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Definition

The World Health Organization defines cancer as ‘a generic term for a large group of diseases characterized by the uncontrolled growth of abnormal cells beyond their usual boundaries that can then invade adjoining parts of the body and/or spread to other organs.’¹

Cancer can affect almost any type of tissue and there are many different subtypes, all of which have specific treatment strategies. Some cancers are solid and develop as a tumour, and others may develop in the blood.

Cancer Research UK’s page, **Types of cancer**, offers information about the different types of cancer according to the type of cell they start from.

Another term that is used when discussing cancer is metastasis. A metastasis is a secondary tumour that is found in a different part of the body that spread from the original cancer site. The cell tissues of the secondary tumour have similar anatomy to the original cancer.

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Prevalence and incidence

1 in 2 people in the UK born after 1960 will be diagnosed with some form of cancer during their lifetime.² In 2020, it is estimated that almost 3 million people are living with cancer in the UK, rising to almost 3.4 million by 2025.³

Rates of cancer have increased by 12 percent since the 1990s. There are around 375,000 new cancer cases in the UK every year and around 166,000 deaths per year attributed to cancer (2016-2018).

The most common cancers are breast, prostate, lung and bowel, which account for 53 percent of all cancers. 38 percent of cancer cases are preventable.

Cancer rates peak between 85 and 89 years of age, with 36 percent of cancer cases in the UK being diagnosed in people aged 75 and over. Cancer also has a slightly higher incidence rate in males at 51 percent.⁴

If you would like to know more, Cancer Research UK has a page dedicated to **Data and statistics** for healthcare professionals which contains detailed information including key statistics, in-depth explanations of these statistics and raw data.

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Signs and symptoms

Due to the huge range in cancer types and affected tissues the list of potential signs and symptoms is broad.

People should be advised to look out for:

- lumps – breast lumps and lumps rapidly increasing in size elsewhere on the body, commonly the lymph glands at the neck, under armpit and groin

- coughing – chest pain and breathlessness, especially a cough lasting three weeks or more; and coughing up blood or blood in sputum
- changes in digestion and bowel habits
 - frequent **heartburn and indigestion**
 - melena (blood in stools)
 - unexplained diarrhoea or **constipation**
 - a feeling of incomplete emptying
 - abdominal or anal pain
 - persistent bloating
- unexplained bleeding
- moles that have an irregular shape or border, more than one colour, are larger than 7 mm diameter or are itchy, crusty or bleeding
- unexplained weight loss
- unexplained **pain** lasting for three weeks or more
- extreme fatigue
- a sore that doesn't heal, eg, a mouth ulcer
- hoarse voice for three weeks or more
- difficulty urinating
- **dysphagia** (difficulty swallowing)
- persistent, unexplained fever (above 37.5 C) that is not caused by an infection⁵
- night sweats.^{6,7}

Macmillan Cancer Support has a page dedicated to signs and symptoms of cancer, which describes symptoms that link specifically to common cancers as well as more information on general symptoms.⁷

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Causes/risk factors

There are some risk factors for cancer which are modifiable, and by reducing people's exposure to these risk factors the risk of cancer is reduced.

There are also risk factors which are either non-modifiable, or risk factors that may have developed due to a modifiable risk factor but are now non-modifiable.

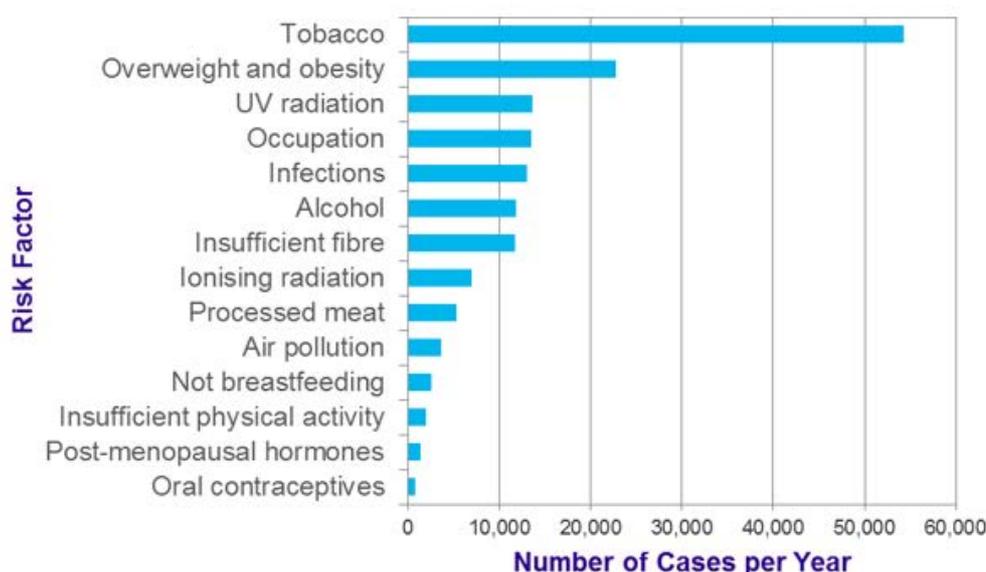
These types of risk factors include:

- age – although cancers are more prevalent in older people there are also a variety of cancers which usually only occur in childhood
- genetics – genes that put people at increased risk have been found for breast, bowel, ovarian and womb cancers; it is also thought that there is a genetic component to prostate, pancreatic and testicular cancers⁸
- low immunity – this may be as a result of immunosuppression post-transplant or an underlying medical condition⁹
- pre-cancerous conditions – conditions which may develop into cancer, eg, breast calcifications (deposits of calcium in the breast tissue) and Barrett's oesophagus (abnormal cell growth in the oesophagus as a result of **gastro-oesophageal reflux disease [GORD]**)¹⁰

- chronic inflammation – inflammation as a result of **Crohn's disease and ulcerative colitis** has been linked to increased risk of bowel cancer¹¹ (other conditions such as bronchitis, gastritis, hepatitis and pancreatitis are linked to increased risk of cancer although the causes of these conditions are potentially modifiable).¹²

Theoretically modifiable risk factors

Modifiable risk factors are linked to preventable cancers. The diagram below shows the number of cases of preventable cancer that are attributable to modifiable risk factors in 2015.



Credit: Cancer Research UK. 2015.¹³

- Lifestyles factors – smoking is a main risk factor of cancer, especially lung and mouth cancer. 1 in 4 cancer deaths in the UK are caused by smoking. Other lifestyle factors include heavy consumption of alcohol and obesity.¹⁴
- Infections – some viruses and bacteria increase the risks of developing cancer. For example, the human papillomavirus virus (HPV) increases the risk of developing certain types of gynaecological cancer, as well as head and neck cancer; also, a Helicobacter pylori infection left untreated increases the risk of stomach and bowel cancer, and an uncommon type of lymphoma found in the stomach.^{15, 16}
- Environmental factors – asbestos is the major cause of a rare form of cancer called mesothelioma; the people most likely to have been exposed to asbestos are construction workers before the substance was banned in the UK in 1999. Exposure to UV light is another environmental risk factor that is known to cause skin cancer.¹⁷

Reducing the amount of preventable cancers in England is one of the main focuses of the National Cancer Transformation Programme. More information can be found in the following NHS England document, **Achieving World-Class Cancer Outcomes: A Strategy for England 2015-2020. Progress report 2016-2017.**

Reducing cancer risk

The European Code Against Cancer webpage, **12 ways to reduce your cancer risk** offers evidence-based information on ways to reduce cancer risk. More information about the evidence base can be found under the **Scientific Justification** section.

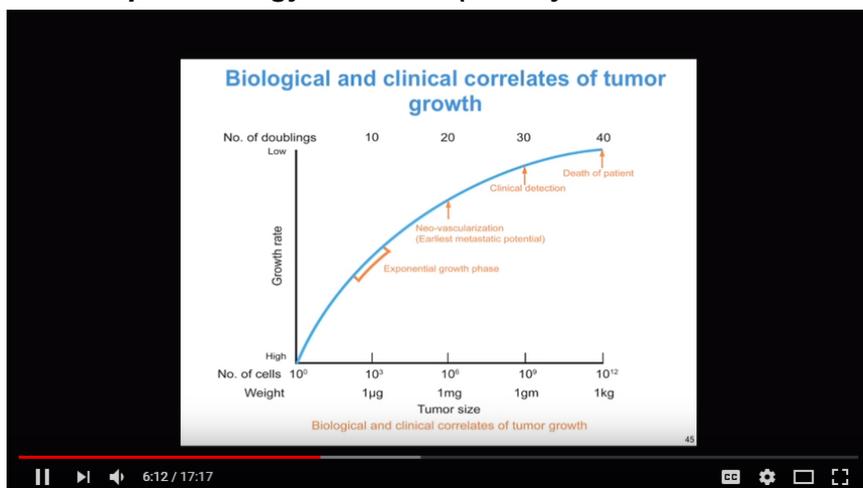
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Pathophysiology (mechanism of disease)

The pathophysiology of cancer is very complex, it also varies between cancer types. There are however some principles that remain the same. The Cancer Research UK website provides information on what cancer is, how it starts, grows and metastasises. Visit **What is cancer?** and access the relevant pages for information, diagrams and videos that will help you to understand what cancer is and how it develops.

The following TED^x talk by Dr Glenn Begley explores the complex biology of cancer:

The Complex Biology of Cancer (or Why Haven't We Cured It Yet?)



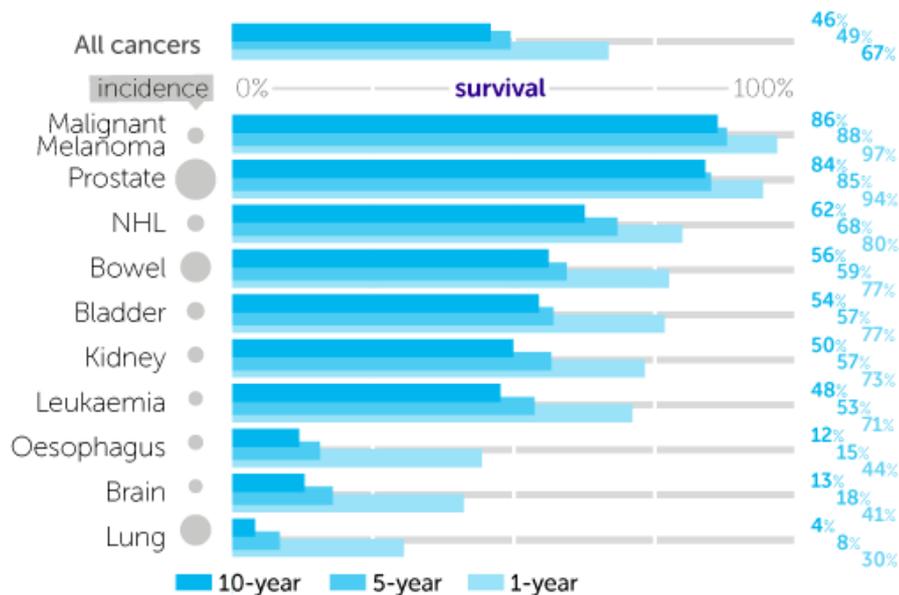
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Prognosis

According to data from 2010 to 2011, half of those diagnosed with cancer will survive for ten years or more. The five-year relative survival rate for both men and women is below the European average in England, Wales and Scotland.

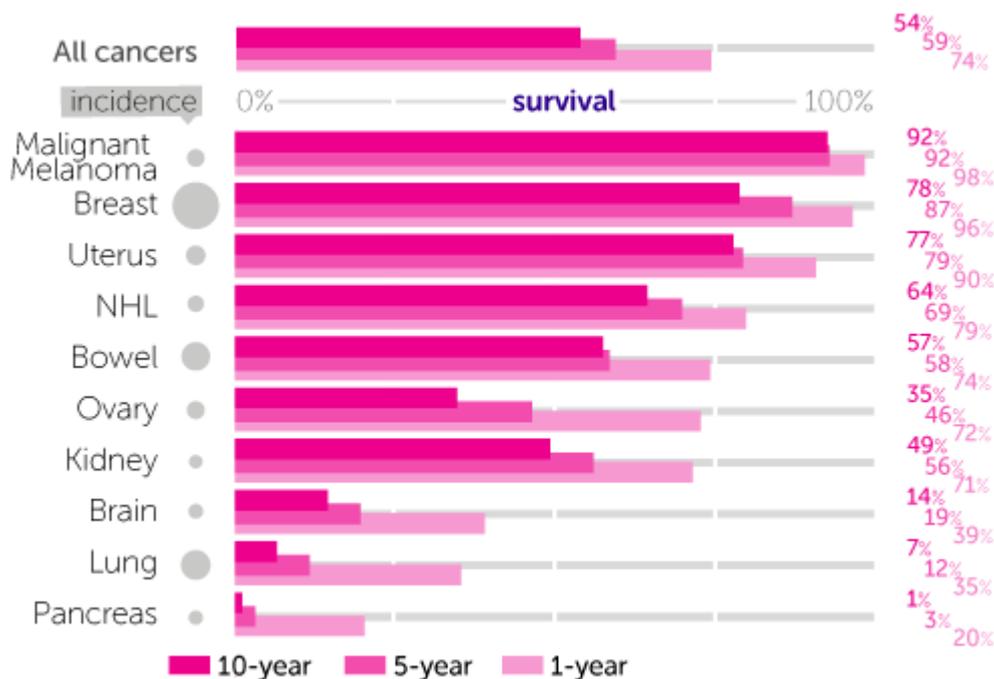
The graphs below show the one, five and ten-year survival rates for the most common cancers in men and women. They show that the prognosis of cancer diagnoses can vary significantly depending the types of cancer.

Age-standardised one, five and ten-year survival for the ten most common cancers in males, England and Wales, 2010-2011



Credit: Cancer Research UK. 2014.¹⁸

Age-standardised one, five and ten-year survival for the ten most common cancers in females, England and Wales, 2010-2011



Credit: Cancer Research UK. 2014.¹⁸

The survival rate for many cancers is improving, with the largest improvement being seen for prostate cancer between the early 70s and 2010 to 2011. The survival rates for brain, oesophagus and lung cancer have shown little change and the survival rate for pancreatic cancer has shown no change.¹⁸

Improving cancer survival rates is another main focus of the National Cancer Transformation Programme as described in ***Achieving World-Class Cancer Outcomes: A Strategy for England 2015-2020. Progress report 2016-2017.***

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Diagnosis/detection

Screening

Screening programmes play an important role in the detection of cancer. Screening helps to identify cancer before people develop symptoms. Early detection of cancer can help to improve outcomes.¹⁹

Bowel cancer screening

A faecal immunochemical test (FIT) was introduced in England in June 2019 and is now sent out along with invitations for bowel cancer screening. Bowel cancer screening is offered every two years to men and women aged 60 to 74. A test kit can be ordered for those aged 75 or older by calling the free helpline on 0800 707 60 60. Ministers have agreed that in the future, bowel cancer screening in England will start at the age of 50. From April 2021, the screening started including some 56-year-olds in some areas.²¹

For more about this type of screening visit the Public Health England (PHE) page, ***Bowel cancer screening: programme overview.***

Breast cancer screening

Mammograms (X-rays of the breast tissue) are offered to all women aged 50 to 70 every three years. Woman over 70 can request an appointment every three years but will no longer be invited. Those who are identified as being high risk may be offered more frequent screening.

For more about this type of screening visit the PHE page, ***Breast screening: programme overview.***

There are some risks associated with breast cancer screening that should be considered. For more information on this, visit ***Breast cancer screening – Benefits and risks.***

Watch the following video to see what happens during a mammogram:
NHS Choices - Breast cancer screening



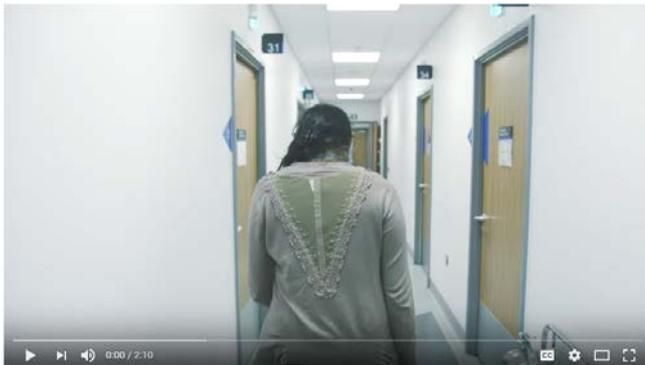
Cervical cancer screening

This is offered to women aged 25 to 49 every three years. Women aged 50 to 64 receive invitations every five years.

For more about this type of screening visit the PHE page, ***Cervical screening: programme overview***.

Watch the following video to find out more about cervical screening:

NHS Choices - Cervical screening



Transgender people

Suitable screening may not always been offered to transgender people. For more information about the appropriate screening in this group, visit ***NHS population screening: information for transgender people***.

Watch the following video to find out more about cervical screening for transgender men:

NHS Choices - Cervical screening for transgender men



The Royal Marsden School have collaborated with Health Education England South London and designed an e-learning programme to provide an overview of the key issues in cancer care. Visit this open access programme, **About the Cancer in the Community programme**, and work through the first module, *Module 1: Cancer Prevention and Screening*, which ‘provides the background to what cancer is, its causes and how to reduce its risks, possible symptoms of cancer, what to do if you suspect a client has cancer, the importance of early detection and the national cancer screening programmes available.’

Referral and diagnosis

If cancer is suspected, then a person may need a referral to a specialist. NICE guideline **Suspected cancer: recognition and referral [NG12]** offers recommendations on the symptoms and signs that warrant investigation and referral for suspected cancer.

There are many tests that can be offered to aid in diagnosis. The test offered depends on a person’s symptoms and the suspected site of cancer. Common tests include scans, blood tests and biopsies. Details about specific tests can be found on the Cancer Research UK page **Tests** and the Macmillan Cancer Support page **Tests and scans**.

Visit **About the Cancer in the Community programme** and work through *Module 2: Cancer Diagnosis and Staging*, which ‘explains how to understand diagnostic tests, the cancer staging and grading systems, the role of rapid diagnostic services, the acute signs and symptoms of a cancer-related emergency, and the role of the multidisciplinary team in cancer treatment decision-making.’

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Management

Cancer treatment is tailored to the person, type, site and stage of cancer. For this reason, there is a broad variety of different pharmacological and non-pharmacological treatments. The main treatment options are surgery, radiotherapy and chemotherapy (including targeted therapies and immunotherapies). Sometimes one or more of these treatments are offered at the same time, or they may be offered one after the other. **Cancer Research UK** offers more information about general treatment for cancer.

Visit **About the Cancer in the Community programme** and work through *Module 3: Cancer Treatments*, which ‘provides an understanding of how cancer is treated, the side-effects of cancer and its treatments, the management of treatment toxicity and the symptoms associated with it, what to do in a cancer-related

emergency and how to understand treatment responses.’ (This module looks at the complications associated with cancer and its treatments, and also oncological emergencies.)

Specialist information on the treatment of cancer can be found on the **British Oncology Pharmacy Association (BOPA)** website. They also offer a range of **courses** but the majority of this content is for members only.

The Cancer Research UK page, **Your cancer type**, signposts to detailed information about treatment (in addition to symptoms and diagnosis) for a variety of different cancers.

For a personal perspective on one of the side effects of chemotherapy, watch:
NHS Choices - Cancer treatment: coping with hair loss during chemotherapy



For a personal perspective on radiotherapy treatment, watch:
Lymphoma Action - Radiotherapy: Helen's experience



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Patient support

The following charities offer support for those who have or have had cancer:

- **Cancer Research UK**
- **Macmillan Cancer Support**
- **Cancer Support UK**

Watch Thom's story to hear about his experience of being diagnosed with colon cancer at the age of 27 and how he has been supported by Macmillan Cancer Support:

Macmillan Cancer Support - Thom's Story



Visit **About the Cancer in the Community programme** and work through *Module 4: Living With and Beyond Cancer*, which 'explores the long-term consequences of cancer, the role of rehabilitation, the needs of clients returning to work and the importance of health promotion.'

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Further resources

For more learning on the topic of cancer visit CPPE's **Cancer** gateway page.

BOPA offers a Cancer e-learning course comprising of four modules called **Let's Communicate Cancer Series**. This is aimed at Community Pharmacies, and you will need to sign up as a free member in order to access it.

Access data on the impact of cancer on your local population through the PHE fingertips page on **Cancer Services**.

The **PHE Cancer Board plan** details PHE's five-year approach to cancer from 2017 to 2021.

NHS England has a page dedicated to **Cancer**.

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External websites

CPPE is not responsible for the content of any non-CPPE websites mentioned on this page or for the accuracy of any information to be found there.

All web links were accessed on 14 January 2020.

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