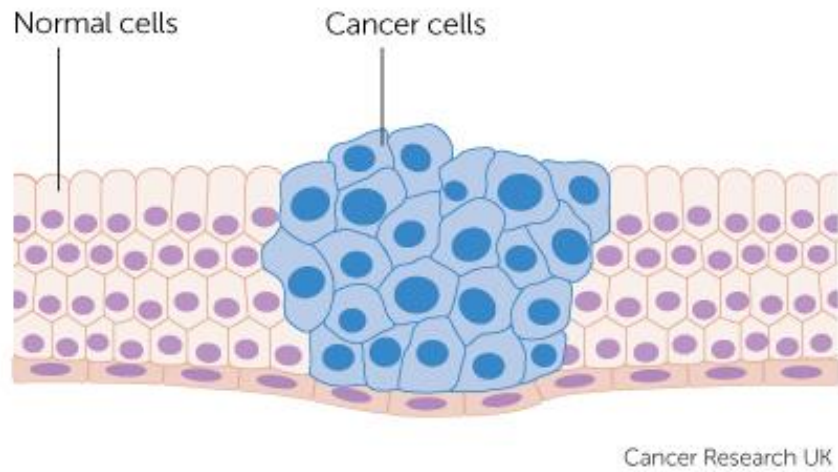


Thursday, 27 April 2023



# Cancer

**Key words:** mitosis, tumour, benign, malignant, secondary, carcinogens, risk factors

**Starter:**

**Make a list of the types of cancer you have heard of**

# The big picture: "What is cancer?"

## Learning outcomes

- Know that cancer is caused when changes occur in cells that cause them to grow and divide out of control
- Know what benign tumours are and that they stay in one place in the body and don't spread to other body tissues
- Know that malignant tumours are cancerous and that the cells are able to travel in the blood to spread to other parts of the body and form secondary tumours
- Know that risk factors linked to lifestyle have been identified for cancer by scientists
- Know that genetic risk factors have been identified for certain types of cancer

How does cancer start?

<https://www.youtube.com/watch?v=8BJ85Gyhg8>

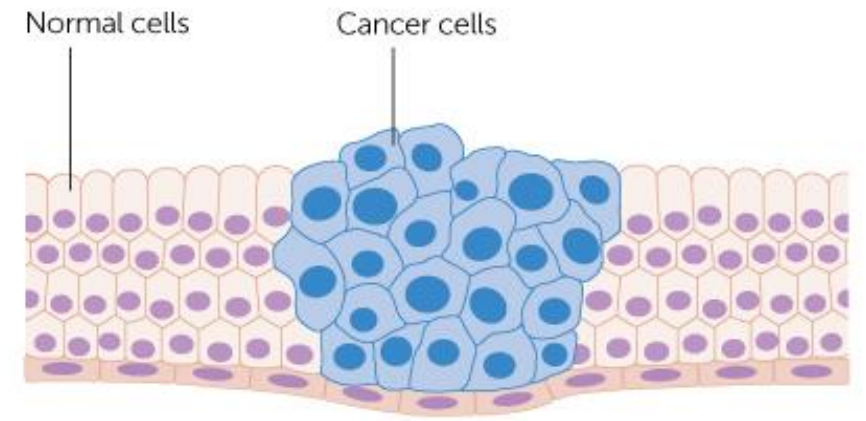
# Types of cancer

We are going to learn about 6 different types of cancers.

You have 3 minutes only with each fact sheet

For each cancer write down:

- The name of the cancer
- The risk factors of this type of cancer
- The areas of the body/ people it effects



Cancer Research UK

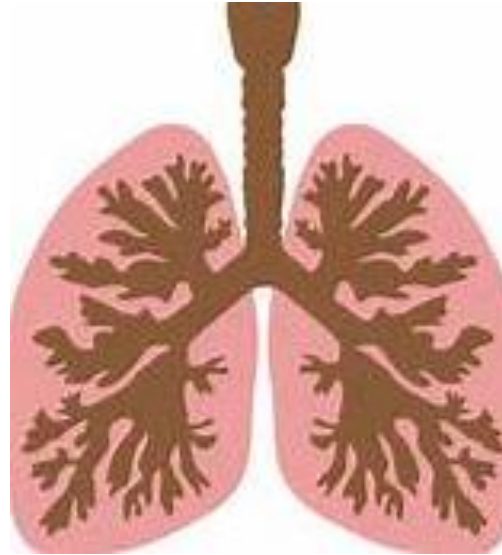
**Extension: ways to reduce risk of this cancer**

# Lung cancer

## Types of lung cancer

There are two main types of lung cancer- small cell lung cancer and non-small cell lung cancer. They are treated differently.

- **Small cell lung cancer**- Small cell lung cancer is called this because when the cancer cells are looked at under a microscope they are very small. Small cell lung cancer is usually caused by smoking, and it's rare for someone who has never smoked to develop this type of lung cancer. Small cell lung cancer is often fast-growing and can spread quickly.
- **Non-small cell lung cancer**- There are three main types of non-small cell lung cancer. The cancer cells appear bigger under a microscope.



## Risks of lung cancer

- By far the biggest cause of lung cancer is smoking. It causes more than 8 out of 10 cases (86%) including a small proportion caused by exposure to second hand smoke in non smokers (passive smoking).
- Other causes include: air pollution, exposure to radon gas, previous lung diseases and family history

## Preventing lung cancer

- Do not smoke/ stay away from others who are smoking
- Maintain a healthy diet
- Exercise regularly

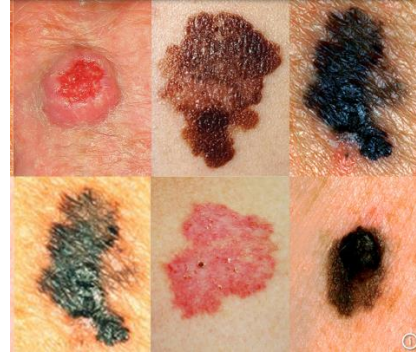


Lung cancer is the second most common cancer in the United Kingdom (excluding non melanoma skin cancer). Around 43,500 people are diagnosed in the UK each year.

# Skin cancer

## Risks of skin cancer:

- Exposure to the sun's rays
- Using sunbeds
- Fair skin
- Red hair
- Age
- Family history
- Other skin conditions
- Sunburn
- Moles and freckles



## What is skin cancer?

- There are two types of skin cancer: Melanoma and non-melanoma.
- Non-melanoma skin cancer refers to a group of cancers that slowly develop in the upper layers of the skin.
- Melanoma is a type of skin cancer that can spread to other organs in the body.

## Preventing skin cancer

- Wear high factor sun cream
- Stay out of the sun in the heat of the day
- Do not use sunbeds
- Wear a hat and sunglasses



**Skin cancer is one of the most common cancers in the world!**

# Cervical cancer

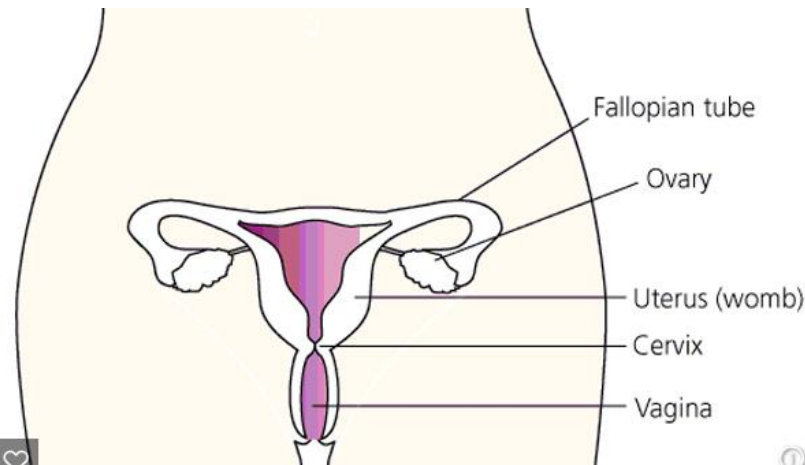
## What is cervical cancer?

Cervical cancer is a type of cancer that develops in a woman's cervix (the entrance to the womb from the vagina).

Almost all cases of cervical cancer are caused by the [human papilloma virus \(HPV\)](#). HPV is a very common virus that can be passed on through any type of sexual contact with a man or a woman. There are more than 100 different types of HPV, many of which are harmless. However, some types of HPV can cause abnormal changes to the cells of the cervix, which can eventually lead to cervical cancer

## Risks of cervical cancer

- HPV virus
- Sexually transmitted infections e.g. Chlamydia
- Smoking
- Being overweight
- Long term use of oral contraceptives
- Family history
- Having multiple pregnancies



## Preventing cervical cancer

- Using condoms
- HPV Vaccinations now given in schools
- The NHS carries out routine cervical smear tests for women over the age of 25.
- Do not smoke

## What is breast cancer?

- There are several different types of breast cancer, which can develop in different parts of the breast. This can occur in both males and females!
- Breast cancer is often divided into non-invasive and invasive types.
- **Non-invasive breast cancer:** this cancer is found in the ducts of the breast and hasn't developed the ability to spread outside the breast.
- **Invasive breast cancer:** Invasive cancer has the ability to spread outside the breast, although this doesn't necessarily mean it has spread.



# Breast cancer

## Preventing risks of breast cancer

- Breast cancer screening for those over the age of 45- uses a mammogram (see picture to the right).
- Regular exercise and healthy diet
- Breastfeeding can reduce your risk

## Risks of breast cancer

- Age
- Women are at a greater risk than men
- Inherited genes
- Race and ethnicity (white women have higher risk)



**Breast cancer is the most common type of cancer in the UK!**



# Testicular cancer

## What is testicular cancer?

Cancer of the testicles, also known as testicular cancer, is one of the less common cancers. It usually affects younger men between the ages of 15 and 49.

## Risks of testicular cancer

- Men born with abnormal testicles
- Middle aged men
- Race (more common in white men)
- Family history
- Tall men are more at risk
- Smoking
- Infertility
- Sexually transmitted infections e.g. HIV



## Preventing testicular cancer

- Safe sex (use condoms)
- Do not smoke
- Get regularly checked at the GP

Testicular cancer is difficult to prevent

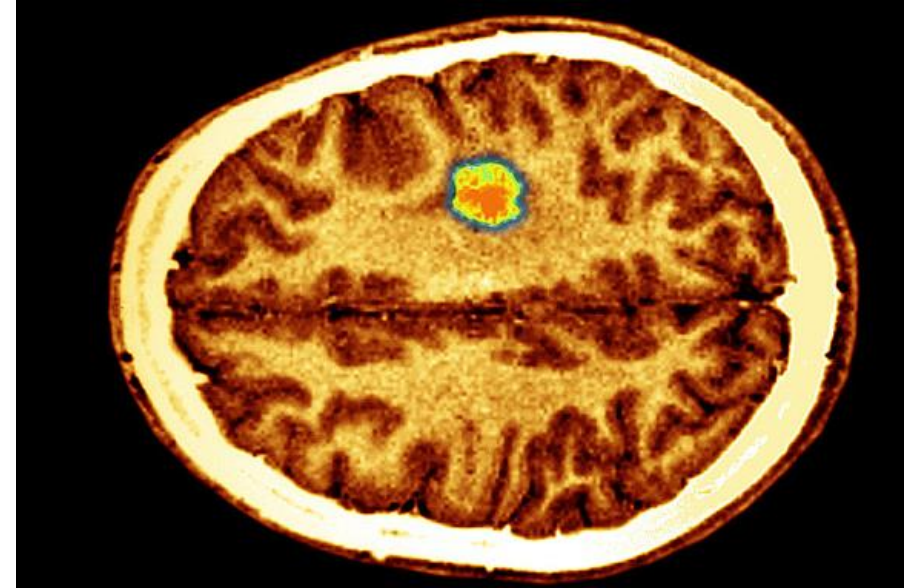
## What are brain tumours?

- A **brain tumour** is a growth of cells in the brain that multiplies in an abnormal, uncontrollable way.
- It can either be cancerous (malignant) or non-cancerous (benign).
- **Brain tumours** are graded from 1 to 4 according to their behaviour, such as how fast they grow and how likely they are to grow back after treatment.

## Risk factors of brain tumours

- Age
- Medical radiation
- Previous cancers
- Genetic history
- Being overweight
- Smoking
- Alcohol

# Brain tumours



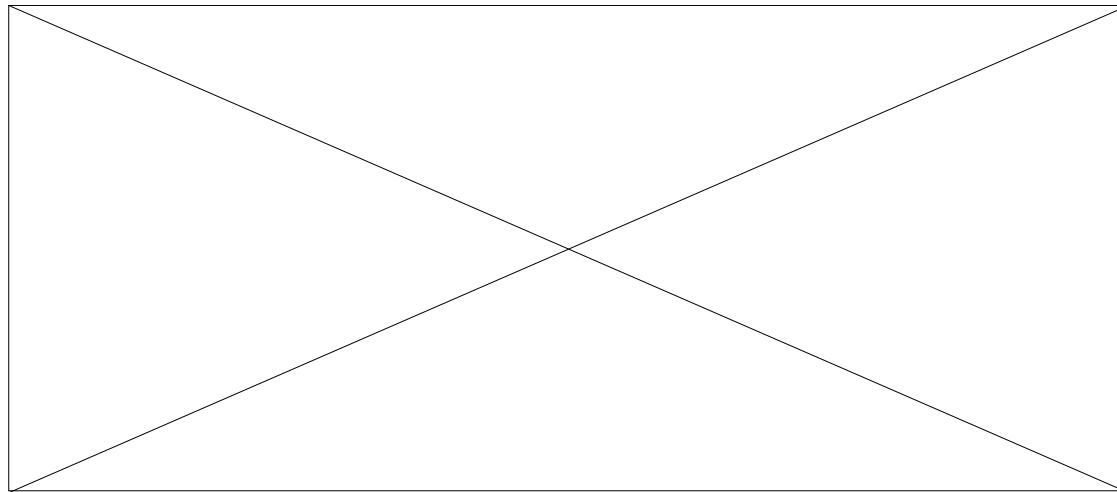
## Preventing brain tumours

- Don't drink alcohol or smoke
- Healthy diet and exercise
- If you show any symptoms go to a GP to be checked ASAP. E.g. persistent headaches, drowsiness, vomiting, problems with vision and seizures.

# Plenary: Exam question

Try the GCSE exam question on what we have completed today.

**Time allowed: 10 minutes**



# Self-assessment

- (a) (i) (as a result of) uncontrolled / abnormal growth / division of cells 1
- (ii) benign tumours do not invade / spread to other tissues / do not form secondary tumours  
accept converse for malignant, accept benign tumours do not metastasise 1
- (b) via the blood / circulatory system 1
- (c) (i) incidence is increasing 1
- more rapidly (over the years) 1
  - difference between rich and poor areas is getting less or the incidence is rising fastest in people from poor areas, accept converse for people from rich areas 1
- (ii) risk factor is UV from sunlight 1
- more UK citizens going abroad or taking holidays in the Sun or poorer people can afford holidays in the Sun or more poorer people are taking holidays in the Sun 1

**Developing:** Give a definition of these terms: cancer, tumour

**Consolidating:** What is mitosis?

**Securing:** What is the difference between a benign tumour and a malignant tumour

**Accomplishing:** What are the differences between the cell cycle of a healthy cell, and the cell cycle of a cancerous cell?

**Mastering +:** Explain how secondary tumours occur due to metastasis.

**Resources:** internet; cancer research and other charity websites and GCSE sites are best 😊

# Learning check...

If this is the answer what is the question...

1. Mitosis
2. Cancer
3. Tumour
4. Malignant
5. Benign
6. Cell cycle