ABOUT THE BRITISH HEART FOUNDATION (BHF)

Our mission is to win the fight against heart and circulatory disease.
Our vision is a world in which people do not die prematurely or suffer from heart and circulatory disease.

For over 50 years we’ve pioneered research that has transformed the lives of millions of people living with heart disease.
We are the biggest independent funder of cardiovascular research in Scotland.
Our work has been central to the discoveries of vital treatments that are leading the fight against heart disease.

But heart and circulatory disease still kills more than one in four people in Scotland, stealing them away from their families and loved ones. From babies born with life-threatening heart problems, to the many mums, dads and grandparents who survive a heart attack or endure their daily battles with heart failure.

BHF HEART STATISTICS

Statistics are very important to the BHF. They give our staff, volunteers and supporters a sense of the scale of heart and circulatory disease's burden and the challenges we face as we fight for every heartbeat. We compile the most comprehensive statistics on the effects, prevention, treatment, costs and causes of heart disease in Scotland and the UK. bhf.org.uk/statistics

For examples of how we are making a difference, look for the BHF sections throughout this factsheet.
Cardiovascular Disease (CVD; Heart and Circulatory Disease)

Cardiovascular disease (CVD) is an umbrella term that describes all diseases of the heart and circulation. It includes everything from conditions that are diagnosed at birth, or inherited, to developed conditions such as coronary heart disease, atrial fibrillation, heart failure, and stroke.

- Cardiovascular (heart and circulatory) disease causes more than a quarter (27 per cent) of all deaths in Scotland, or more than 15,000 deaths each year - that's more than 40 people per day or 1,250 per month.
- Since the BHF was established the annual number of CVD deaths in Scotland has fallen by more than half.
- In 1961, 34,547 deaths - over half of all deaths that year in Scotland - were attributed to CVD.
- Since 1961 the Scottish death rate from CVD has declined by more than three quarters. Death rates have fallen more quickly than the actual number of deaths because people in Scotland are now living longer lives.
- Over 4,600 people under the age of 75 in Scotland die from CVD each year.

<table>
<thead>
<tr>
<th>Nation</th>
<th>Number of People Dying from CVD (2016)</th>
<th>Number of People Under 75 Years Old Dying from CVD (2016)</th>
<th>Estimated Number of People Living with CVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>England (2016/17)</td>
<td>124,615</td>
<td>33,812</td>
<td>5.9 million</td>
</tr>
<tr>
<td>Scotland (2015/16)</td>
<td>15,131</td>
<td>4,644</td>
<td>685,000</td>
</tr>
<tr>
<td>Wales (2016/17)</td>
<td>8,655</td>
<td>2,495</td>
<td>375,000</td>
</tr>
<tr>
<td>Northern Ireland (2016/17)</td>
<td>3,629</td>
<td>1,070</td>
<td>225,000</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>152,465</td>
<td>42,311</td>
<td>7 million +</td>
</tr>
</tbody>
</table>

Deaths BHF/University of Birmingham analysis of latest official statistics (ONS/NISRA/NRS); UK total includes non-residents (ONS data)
Living with CVD estimates based on latest health surveys with CVD fieldwork and GP patient data

- There are an estimated 685,000 people living with cardiovascular disease in Scotland.
- An ageing and growing population and improved survival rates from cardiovascular events could see numbers rise still further.
- For more information about CVD, visit our website at bhf.org.uk/heart-health/conditions/cardiovascular-disease

BHF Thanks to research we funded, the use of statins to help prevent CVD is now routine, saving lives every year in Scotland. Read our research timeline to find out more.

BHF A groundbreaking study, co-funded by the BHF, investigated the effect of social inequalities on health. This research has helped shape public health policy across the UK and around the world. Read our research timeline to find out more. Subsequently, addressing health inequalities has become a key component in all innovation programmes that the BHF has piloted to improve services for people living with or at risk of CVD.
• Early death rates from CVD (before the age of 75) are generally higher in Scotland than the rest of the UK.
• Death rates take the age structure (demography) of local areas into account to reveal the real differences in statistics. This is very important when there are big variations in the age profile of communities across the country.
• The highest premature CVD death rates by Scottish local authority (2014-16) were for Glasgow City and North Lanarkshire.

<table>
<thead>
<tr>
<th>Local Authority</th>
<th>Death Rate per 100,000 Population</th>
<th>Annual Number of CVD Deaths Under 75 Years Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow City</td>
<td>138.8</td>
<td>586</td>
</tr>
<tr>
<td>North Lanarkshire</td>
<td>121.6</td>
<td>350</td>
</tr>
<tr>
<td>East Ayrshire</td>
<td>121.1</td>
<td>139</td>
</tr>
<tr>
<td>West Dunbartonshire</td>
<td>120.6</td>
<td>96</td>
</tr>
<tr>
<td>Dundee City</td>
<td>119.2</td>
<td>139</td>
</tr>
<tr>
<td>Renfrewshire</td>
<td>108.5</td>
<td>170</td>
</tr>
<tr>
<td>North Ayrshire</td>
<td>105.9</td>
<td>144</td>
</tr>
<tr>
<td>Clackmannanshire</td>
<td>104.9</td>
<td>52</td>
</tr>
<tr>
<td>Falkirk</td>
<td>102.2</td>
<td>143</td>
</tr>
<tr>
<td>Aberdeen City</td>
<td>101.1</td>
<td>170</td>
</tr>
</tbody>
</table>

• The premature (under 75) death rate for Glasgow City (138.8 per 100,000) is more than twice as high as for East Dunbartonshire (63.9 per 100,000).
• Regional and local statistics and rankings for CVD deaths can be found on our website at bhf.org.uk/statistics.
• Each year cardiovascular disease costs NHS Scotland around £800m.

BHF A clinical trial, funded by us as part of a wider collaboration, showed that the benefits of treating high blood pressure in very elderly people outweighed the risk of side effects, allowing elderly people to receive the care they require. Read our research timeline to find out more.

BHF We have funded House of Care, an innovative programme designed to enable clinicians to empower patients to make informed decisions about their care, based on what is important to them, and provide support to patients to manage their own conditions from day to day. bhf.org.uk/houseofcare
Coronary Heart Disease (CHD; Ischaemic Heart Disease)

Coronary heart disease (CHD) is the most common type of cardiovascular disease. It occurs when coronary arteries become narrowed by a build-up of atheroma, a fatty material within their walls. The pain or discomfort felt from such narrowing is called angina and if a blockage occurs it can cause a myocardial infarction (heart attack).

- Coronary heart disease (CHD) is Scotland’s single biggest killer. It is also the leading cause of death worldwide.
- In Scotland, 1 in 7 men and nearly 1 in 10 women die from coronary heart disease.
- CHD is responsible for around 6,700 deaths in Scotland each year - that’s around 18 deaths per day.
- Since the BHF was established the annual number of CHD deaths in Scotland has fallen by 65 per cent.
- Most deaths from coronary heart disease are caused by a heart attack.

BHF Our researchers have developed a scoring system to assess the risk of heart attack or death for patients with acute coronary syndrome (unstable angina or heart attack). The GRACE scoring system is now a reference standard, resulting in guideline changes in over 55 countries, leading to improved management of heart patients around the world.

bhf.org.uk/heartattackhistory

BHF A trial that we funded has led the way in demonstrating that MRI – a non-invasive imaging technique – is more effective than a CT scan in identifying people at high risk of death or heart attack following chest pain suspected to be angina. These findings are important as MRI does not expose people to radiation.

bhf.org.uk/MRIscans_highrisk

- CHD death rates are on average higher in Scotland than the rest of the UK.
- Regional and local statistics and rankings for CHD deaths can be found on our website at bhf.org.uk/statistics
- CHD kills nearly three times as many women as breast cancer in Scotland: it even kills more women prematurely.
- Over 2,500 people under the age of 75 in Scotland die from CHD each year.
- An estimated 245,000 people are living with CHD in Scotland – 146,000 men and 99,000 women.
- For more information about CHD, visit our website at bhf.org.uk/heart-health/conditions/coronary-heart-disease

Heart Attack (Myocardial Infarction, MI)

- Most deaths from coronary heart disease are caused by a heart attack.
- There are over 25,000 hospital visits attributed to heart attacks in Scotland each year: that is 1 person going to hospital due to a heart attack every 20 minutes.
- More than 100,000 people alive in Scotland today (68,000 men and over 32,000 women) have survived a heart attack.
- In the 1960s more than 7 out of 10 heart attacks in the UK were fatal. Today at least 7 out of 10 people survive.
- For more information on heart attacks visit our website at bhf.org.uk/heart-health/conditions/heart-attack
**Atrial Fibrillation (AF)**

Atrial fibrillation is one of the most common forms of abnormal heart rhythm (arrhythmia) and a major cause of stroke.

- Around **96,000 people** in Scotland have been diagnosed with atrial fibrillation.
- It is estimated that there are thousands more living with undiagnosed AF.
- For more on atrial fibrillation, visit bhf.org.uk/heart-health/conditions/atrial-fibrillation

**Heart Failure (HF)**

Heart failure occurs when the heart is not pumping blood around the body as well as it should, most commonly when the heart muscle has been damaged – for example, after a heart attack.

- Around **48,000 people** in Scotland have been diagnosed with heart failure – around 60 per cent are men.
- For more information on heart failure, visit our website at bhf.org.uk/heart-health/conditions/heart-failure

**Stroke (Cerebrovascular Disease)**

A stroke occurs when the blood supply to part of the brain is cut off, causing brain cells to become damaged.

- Strokes cause over **4,100 deaths** in Scotland each year.
- In Scotland over **26,000 hospital visits** are attributed to stroke each year.
- Around **124,000 people** living in Scotland have survived a stroke or transient ischaemic attack (TIA).
- Regional and local statistics and rankings for stroke deaths can be found on our website at bhf.org.uk/statistics
- For more health information on strokes visit our website at bhf.org.uk/heart-health/conditions/stroke
Out-of-Hospital Cardiac Arrest (OHCA)

Cardiac arrest is a serious medical emergency, where the heart stops pumping blood around the body. Unless treated immediately, it leads to death within minutes.

- There are around 3,500 out-of-hospital cardiac arrests (OHCAs) in Scotland each year.
- The survival rate in Scotland is just 1 in 20.
- The Chain of Survival (below) is a sequence of steps that together maximise the chance of survival following cardiac arrest.
- Every minute without cardiopulmonary resuscitation (CPR) and defibrillation reduces the chance of survival by up to 10 per cent.
- Performing CPR can double the chances of survival in some cases (ventricular fibrillation).
- Rates of survival and bystander CPR are much lower in areas of greatest deprivation.
- For more on cardiac arrest visit bhf.org.uk/heart-health/conditions/cardiac-arrest

BHF

By providing access to innovative resources for cardiopulmonary resuscitation (CPR) training, we aim to give people the skills and confidence to act when they witness a cardiac arrest and improve survival rates, thereby building a Nation of Lifesavers. Millions of adults and schoolchildren have participated in our CPR training schemes and now have life saving skills.

BHF

We have also helped fund and place thousands of public access defibrillators (PADs) in communities across the country. We are making further investments to increase defibrillator awareness for emergency medical services and the public to ensure that PADs can be accessed quickly in an emergency.

bhf.org.uk/survival

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Congenital Heart Disease

Congenital heart disease is a heart condition or defect that develops in the womb before a baby is born.

- Heart defects are diagnosed in at least 1 in 180 births - that's an average of 25 each month in Scotland - with more diagnoses later in life.
- Estimates suggest that as many as 1-2 per cent of the population may be affected.
- Before the BHF existed, the majority of babies born in the UK with a heart defect did not survive to their first birthday. Today, thanks to research, around 8 out of 10 survive to adulthood.
- For more information, visit bhf.org.uk/heart-health/conditions/congenital-heart-disease

BHF

Professor Sir Magdi Yacoub developed surgical techniques to treat a complex congenital heart defect. The switch procedure which he pioneered is now used routinely, worldwide, to treat babies born with abnormally connected blood vessels.

BHF

With our support, researchers at the Institute of Child Health mapped out the details of heart defects. This knowledge, combined with advances in imaging technology, helps to identify and treat abnormalities as early as possible, meaning babies have the best chance of survival.

bhf.org.uk/congenhistory
**Inherited (Genetic) Conditions**

These are conditions which can be passed on through families, affect people of any age and be life-threatening.

- They include hypertrophic cardiomyopathy (HCM; estimated 1 in 500 people) and familial hypercholesterolaemia (FH; 1 in 250).
- It’s estimated that around 50,000 people in Scotland have a faulty gene which puts them at an unusually high risk of developing heart disease or dying suddenly at a young age.
- In the UK it is estimated that at least 12 young people (aged under 35) die every week from an undiagnosed heart condition.
- For more information, visit our website:-
  - bhf.org.uk/heart-health/conditions/inherited-heart-conditions
  - bhf.org.uk/heart-health/conditions/familial-hypercholesterolaemia

**BHF** Professor Steve Humphries and his team have pioneered the development of genetic tests for familial hypercholesterolaemia (FH), an inherited condition which results in exceptionally high levels of cholesterol in the blood. Left untreated, this can greatly increase the risk of developing heart disease at an early age. Read our research timeline to find out more. Based on this research, the BHF has piloted FH cascade screening programmes across the UK since 2010, ensuring access to genetic testing, and resulting in thousands being diagnosed and getting the treatment they need.

**BHF** Professor Hugh Watkins and his team have led in the identification of the faulty genes that cause hypertrophic cardiomyopathy (HCM) – a dangerous condition that can lead to sudden death. Through the Miles Frost Fund, the BHF will pilot a programme to help ensure access to genetic testing for immediate family members of those diagnosed with HCM. bhf.org.uk/HCMresearch

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**Medical Risk Factors**

Many different risk factors increase your likelihood of developing cardiovascular disease.

**High Blood Pressure**
- Nearly 30 per cent of adults in Scotland have high blood pressure and half of them are not receiving treatment.
- People with high blood pressure are up to three times more likely to develop heart disease or have a stroke.

**High Blood Cholesterol**
- High blood cholesterol is a significant risk factor for cardiovascular disease.

**Diabetes**
- Having diabetes can double the risk of developing cardiovascular disease.
- 280,000 adults in Scotland have been diagnosed with diabetes.
- Around 10 per cent of those diagnosed are living with Type 1 diabetes and 90 per cent have Type 2.
- It’s estimated that thousands more people in Scotland are living with undiagnosed Type 2 diabetes.

For more information, visit our website:-
- High Blood Pressure (Hypertension) bhf.org.uk/heart-health/risk-factors/high-blood-pressure
- High Cholesterol bhf.org.uk/heart-health/risk-factors/high-cholesterol
- Diabetes bhf.org.uk/heart-health/risk-factors/diabetes
Lifestyle Risk Factors

Modifiable risk factors (e.g. cigarette smoking, physical inactivity and poor diet) contribute significantly to the risk of CVD.

**Smoking**

- One in five adults smoke cigarettes in Scotland – that’s over **900,000 adults**.
- There are over **13,000** smoking-related deaths each year in Scotland.
- Each year an estimated **2,200** Scottish deaths from cardiovascular disease can be attributed to smoking.
- There are around **128,000** smoking-related hospital admissions each year in Scotland.

**Overweight/Obesity**

- Around 29 per cent of adults in Scotland are obese and in addition more than a third are overweight (using BMI).
- Nearly 3 out of 10 of children in Scotland are overweight or obese.

**Diet and Exercise**

- Over a third of adults in Scotland and a quarter of children do not achieve recommended levels of physical activity.
- Only 1 in 5 adults and 1 in 8 children in Scotland eat the recommended five portions of fruit and veg per day.
- 1 in 4 adults in Scotland regularly exceed guidelines for daily alcohol intake; no level of use is without risk.

**Other Risk Factors**

- Outdoor **air pollution** contributes to an estimated 40,000 premature deaths in the UK each year, with a significant impact on cardiovascular health.
- Other risk factors can significantly increase your risk of developing cardiovascular disease, including age, gender, family history and ethnicity.

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**BHF** Groundbreaking studies by our researchers have greatly advanced our understanding of how maternal nutrition and lifestyle during pregnancy can affect a child’s long-term health. Read our [research timeline](#) to find out more.

**BHF** Our research has provided evidence of a causal relationship between air pollutants and cardiovascular disease. The researchers have also shown that fitting particle traps to diesel engine exhausts helps to prevent the damaging effects of some types of pollution. Some European countries have already started to adopt this simple intervention to limit the detrimental effects of pollution on health. Visit our [website](#) to find out more.
About the British Heart Foundation (BHF)

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But heart and circulatory disease still kills more than one in four people in Scotland, stealing them away from their families and loved ones. From babies born with life-threatening heart problems, to the many mums, dads and grandparents who survive a heart attack or endure their daily battles with heart failure.

Join our fight for every heartbeat. Every pound raised, minute of your time and donation to our shops will help make a difference to people’s lives.

bhf.org.uk/donate

We are the biggest independent funder of cardiovascular research in Scotland.

More BHF CVD Statistics

Including exclusive content, local statistics and maps

Visit our website  bhf.org.uk/statistics

This factsheet is compiled by the British Heart Foundation.

Last reviewed and updated February 2018.

Statistics are the latest available from the Scottish and UK statistical agencies.

For any queries, please contact us and we will do our best to help.

Factsheets are also available for the UK, England, Wales and Northern Ireland.
<table>
<thead>
<tr>
<th>STATISTIC</th>
<th>REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CARDIOVASCULAR DISEASE (CVD; HEART &amp; CIRCULATORY DISEASE)</strong></td>
<td></td>
</tr>
<tr>
<td>CVD death rates; local death rates</td>
<td>BHF/University of Birmingham in collaboration with the General Register Office for Scotland (2014-16 data)</td>
</tr>
<tr>
<td>685k living with CVD; gender split</td>
<td>BHF estimate based on Scottish Health Survey 2016 data and ONS mid-2016 population estimates</td>
</tr>
<tr>
<td>£800m CVD cost</td>
<td>NHS Expenditure, Population Health Analytical Services, Scottish Government 2011/12</td>
</tr>
<tr>
<td><strong>CORONARY HEART DISEASE (CHD; ISCHAEMIC HEART DISEASE)</strong></td>
<td></td>
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<tr>
<td>CHD death rates</td>
<td>BHF/University of Birmingham in collaboration with the General Register Office for Scotland (2014-16 data)</td>
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<td>245k living with CHD; gender split</td>
<td>BHF estimate based on Scottish Health Survey 2016 data and ONS mid-2016 population estimates</td>
</tr>
<tr>
<td><strong>HEART ATTACK (MYOCARDIAL INFARCTION, MI)</strong></td>
<td></td>
</tr>
<tr>
<td>7/10 people survive heart attack ~ 1960s estimate</td>
<td>Case fatality rates in Smolina’s 2012 BMJ paper on acute MI mortality (<a href="http://www.bmj.com/content/344/bmj.d8059">www.bmj.com/content/344/bmj.d8059</a>) ~ Goldacre’s 2003 paper on myocardial infarction (Oxon)</td>
</tr>
<tr>
<td>100k surviving MI</td>
<td>BHF analysis of 2013 Clinical Practice Research Datalink prevalence data and ONS population estimates</td>
</tr>
<tr>
<td><strong>ATRIAL FIBRILLATION (AF)</strong></td>
<td></td>
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<tr>
<td><strong>HEART FAILURE (HF)</strong></td>
<td></td>
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<tr>
<td><strong>STROKE (CEREBROVASCULAR DISEASE)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CONGENITAL HEART DISEASE</strong></td>
<td></td>
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<tr>
<td>1:180 babies diagnosed</td>
<td>BHF/Oxford University analysis of EUROCAT congenital anomaly registers 2010-14 (NB cases exclude BAV - bicuspid aortic valve)</td>
</tr>
<tr>
<td>1.2% prevalence</td>
<td>various estimates including Hoffman &amp; Kaplan, JACC –19 per 1,000 includes &quot;BAVs which will eventually need cardiologic care “ (<a href="http://www.sciencedirect.com/science/article/pii/S0735109702018867">www.sciencedirect.com/science/article/pii/S0735109702018867</a>)</td>
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<tr>
<td>Survival comparison (pre-BHF/today)</td>
<td>MacMahon BMJ (<a href="http://heart.bmj.com/content/heartjnl/15/2/121.full.pdf">http://heart.bmj.com/content/heartjnl/15/2/121.full.pdf</a>) and Wren &amp; O’Sullivan, BMJ (<a href="http://heart.bmj.com/content/85/4/438.long">http://heart.bmj.com/content/85/4/438.long</a>)</td>
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<tr>
<td><strong>INHERITED (GENETIC) CONDITIONS</strong></td>
<td></td>
</tr>
<tr>
<td>50k with faulty gene</td>
<td>BHF Scotland estimate from PHG Foundation, <em>Heart to Heart: inherited cardiovascular conditions services</em> (2009); revised FH prevalence estimates (see below) and DCM from Hershberger et al 2013 (<a href="http://www.nature.com/nrrcardio/journal/v10/n9/full/nrrcardio.2013.105.html">www.nature.com/nrrcardio/journal/v10/n9/full/nrrcardio.2013.105.html</a>)</td>
</tr>
<tr>
<td>1:500 with hypertrophic cardiomyopathy (HCM)</td>
<td>Priori et al, Task Force on Sudden Cardiac Death ESC (eurheartj.oxfordjournals.org/content/ehj/22/16/1374.full.pdf)</td>
</tr>
<tr>
<td>UK 12 cardiac deaths/week under-35s</td>
<td>Cardiac Risk in the Young (<a href="http://www.c-r-y.org.uk/statistics">www.c-r-y.org.uk/statistics</a>)</td>
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<tr>
<td>STATISTIC</td>
<td>REFERENCE</td>
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<td>-----------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
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<tr>
<td><strong>OUT-OF-HOSPITAL CARDIAC ARREST (OHCA)</strong></td>
<td></td>
</tr>
<tr>
<td>3.5k OHCAs/year; 5% survival</td>
<td>Out-of-Hospital Cardiac Arrest: A Strategy for Scotland, 2015 (<a href="www.gov.scot/Publications/2015/03/7484">www.gov.scot/Publications/2015/03/7484</a>)</td>
</tr>
<tr>
<td>Every min &amp; CPR doubles survival</td>
<td>European Resuscitation Council, Guidelines for Resuscitation 2015 (<a href="www.cprguidelines.eu">www.cprguidelines.eu</a>)</td>
</tr>
<tr>
<td><strong>RISK FACTORS</strong></td>
<td></td>
</tr>
<tr>
<td>Adults diagnosed HBP</td>
<td>Scottish Health Survey 2015, Scottish Government</td>
</tr>
<tr>
<td>21% of adults smoke ~ 900k+ smokers</td>
<td>BHF analysis of Scottish Health Survey 2016, Scottish Government and ONS population estimates</td>
</tr>
<tr>
<td>13K smoking-related deaths</td>
<td>Adult smoking habits in the UK: 2016 ONS <a href="https://www.ons.gov.uk/releases/adultsmokinghabitsingreatbritain2016">https://www.ons.gov.uk/releases/adultsmokinghabitsingreatbritain2016</a></td>
</tr>
<tr>
<td>Obesity, physical activity, 5-a-day, alcohol</td>
<td>BHF analysis of Scottish Health Survey 2016, Scottish Government and ONS population estimates</td>
</tr>
<tr>
<td>air pollution (UK)</td>
<td>Royal College of Physicians report (2016) (<a href="#">link</a>)</td>
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</tbody>
</table>