highest among the elderly population; of all cancer patients diagnosed in 2022, 64% were over 65 years old. As the Slovenian population is ageing, the number of new cancer cases is expected to increase simply on account of the growing proportion of elderly people.*
- *In 2022, the most frequent cancers in Slovenia (prostate, lung, breast, colorectal and melanoma) accounted for 54% of all diagnosed cancers. These cancers are associated with unhealthy lifestyle: smoking, alcohol consumption, unhealthy diet, lack of physical activity, overweight and obesity, and excessive sun exposure – primary prevention measures should be in place with the aim to reduce their burden.*
- *The number of new cases in 2022, in the third year of the Covid-19 epidemic, is much higher compared to the year 2021, mainly due to changes in the method of data collection in the Cancer Registry, which contributed to an increase in the incidence of non-melanoma skin cancer and melanoma. Nevertheless, part of the increase can still be attributed to the shortfall caused by the Covid-19 epidemic, which we observed in 2020.*
- *Cancer screening programmes recommended by the Council of the European Union (EC) that have been introduced in Slovenia could lower mortality from breast, colorectal and cervical cancer through early detection; in addition cancer incidence for colorectal and cervical cancers has already been reduced.*
- *The five-year net survival of adult Slovenian patients with any type of cancer who were diagnosed in the 2018–2022 period was 59% in men and 64% in women.*

For additional information on the burden of cancer in Slovenia and in the world, visit: www.slora.si/en.

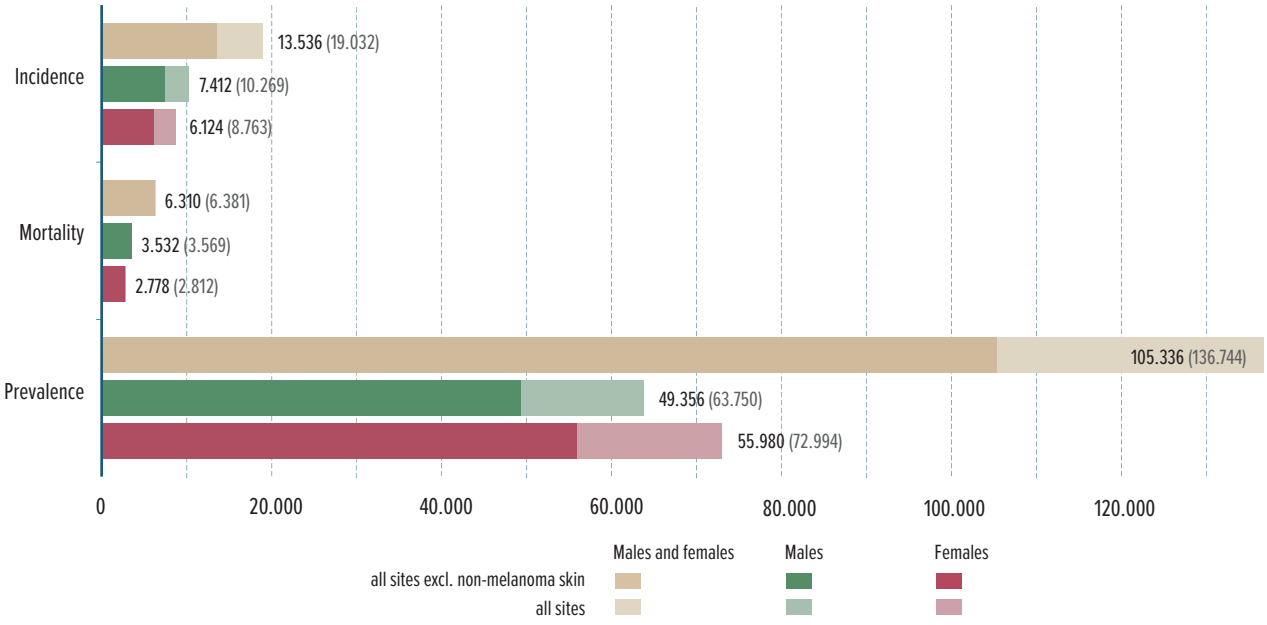


Figure 1. All cancer sites excl. non-melanoma skin cancer (numbers in brackets include non-melanoma skin cancer), Slovenia 2022.

Basic figures on cancer in Slovenia 2022

- In 2022, 19,032 people (10,269 men and 8,763 women) were diagnosed with cancer in Slovenia. Of these, 5,496 patients were diagnosed with non-melanoma skin cancer.
- The age-standardized incidence rate (European standard population) was 411.3/100,000; 474.6 in men and 364.6 in women. Among those born in 2022, one in three Slovenians are expected to develop cancer by the age of 75.
- In 2022, 6,381 Slovenians died of cancer, 3,569 men and 2,812 women. There were 136,744 people alive in Slovenia (63,750 men and 72,994 women) who had at some point during their lifetime been diagnosed with cancer (prevalence).

Age of patients

- Although the risk of cancer increases gradually with age, it is by far highest in older age; of all cancer patients in 2022, as many as 67% men and 61% women were diagnosed with cancer after the age of 65.
- Around 0.6% of all cancers were diagnosed in children and adolescents (up to 20 years of age).

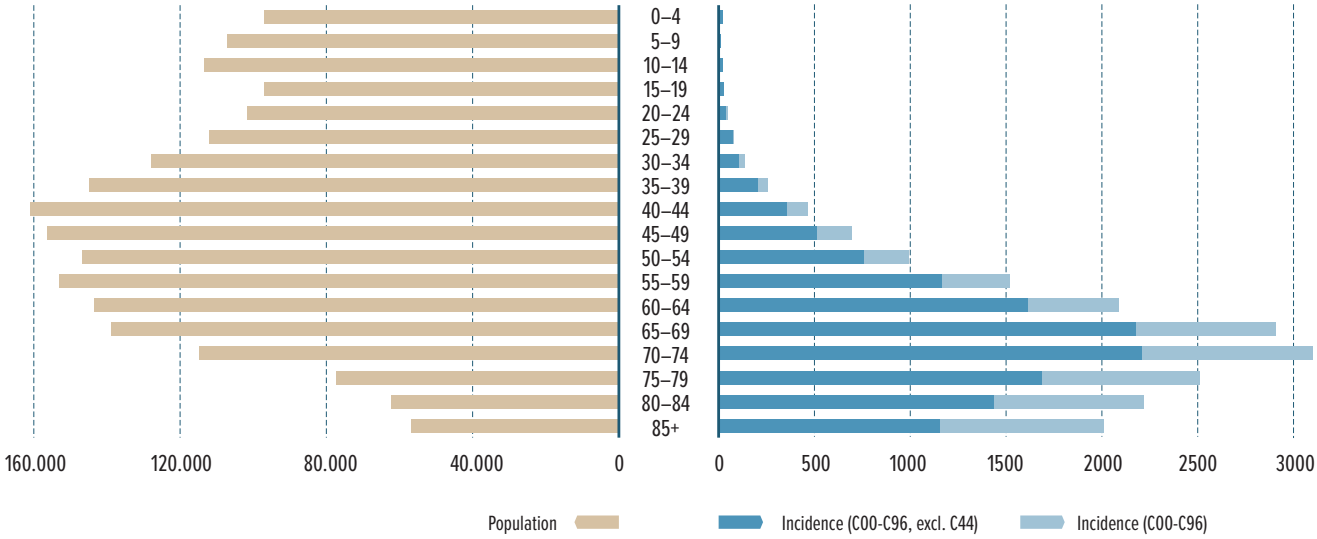
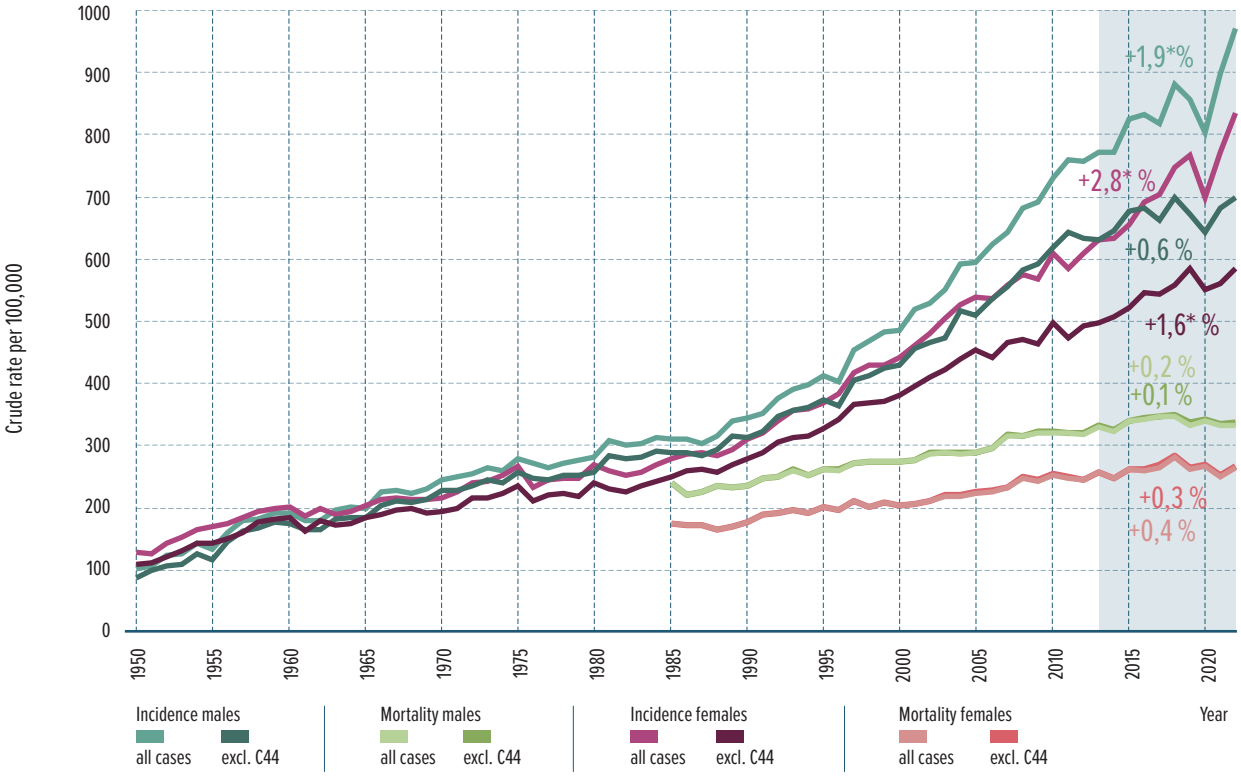


Figure 2. Number of new cancer cases excluding non-melanoma skin cancer and including it (right side) by age and comparison with the population numbers (left side) in the same age groups, Slovenia 2022.

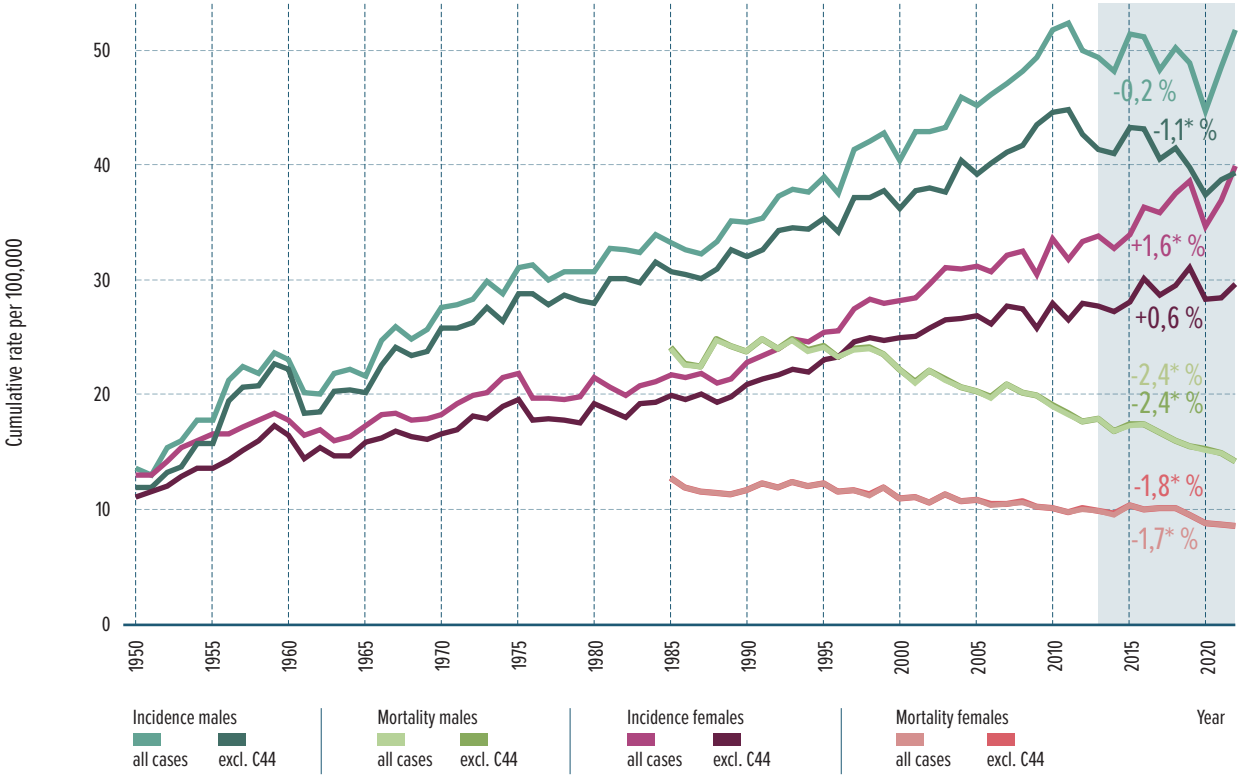
Time trends

- The crude incidence rates are increasing, mainly due to non-melanoma skin cancer.
- The crude incidence rate has almost doubled in the last thirty years, increasing by an average of 1.1% per year (all cancer sites excluding non-melanoma skin cancer) over the last decade; increasing is significant in women. The crude mortality rate has remained unchanged over the last 10 years (the trend is not statistically significant).
- More than half of this increase can be attributed to an ageing population, as longer life expectancy means more people are likely to be diagnosed with cancer. The age-standardized, cumulative incidence rate shows that the risk of cancer adjusted for ageing has been increasing more slowly, with the trend reversed for men. It is also encouraging that cancer mortality (if we adjust for ageing) has been declining, especially since the mid-1990s, pointing to greater successes of cancer treatment, earlier diagnosis and screening programmes.



* Average annual change is statistically significant at 0.05 significance level

Figure 3. Crude annual incidence and mortality rates for all cancer sites excluding non-melanoma skin cancer and including it by sex with average annual change in last 10 years, Slovenia 1950–2022.



* Average annual change is statistically significant at 0.05 significance level

Figure 4. Cumulative annual incidence and mortality rates for all cancer sites excluding non-melanoma skin cancer and including it by sex with average annual change for the last 10 years, Slovenia 1950–2022.

Most frequent cancers

- Cancer is not a single disease, but rather several hundred different diseases. These can occur in all tissues and organs of the human body. They vary in frequency, treatment and outcome, and are also associated with different, more or less established risk factors.
- The five most frequent cancers in Slovenia – prostate, lung, breast, colorectal and melanoma – accounted for 54% of all new cancer cases in 2022.
- The most frequent cancers are associated with an unhealthy lifestyle, excessive sun exposure, unhealthy diet, smoking and alcohol consumption. Primary prevention measures should be in place with the aim to reduce their burden.
- Prostate cancer is the most common cancer in men, while breast cancer is the most common in women; both cancers account for about one-fifth of all cancers. In both sexes it is followed by lung and colorectal cancers.
- The most frequent cancers differ according to age. In children and adolescents aged under 20 years leukaemias are the most frequent, followed by tumours of the central and autonomic nervous system and lymphomas, in girls also thyroid cancer. Young adult men are most often diagnosed with testicular cancer and melanoma, while in young women breast cancer is ranked first.

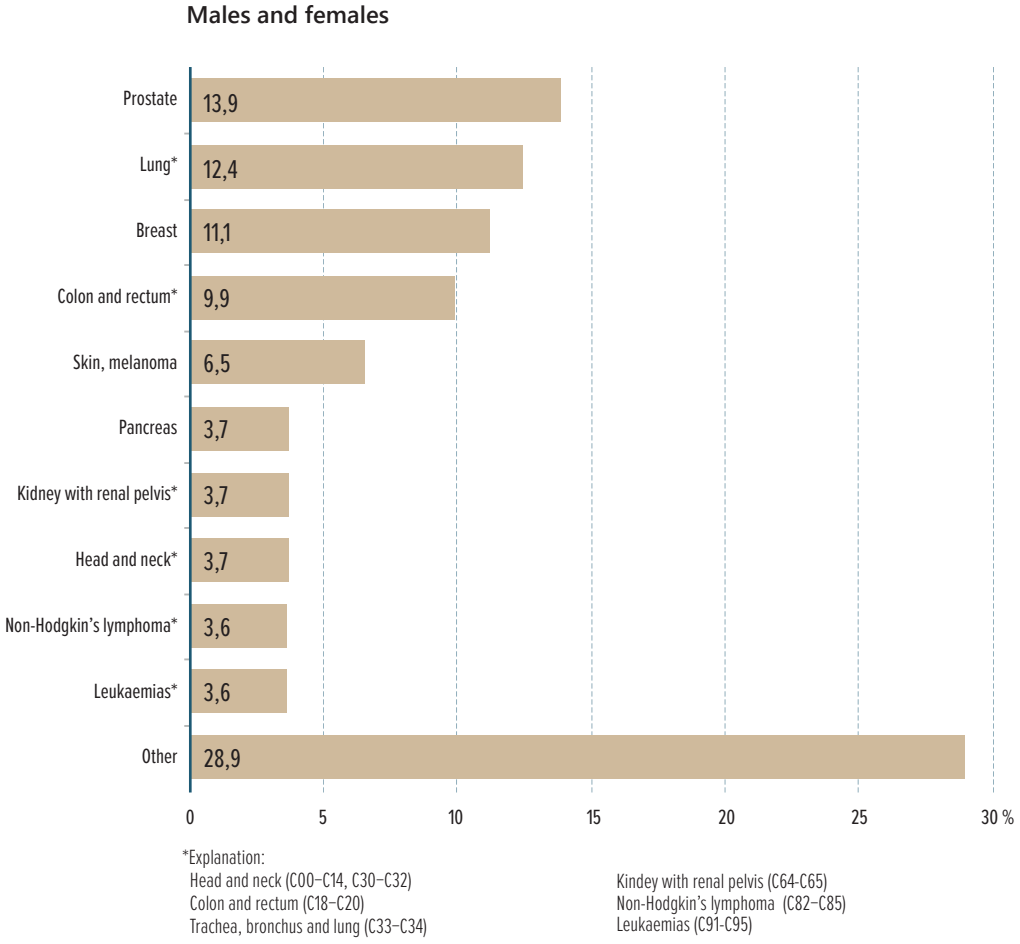
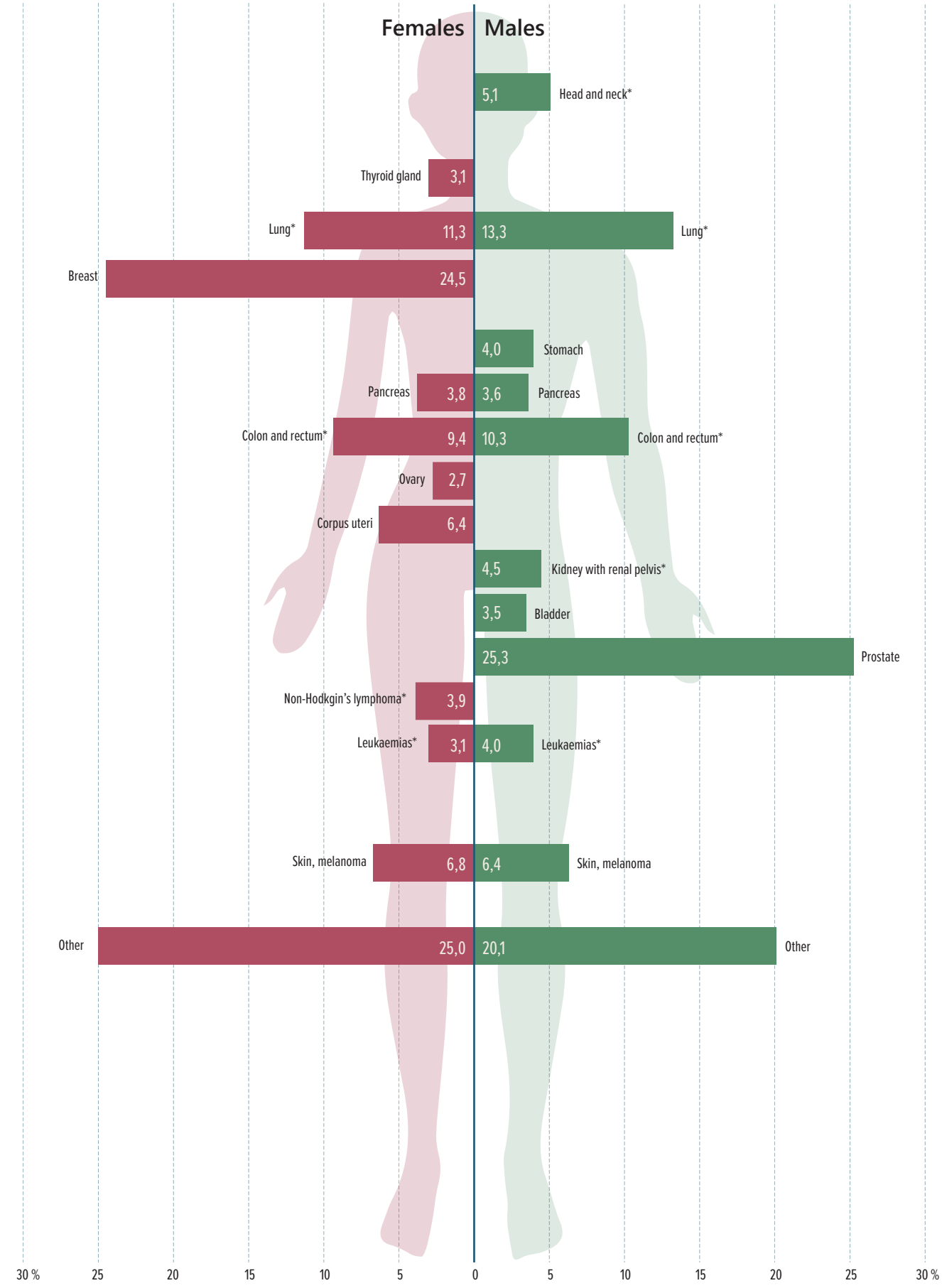


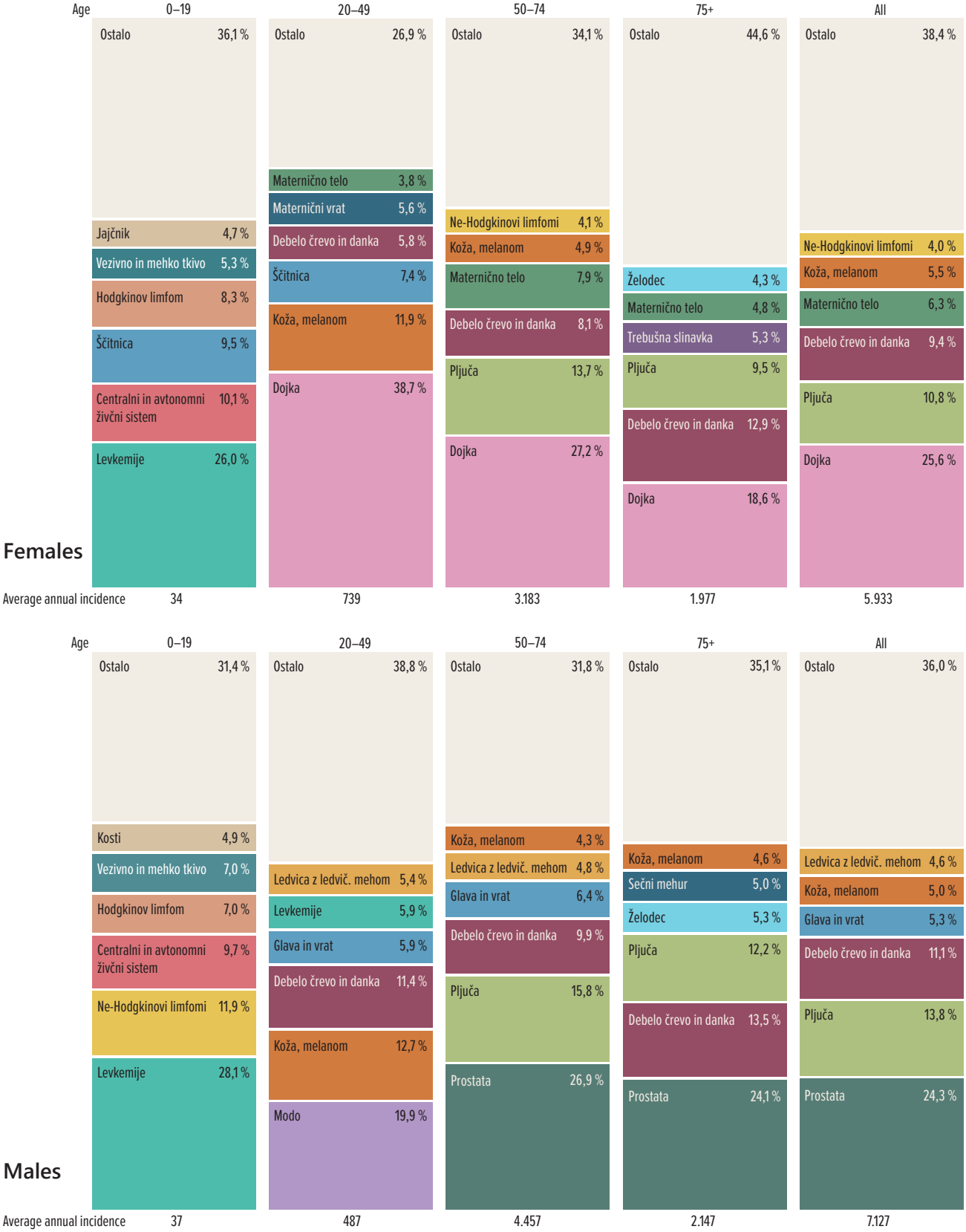
Figure 5a. The leading cancer sites with percentage distribution for both sexes combined (non-melanoma skin cancer is excluded), Slovenia 2022.



*Explanation:

Head and neck (C00–C14, C30–C32)
Trachea, bronchus and lung (C33–C34)
Colon and rectum (C18–C20)
Kidney with renal pelvis (C64–C65)
Non-Hodgkin's lymphoma (C82–C85)
Leukaemias (C91-C95)

Figure 5b. The leading cancer sites with percentage distribution by sex (non-melanoma skin cancer is excluded), Slovenia 2022.



*Explanation:

Colon and rectum (C18–C20)
Kidney with renal pelvis (C64–C65)
Non-Hodgkin's lymphoma (NHL) (C82–C85)
Skin, melanoma (C43)
Connective and soft tissue (C48–C49)
Head and neck (C00–C14, C30–C32)
Central and autonomic nervous system (C70–C72)
Breast (C50)
Cervix uteri (C53)
Corpus uteri (C54)
Thyroid gland (C73)
Hodgkin's disease (C81)
Leukaemias (C91–C95)
Stomach (C16)
Prostate (C61)
Testis (C62)
Lung (C33–C34)
Bladder (C67)
Bone (C40–C41)
Pancreas (C25)

Figure 6. Percentage distribution of leading cancer sites by age group and sex (non-melan. skin cancer is excluded), Slovenia 2018–2022.

Time trends for most frequent cancers

- Among the more frequent cancers in men, the incidence rate of lung cancer was increasing until the early 2000s, when it stabilized at around 90/100,000.
- In the new millennium lung cancer is being overtaken by prostate cancer and non-melanoma skin cancer which is increasing at an average rate of 6.7% per year in the last decade. The dramatic increase in the incidence of prostate cancer over the past two decades is not due to any newly identified risk factor, but rather to the increasing use of the prostate-specific antigen (PSA) test in healthy men and therefore detection of a large number of cancers that would have otherwise remained undetected for life. Data for recent years indicate that we have already reached the peak incidence of prostate cancer.
- Time trends in the incidence of colorectal cancer must also be interpreted by taking into account changes in diagnostics – in 2009 Slovenia introduced the national screening and early detection programme for colorectal cancer (Svit). The crude incidence rate of colorectal cancer in men decreased by 1.6% per year from 2013 on, but it was on the rise in 1999–2008 (3.6% on average annually). Average annual percentage changes are shown next to the incidence curves in Figure 7.
- Among the more frequent cancers in women, crude incidence rates have been increasing for breast cancer (by 1.7% on average per year), skin, excluding melanoma (by 6.7%), melanoma (by 4.5%) and corpus uteri cancer (by 1.6%). Most worrying, however, is the increase in lung cancer among women (by 5.4%).
- The incidence rate of cervical cancer has decreased significantly since the introduction of the national cervical cancer screening programme (ZORA) (by an average of 2.4% per year in the last ten years).
- Similar to men, the introduction of the Svit screening programme in 2009 has had an impact on the time trend of colorectal cancer in women – the crude incidence rate of colorectal cancer in women decreased by 0.7% per year from 2013 on, but it was on the rise in the 1999–2008 period (3.4% on average annually).

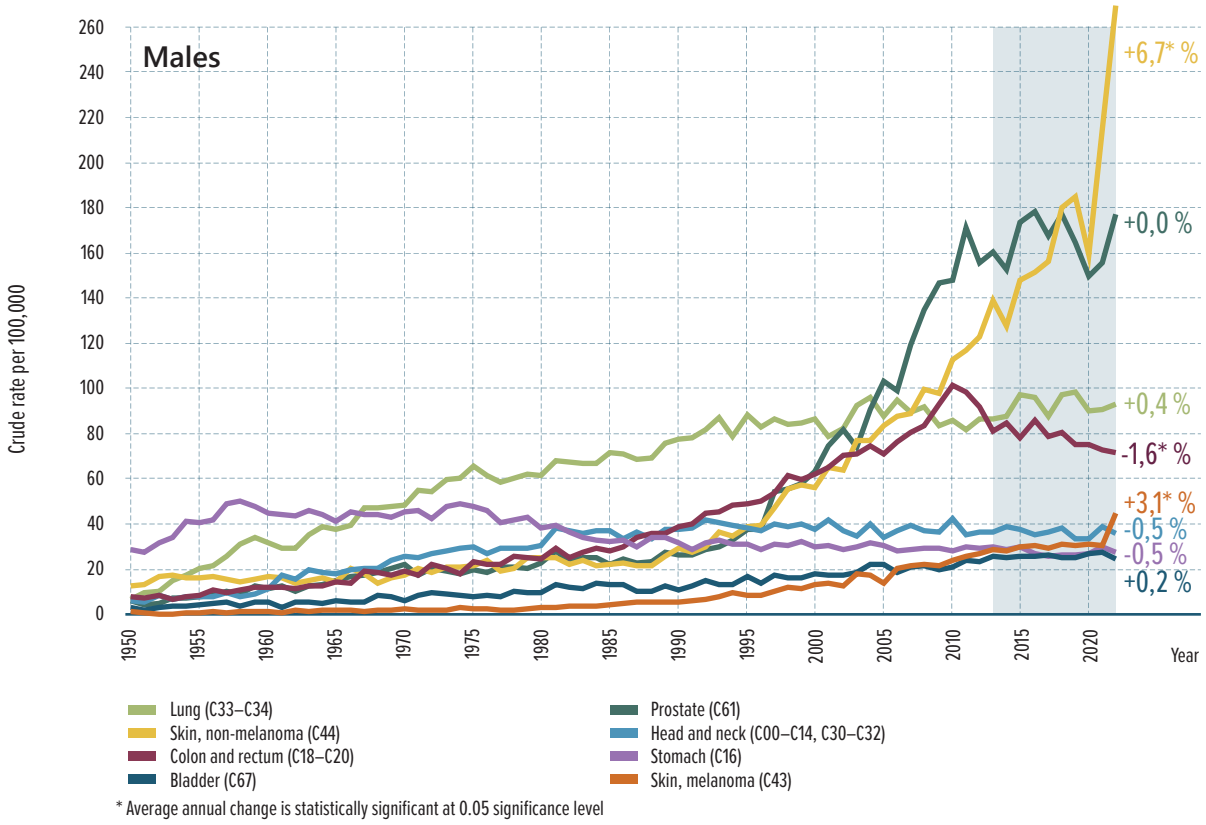


Figure 7a. Crude annual incidence rates of selected primary cancer sites with average annual change in last 10 years in males, Slovenia 1950–2022.

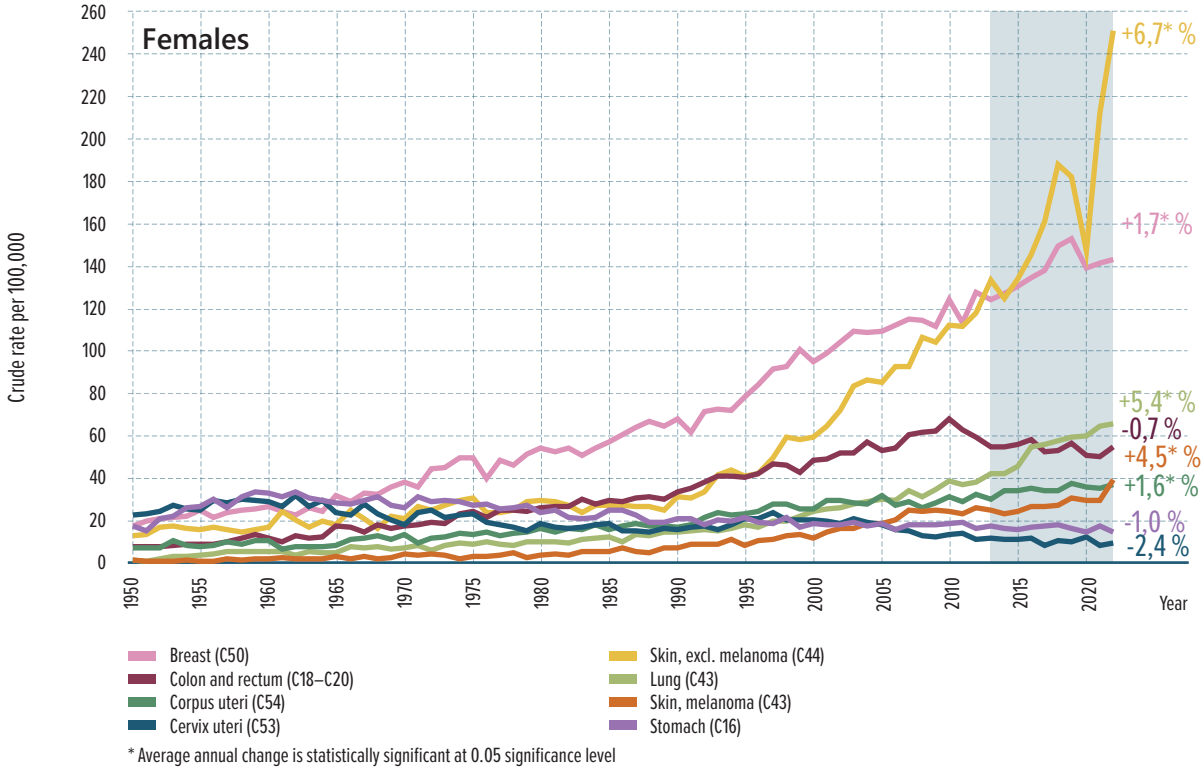


Figure 7b. Crude annual incidence rates of selected primary cancer sites with average annual change in last 10 years in females, Slovenia 1950–2022.

Rare cancers

- A particular challenge is posed by rare cancers (defined as those with less than six new cases per 100,000 per year).
- In total, rare cancers in Slovenia accounted for about a fifth of all newly diagnosed cancers – around 3,000 patients were diagnosed with rare cancers every year.
- As opposed to frequent cancers, rare cancers are more likely to occur in children and adolescents.
- Problems with rare cancers are similar to those characteristic of all rare diseases: they are difficult to diagnose and are often detected late, their aetiology and treatment options are poorly researched, or else the most appropriate treatment is hard to access. In order to successfully manage rare cancers, it is important that their burden is closely monitored, and that all countries adopt guidelines as well as establish reference centres for diagnostics and treatment of such patients.

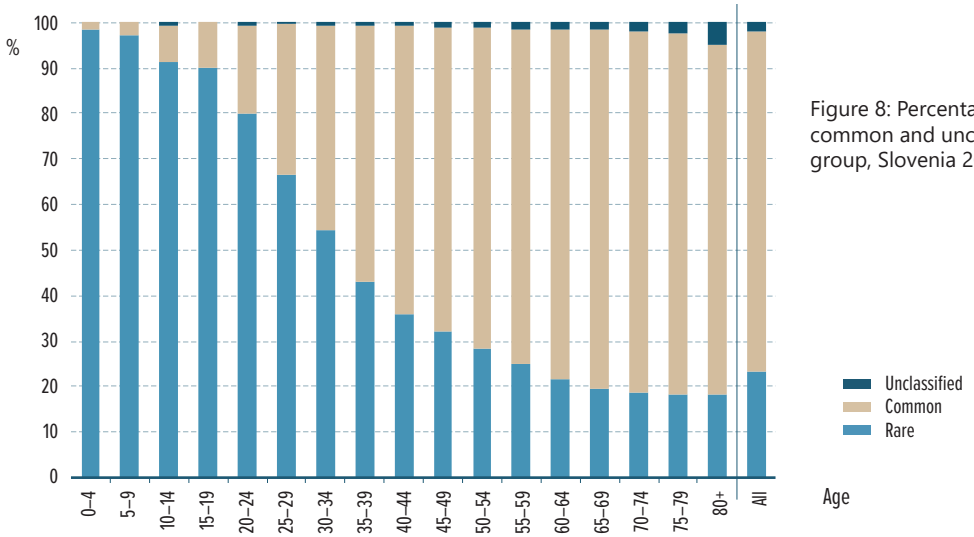


Figure 8: Percentage distribution of rare, common and unclassified cancers by age group, Slovenia 2004–2013.

Survival

- The five-year net survival of male patients with any type of cancer excluding non-melanoma skin cancer diagnosed between 2018 and 2022 was 59.2%, while in women it was 63.5%.
- The five-year net survival was over 80% in men with testicular cancer, prostate cancer, thyroid cancer, skin melanoma, Hodgkin's lymphoma and lymphocytic leukaemia, and in women with thyroid cancer, skin melanoma, breast cancer, Hodgkin's lymphoma and lymphocytic leukaemia.
- Statistically significant progress has been observed for both sexes in the last five years in lung cancer, where five-year survival in women has already exceeded 30%.
- In 2020, a survival analysis of Slovenian cancer patients diagnosed between 1997 and 2016 was performed. The results of the analysis are published in the publication Survival of Cancer Patients, Diagnosed in 1997–2016 in Slovenia (Zadnik et al., 2022) which is also available in digital format at www.onko-i.si/eng/crs. The main conclusions are:

1. Survival of Slovenian cancer patients is improving over time. During the 20 years observed (1997–2001 and 2012–2016), five-year net survival increased by 11 percentage points. The increase was significantly higher in men, for whom five-year net survival increased by 17 percentage points (from 38% to 55%). In women, five-year net survival increased by 6 percentage points (from 54% to 60%).
2. Age and stage at diagnosis are still key factors when it comes to survival of cancer patients. Five-year net survival is lowest in those aged 75–94, though even in this age group it has improved by 7 percentage points over the past 20 years. Five-year net survival of patients with localized disease increased by 10 percentage points over the observed 20 years and has reached 85% during the last period; survival of patients with distant disease has not improved.
3. For both sexes combined, survival has improved significantly over the last 20 years for the three most frequent cancers: colorectal cancer (by 14 percentage points, from 48% to 62%), skin melanoma (by 12 percentage points, from 79% to 91%), and lung cancer (by 8 percentage points, from 10% to 18%). This improvement is due to earlier diagnosis and advances in systemic treatment.
4. Progress has also been shown in the two most frequent cancers by sex: breast cancer in women and prostate cancer in men. The five-year net survival of breast cancer patients has increased for 10 percentage points in the last 20 years, while the five-year net survival of prostate cancer patients has increased for over 20 percentage points. The improvement in prostate cancer survival is probably not real, since in the period under review, PSA testing in Slovenia was performed rather uncritically and likely resulted in detection of prostate cancers that would have otherwise remained clinically silent for a long time, thus artificially prolonging survival on account of earlier diagnosis in the natural course of disease.
5. The group of cancers where no progress has been observed over time and where survival still remains low includes pancreatic cancer, oesophageal cancer, liver, gallbladder and bile duct cancers as well as brain tumours.
6. In the CONCORD-3 study, five-year net survival of adult patients with 15 different cancers diagnosed between 2010 and 2014 was compared among 26 European countries. In most cases survival rates of Slovenian cancer patients are below the European average, which highlights the need and serves as an incentive for future improvements.
7. Less than 1% of cancer patients are children and adolescents; they are mainly diagnosed with leukaemias, central nervous system tumours and lymphomas, and have a better five-year survival compared to adults. In the last 20 years (1997–2001 and 2012–2016), the five-year survival of children and adolescents with cancer has increased by 7 percentage points (from 79% to 86%).

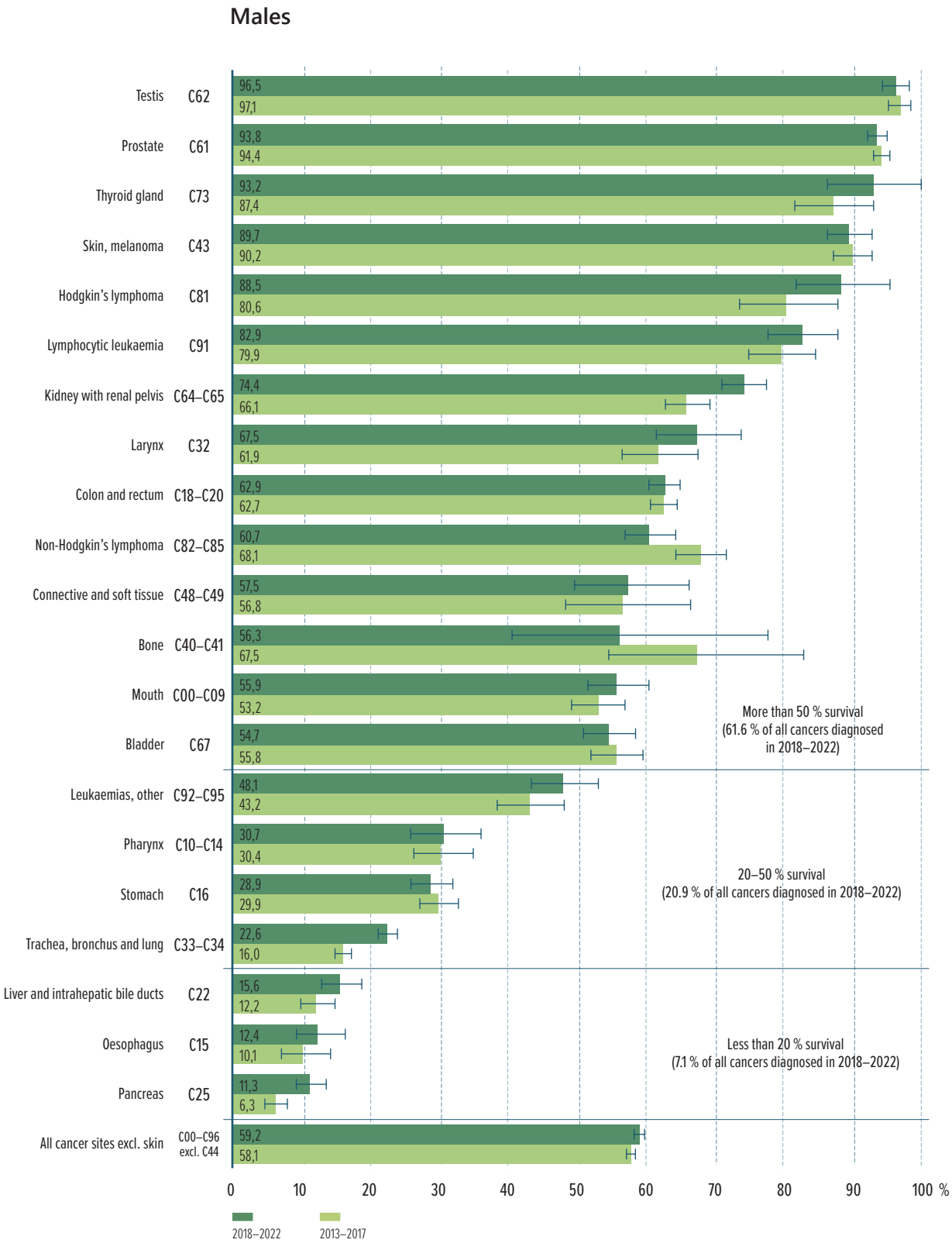


Figure 9a. Five-year net survival (with 95% confidence interval) for males diagnosed with selected cancers in periods 2018–2022 and 2013–2017.

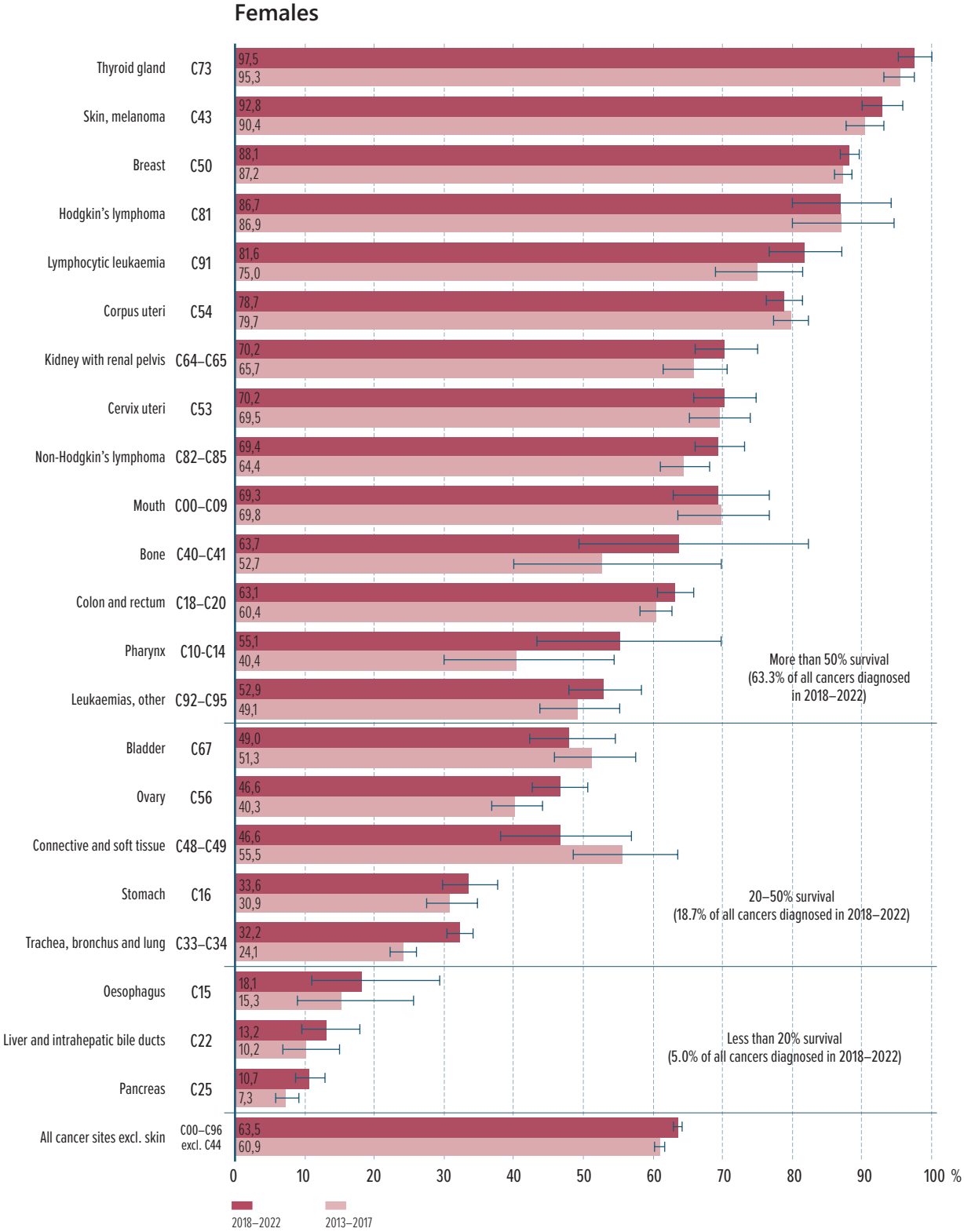


Figure 9b. Five-year net survival (with 95% confidence interval) for females diagnosed with selected cancers in periods 2018–2022 and 2013–2017.

Comparisons with Europe

- In 2022, according to the estimates of the European Cancer Information System (https://ecis.jrc.ec.europa.eu/) Slovenia ranked eighth among 27 European countries with respect to the incidence rate (age standardized, European population standard) of all cancers excluding skin cancer (605/100,000). Denmark, Ireland, the Netherlands, Croatia, Hungary, Belgium and France had a higher incidence.
- We are in fifth place in terms of mortality, led by Poland, Hungary, Croatia and Slovakia.

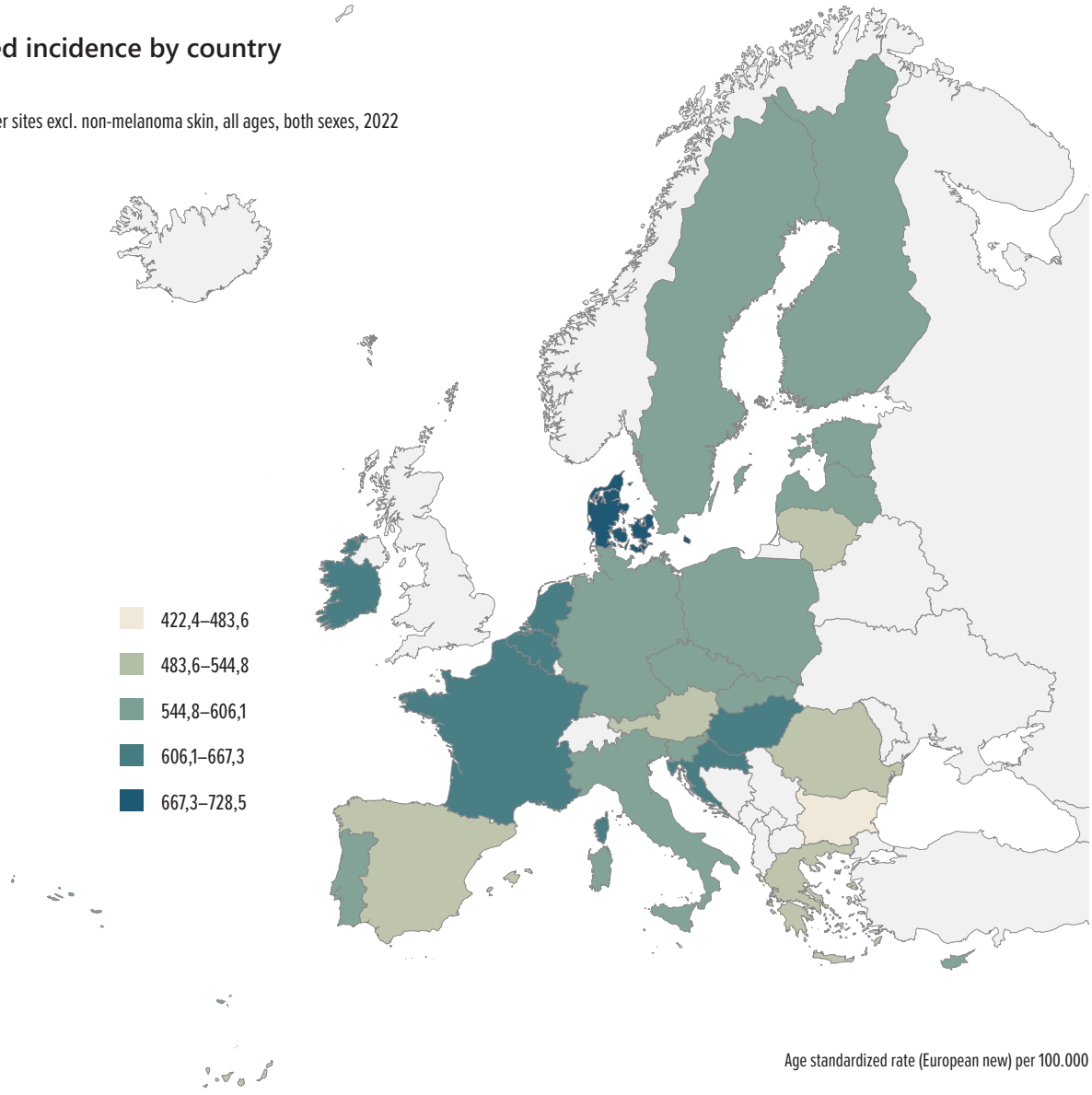


Figure 10a. Estimated age-standardized (European standard) incidence rates of cancer (excluding non-melanoma skin) in Europe, 2022.

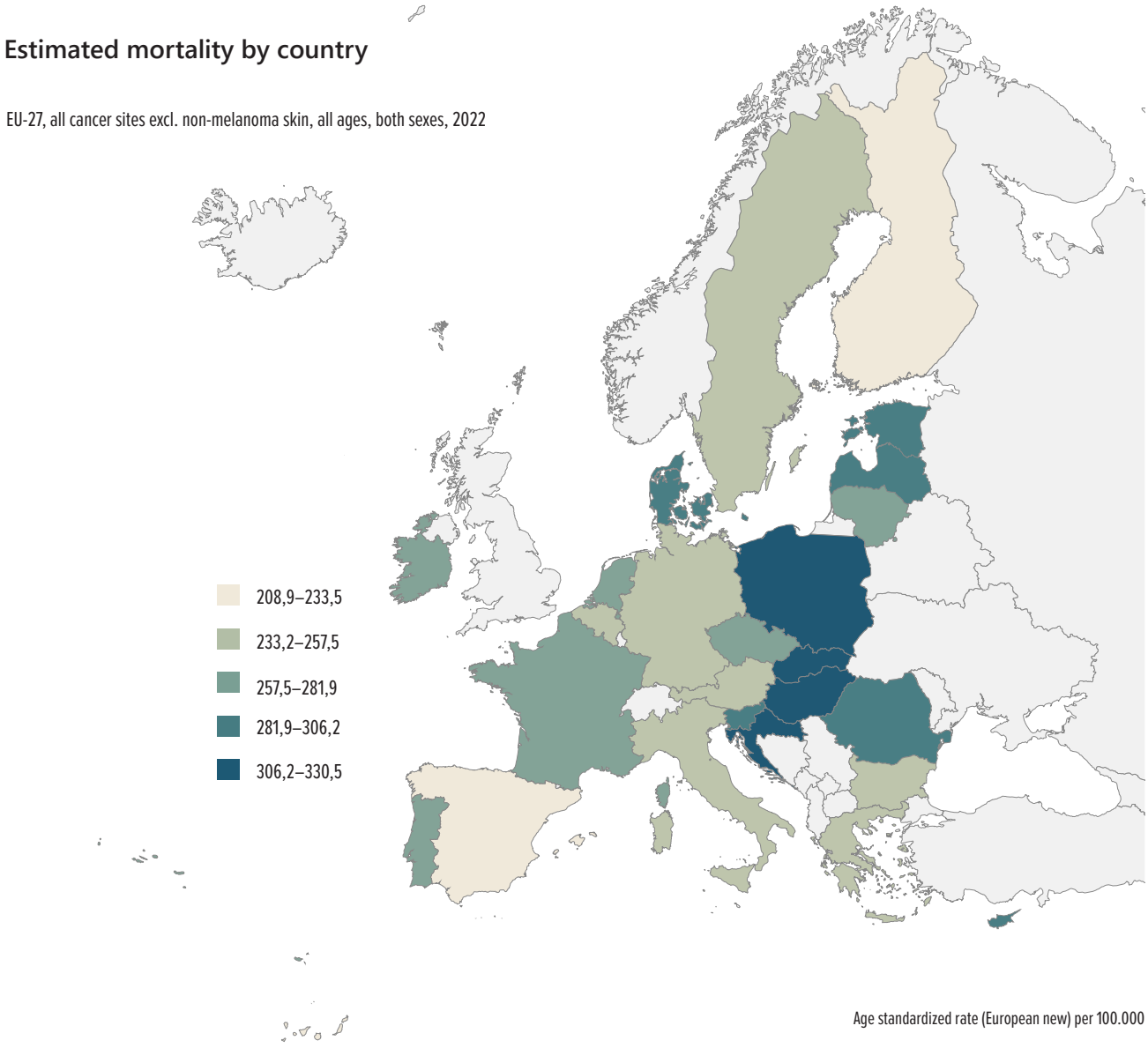


Figure 10b. Estimated age standardized (European standard) mortality rates of cancer (excluding non-melanoma skin) in Europe, 2022.