

Cancer: its risk factors, treatments and diagnosis



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Cancer is a disease in which irregular cells multiply uncontrollably and inhabit the surrounding tissues. These cells can metastasize to different parts of the body via bodily fluids such as the lymphatic system (NHS, 2014). Cancers are categorised based on the organ or cell from where they arose. As an example, cancer that develops in the lung is known as lung cancer and cancer that arises in melanocytes of the skin is called melanoma. (Cancer Research UK, 2013)

There are four major types of cancer: Carcinoma, cancer that originates on the surface of internal organs. Sarcoma, cancer that initiates in bone, cartilage, fat, muscle, and blood vessels. Leukemia, Cancer that arises in bone marrow and causes abnormal blood cells to be made. Lymphoma and myeloma, cancers that originate in the immune system and nervous system cancers, cancers that develop in the cells of the central nervous system (Cancer Research UK, 2013).

Some of the risk factors of cancer include the following and for the purpose of this essay, only two are briefly explained.

- Alcohol
- Unhealthy eating
- Lack of exercise
- Ultraviolet light
- Air Pollution
- Radiation

Smoking: Smoking precipitates cancer by damaging the DNA, as well as the crucial genes that defend us against cancer. Numerous chemicals such as benzene found in tobacco have been proven to cause DNA mutilation.

Old age: The progression of ageing favours two vital processes in cancer growth: the procurement of alterations and the creation of a molecular and cellular environment, which favours carcinogenesis.

Over 331, 000 people had cancer in 2011 in the UK. 1 in 3 British resident will develop cancer in their lifetime. Approximately 162, 000 died from cancer in 2012. The hazard of developing cancer below the age of 50 is 1 in 35 for males and 1 in 20 for females. Less than 1% of entire cancers develop in children aged below 14 years. Less than 1% of all cancers occur in teenagers. In general cancer incidence rates in Great Britain have escalated in the last 40 years, with nearly the entire increase happening in the last 20 years. Cancer is the number one threat for British residents, ahead of debt, violent crime, Alzheimer's disease and losing a job. There have been huge upsurges in the frequency of numerous cancers strongly related to lifestyle, such as kidney, liver, skin oral and uterine (Cancer Research UK, 2012)

Cancer develops when the genetic material of a cell becomes corrupted; the corruption triggers mutations that interfere with the normal cell development and division. When this occurs, the cell does not die. Instead, additional cells are made superfluously; these excess cells accumulate to form a tissue called a tumour, which is the basis of cancer. Tumours are either benign or malignant. Benign tumours remain confined to the location of origin and are not cancerous. Malignant tumours can infiltrate nearby tissues and

propagate to various parts of the body. Not all cancers start with a tumour for instance; leukaemia is a cancer of the blood. Viruses such as Human papillomavirus escalates the hazard for cancers of the cervix, penis, vulva, and anus. Hepatitis B and hepatitis C viruses extend the dangers for liver cancer.

Symptoms of cancer may include lumps and bumps anywhere on the body, changes in colour of the skin, continuous cough, irregular bowel movements, pain when swallowing and unusual bleeding. (NHS, 2012).

The government has taken numerous steps to minimise the health hazards associated with smoking. As an example the 2006 Health Act, Smoking was forbidden in virtually all enclosed work and public spaces in the United Kingdom since July 2007.

Some of the methods employed to detect early signs of the disease involve the following.

- Imaging
- Endoscopy
- Cancer screening

There's a greater chance of cure for cancer if diagnosed early. Some of the treatments available include

- Surgery
- radiotherapy
- chemotherapy

The current Government cancer policy is the Improving outcomes a strategy for cancer 2011: national cancer strategy. Three, conjointly strengthening values, reinforces this policy.

To place the patient at the heart of the public services by refining the relationship between the public and service via the principle of no decision about me without me.

To set the NHS and public health care services towards bringing progress in outcomes.

Permitting local organisations and professionals to attain the liberties to modernise and drive enhancements in services that provide care of the utmost value for all patients.

What is smoking

Smoking is the inhalation and exhalation of tobacco smoke in cigarettes. Traditionally, smoking as a practice, was followed by natives of the Western Hemisphere, in religious ceremonies and for medicinal resolutions. It has a history beginning in the early 1600s.

Smoking increases the risks of thrombosis it causes hypertension and accelerate the heart rate, compelling the heart to work harder than normal. It Narrows the arteries, dwindling the volume of oxygen-rich blood flowing to the organs. Smoking can elicit male impotence as it interferes with blood supply to the penis. It also damages sperm, diminish sperm count and initiate testicular cancer. In women, smoking can decrease fertility. Smoking while pregnant can result in a miscarriage, premature birth, and stillborn. It also

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raises the risk of cot death by at least 25%. Furthermore, smoking is an enormous squander on the budget of families on minimum earnings predominantly as households on low incomes ironically tend to smoke considerably more than those on greater earnings. The typical family spending on tobacco in smoking households is about 2.1%, while the deprived section of the population devotes close to 15% of weekly income on cigarettes.

1 in 5 adults was a smoker in 2012, a proportion that has remained mostly unchanged, compared to 1 in 4 in 2002.

In 2013, less than a quarter of 11 to 15-year olds stated that they had attempted smoking. At 22%, this is the lowest level recorded since the statistics were first composed in 1982 and continues to decrease since 2003, when 42% of pupils had tried smoking.

The percentage of admissions attributable to smoking as a proportion of all admissions was higher in men than women. In 2013 approximately 1 in 6 deaths of adults aged 35 and over were projected to be triggered by smoking compared with 81,900 in 2005 (Hscic, 2014).

Some of the determinants of smoking include the following and for the purpose of this essay only 2 are briefly explained.

- Socioeconomic status
- Cultural Characteristics
- Biological elements
- Stress

Advertising The tobacco industry's advertisements, and other promotions for its products are a tremendous impact in society. The tobacco industry devotes billions of pounds each year to generate and market advertisements that display smoking as exhilarating, stylish, and harmless.

- Price of tobacco
- Peer pressure
- Health Hazard of smoking
- Cancer
- Cardiovascular Disease
- Respiratory disorders
- Sexual dysfunction

Smoking raises the hazard of atherosclerosis and hypertension that can result in the development of a Cardiovascular disease. (NHS, 2012).

Some chemicals found tobacco smoke such as benzene can cause cancer. They instigate DNA mutilation that can result in an uncontrollable multiplication of cells consequently forming a cancer tumour(NHS, 2012).

The government regularly maintains tobacco prices high through tax policy to discourage young people from starting to smoke and prompt smokers to quit. Tobacco promotion is now illicit in the UK and numerous other countries. After the introduction of the tobacco Advertising & Promotion Act 2002, nearly all advertising ended in February 2003, i. e., on posters and in printed publications. Cigarette adverts at the point of sale was forbidden in supermarkets in April 2012 and will be proscribed in small shops from April 2015 (Ash, 2014)

Smoking has a significant impact on the environment. Smoke and cigarettebutts, instigate air, water and soil pollution, and nearly 5 million hectares of woodland are wrecked each year to facilitate the production of tobacco (Ewles, 2005)

Current UK smoking policy is the tobacco control plan for England. “ The Plan intends to lessen adult smoking prevalence from 21% to 18. 5% by 2015. Diminish thesmoking percentage of 15-year-olds from 15% to 12% by 2015, and smoking during pregnancy from 14% to 11% by 2015” (Ash, 2014). The Plan also pledges support for plain packaging of tobacco products, and to cease the parade of ciggeratt in supermarkets by April 2012, and in small shops by April 2015 (Ash, 2014).

Cardiovascular Disease

Cardiovascular disease is a overall term that defines the ailments that affect the cardiovascular system. CVD develops after the amount of blood flowing to the heart, and brain reduces due to thrombosis, or atherosclerosis (NHS, 2012)

Presently, 1 in 3 deaths in the UK are initiated by CVD, accounting for 180, 000 deaths each year. CVD causes a substantial problem of disability, and up to £8 billion of NHS resources are dedicated to CVD (NICE, 2014).

The 4 main categories of cardiovascular disease are

1. Coronary heart disease
2. Stroke
3. Peripheral arterial disease

4. Aortic disease

Coronary heart disease develops when the coronary arteries narrow due to fat accrual. This ailment is known as atherosclerosis, and the fat is called atheroma. Eventually, the arteries will be so narrow the provision of oxygenated blood diminishes accordingly damaging certain parts of the heart causing angina. However, if a part of atheroma disassembles, it may initiate a thrombosis and if it occludes the blood flow for a long enough time the heart muscle is perpetually impaired or dies causing a heart attack.

Angina and heart attack are the two most common symptoms of CHD.

The typical symptoms for angina include pain, ache, discomfort in the chest area. The pain usually subsides within 10 minutes after resting. If glyceryl trinitrate is administered the pain fades within 2 minutes. Angina pain can also be generated by other causes of a rapid heart rate. For example, when in a state of “fight or flight”.

A Heart attack usually has the following symptoms, chest pain – a feeling of heaviness, and tension in the centre of chest. Discomfort in various areas of the body it can feel the pain can spread from the chest to arms typically the left arm is affected, jaw, neck, feeling light-headed, sweating and shortness of breath.

A stroke happens when the blood provision to a section of the brain halts and creates damage due to oxygen deprivation. A thrombosis or a haemorrhage in the brain can elicit the blockage. As a result, the affected region of the brain cannot operate routinely. Strokes affect people in dissimilar ways, subject on the section of the brain that is impaired, how extensive the harm

is and how healthy the individual was before the stroke. A stroke can change the way the body functions as well as the thought procedures, communication and vision. A stroke can also have an emotional effect and can create problems such as anxiety, despair or alterations to personality. Types of strokes There are around 152, 000 strokes in the UK each year. There are around 1.1 million stroke survivors living in the UK. Stroke is a significant cause of adult incapacity. More than half of entire stroke survivors are left reliant on others for everyday activities. Stroke is responsible for roughly 7% of deaths in men and 10% in women.

Statistics

In 2010, cardiovascular diseases were the UK's main killer, nearly 180, 000 people died from CVD roughly 81, 000 of these deaths caused by coronary heart disease and about 50, 000 from strokes. In 2010, cardiovascular diseases were responsible for around 46, 000 untimely deaths in the UK; 68% of these were men. For men, the incidence of angina is highest in Wales, for women it is highest in Scotland. It is lowest for both sexes in England. In 2009, CVD cost the NHS £8.7 billion and £19 billion on the economy.

Risk factors

risk factors associated with coronary heart disease and stroke

- Family history,
- Ethnicity and age,
- Tobacco exposure,

- Hypertension,
- High cholesterol,
- Obesity,
- Physical inactivity,
- Diabetes,
- Unhealthy diets,
- Harmful use of alcohol
- Hypertension,

Blood pressure refers to the total force the blood applies to the inside walls of the arteries as it passes through them. It is typical for blood pressure to momentarily upsurge. However, if blood pressure is regularly greater than the healthy level when at repose, this condition known as high blood pressure or hypertension. Blood pressure is quantified in millimetres and noted as two numbers:

Systolic pressure – the force of the blood when the heart pumps blood out.

Diastolic pressure – the pressure of the blood when the heart reposes between beats, which reveals how efficiently the arteries are resisting blood flow.

- Smoking
- Alcohol

Alcohol is a product that has delivered a range of purposes for people throughout history. Alcohol has played a significant part in religion and worship. Historically, alcoholic drinks have served as a source of nutrients and extensively used for medicinal, antibacterial, and palliative properties.

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They can be a social lubricant, can aid entertainment, can provide pharmacological pleasure, and can enhance the pleasure of eating.

Alcohol impedes the brain's messaging paths and can influence the manner the brain operates. These disturbances can alter attitude and behaviour, and make it difficult to think sensibly and move with coordination. It is difficult to know and recall the quantity alcohol is in beverages, and just how this can impact health. The lower risk guidelines can assist with this. Men are recommended to drink no more than 3 – 4 units of regular strength of lager, or cider per day. For women no more than 2-3 units of a normal glass of wine.

There's no evidence to verify that drinking alcohol is completely safe, but by keeping within these guidelines, there is only a little risk of causing damage in most situations.

Drinking excessively over an extended period or on a single occasion can harm the heart, causing health conditions such as

- Cardiomyopathy
- Arrhythmias
- Stroke
- High blood pressure
- fatty liver
- Alcoholic hepatitis
- Fibrosis
- Cirrhosis
- Cancers

Approximately 9990 people were victims of alcohol related driving accidents in the UK in 2011 together with 280 who lost their lives and 1290 who sustained severe harm. Alcohol-linked criminality costs £11 billion each year. They were roughly 1.2 million alcohol associated hospital admissions between 2011 – 2012, a 135% upsurge since 2002-2003 and 8748 deaths absolutely linked to alcohol.

The alcohol-related deaths of men in the most deprived socio-economic class is 3.5 times greater than for men in the least deprived class whereas for women the number is 5.7 times

Between 2002 and 2009, 92,220 children below 18 years were admitted to hospital in England for alcohol-related illnesses. The incidents of people aged between 60 and 74 admitted to hospitals in England due to alcohol has escalated by over 50%, more than in the 15-59 age category over the last decade.

Change4Life is a public health plan in England, created in January 2009 regulated by the Department of Health. Change4Life focuses on helping the public to make small, maintainable yet essential enhancements to their diet, activity levels and alcohol intake. The Public Health Responsibility Deal was formally launched in March 2011. It challenges businesses and other organisations to play their role in creating an environment that supports people to make informed, balanced, healthier choices.

The Government's Alcohol Strategy. The Strategy focuses on

- Crime and disorder

- Binge drinking/'irresponsible drinking'
- Individual responsibility
- ' Minimum Unit Pricing' and increased punitive measures
- Younger people