

Cancer in Scotland

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Information Services Division
NHS National Services Scotland

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Cancer incidence

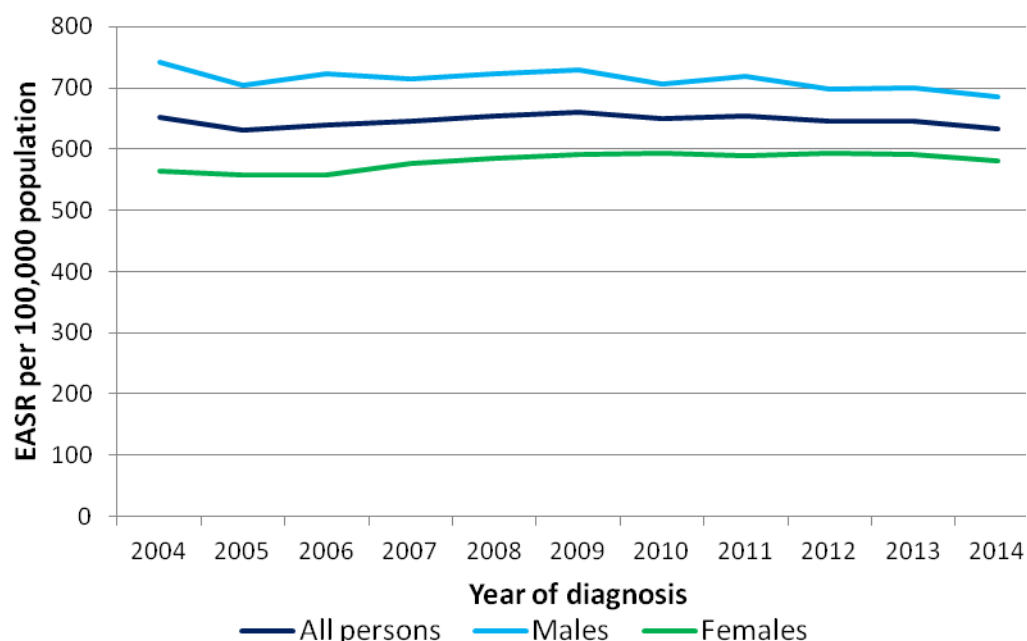
This section was updated in May 2016. It will be updated again in April 2017. This section is updated annually, alongside the Cancer Incidence National Statistics publication.

In 2014, 31,711 people were diagnosed with cancer in Scotland (16,183 females and 15,528 males). The number of people diagnosed has increased over the last ten years from 27,820. These figures do not include non-melanoma skin cancers (NMSC), of which nearly 11,500 were diagnosed in 2014. NMSC is excluded from the analysis of all cancers combined for the reasons below:

- In the interests of external comparison, because not all cancer registries collect data on NMSC;
- Because they are so common, only the first occurrence of a basal cell carcinoma (the most common type of NMSC) is collected in Scotland;

Over the ten years to 2014, the age-standardised incidence rate of cancer has increased by 6% for females and decreased by 3% for males. For both sexes combined, the standardised incidence rate has increased by 1% (Figure 1).

Figure 1. Recent trends (2004-2014) in age-standardised incidence rates for cancer¹ in Scotland. (EASR: European Age Standardised Rate – using ESP2013²)



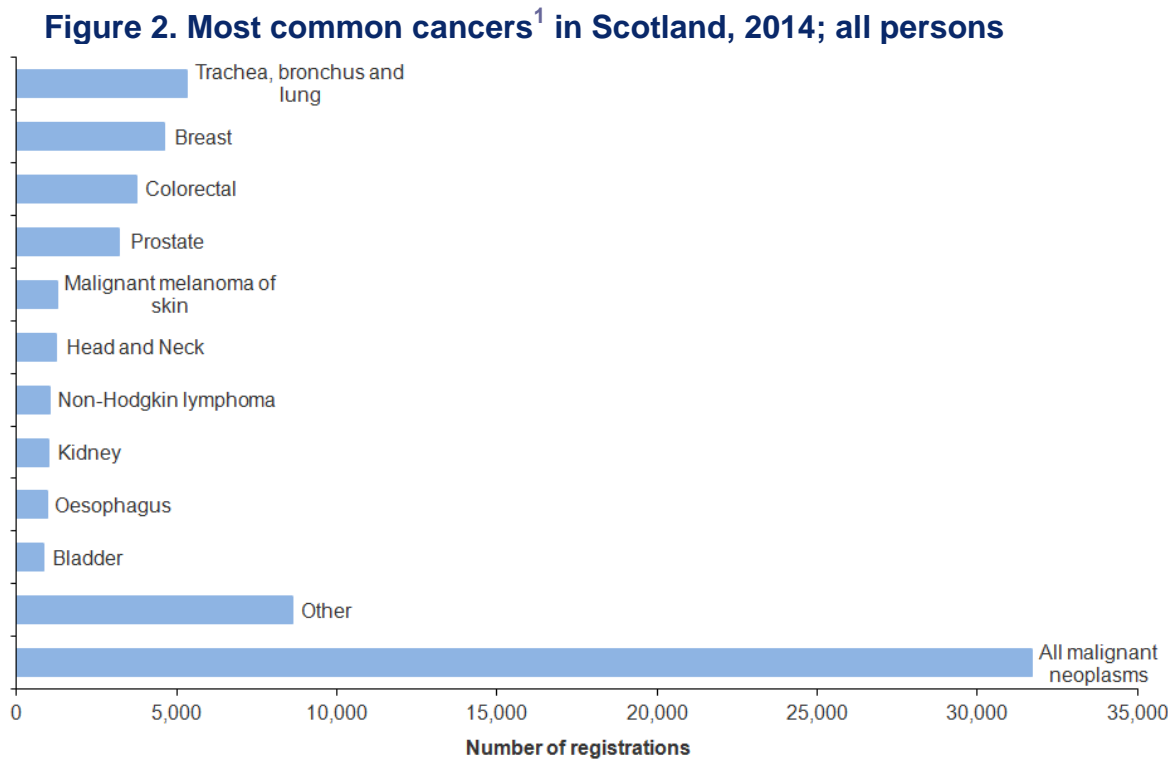
Source: Scottish Cancer Registry

1 All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)

2 The European Standard Population (ESP), which was first used in 1976, was revised in 2013.

Figures using ESP1976 and ESP2013 are not comparable. The European Age Standardised Rate (EASR) is calculated using ESP2013 and 5 year age groups 0-4, 5-9 up to an upper age group of 90+.

Lung cancer remains the most common cancer overall in Scotland for both sexes combined, with 5,307 cases diagnosed in 2014. This accounted for 17% of all cancers in Scotland. There were 4,610 cases of breast cancer (15%) and 3,721 cases of colorectal cancer (12%) (Figure 2 and Table 1).



Source: Scottish Cancer Registry

¹ All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)

Table 1 shows the numbers of cases for the most common cancers in 2014 for males, females and both sexes. The table also shows the estimated change in the standardised incidence rates over the last ten years.

Table 1: Most common cancers in Scotland in 2014: Rank, number, frequency and change in incidence rate since 2004

Rank	Type of cancer (with ICD10 code)	Number	Frequency	10 year % change ¹	p - value ³
All Persons					
1	Trachea, bronchus and lung (C33-C34)	5,307	16.7%	-4.5	0.3406
2	Breast (C50) ²	4,610	14.5%	x	x
3	Colorectal (C18-C20)	3,721	11.7%	-5.4	0.0858
4	Prostate (C61) ²	3,202	10.1%	x	x
5	Malignant melanoma of skin (C43)	1,248	3.9%	+22.5	<0.0001
6	Head and Neck (C00-C14, C30-C32)	1,234	3.9%	+10.7	0.0001
7	Non-Hodgkin lymphoma (C82-C85)	1,008	3.2%	+2.0	0.4282
8	Kidney (C64-C65)	1,006	3.2%	+27.1	<0.0001
9	Oesophagus (C15)	932	2.9%	-6.3	0.0741
10	Bladder (C67)	841	2.7%	-8.8	0.2254
	Other malignant neoplasms	8,602	27.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	31,711	100.0%	+0.6	0.0063
Males					
1	Prostate (C61)	3,202	20.6%	0.0	0.9962
2	Trachea, bronchus and lung (C33-C34)	2,696	17.4%	-13.9	<0.0001
3	Colorectal (C18-C20)	2,061	13.3%	-6.9	0.0108
4	Head and Neck (C00-C14, C30-C32)	849	5.5%	+5.4	0.1244
5	Malignant melanoma of skin (C43)	643	4.1%	+32.8	<0.0001
6	Oesophagus (C15)	624	4.0%	-5.3	0.1570
7	Kidney (C64-C65)	610	3.9%	+25.2	<0.0001
8	Bladder (C67)	553	3.6%	-10.8	0.0233
9	Non-Hodgkin lymphoma (C82-C85)	546	3.5%	+3.2	0.3817
10	Stomach (C16)	406	2.6%	-32.4	<0.0001
	Other malignant neoplasms	3,338	21.5%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,528	100.0%	-3.4	0.0016
Females					
1	Breast (C50)	4,578	28.3%	+6.7	<0.0001
2	Trachea, bronchus and lung (C33-C34)	2,611	16.1%	+10.7	<0.0001
3	Colorectal (C18-C20)	1,660	10.3%	-2.9	0.3254
4	Corpus uteri (C54)	759	4.7%	+31.7	<0.0001
5	Malignant melanoma of skin (C43)	605	3.7%	+12.2	0.0189
6	Ovary (C56)	595	3.7%	-12.9	0.0003
7	Non-Hodgkin lymphoma (C82-C85)	462	2.9%	+0.5	0.9223
8	Pancreas (C25)	419	2.6%	+18.1	0.0002
9	Kidney (C64-C65)	396	2.4%	+30.7	<0.0001
10	Cervix uteri (C53)	385	2.4%	+17.9	0.0089
	Other malignant neoplasms	3,713	22.9%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	16,183	100.0%	+5.8	<0.0001

Source: Scottish Cancer Registry

'x' = not applicable.

- 1 Estimated 10-year change in age-adjusted incidence rates, calculated using Poisson regression analyses.
- 2 Percentage change in incidence is not shown in the 'All Persons' table for cancers occurring mainly or only in one sex.
- 3 p-value is the probability that the 10 year percentage change occurred by chance. A p-value of less than 0.05 indicates that the change is statistically significant.

When attempting to interpret trends in cancer incidence, it is important to remember that recent patterns of cancer are, for the most part, likely to reflect trends in the prevalence of risk and protective factors going back several decades. The commentary below relates to changes in the incidence rates of different types of cancer over the last ten years.

Breast cancer

Breast cancer is the most common cancer in women. Over the last decade the incidence rate has increased by 7%; this may be partly due to increased detection by the Scottish Breast Screening Programme and an extension from 2003 in the age range invited for screening to include women up to the age of 70 years. However, increases in the incidence of breast cancer might also be anticipated with higher prevalence of known risk factors among the female population, such as increases in the mother's age at the birth of her first child, decreases in family size, increases in post-menopausal obesity, and increases in alcohol consumption.

Prostate cancer

Prostate cancer is the most common cancer in men, accounting for slightly more than one in five cancers in men. The incidence rate of prostate cancer has remained steady over the last decade. Prostate cancer incidence is likely to be influenced by the extent of prostate-specific antigen testing among men.

Lung cancer

The long-term decline seen in the incidence rate of lung cancer in males, the second most common cancer in men, has continued with a significant fall in the incidence rate of 14% over the last ten years. Lung cancer incidence rates in females increased by 11% over the last ten years. To a large extent, this trend reflects historic trends in the prevalence of smoking, which have differed between men and women.

Colorectal cancer

Colorectal cancer has decreased in both women (3%) and men (7%), although only the decrease for males is statistically significant. Modifiable risk factors for colorectal cancer are thought to include diet, lack of physical activity and long-term smoking.

Cancer of the body of the uterus

The incidence of cancer of the body of the uterus (corpus uteri) has increased by 32% over the ten-year period 2004-2014. The majority of cancers at this anatomical site affect the endometrium or lining of the womb. The increase in incidence may be due, at least in part, to longstanding changes in fertility (since childbearing appears to protect against endometrial cancer) and increases in levels of obesity (which increase risk). A further contributing factor may be a decrease in rates of hysterectomy, which leaves a larger population at risk of developing uterine cancer.

Malignant melanoma of the skin

Malignant melanoma of the skin is the fifth most common cancer in both women and men. Incidence rates increased over the last decade by 33% in

males and 12% in females. The primary recognised risk factor for melanoma of the skin is exposure to natural and artificial sunlight, especially but not exclusively at a young age.

Ovarian cancer

The 13% decrease observed in ovarian cancer incidence may be partly due to increased use of the oral contraceptive pill from the 1960s onwards, since this appears to protect against the development of ovarian cancer.

Oesophageal cancer

There was a decrease of 5% in males and 8% in females over the last ten years, however neither of these changes are statistically significant. Established risk factors for oesophageal cancer include smoking, alcohol misuse, obesity, and chronic gastro-oesophageal reflux disease. Oesophageal cancer does not appear in table 1 for females as it is not one of the ten most common cancers for women.

Bladder cancer

The decline in bladder cancer incidence since 1998 may be, at least in part, an artefact due to a change in coding practice across cancer registries in the UK. Around a quarter of bladder tumours are no longer coded as invasive bladder cancers. This decrease is large enough to have an impact on the figures for all cancers combined.

Non-Hodgkin's lymphoma

Non-Hodgkin's lymphoma (NHL) has increased in males by 3%, with a smaller increase in females of less than 1%, however neither of these changes are statistically significant. Although immunosuppression has been associated with the development of NHL, much has still to be understood about the causes of NHL and so the reasons for the observed trends in incidence are unclear.

Pancreatic cancer

There have been increases in incidence of pancreatic cancer in both females (18%) and males (12%). Again, the causes of pancreatic cancer are poorly understood, although smoking is one reasonably well-established risk factor. Pancreatic cancer does not appear in table 1 for males as it is not one of the ten most common cancers for men.

Kidney cancer

Cancers of the kidney continue to show significant increases in incidence rates over the last ten years of 31% and 25% for females and males, respectively. The increase has occurred primarily in cancers of the renal parenchyma rather than of the renal pelvis. The reason for this increase is not clear. Established risk factors include obesity and smoking, but advances in medical imaging may also have led to an increase in incidental diagnosis of some tumours.

Stomach cancer

Cancer of the stomach continues to show highly significant decreases in incidence in both males (32%) and females (23%). This most probably reflects a decrease in prevalence of infection with the bacterium *Helicobacter pylori* (perhaps as a result of improvements in social conditions and widespread use of antibiotics). People infected with *Helicobacter pylori* have an increased risk of developing stomach cancer. The introduction of refrigeration has also probably had an effect on incidence as it reduced the need for potentially carcinogenic food preservatives. Stomach cancer does not appear in table 1 for females as it is not one of the ten most common cancers for women.

Cervical cancer

The incidence of cervical cancer (cervix uteri) has increased by 18% over the last ten years. It was the tenth most common cancer in females in Scotland in 2014 but it is the most common cancer in women under the age of 35 (as it is in the rest of the UK). The main risk factor for cervical cancer is infection with the human papilloma virus (HPV), which can cause the most common forms of cervical cancer.

Further information

A summary table showing numbers of cases and age-standardised incidence rates for each cancer, sex and year (2005-2014) can be found at http://www.isdscotland.org/Health-Topics/Cancer/Publications/2016-05-17/cancer_incandmort_summary.xls

Detailed numbers and rates by age band, sex and health board for approximately 45 cancer sites and for all cancers combined over the period 1990-2014 can be found within the cancer-specific categories listed on <http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/>.

A summary of the most recent Cancer Incidence Projections can be found at <http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Incidence-Projections/>

Cancer incidence publications for the rest of the UK can be found at the following links: [England](#), [Wales](#) and [Northern Ireland](#).

Comparisons are also produced by Cancer Research UK, and the most recent [incidence report](#) can be found on their [CancerStats page](#).

Comparison of Scottish and UK cancer data to that of other countries is a complex process because of the wide variation amongst data collection and coding practices, as well as variation in the quality and completeness of data. The International Agency for Research on Cancer maintain an online database, [Cancer Mondial](#), that is searchable for comparative data.

Lifetime risk of cancer

This section was last updated in April 2015. It will next be updated in April 2017.

It is estimated that more than 2 in 5 people in Scotland will develop some form of cancer during their lifetime, and that around 1 in 13 males and 1 in 9 females will develop some form of cancer before the age of 65 (Table 2). Having survived to age 65 without cancer, the risk of getting cancer subsequently is 1 in 3 for males and 2 in 7 for females.

Table 2: Risk of being diagnosed with cancer over a lifetime (up to the age of 90), 2009-2013

Cancer site / type (ICD-10)	Males			Females		
	% of cohort that develop cancer up to age 64	Lifetime risk over lifetime	Lifetime risk 1 in ...	% of cohort that develop cancer up to age 64	Lifetime risk over lifetime	Lifetime risk 1 in ...
All malignant neoplasms excl non-melanoma skin cancer ¹	7.6	42.2	2.4	11.0	40.3	2.5
Head and Neck (C00-C14, C30-C32)	0.7	2.4	41.7	0.3	1.0	97.0
Oral cavity (C01-C06)	0.3	0.8	125.8	0.1	0.5	203.9
Oesophagus (C15)	0.3	1.8	56.0	0.1	0.9	105.6
Stomach (C16)	0.2	1.5	66.7	0.1	0.8	120.3
Colorectal (C18-C20)	1.0	6.8	14.7	0.8	5.1	19.4
Colon (C18)	0.6	4.5	22.3	0.5	3.8	26.5
Rectum and rectosigmoid junction (C19-C20)	0.4	2.4	41.4	0.3	1.4	70.1
Liver and intrahepatic bile ducts (C22)	0.2	1.1	93.3	0.1	0.4	225.6
Pancreas (C25)	0.2	1.2	80.8	0.1	1.2	86.2
Larynx (C32)	0.1	0.7	141.6	0.0	0.2	547.2
Trachea, bronchus and lung (C33-C34)	0.9	8.6	11.6	0.8	7.6	13.2
Bone and connective tissue (C40-C41, C47, C49)	0.1	0.3	290.2	0.1	0.2	493.3
Malignant melanoma of the skin (C43)	0.5	1.6	62.8	0.8	1.7	59.3
Female breast (C50, females)	x	x	x	4.5	11.9	8.4
Cervix uteri (C53)	x	x	x	0.6	0.9	112.7
Corpus uteri (C54)	x	x	x	0.5	2.0	50.5
Ovary (C56)	x	x	x	0.6	1.8	57.0
Prostate (C61)	1.0	9.9	10.1	x	x	x
Testis (C62)	0.5	0.6	177.2	x	x	x
Kidney (C64-C65)	0.4	1.6	60.8	0.2	1.1	91.1
Bladder (C67)	0.1	1.8	55.0	0.1	0.8	128.8
Brain and other CNS (C70-C72, C75.1, C75.3)	0.3	0.7	135.8	0.2	0.6	179.4
Thyroid (C73)	0.1	0.2	545.4	0.3	0.5	212.8
Hodgkin's disease (C81)	0.2	0.3	352.7	0.1	0.2	486.4
Non-Hodgkin's lymphoma (C82-C85)	0.4	1.7	59.8	0.3	1.5	66.2
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.1	0.8	132.6	0.1	0.5	182.8
Leukaemias (C91-C95)	0.3	1.2	81.3	0.2	0.8	129.6

¹ C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).
Source: Scottish Cancer Registry, ISD

'x' = not applicable.
Data extracted: March 2015

For the most common cancers, for males, the lifetime risk of developing lung cancer is estimated as 1 in 12, of prostate cancer 1 in 10, and 1 in 15 men are estimated to develop colorectal cancer in their lifetime. For females, the estimated lifetime risk is 1 in 8 for breast cancer, 1 in 13 for lung cancer, and 1 in 19 for colorectal cancer.

Prevalence of cancer

This section was last updated in April 2015. It will next be updated in April 2017.

Overall, 2.9% of men and 3.7% of women in Scotland are living with cancer (2,882 and 3,699 per 100,000 population, Table 3 and [All Cancer Types prevalence](#)).

Table 3: Cancer survivors (prevalence) at 31 December 2013, by time since diagnosis

Males					
Prevalence: rate per 100,000 in population					
Cancer site / type (ICD-10)	Up to 1 year	> 1 to 5 years	> 5 to 10 years	> 10 to 20 years	Total up to 20 years
All malignant neoplasms excl non-melanoma skin cancer ¹	428.6	1,050.4	750.5	652.8	2,882.2
Prostate (C61)	116.4	359.4	286.2	166.1	928.0
Colorectal (C18-C20)	65.0	192.7	132.5	125.8	516.0
Colon (C18)	42.5	120.4	82.4	77.1	322.5
Head and Neck (C00-C14, C30-C32)	28.6	74.3	53.5	49.7	206.1
Rectum, incl rectosigmoid junction (C19-C20)	22.8	74.2	52.1	51.0	200.1
Malignant melanoma of the skin (C43)	21.5	66.5	53.1	53.6	194.7
Non-Hodgkin's lymphoma (C82-C85)	17.5	52.5	41.6	37.8	149.4
Trachea, bronchus and lung (C33-C34)	52.5	52.9	22.5	16.7	144.4
Testis (C62)	7.1	31.4	36.0	66.6	141.0
Bladder (C67)	16.0	38.4	28.4	47.1	129.9
Kidney (C64-C65)	19.1	45.6	30.2	23.7	118.6
Leukaemias (C91-C95)	9.4	33.0	29.2	31.4	103.0
Larynx (C32)	7.5	23.4	19.7	20.4	70.9
Oral Cavity (C01-C06)	9.7	24.8	17.6	14.0	66.1
Hodgkin's disease (C81)	3.2	12.1	12.4	17.8	45.5
Oesophagus (C15)	14.3	15.6	7.2	7.0	44.0
Stomach (C16)	10.5	13.6	8.6	8.6	41.3
Multiple myeloma, mal plasma cell neo (C90)	6.8	17.9	9.5	4.1	38.4
Bone and connective tissue (C40-C41, C47, C49)	4.0	10.2	9.2	11.7	35.1
Brain and other CNS (C70-C72, C75.1-C75.3)	6.0	8.7	5.7	9.8	30.2
Liver and intrahepatic bile ducts (C22)	8.4	10.3	2.7	1.4	22.8
Thyroid (C73)	2.7	7.1	5.9	7.1	22.8
Pancreas (C25)	5.9	4.2	1.2	1.1	12.4

¹ C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).
Source: Scottish Cancer Registry, ISD

Data extracted: March 2015

Females					
Prevalence: rate per 100,000 in population					
Cancer site / type (ICD-10)	Up to 1 year	> 1 to 5 years	> 5 to 10 years	> 10 to 20 years	Total up to 20 years
All malignant neoplasms excl non-melanoma skin cancer ¹	447.2	1,209.8	970.6	1,071.2	3,698.9
Female breast (C50, females)	158.8	533.6	473.3	527.1	1,692.9
Colorectal (C18-C20)	50.3	144.3	110.1	116.9	421.6
Colon (C18)	36.8	103.6	76.0	80.9	297.4
Malignant melanoma of the skin (C43)	20.6	80.3	78.6	89.9	269.4
Corpus uteri (C54)	24.6	73.2	64.3	72.3	234.3
Trachea, bronchus and lung (C33-C34)	51.9	60.5	22.0	15.3	149.7
Ovary (C56)	16.1	45.3	37.3	48.8	147.5
Non-Hodgkin's lymphoma (C82-C85)	15.5	47.9	39.0	35.4	137.8
Cervix uteri (C53)	10.7	33.9	32.8	58.7	136.0
Rectum, incl rectosigmoid junction (C19-C20)	13.8	41.5	34.9	37.3	127.5
Head and Neck (C00-C14, C30-C32)	12.5	32.6	21.9	22.9	90.0
Kidney (C64-C65)	10.9	31.0	18.6	17.3	77.9
Leukaemias (C91-C95)	6.3	20.1	20.4	23.7	70.6
Thyroid (C73)	6.2	21.6	18.3	23.2	69.3
Bladder (C67)	7.0	12.1	10.2	18.6	48.0
Oral Cavity (C01-C06)	6.0	15.8	10.0	9.3	41.1
Hodgkin's disease (C81)	2.3	8.0	8.4	14.1	32.8
Multiple myeloma, mal plasma cell neo (C90)	4.8	14.0	5.9	3.1	27.9
Stomach (C16)	5.7	9.0	5.4	7.1	27.3
Bone and connective tissue (C40-C41, C47, C49)	2.3	6.3	6.7	8.9	24.1
Brain and other CNS (C70-C72, C75.1-C75.3)	5.0	6.9	5.0	6.0	22.8
Oesophagus (C15)	7.5	7.6	3.9	3.5	22.5
Larynx (C32)	2.0	5.0	4.7	4.7	16.4
Pancreas (C25)	6.1	3.5	1.0	1.0	11.6
Liver and intrahepatic bile ducts (C22)	3.0	3.1	1.2	0.7	8.0

¹ C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).
Source: Scottish Cancer Registry, ISD

Data extracted: March 2015

Cancers with high incidence along with favourable survival have the highest prevalence, in particular breast cancer; for example, 1.7% of women in Scotland are living with breast cancer. Prevalence is increasing for many cancers due to a combination of improvements in prognosis and screening techniques, as well as increasing incidence.

The prevalence of cancer in the Scottish population increases with age (Table 4), with 12.0% of men and 10.8% of women (11,993 and 10,816 cases per 100,000 population, respectively) of people aged 65 and over living with cancer, compared to 2.7% of men and 4.8% of women aged 45-64, and 0.4% of men and 0.6% of women aged under 45. The prevalence figures by age group include all cancer diagnoses from 20 years previously, up to those diagnosed very recently.

The most prevalent cancer (4.9%) in men aged 65 and over is prostate cancer; in females 65 and over the most prevalent cancer is breast cancer (4.9%). Overall, 66.8% of males and 56.7% of females who are living with a diagnosis of cancer are aged 65 and over.

Table 4: Cancer survivors (prevalence) at 31 December 2013, current ages of those surviving up to 20 years following diagnosis

Males				
Age-specific prevalence: rate per 100,000 in population				
Cancer site / type (ICD-10)	Under 45	45-64	65+	All Ages
All malignant neoplasms excl non-melanoma skin cancer ¹	380.6	2,688.8	11,993.2	2,882.2
Prostate (C61)	0.8	497.3	4,922.8	928.0
Colorectal (C18-C20)	11.7	400.4	2,484.7	516.0
Colon (C18)	7.2	231.6	1,585.2	322.5
Head and Neck (C00-C14, C30-C32)	13.7	285.9	743.9	206.1
Rectum, incl rectosigmoid junction (C19-C20)	4.5	171.9	934.9	200.1
Malignant melanoma of the skin (C43)	41.4	251.2	635.8	194.7
Non-Hodgkin's lymphoma (C82-C85)	28.4	188.5	506.7	149.4
Trachea, bronchus and lung (C33-C34)	4.3	115.4	686.4	144.4
Testis (C62)	110.4	251.2	59.0	141.0
Bladder (C67)	1.7	65.2	690.9	129.9
Kidney (C64-C65)	11.3	147.2	446.0	118.6
Leukaemias (C91-C95)	40.9	91.1	341.5	103.0
Larynx (C32)	1.8	71.4	312.6	70.9
Oral Cavity (C01-C06)	4.9	104.9	214.1	66.1
Hodgkin's disease (C81)	40.0	56.6	45.8	45.5
Oesophagus (C15)	0.9	51.8	182.1	44.0
Stomach (C16)	1.3	30.7	199.9	41.3
Multiple myeloma, mal plasma cell neo (C90)	1.3	41.4	163.0	38.4
Bone and connective tissue (C40-C41, C47, C49)	18.7	38.2	87.4	35.1
Brain and other CNS (C70-C72, C75.1-C75.3)	25.8	39.3	30.1	30.2
Liver and intrahepatic bile ducts (C22)	1.6	26.7	90.8	22.8
Thyroid (C73)	10.4	32.6	49.1	22.8
Pancreas (C25)	1.0	16.2	46.0	12.4

¹ C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).
Source: Scottish Cancer Registry, ISD

Data extracted: March 2015

Females				
Age-specific prevalence: rate per 100,000 in population				
Cancer site / type (ICD-10)	Under 45	45-64	65+	All Ages
All malignant neoplasms excl non-melanoma skin cancer ¹	561.1	4,761.7	10,815.7	3,698.9
Female breast (C50, females)	118.4	2,478.2	4,908.6	1,692.9
Colorectal (C18-C20)	15.0	311.8	1,692.9	421.6
Colon (C18)	9.9	195.7	1,230.2	297.4
Malignant melanoma of the skin (C43)	94.6	377.9	596.3	269.4
Corpus uteri (C54)	4.8	237.7	859.8	234.3
Trachea, bronchus and lung (C33-C34)	3.4	130.7	578.4	149.7
Ovary (C56)	34.7	230.9	339.5	147.5
Non-Hodgkin's lymphoma (C82-C85)	18.2	143.2	458.6	137.8
Cervix uteri (C53)	88.6	244.3	113.6	136.0
Rectum, incl rectosigmoid junction (C19-C20)	5.2	117.6	477.2	127.5
Head and Neck (C00-C14, C30-C32)	10.2	113.1	276.3	90.0
Kidney (C64-C65)	9.4	81.6	260.7	77.9
Leukaemias (C91-C95)	33.2	59.8	188.3	70.6
Thyroid (C73)	39.2	114.2	88.8	69.3
Bladder (C67)	1.1	24.4	209.9	48.0
Oral Cavity (C01-C06)	3.6	51.9	128.8	41.1
Hodgkin's disease (C81)	32.9	36.9	26.7	32.8
Multiple myeloma, mal plasma cell neo (C90)	0.5	27.1	104.0	27.9
Stomach (C16)	1.6	20.1	107.6	27.3
Bone and connective tissue (C40-C41, C47, C49)	15.2	24.5	47.8	24.1
Brain and other CNS (C70-C72, C75.1-C75.3)	22.4	27.1	18.1	22.8
Oesophagus (C15)	0.8	16.9	90.1	22.5
Larynx (C32)	0.7	17.7	57.6	16.4
Pancreas (C25)	0.8	9.9	43.8	11.6
Liver and intrahepatic bile ducts (C22)	1.4	6.8	27.7	8.0

¹ C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).
Source: Scottish Cancer Registry, ISD

Data extracted: March 2015

Cancer mortality

This section was last updated in October 2016, It will next be updated in October 2017. This section is updated annually, alongside the Cancer Mortality National Statistics publication.

In 2015, 16,011 people died of cancer in Scotland. Lung cancer accounted for the largest number of deaths in both sexes, with 24.9% of cancer deaths in males, and 25.6% of cancer deaths in females. The absolute number of lung cancer deaths in males was 2,075 and in females was 1,972. Colorectal, breast and prostate cancer were the other major causes of cancer deaths (Table 5).

Overall cancer mortality rates have decreased by 14% in males and 6% in females in the last 10 years. In men, the largest falls in mortality among the top 10 causes of death from cancer have been in stomach, lung and colorectal cancer (36%, 23% and 21% respectively). Death rates from prostate cancer, the most frequently diagnosed cancer in males (Table 1), have decreased by 5% over the 10 years to 2015. The death rate from cancer of the liver has increased by 46% in men over the last 10 years, a statistically significant trend.

For women, the largest falls in mortality rates among the top 10 causes of death from cancer were observed in breast, ovarian and oesophageal cancer (21%, 14% and 13% respectively) (Table 5). Death rates from breast cancer, the most frequently diagnosed cancer in females, have decreased by 21% in spite of the increase in incidence of female breast cancer (Table 1). Cervical cancer deaths have decreased by 14% over the same time period, in keeping with a longer term trend (data not shown in Table 5 as cervical cancer lies outside the top 10 causes of death from cancer).

**Table 5: Most common causes of death from cancer in Scotland in 2015:
Rank, number, frequency and change in mortality rate since 2005**

Rank	Type of cancer	Number	Frequency	10 year % change ¹	p - value ³
All Persons					
1	Trachea, bronchus and lung (C33-C34)	4,047	25.3%	-15.1	<0.0001
2	Colorectal (C18-C20)	1,565	9.8%	-16.4	<0.0001
3	Breast (C50) ²	992	6.2%	x	x
4	Prostate (C61) ²	985	6.2%	x	x
5	Oesophagus (C15)	816	5.1%	-9.6	0.0036
6	Pancreas (C25)	749	4.7%	+5.8	0.1383
7	Liver and intrahepatic bile ducts (C22)	572	3.6%	+52.4	<0.0001
8	Bladder (C67)	522	3.3%	-6.9	0.7240
9	Head and Neck (C00-C14, C30-C32)	452	2.8%	+9.6	0.0073
10	Stomach (C16)	442	2.8%	-33.0	<0.0001
	Other malignant neoplasms	4,869	30.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	16,011	100.0%	-10.6	<0.0001
Rank	Type of cancer	Number	Frequency	10 year % change ¹	p - value ³
Males					
1	Trachea, bronchus and lung (C33-C34)	2,075	24.9%	-22.9	<0.0001
2	Prostate (C61)	985	11.8%	-4.7	0.1556
3	Colorectal (C18-C20)	844	10.1%	-20.9	<0.0001
4	Oesophagus (C15)	552	6.6%	-8.1	0.0106
5	Pancreas (C25)	365	4.4%	+6.3	0.2142
6	Liver and intrahepatic bile ducts (C22)	351	4.2%	+45.6	<0.0001
7	Bladder (C67)	329	4.0%	-11.4	0.0429
8	Head and Neck (C00-C14, C30-C32)	314	3.8%	+5.4	0.2435
9	Stomach (C16)	262	3.1%	-36.4	<0.0001
10	Brain and other CNS (C70-C72, C75.1-C75.3)	241	2.9%	-1.9	0.7763
	Other malignant neoplasms	2,003	24.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	8,321	100.0%	-13.5	<0.0001
Rank	Type of cancer	Number	Frequency	10 year % change ¹	p - value ³
Females					
1	Trachea, bronchus and lung (C33-C34)	1,972	25.6%	-2.3	0.3518
2	Breast (C50)	989	12.9%	-21.0	<0.0001
3	Colorectal (C18-C20)	721	9.4%	-8.5	0.0062
4	Pancreas (C25)	384	5.0%	+5.3	0.4183
5	Ovary (C56)	362	4.7%	-14.2	0.0011
6	Oesophagus (C15)	264	3.4%	-13.2	0.0108
7	Liver and intrahepatic bile ducts (C22)	221	2.9%	+68.6	<0.0001
8	Non-Hodgkin lymphoma (C82-C85)	203	2.6%	-8.7	0.0715
9	Bladder (C67)	193	2.5%	+5.2	0.4372
10	Corpus uteri (C54)	184	2.4%	+67.5	<0.0001
	Other malignant neoplasms	2,197	28.6%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,690	100.0%	-6.2	0.0001

Source: National Records of Scotland (NRS)

'x' = not applicable.

- 1 Estimated 10-year change in age-adjusted mortality rates, calculated using Poisson regression analyses.
- 2 Percentage change in mortality is not shown in the 'All Persons' table for cancers occurring mainly or only in one sex.
- 3 p-value is the probability that the 10 year percentage change occurred by chance. A p-value of less than 0.05 indicates that the change is statistically significant.

Figure 3: Trends in mortality from ten most common cancer causes of death, males

EASR: Age-standardised rate, standardised to the 2013 European Standard Population

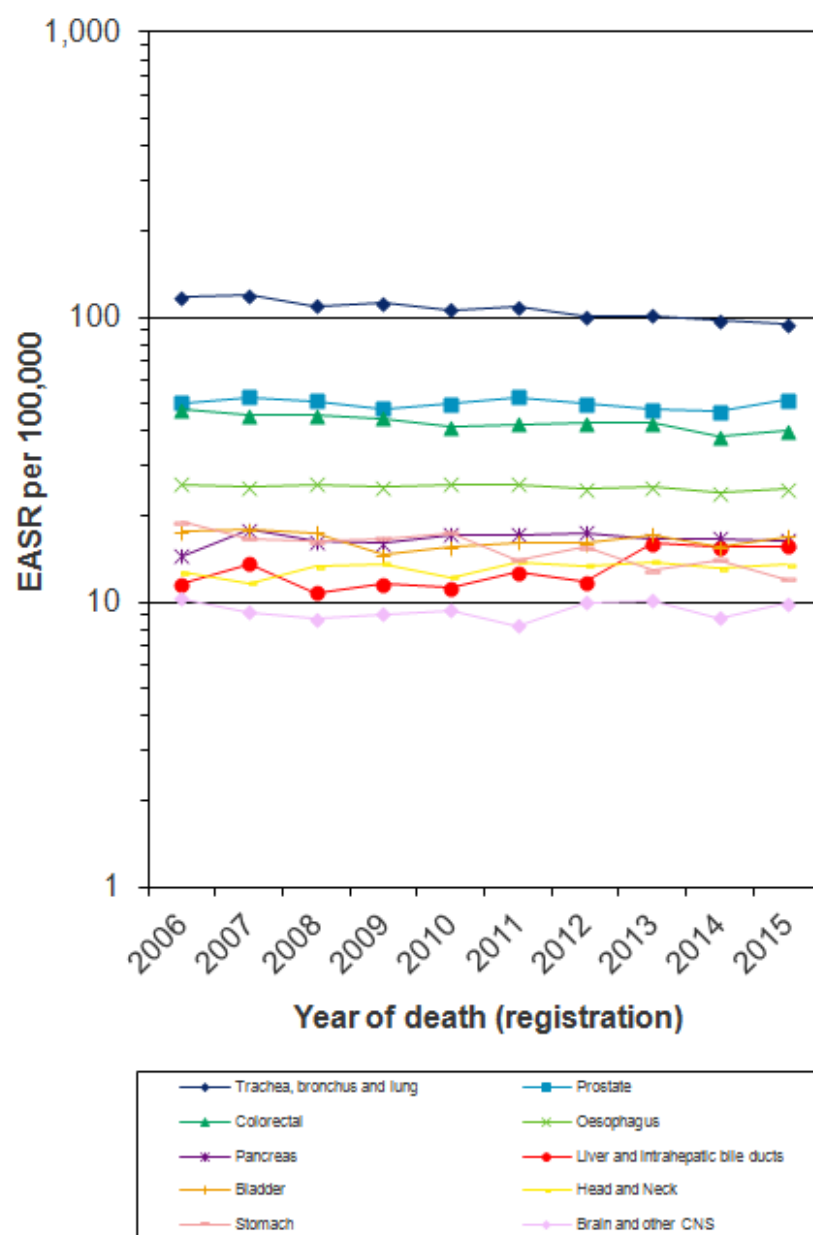
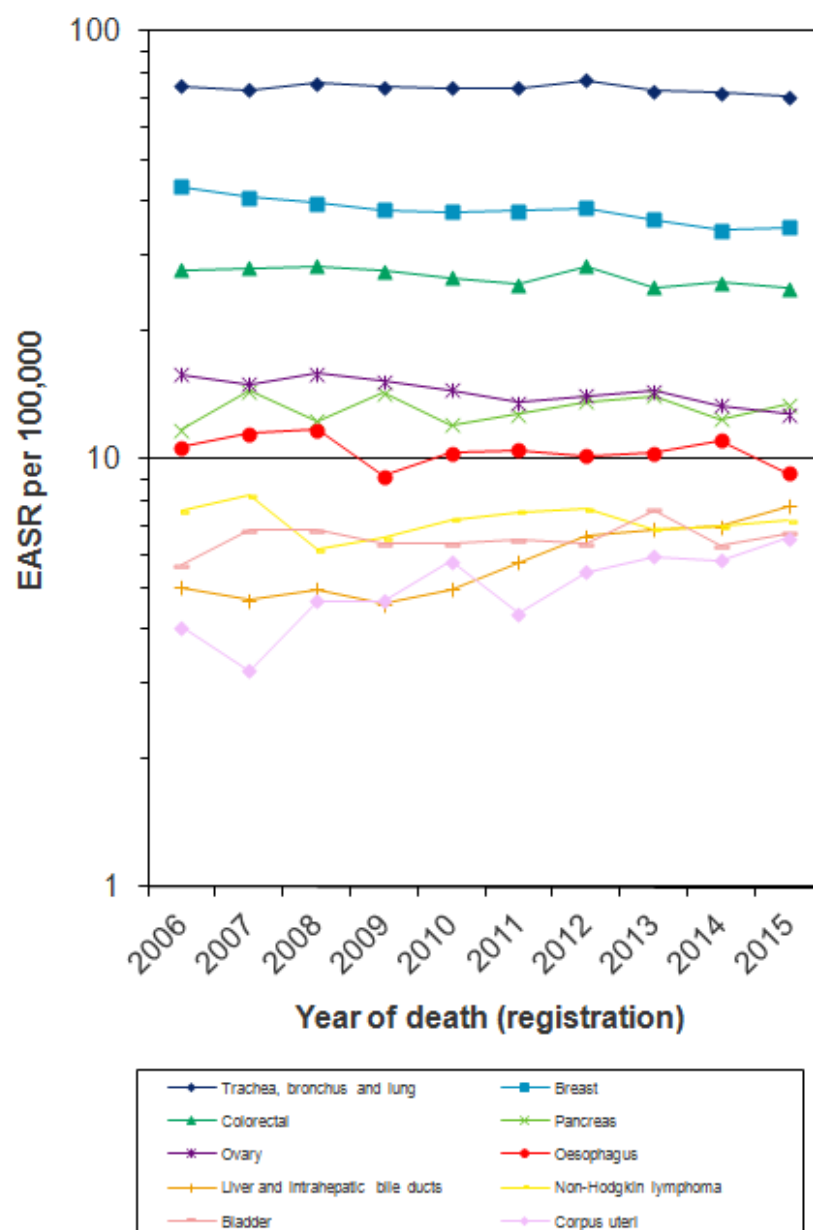


Figure 4: Trends in mortality from ten most common cancer causes of death, females

EASR: Age-standardised rate, standardised to the 2013 European Standard Population



Cancer survival

This section was last updated in April 2015. The next update will be in 2017. This section is updated with the National Statistics publication of Cancer Survival in Scotland.

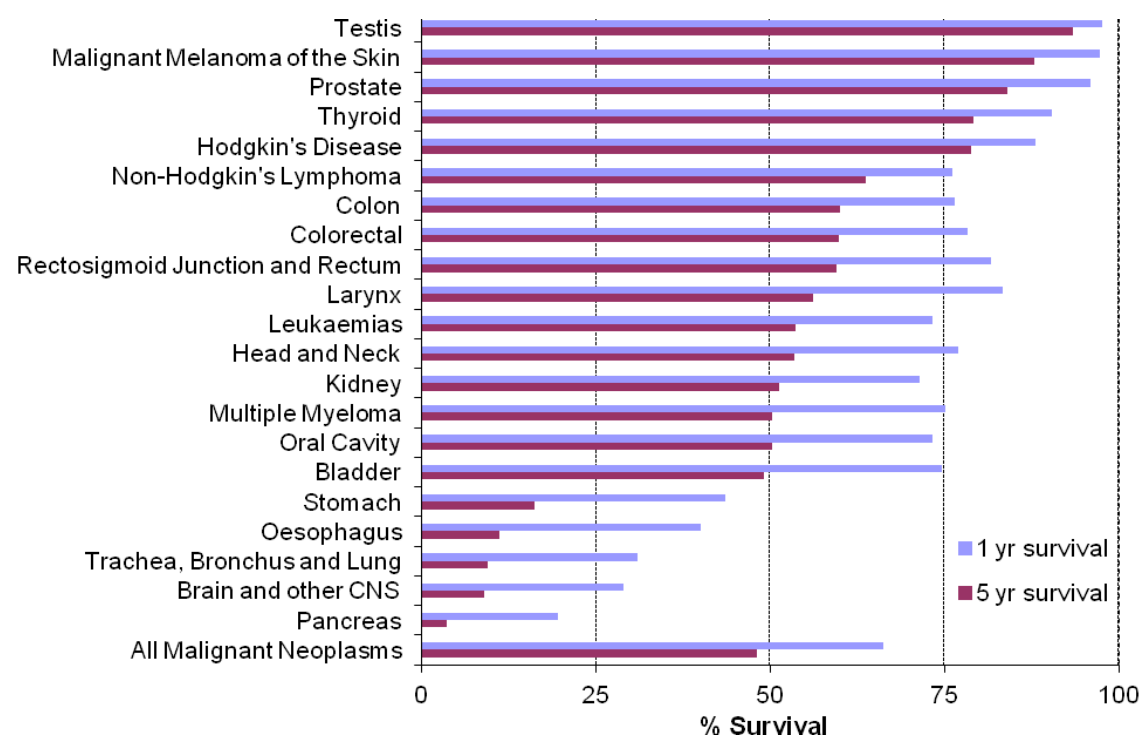
Cancer survival 2007-2011

One- and five-year cancer survival

Age-standardised one- and five-year relative survival estimates are shown in Figure 5a for males and Figure 8b for females. Survival estimates are shown for 25 types of cancer, plus all cancers combined (excluding non-melanoma skin cancer) for patients aged 15-99 who were diagnosed with cancer in the period 2007-2011.

Survival for males at five years after diagnosis varied from 3.6% for cancer of the pancreas to 93.4% for testicular cancer (Figure 5a). For females, survival at five years varied from 5.5% for cancer of the pancreas to 95.1% for malignant melanoma of the skin (Figure 5b). For all cancers combined, survival at five years is higher for women (53.9% compared to 48.1% for men).

Figure 5a. Age-standardised¹ relative survival at 1 and 5 years after diagnosis by cancer (males); Patients aged 15-99, diagnosed 2007-2011²⁻³



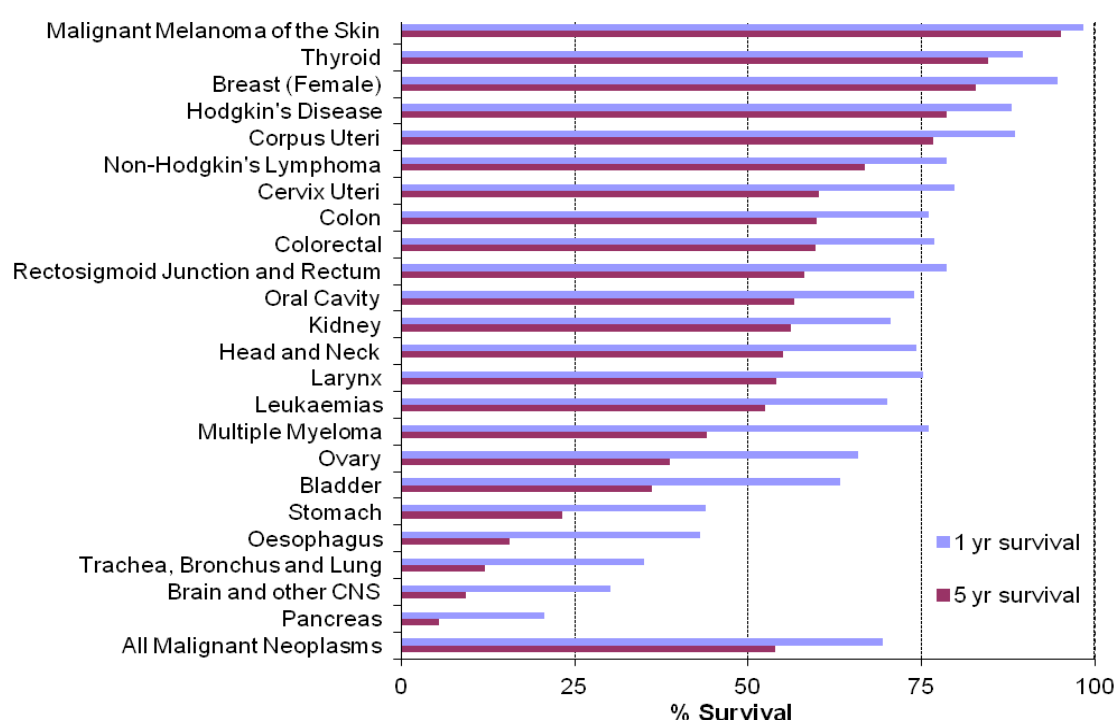
Source: Scottish Cancer Registry

1. These rates are age-standardised to the International Cancer Survival Standard (ICSS).

2. Cases diagnosed in 2009-2011 do not have 5 years' follow-up. Patients have been followed up to 31st December 2013.

3. Cancer registration is a dynamic process: the data presented here may differ from other published data relating to the same time period.

Figure 5b. Age-standardised¹ relative survival at 1 and 5 years after diagnosis by cancer (females); Patients aged 15-99, diagnosed 2007-2011²⁻³



Source: Scottish Cancer Registry

1. These rates are age-standardised to the International Cancer Survival Standard (ICSS).

2. Cases diagnosed in 2009-2011 do not have 5 years' follow-up. Patients have been followed up to 31st December 2013.

3. Cancer registration is a dynamic process: the data presented here may differ from other published data relating to the same time period.

For the five most common cancers (see Cancer Incidence section, figure 2), the estimated five-year age-standardised relative survival for people diagnosed in the period 2007-2011 was:

- lung cancer: 9.5% for males, 12.0% for females;
- female breast cancer: 82.8%;
- colorectal cancer: 59.9% for males, 59.8% for females;
- prostate cancer: 84.0%;
- head and neck cancer: 53.5% for males, 55.0% for females.

Survival was lowest in patients with cancers which often present at an advanced stage and are less amenable to treatment (e.g. cancers of the pancreas, lung and stomach). Survival tended to be better for three groups of cancer:

- cancers which present at an early stage (e.g. cancers of the corpus uteri, thyroid and malignant melanoma of the skin);
- cancers which can be detected early by screening programmes (e.g. cervix uteri, breast and colorectal);

- cancers for which there have been substantial advances in treatment over time (e.g. Hodgkin's disease and cancer of the testis).

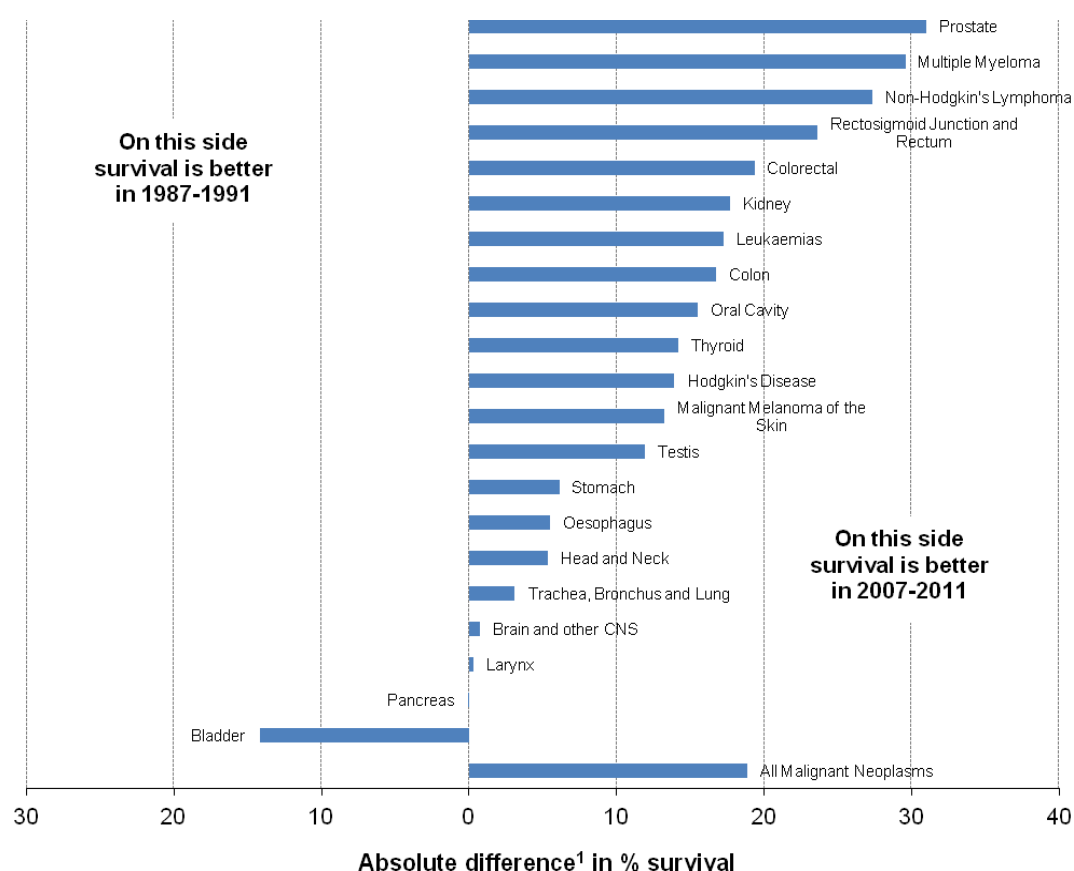
Trends in cancer survival 1987-2011

Five-year survival

Most cancers showed some improvement in survival at five years after diagnosis. For all cancers combined, age-standardised five-year relative survival for males increased from 29.3% for people diagnosed in 1987-1991 to 48.1% for people diagnosed in 2007-2011. This was an absolute increase of 18.9 percentage points. For females, the figure increased from 40.2% to 53.9% over the same period. This was an absolute increase of 13.7 percentage points.

Figure 6a shows the absolute difference in survival at five years between the periods of diagnosis 1987-1991 and 2007-2011 by type of cancer for males. Figure 6b shows the same information for females.

Figure 6a. Absolute difference¹ in age-standardised² relative survival at 5 years after diagnosis by cancer, patients diagnosed in 1987-1991 compared to those diagnosed in 2007-2011 (males); Patients aged 15-99³⁻⁴

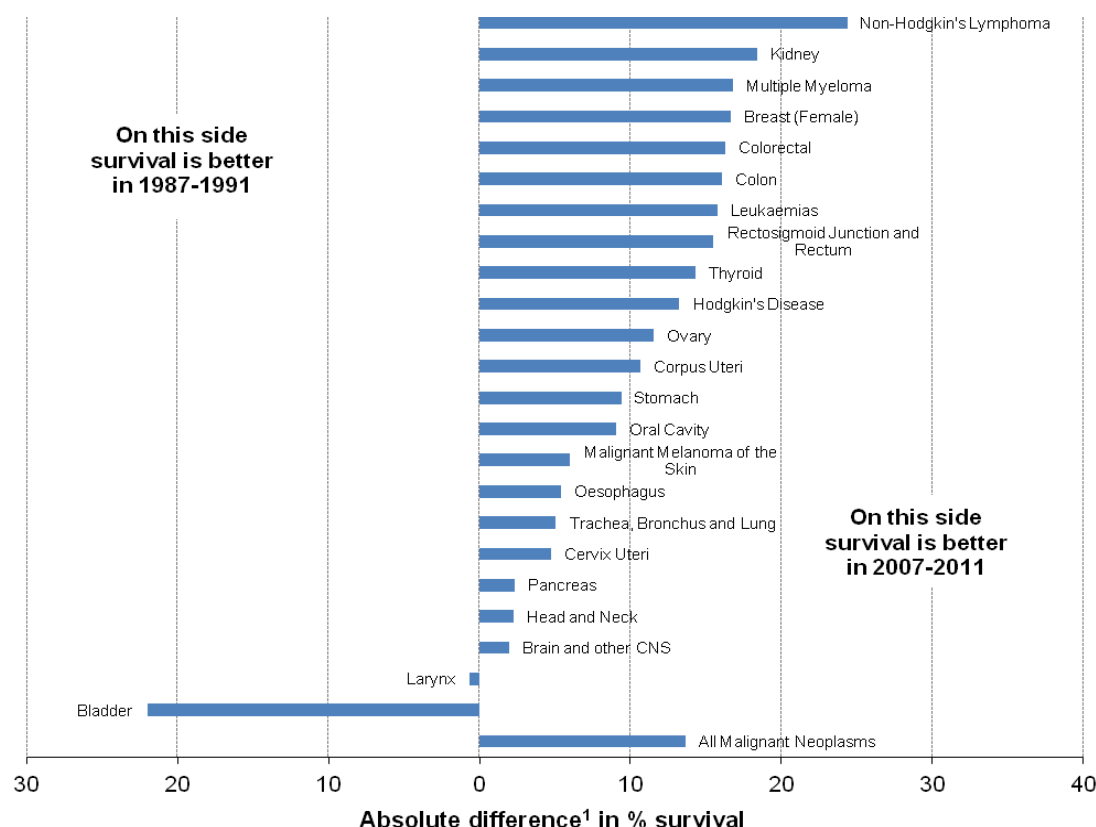


Source: Scottish Cancer Registry

1. Absolute difference in % survival is a difference of % survival between the periods of diagnosis 1987-1991 and 2007-2011. For example, the % survival for Kidney cancer in males in 1987-1991 was 33.7. In 2007-2011, it was 51.4. Subtraction gives a difference of 17.7.

2. These rates are age-standardised to the International Cancer Survival Standard (ICSS).
3. Cases diagnosed in 2009-2011 do not have 5 years' follow-up. Patients have been followed up to 31st December 2013.
4. Cancer registration is a dynamic process: the data presented here may differ from other published data relating to the same time period.

Figure 6b. Absolute difference¹ in age-standardised² relative survival at 5 years by cancer (females), patients diagnosed in 1987-1991 compared to those diagnosed in 2007-2011; Patients aged 15-99³⁻⁴



Source: Scottish Cancer Registry

1. Absolute difference in % survival is a difference of % survival between the periods of diagnosis 1987-1991 and 2007-2011. For example, the % survival for Kidney cancer in females in 1987-1991 was 37.7. In 2007-2011, it was 56.1. Subtraction gives a difference of 18.4.
2. These rates are age-standardised to the International Cancer Survival Standard (ICSS).
3. Cases diagnosed in 2009-2011 do not have 5 years' follow-up. Patients have been followed up to 31st December 2013.
4. Cancer registration is a dynamic process: the data presented here may differ from other published data relating to the same time period.

For some cancers, the improvement was large. For multiple myeloma, the age-standardised relative survival at five years after diagnosis in males increased from 20.7% in the period 1987-1991 to 50.3% in the period 2007-2011, an absolute increase of 29.6 percentage points. Over the same period, the increase for females was 16.8 percentage points from 27.2% to 44.0%. These improvements may have resulted from wider use of stem cell transplantation in the 1990s, followed by the introduction of novel anti-myeloma agents over the last decade or so.

Large absolute increases in percentage survival at five years after diagnosis were also seen for colorectal cancer (19.4 and 16.3 percentage points for

males and females respectively), Non-Hodgkin's lymphoma (27.4 percentage points for males and 24.4 for females), kidney cancer (17.7 percentage points for males and 18.4 for females), leukaemia (17.2 percentage points for males and 15.7 for females) and female breast cancer (16.6 percentage points).

Some of the improvement observed for prostate cancer (31 percentage points from 53.0% in 1987-1997 to 84.0% in 2007-2011) is likely to reflect the introduction of prostate-specific antigen (PSA) testing around 1990, resulting in the diagnosis of some less 'aggressive' tumours.¹

There were small decreases in survival at 5 years for cancer of the larynx in females (-0.6 percentage points) and cancer of the pancreas in males (-0.1 percentage points). The decrease in cancer of the larynx is possibly due to the increased proportion of supraglottic tumours over recent years. These tumours usually take longer to cause symptoms and so tend to present at a later stage, with decreased survival after diagnosis.² Survival from cancer of the pancreas has remained poor across the whole period of observation.

The decrease in survival from bladder cancer is an artefact of a change in classification. Over the period 1996 to 1999, there was a marked reduction in the numbers of registrations of invasive bladder carcinoma. This reflected a change in coding practice recommended by the European Network of Cancer Registries (ENCR) and subsequently by the United Kingdom Association of Cancer Registries (UKACR). Some cases classified and coded previously as invasive bladder cancer (ICD-10 C67) are now coded as carcinoma in situ of the bladder (ICD-10 D09.0) or neoplasms of uncertain or unknown behaviour of the bladder (ICD-10 D41.4). Survival from non-invasive bladder tumours is usually very high, so the reclassification of such tumours has led to an apparent decrease in survival from invasive bladder cancer.

The latest publication on trends in cancer survival in Scotland from 1987-2011 for 25 cancer types can be found at <https://isdscotland.scot.nhs.uk/Health-Topics/Cancer/Publications/2015-03-03/2015-03-03-CancerSurvival-Report.pdf>.

Children, teenagers and young adults

This section was last updated in March 2011. The section is based on occasional publications and the next update has not yet been announced.

Incidence and survival information for teenagers and young adults can be found at the following area on the ISD website:

<http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Teenage-and-Young-Adults>.

¹ Brewster DH, Fraser LA, Harris V and Black RJ (2000). Rising incidence of prostate cancer in Scotland: increased risk or increased detection? *BJU Int*; 85: 463-472.

² Scott N, Gould A, Brewster D. Laryngeal cancer in Scotland, 1960-1994: trends in incidence, geographical distribution and survival. *Health Bulletin* (Edinburgh) 1998; 56:749-756.

In brief, the incidence of cancer in teenagers and young adults (aged 15-24) account for less than 1% of all cancers per year (an average of 176 cases per year) in Scotland. Incidence rates of all cancers in teenagers and young adults have increased over time, rising from 195.9 to 263.2 per million population between the periods 1979-1983 and 1999-2003. Rates have remained stable in the subsequent 5 year period 2004-2008 (263.1 per million population). Five-year (observed) survival from all cancers in teenagers and young adults has increased by 16% (from 67% to 83%) between the periods 1979-1983 and 2004-2008.

A report on childhood cancer in Scotland including incidence, mortality and survival for 1983-2007 is also available at:

<http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Childhood>

It shows that the incidence of childhood cancer in Scotland has increased, mortality has decreased, and survival has improved, over the period 1983-1987 to 2003-2007. In summary, around 130 children are diagnosed with cancer in Scotland each year, accounting for less than 1% of all malignant neoplasms diagnosed at all ages. Overall, the incidence of, and mortality from, childhood cancer are higher in boys than in girls. The two most commonly occurring cancers in childhood are leukaemia, and Central Nervous System (mostly brain) tumours. Between 1983-1987 and 2003-2007, the age- and sex-standardised incidence rate of all childhood cancer increased, from 120 to 161 per million children per year. Similar incidence trends have been seen in other European countries. During the same period, the age- and sex-standardised mortality rate of all childhood cancer decreased from 39 to 36 per million children per year. Five-year survival for all childhood cancers combined has increased from 65% for those diagnosed during 1983-1987 to 76% for those diagnosed during 1998-2002, and for some specific types of childhood cancer, survival prospects are now excellent.

Since the early 1990s, the UK Childhood Cancer Study Investigators have been collating and analysing data, with a view to investigating the possible causes of childhood cancer.

UK statistics

Summary information on cancer in the UK can be found at <http://info.cancerresearchuk.org/cancerstats/> and information for England can be found at <http://www.statistics.gov.uk/>.

Comparative data on incidence and mortality for the UK can be found in the UK Cancer e-Atlas produced by the National Cancer Intelligence Network: http://www.ncin.org.uk/cancer_information_tools/eatlas/