

# Cancer in Scotland

April 2015

First published in June 2004,  
revised with each National Statistics publication

Next due for revision October 2015

Information Services Division  
NHS National Services Scotland

## Contents

Cancer Incidence .....	2
Lifetime Risk of Cancer .....	9
Prevalence of Cancer .....	9
Cancer Mortality .....	12
Cancer Survival .....	16
Children, Adolescents and Young Adults .....	20
UK Statistics .....	21

## Cancer incidence

This section was last updated in April 2015. It will be updated again in April 2016. This section is updated annually, alongside the Cancer Incidence National Statistics publication.

Approximately 15,000 males and 16,000 females were diagnosed with cancer in 2013. Non-melanoma skin cancers (NMSC), of which there were over 11,000 registered in 2013, are excluded from the analysis of all cancers combined for three main reasons:

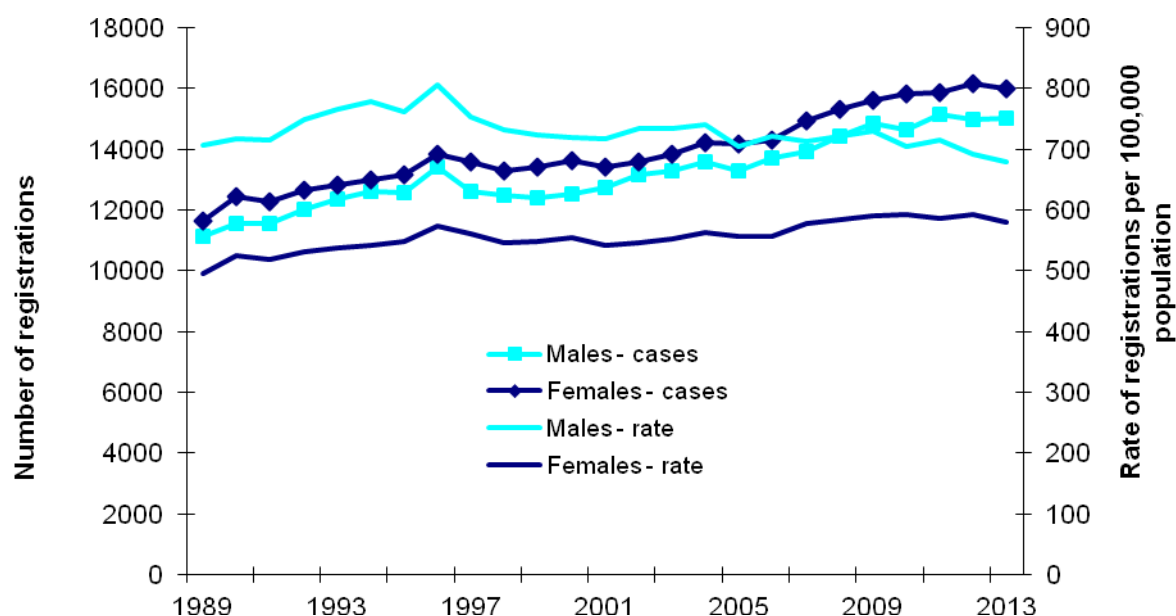
- In the interests of external comparison, because not all cancer registries collect data on NMSC;
- Because they are so common, only the first occurrence of a basal cell carcinoma (the most common type of NMSC) is collected in Scotland;
- Although numerically important in terms of NHS workload, NMSC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

Excluding NMSC, the number of cancers diagnosed in Scotland has increased over the last 10 years from 27,095 cases in 2003 to 31,013 in 2013.

For males, the most common cancers are prostate, lung and colorectal cancers (Table 1), collectively accounting for 52% of cancers in men. For females, the most common cancers are breast, lung and colorectal cancers (Table 1), accounting for 56% of cancer in women.

Over the decade up to 2013, the age-standardised incidence rate of cancer has fallen for males (a 4% decrease) and shows a significant, increasing trend for females (7% increase) (Figure 1).

**Figure 1. New cancer<sup>1</sup> registrations in Scotland, 1989-2013:  
number of cases and age standardised rate<sup>2</sup>  
(European Age Standardised Rate – using ESP2013<sup>2</sup>)**



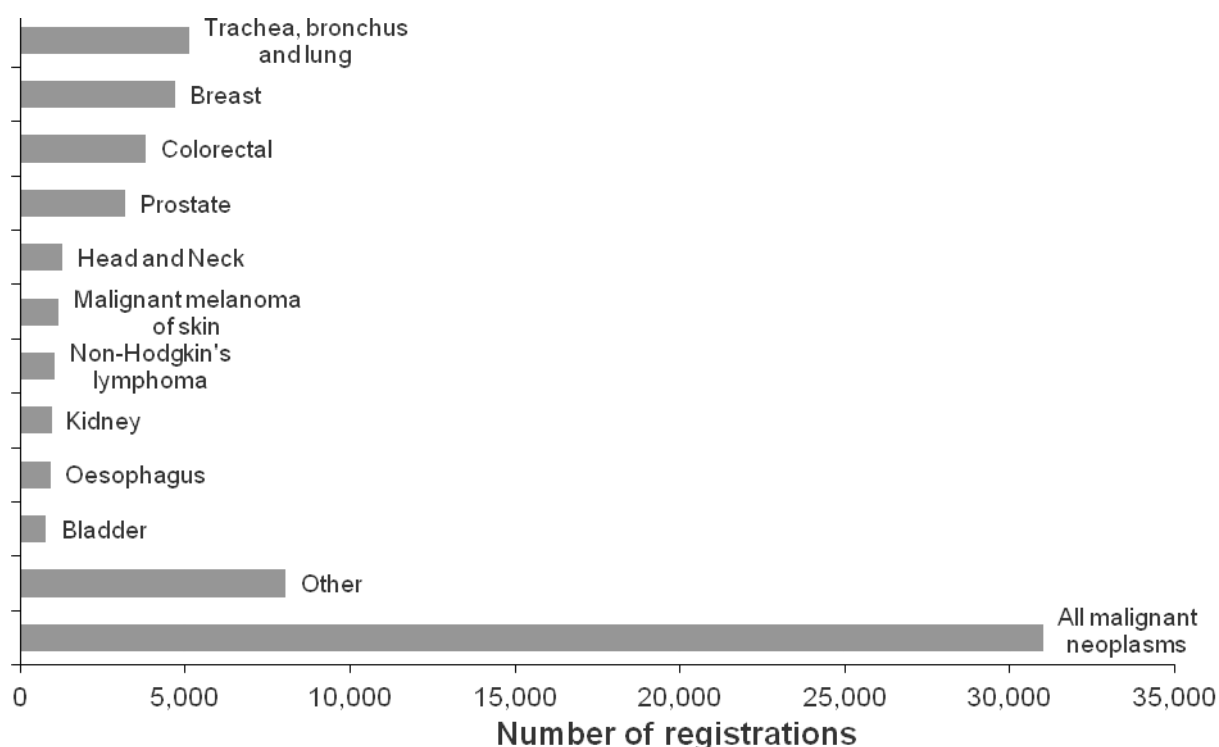
Source: Scottish Cancer Registry

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+.

For both males and females in Scotland combined, lung cancer is still the most common cancer overall (Figure 2), with 5,124 cases diagnosed in 2013 (17% of all cancers), compared to 4,697 cases (15%) of breast cancer and 3,812 cases of colorectal cancer (12%).

**Figure 2. Most common cancers in Scotland, 2013; all persons**



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

Source: Scottish Cancer Registry

Table 1 shows the numbers of cases in 2013, percentage frequency and estimated percentage change in age-adjusted incidence rates over ten years for the most common cancers. A p-value of less than 0.05 for the 10 year change indicates that this 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 9%; this is partly due to increased detection by the Scottish Breast Screening Programme, which has seen a rise in attendance over the same time period, and an extension in the age range invited for screening to include women up to the age of 70 years, phased in over the 3-year period beginning 1st April 2003. 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 with a relative frequency of 21%. The incidence rate of prostate cancer has decreased slightly by 0.8% over the last decade. Prostate cancer incidence is likely to be influenced by the extent of prostate-specific antigen (PSA) 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 15% over the last ten years. Lung cancer incidence rates in females increased by 13% 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 increased in women by 3%, while there has been a decrease of 3% for men. Modifiable risk factors for colorectal cancer are thought to include diet, lack of physical activity and long-term smoking.

## **Cancer of the corpus uteri**

The incidence of cancer of the body of the uterus (corpus uteri) has increased significantly (by 33%) over the 10-year period 2003-2013. 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 women and sixth most common cancer in men. Incidence rates increased over the last decade by 38% in males and 22% 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.

## **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.

## **Ovarian cancer**

The 14% 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**

After a prolonged period of increasing incidence, oesophageal cancer now seems to be decreasing in incidence in both sexes. 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.

## **Non-Hodgkin's lymphoma**

Non-Hodgkin's lymphoma (NHL) has increased in females (by 9%), with a smaller increase in males (2%). Although immunosuppression has been associated with the development of NHL, much has still to be understood about its aetiology 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 males (13%) and females (9%). Again, the aetiology of pancreatic cancer is 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 10 years of 25% and 35% for males and females, respectively. The increase has occurred primarily in cancers of the renal parenchyma (ICD-10 C64) rather than of the renal pelvis (C65). 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 (30%) and females (25%). 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.

**Table 1. Most common cancers in Scotland in 2013**

Rank	ICD-10 site grouping	Number	Frequency	10 year % change <sup>1</sup>	p - value <sup>3</sup>
<b>All Persons</b>					
1	Trachea, bronchus and lung (C33-C34)	5,124	16.5%	-4.4	0.5193
2	Breast (C50) <sup>2</sup>	4,697	15.1%	x	x
3	Colorectal (C18-C20)	3,812	12.3%	-0.7	0.6434
4	Prostate (C61) <sup>2</sup>	3,165	10.2%	x	x
5	Head and Neck (C00-C14, C30-C32)	1,278	4.1%	+11.5	<0.0001
6	Malignant melanoma of skin (C43)	1,172	3.8%	+30.3	<0.0001
7	Non-Hodgkin's lymphoma (C82-C85)	1,062	3.4%	+4.8	0.0429
8	Kidney (C64-C65)	949	3.1%	+28.5	<0.0001
9	Oesophagus (C15)	913	2.9%	-7.6	0.0500
10	Bladder (C67)	783	2.5%	-11.9	0.0375
	Other malignant neoplasms	8,058	26.0%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	31,013	100.0%	+0.5	0.0087
<b>Males</b>					
1	Prostate (C61)	3,165	21.1%	-0.8	0.8529
2	Trachea, bronchus and lung (C33-C34)	2,571	17.1%	-15.0	<0.0001
3	Colorectal (C18-C20)	2,100	14.0%	-3.1	0.2680
4	Head and Neck (C00-C14, C30-C32)	869	5.8%	+6.8	0.0628
5	Kidney (C64-C65)	595	4.0%	+25.1	<0.0001
6	Malignant melanoma of skin (C43)	585	3.9%	+38.5	<0.0001
7	Oesophagus (C15)	566	3.8%	-8.5	0.0167
8	Non-Hodgkin's lymphoma (C82-C85)	561	3.7%	+1.8	0.6138
9	Bladder (C67)	527	3.5%	-13.3	0.0029
10	Stomach (C16)	430	2.9%	-30.1	<0.0001
	Other malignant neoplasms	3,063	20.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,032	100.0%	-4.4	0.0002
<b>Females</b>					
1	Breast (C50)	4,665	29.2%	+9.1	<0.0001
2	Trachea, bronchus and lung (C33-C34)	2,553	16.0%	+13.4	<0.0001
3	Colorectal (C18-C20)	1,712	10.7%	+3.3	0.2173
4	Corpus uteri (C54)	729	4.6%	+33.0	<0.0001
5	Malignant melanoma of skin (C43)	587	3.7%	+22.2	<0.0001
6	Ovary (C56)	565	3.5%	-13.8	<0.0001
7	Non-Hodgkin's lymphoma (C82-C85)	501	3.1%	+9.0	0.0518
8	Head and Neck (C00-C14, C30-C32)	409	2.6%	+25.4	0.0001
9	Pancreas (C25)	386	2.4%	+8.6	0.0927
10	Kidney (C64-C65)	354	2.2%	+34.9	<0.0001
	Other malignant neoplasms	3,520	22.0%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,981	100.0%	+7.0	<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.

## Further information

A summary table showing numbers of cases and age-standardised incidence rates for each cancer, sex and year (2004-2013) can be found at [http://www.isdscotland.org/Health-Topics/Cancer/Publications/2015-04-28/cancer\\_incandmort\\_summary.xls](http://www.isdscotland.org/Health-Topics/Cancer/Publications/2015-04-28/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 1989-2013 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 (2010) can be found at <http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Cancer-Incidence-Projections-Scotland-to-2020.pdf>.

A more comprehensive report from 2001 is available at <http://www.scotland.gov.uk/Publications/2001/05/9056/File-1>

Cancer incidence statistics for England can be found on the National Statistics hub at <http://www.ons.gov.uk/ons/rel/vsob1/cancer-statistics-registrations--england--series-mb1-/no--43--2012/stb-cancer-registrations-2012.html>

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/](http://www.ncin.org.uk/cancer_information_tools/eatlas/)



## 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 <sup>1</sup>	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

<sup>1</sup> 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**

<b>Males</b>					
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 <sup>1</sup>	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

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

Data extracted: March 2015

<b>Females</b>					
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 <sup>1</sup>	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

<sup>1</sup> 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**

<b>Males</b>				
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 <sup>1</sup>	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

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

Data extracted: March 2015

<b>Females</b>				
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 <sup>1</sup>	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

<sup>1</sup> 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 2014, It will next be updated in October 2015. This section is updated annually, alongside the Cancer Mortality National Statistics publication.

### **Note about the 2013 European Standard Population**

The 2013 European Standard Population (ESP2013) has been used to calculate the European Age Standardised Rates (EASRs) within this publication. The European Standard Population (ESP), which was first used in 1976, was revised in 2013. Figures using ESP1976 and ESP2013 are not comparable. Therefore, findings from this publication are not comparable with previous ISD reports. Further detail regarding this change and a worked example of EASRs using both ESP1976 and ESP2013 can be found in Appendix A1 of the latest [Cancer Mortality publication](#).

In 2013, 15,764 people died of cancer in Scotland. Lung cancer accounted for the largest number of deaths in both sexes, with 26.4% of cancer deaths in males, and 25.8% of cancer deaths in females. The absolute number of lung cancer deaths in males was 2127 and in females was 1993. Colorectal, breast and prostate cancer were the other major causes of cancer deaths (Table 5).

Overall cancer mortality rates have decreased by 15.0% in males and 5.8% 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 (37.6%, 20.8% and 19.8% respectively). Death rates from prostate cancer, the most frequently diagnosed cancer in males (Table 1), have decreased by 11.9% over the 10 years to 2013. The death rate from cancer of the liver has increased by 40.7% 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 stomach, breast and ovarian cancer (24.9%, 19.2% and 15.9% respectively) (Table 5). Death rates from breast cancer, the most frequently diagnosed cancer in females, have decreased in spite of the increase in incidence of female breast cancer (Table 1). Cervical cancer deaths have decreased by 18.2% 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 2013: Rank, number, frequency and change in mortality rate since 2003**

<b>Males</b>					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change <sup>1</sup>	p-value
1	Trachea, bronchus and lung (C33-C34)	2,127	26.4%	-20.8	<0.001
2	Prostate (C61)	876	10.9%	-11.9	0.000
3	Colorectal (C18-C20)	871	10.8%	-19.8	<0.001
4	Oesophagus (C15)	538	6.7%	-10.2	0.001
5	Pancreas (C25)	354	4.4%	+5.6	0.215
6	Liver and intrahepatic bile ducts (C22)	343	4.3%	+40.7	<0.001
7	Bladder (C67)	318	4.0%	-14.8	0.005
8	Head and Neck (C00-C14, C30-C32)	312	3.9%	+2.0	0.688
9	Stomach (C16)	265	3.3%	-37.6	<0.001
10	Brain and other CNS (C70-C72, C75.1-C7	238	3.0%	-0.7	0.924
	Other malignant neoplasms	1,805	22.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	8,047	100.0%	-15.0	<0.001
<b>Females</b>					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change <sup>1</sup>	p-value
1	Trachea, bronchus and lung (C33-C34)	1,993	25.8%	+6.8	0.014
2	Breast (C50)	1,013	13.1%	-19.2	<0.001
3	Colorectal (C18-C20)	707	9.2%	-9.1	0.005
4	Ovary (C56)	396	5.1%	-15.9	<0.001
5	Pancreas (C25)	388	5.0%	+5.4	0.310
6	Oesophagus (C15)	290	3.8%	-12.2	0.016
7	Stomach (C16)	226	2.9%	-24.9	0.000
8	Bladder (C67)	213	2.8%	+2.1	0.788
9	Non-Hodgkin's lymphoma (C82-C85)	191	2.5%	-12.3	0.067
10	Liver and intrahepatic bile ducts (C22)	190	2.5%	+34.8	0.000
	Other malignant neoplasms	2,110	27.3%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,717	100.0%	-5.8	<0.001
<b>All persons</b>					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change <sup>1</sup>	p-value
1	Trachea, bronchus and lung (C33-C34)	4,120	26.1%	-10.9	0.001
2	Colorectal (C18-C20)	1,578	10.0%	-15.9	<0.001
3	Breast (C50) <sup>2</sup>	1,020	6.5%	x	x
4	Prostate (C61) <sup>2</sup>	876	5.6%	x	x
5	Oesophagus (C15)	828	5.3%	-10.8	0.001
6	Pancreas (C25)	742	4.7%	+5.5	0.086
7	Liver and intrahepatic bile ducts (C22)	533	3.4%	+38.8	<0.001
8	Bladder (C67)	531	3.4%	-10.3	0.291
9	Stomach (C16)	491	3.1%	-33.8	<0.001
10	Head and Neck (C00-C14, C30-C32)	451	2.9%	+5.8	0.066
	Other malignant neoplasms	4,594	29.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,764	100.0%	-11.4	<0.001

'x' = not applicable.

<sup>1</sup> Calculated using Poisson regression analyses.

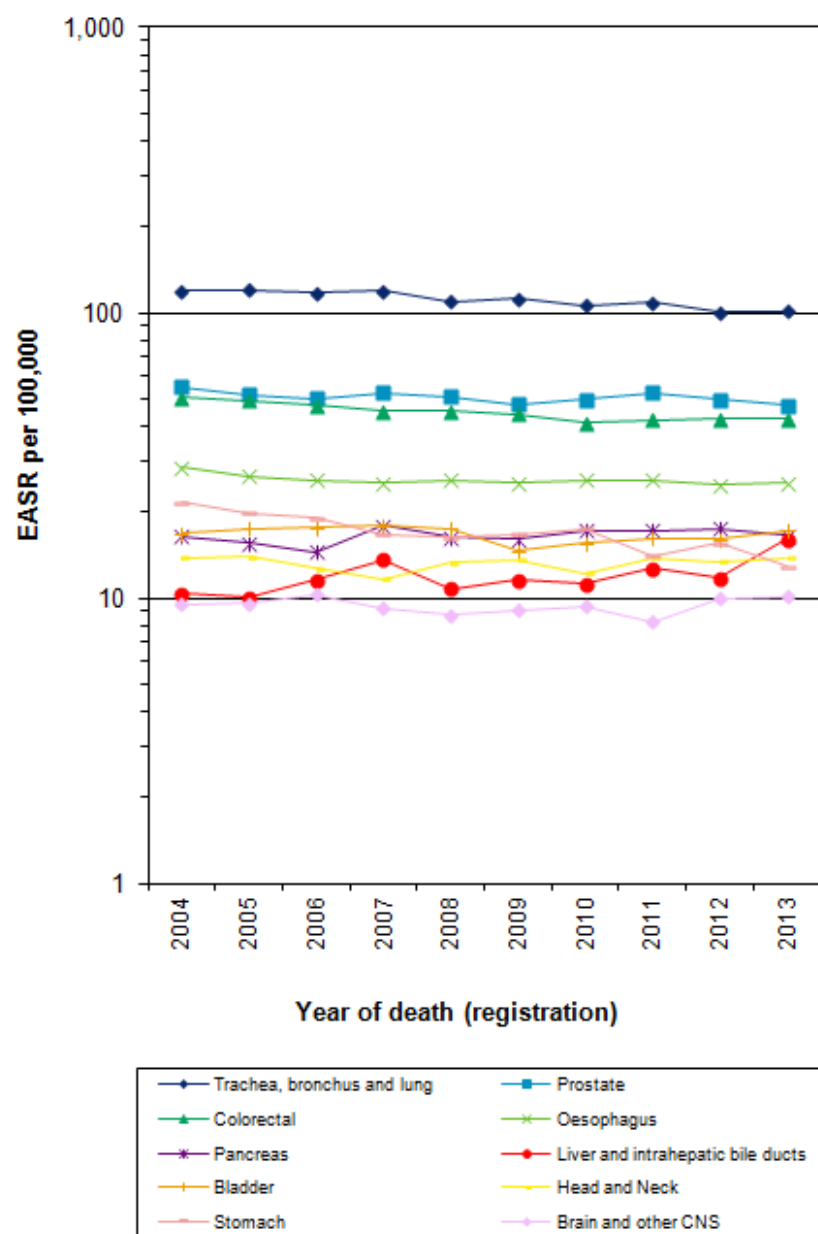
<sup>2</sup> Percentage change in mortality is not shown here for cancers occurring mainly or only in one sex.

Source: National Records of Scotland (NRS)

Date extracted: September 2014

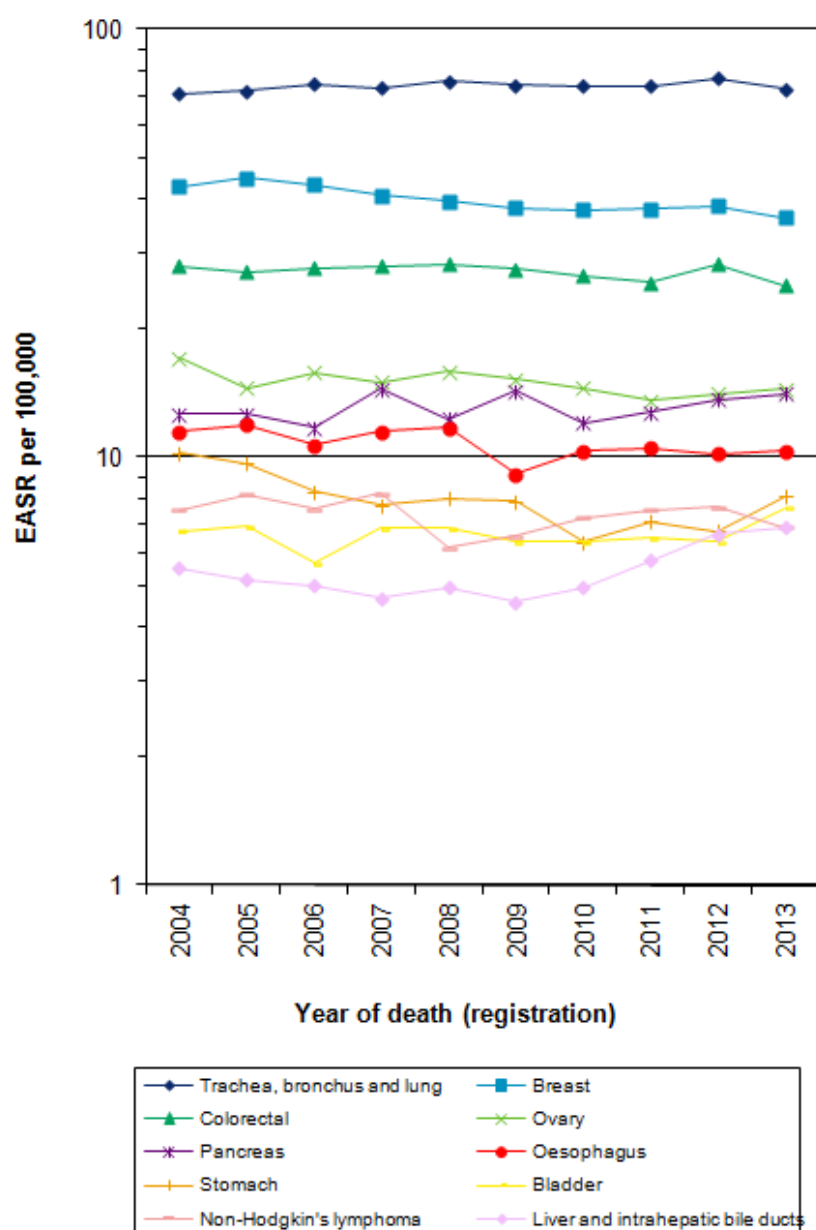
**Figure 6: Trends in mortality from ten most common cancer causes of death, males**

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



**Figure 7: 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.

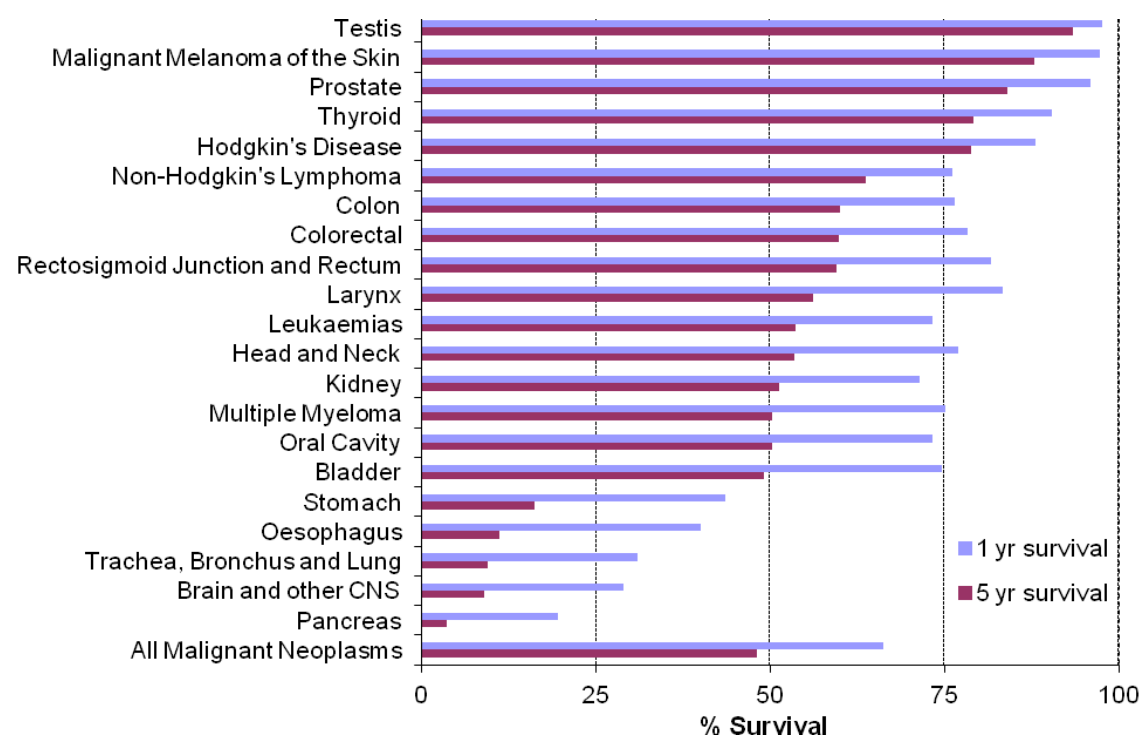
### Cancer survival 2007-2011

#### One- and five-year cancer survival

Age-standardised one- and five-year relative survival estimates are shown in Figure 8a 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 8a). 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 8b). For all cancers combined, survival at five years is higher for women (53.9% compared to 48.1% for men).

**Figure 8a. Age-standardised<sup>1</sup> relative survival at 1 and 5 years after diagnosis by cancer (males); Patients aged 15-99, diagnosed 2007-2011<sup>2-3</sup>**



Source: Scottish Cancer Registry

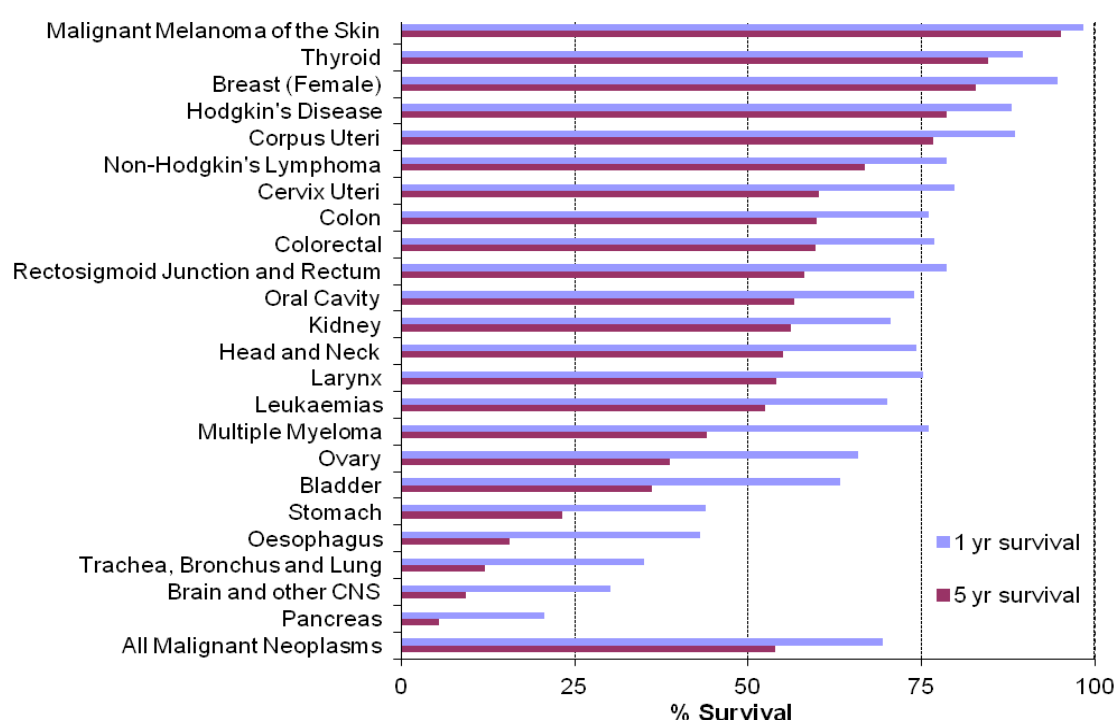
1. These rates are age-standardised to the International Cancer Survival Standard (ICSS).

2. Cases diagnosed in 2009-2011 do not have 5 years' follow-up. Patients have been followed up to 31<sup>st</sup> 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 8b. Age-standardised<sup>1</sup> relative survival at 1 and 5 years after diagnosis by cancer (females); Patients aged 15-99, diagnosed 2007-2011<sup>2-3</sup>**



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 31<sup>st</sup> 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).

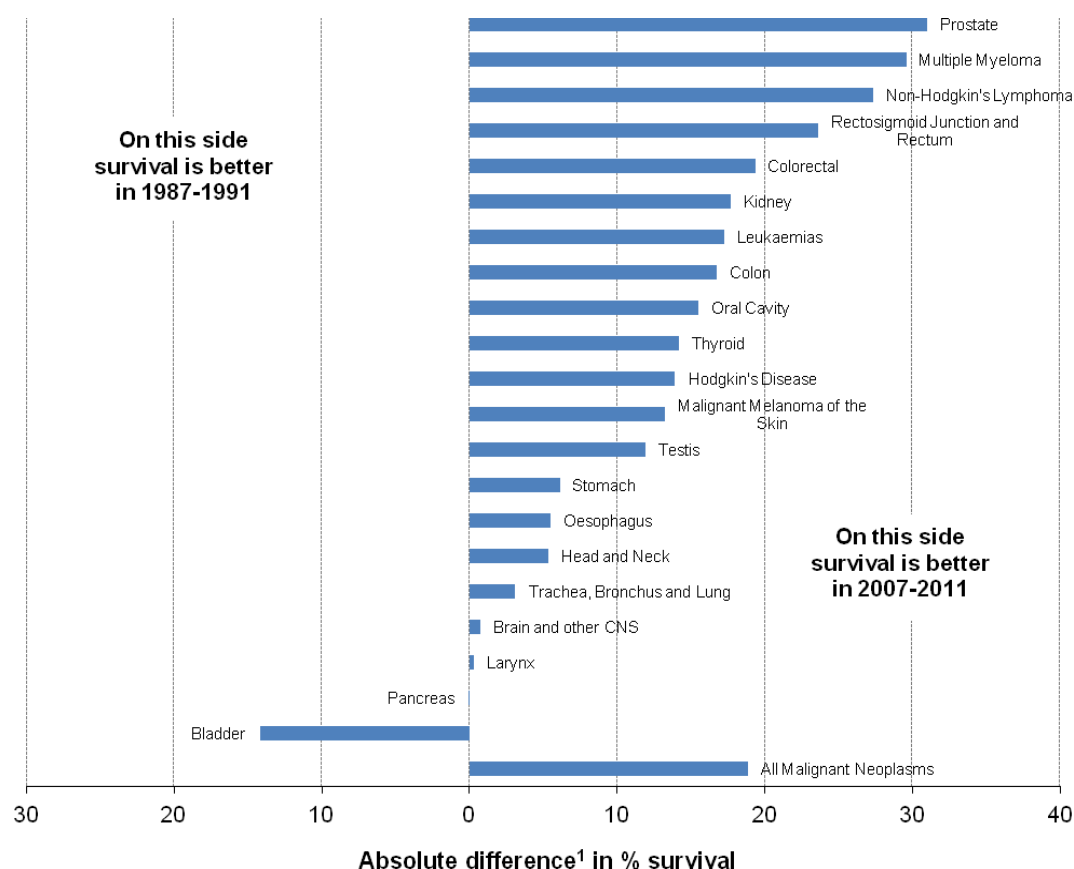
## Trends in cancer survival 1987-2011

### 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 9a 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 9b shows the same information for females.

**Figure 9a. Absolute difference<sup>1</sup> in age-standardised<sup>2</sup> relative survival at 5 years after diagnosis by cancer, patients diagnosed in 1987-1991 compared to those diagnosed in 2007-2011 (males); Patients aged 15-99<sup>3-4</sup>**

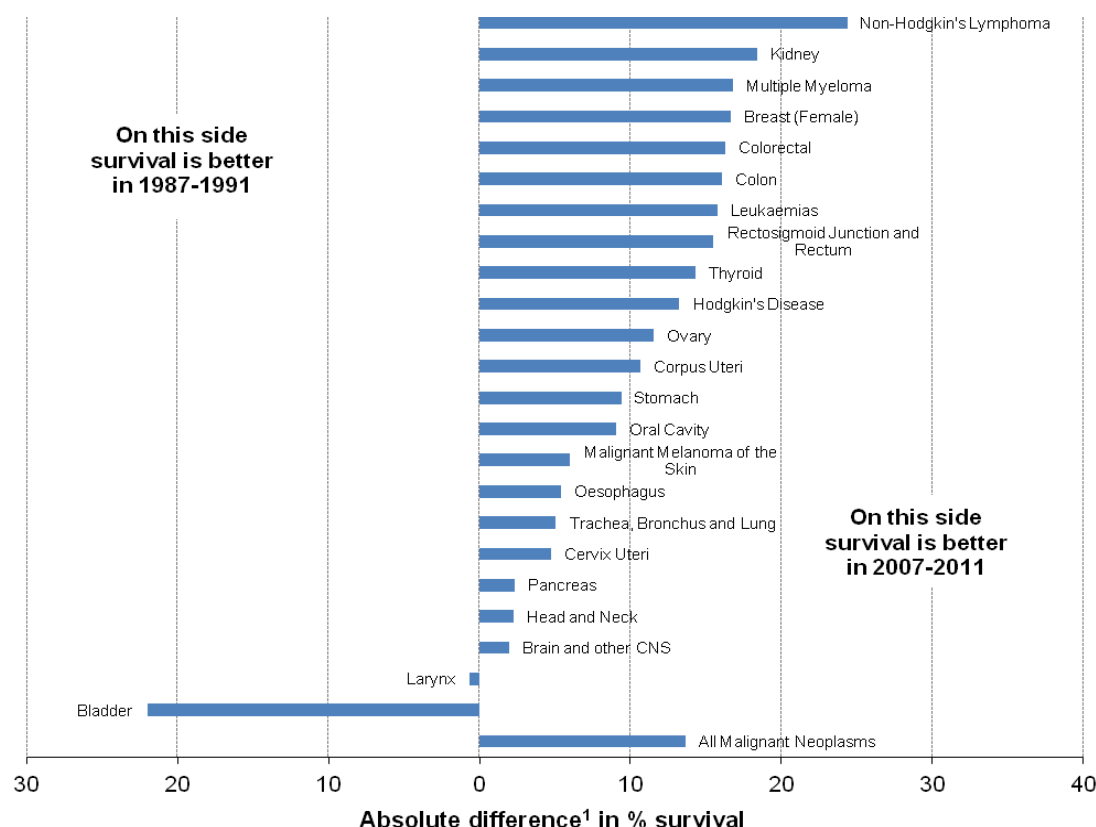


Source: Scottish Cancer Registry

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 31<sup>st</sup> 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 9b. Absolute difference<sup>1</sup> in age-standardised<sup>2</sup> relative survival at 5 years by cancer (females), patients diagnosed in 1987-1991 compared to those diagnosed in 2007-2011; Patients aged 15-99<sup>3-4</sup>**



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 31<sup>st</sup> 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.<sup>1</sup>

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.<sup>2</sup> 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>.

---

<sup>1</sup> 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.

<sup>2</sup> 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/](http://www.ncin.org.uk/cancer_information_tools/eatlas/)