Introduction

Smoking is the primary cause of preventable illness and premature death, accounting for 81,400 deaths in England in 2009. Smoking harms nearly every organ of the body and dramatically reduces both quality of life and life expectancy. Smoking causes lung cancer, respiratory disease and heart disease as well as numerous cancers in other organs including lip, mouth, throat, bladder, kidney, stomach, liver and cervix. The 2010 US Surgeon General report, ‘How Tobacco Smoke Causes Disease’, concludes that “there is no risk-free level of exposure to tobacco smoke, and there is no safe tobacco product.”

The World Health Organization estimates that the global yearly death toll as a result of tobacco use is currently 6 million (including exposure to secondhand smoke). This is expected to rise to 7 million by 2020 and to more than 8 million a year by 2030. It is predicted that by the end of the 21st century, tobacco will have killed one billion people.

For every death caused by smoking, approximately 20 smokers are suffering from a smoking related disease. In England it is estimated that in 2008-09, 462,900 NHS hospital admissions were attributable to smoking. Estimates of the cost of smoking to the National Health Service range from £2.7 billion to £5.2bn a year.

Deaths caused by smoking

Smoking is the leading cause of preventable death and disease in the UK. About half of all life-long smokers will die prematurely, losing on average about 10 years of life. Smoking kills more people each year than the following preventable causes of death combined: [figures for England except HIV which is for UK]

- obesity (34,100)
- alcohol (6,541)
- traffic accidents (2,502)
- illegal drugs (1,738)
- HIV infection (529)

Most smoking-related deaths are from one of three types of disease: lung cancer, chronic obstructive pulmonary disease (COPD which incorporates emphysema and chronic bronchitis) and coronary heart disease (CHD). In 2010, there were a total of 450,571 deaths of adults aged 35 and over in England of which 81,700 (18%) were estimated to be attributable to smoking.
Of these smoking caused:

- 35% (22,300) of all respiratory deaths
- 29% (37,500) of all cancer deaths
- 14% (20,600) of all cardiovascular disease deaths

### Estimated percentages and numbers of deaths attributable to smoking in England by cause, 2010

<table>
<thead>
<tr>
<th>Deaths estimated to be caused by smoking</th>
<th>Number of deaths</th>
<th>% of deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All deaths</td>
<td>Men</td>
</tr>
<tr>
<td><strong>Cancer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lung, Trachea and Bronchus</td>
<td>28,044</td>
<td>13,800</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>6,199</td>
<td>2,900</td>
</tr>
<tr>
<td>Bladder</td>
<td>4,131</td>
<td>1,300</td>
</tr>
<tr>
<td>Pancreas</td>
<td>6,587</td>
<td>800</td>
</tr>
<tr>
<td>Upper respiratory sites</td>
<td>1,818</td>
<td>900</td>
</tr>
<tr>
<td>Stomach</td>
<td>4,041</td>
<td>700</td>
</tr>
<tr>
<td>Kidney</td>
<td>3,357</td>
<td>700</td>
</tr>
<tr>
<td>Larynx</td>
<td>601</td>
<td>400</td>
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<tr>
<td>Myeloid leukaemia</td>
<td>2,268</td>
<td>300</td>
</tr>
<tr>
<td>Cervical</td>
<td>699</td>
<td>100</td>
</tr>
<tr>
<td>Unspecified site</td>
<td>8,075</td>
<td>2,100</td>
</tr>
<tr>
<td><strong>All Cancer</strong></td>
<td>65,820</td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic obstructive lung disease*</td>
<td>22,346</td>
<td>9,400</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>23,565</td>
<td>2,400</td>
</tr>
<tr>
<td><strong>All Respiratory</strong></td>
<td>45,911</td>
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<tr>
<td><strong>Circulatory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>65,128</td>
<td>6,200</td>
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<tr>
<td>Aortic aneurysm</td>
<td>6,456</td>
<td>2,500</td>
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<td>Cerebrovascular disease</td>
<td>40,374</td>
<td>1,900</td>
</tr>
<tr>
<td>Other heart disease</td>
<td>23,593</td>
<td>1,900</td>
</tr>
<tr>
<td>Other arterial disease</td>
<td>2,511</td>
<td>200</td>
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<tr>
<td>Atherosclerosis</td>
<td>374</td>
<td>0</td>
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<tr>
<td><strong>All Circulatory</strong></td>
<td>138,436</td>
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<tr>
<td><strong>Digestive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stomach and duodenal ulcer</td>
<td>2,340</td>
<td>600</td>
</tr>
<tr>
<td><strong>All deaths</strong></td>
<td>255,801</td>
<td></td>
</tr>
<tr>
<td><strong>Total caused by smoking</strong></td>
<td>49,000</td>
<td>32,700</td>
</tr>
</tbody>
</table>

*ICD codes J40-J44 which includes bronchitis, emphysema and other chronic obstructive lung disease. The proportion of deaths attributable to smoking is the median (mid-point) between the highest and lowest estimates for this group of diseases.

### Non fatal diseases

There are many medical conditions associated with or aggravated by smoking, which may not be fatal but still cause years of debilitating illness. These include: 16
Smokers are at increased risk of:

**Heart and circulation**
- Angina
- Buerger's Disease (severe circulatory disease)
- Peripheral vascular disease

**Stomach/digestive system**
- Colon polyps
- Crohn's disease (chronic inflamed bowel)
- Duodenal ulcer
- Stomach ulcer

**Diseases of the gums and teeth**
- Acute necrotizing ulcerative gingivitis (gum disease)
- Tooth loss
- Tooth discolouration

**Ligaments, muscles and bones**
- Ligament, tendon and muscle injuries
- Neck and back pain
- Osteoporosis (in both sexes)
- Rheumatoid arthritis (in heavy smokers)

**Eyes**
- Cataract
- Macular degeneration
- Nystagmus (abnormal eye movements)
- Optic neuropathy (loss of vision)
- Ocular histoplasmosis (fungal eye infection)
- Tobacco Amblyopia (loss of vision)

**Skin**
- Psoriasis
- Skin wrinkling

**Other**
- Depression
- Hearing loss
- Type 2 Diabetes

**Diseases that can be significantly aggravated by smoking**
- Asthma
- Common cold
- Crohn's disease (chronic inflamed bowel)
- Chronic rhinitis (inflammation of nose)
- Diabetic retinopathy (eye disease)
- Graves' disease (over-active thyroid gland)
- Influenza
- Multiple sclerosis
- Optic neuritis
- Tuberculosis

**Reproductive functions affected by smoking**
- Female fertility (30% lower)
- Menopause (onset 1.74 years earlier on average)

**Male fertility - for example:**
- Impotence
- Reduced sperm count and motility, sperm less able to penetrate the ovum, increased shape abnormalities
Resources

For information about tobacco use and related harm at local level in England, please refer to the Tobacco Profiles, published by the Association for Public Health Observatories.

The American Cancer Society produces a global Cancer Atlas which has a chapter on Tobacco. The Centers for Disease Control and Prevention in the United States has produced an interactive version of the Atlas.

For more on deaths in the UK and worldwide: www.deathsfromsmoking.net
References


