Our vision is a world free from the fear of heart and circulatory diseases.
Key Statistics

Today in England

- 380 people will die from a heart or circulatory disease
- Around 100 people will be younger than 75
- 6.1m people are living with a heart or circulatory disease
- 225 hosp. admissions will be due to a heart attack
- 150 people will die from coronary heart disease
- 12 babies will be diagnosed with a heart defect

Quick Links

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Heart and Circulatory Diseases (Cardiovascular Disease; CVD)

Heart and circulatory diseases is an umbrella term that describes all diseases of the heart and circulation. It includes everything from conditions that are inherited, or that a person is born with, to those that are develop later such as coronary heart disease, atrial fibrillation, heart failure, and stroke.

- There are around 6.1 million people living with CVD in England - an ageing and growing population and improved survival rates from heart and circulatory events could see these numbers rise still further.

- Heart and circulatory diseases cause more than a quarter (27 per cent) of all deaths in England; that’s over 138,000 deaths each year – an average of 380 people each day or one death every four minutes.

- More than 36,000 people under the age of 75 in England die from heart and circulatory diseases (CVD) each year.

**25-44 year olds in the North of England are 47% more likely to die from heart and circulatory diseases compared to those in the South.**

- Since the BHF was established the annual number of deaths from heart and circulatory diseases in England has fallen by half.

- In 1961, more than half of all deaths in England were attributed to CVD (264,192 deaths).

**Linked conditions**

Around 80 per cent of people with heart and circulatory diseases have at least one other condition.
Deaths from and numbers living with heart and circulatory diseases (CVD)

<table>
<thead>
<tr>
<th>Nation</th>
<th>No. of People Dying from CVD (latest)</th>
<th>No. of People Under 75 Years Old Dying from CVD (latest)</th>
<th>Estimated Number of People Living with CVD (latest estimates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotland (2018)</td>
<td>17,312</td>
<td>4,783</td>
<td>700,000</td>
</tr>
<tr>
<td>Wales (2018)</td>
<td>9,559</td>
<td>2,675</td>
<td>340,000</td>
</tr>
<tr>
<td>Northern Ireland (2017)</td>
<td>4,104</td>
<td>1,131</td>
<td>225,000</td>
</tr>
<tr>
<td>United Kingdom (latest)</td>
<td>170,379</td>
<td>45,308</td>
<td>7.4 million</td>
</tr>
</tbody>
</table>

Deaths BHF/University of Birmingham analysis from 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

Death Rates

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 UK.

- Since 1961 the English death rate from heart and circulatory diseases has declined by more than three quarters. Death rates have fallen more quickly than the actual number of deaths because people in this country are now living longer.

- The premature (under 75) death rate for Manchester (140.7 per 100,000) is nearly 4 times higher than that for Mid Suffolk in the East of England (37.0 per 100,000).

- Early deaths from CVD (before the age of 75) are most common in the North West, closely followed by the North East, and lowest in the South East of England.
England premature (under 75 years) death rates from heart and circulatory diseases, 2015-17

<table>
<thead>
<tr>
<th>Top Five</th>
<th>Location</th>
<th>Under 75 Death Rate per 100,000 Population</th>
<th>Under 75 Annual Number of CVD Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manchester</td>
<td>North West</td>
<td>132.8</td>
<td>1,104</td>
</tr>
<tr>
<td>Blackpool</td>
<td>North West</td>
<td>120.7</td>
<td>466</td>
</tr>
<tr>
<td>Blackburn with Darwen</td>
<td>North West</td>
<td>115.7</td>
<td>386</td>
</tr>
<tr>
<td>Middlesbrough</td>
<td>North East</td>
<td>113.4</td>
<td>373</td>
</tr>
<tr>
<td>Lincoln</td>
<td>East Midlands</td>
<td>112.8</td>
<td>232</td>
</tr>
</tbody>
</table>

The cost of Heart and Circulatory Diseases

- Healthcare costs relating to heart and circulatory diseases are estimated at £7.4 billion each year.
- CVD’s cost to the wider economy in England (including premature death, disability and informal costs) is estimated to be £15.8 billion each year.

For more information please visit:

- Regional and local statistics

Premature heart & circulatory disease (CVD) death rate by local authority 2015-17

The total annual healthcare cost of heart and circulatory disease in England is £7.4 BILLION.
Coronary heart disease (CHD) is the most common type of heart and circulatory 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).

- 1.9 million people are living with CHD in England
- CHD is the one of England’s leading causes of death and also the single biggest cause of premature death.
- It is the leading cause of death worldwide.
- In England, nearly one in eight men and one in 13 women die from coronary heart disease (1 in 10 overall).
Key Facts

- CHD is responsible for around 52,000 deaths in England each year, an average of 140 people each day, or one death around every ten minutes.

- More than 18,000 people under the age of 75 in England die from CHD each year.

- CHD kills twice as many women in England as breast cancer.

- Since the BHF was established the annual number of CHD deaths in England has fallen by more than half.

- Coronary heart disease is the leading cause of heart attacks

Linked conditions

- People with coronary heart disease, or who have had a heart attack, are twice as likely to have a stroke as those who haven’t.
Heart Attack (Myocardial Infarction, MI)

- There are around 82,000 hospital admissions in England each year for heart attacks: that’s around 220 each day or 1 every six minutes.
- In England there are over 162,000 hospital visits each year due to heart attacks.
- 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.
- An estimated 1.1 million people alive in England today have survived a 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.

- More than 1.1 million people in England have been diagnosed with atrial fibrillation.
- It’s estimated that there are hundreds of thousands of people living with undiagnosed AF in England.

Every 6 minutes someone in England is admitted to hospital due to a heart attack

Linked conditions

- People with AF are five times more likely to have a stroke
- AF is a contributing factor to one in five strokes

For more info please visit:
  - Heart Attacks
  - Atrial Fibrillation
Heart Failure

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.

- Nearly 500,000 people in England have been diagnosed with heart failure by their GP.
- Around 80 per cent of heart failure diagnoses are made in hospital, despite 40 per cent of patients having symptoms that should have triggered an earlier assessment.
- Estimates which include diagnoses at hospital show there are thousands more people living with the condition across the country.

Stroke (Cerebrovascular Disease)

A stroke occurs when the blood supply to part of the brain is cut off, causing brain cells to become damaged. A transient ischaemic attack (TIA) is also known as a “mini-stroke” and is caused by a temporary disruption in the blood supply to part of the brain.

- Strokes cause around nearly 30,000 deaths in England each year.
- In England over 110,000 hospital admissions are attributed to stroke each year.
- Over 1 million people living in England have survived a stroke or transient ischaemic attack (TIA).
- Nearly half of stroke survivors in England are under the age of 75.

Linked conditions

- People with heart failure are 2-3 times more likely to have a stroke.
- People with diabetes are twice as likely to have a stroke as people without diabetes.
Vascular Dementia

Vascular dementia happens when there’s a problem with the blood supply to an area of your brain. The cells in the affected area of your brain don’t get enough oxygen or nutrients and start to die. This leads to symptoms such as concentration problems and personality changes.

- Vascular dementia causes more than 12,000 deaths each year in England – numbers could be higher as it can be difficult to diagnose the different types of dementia.
- Vascular dementia is the second most common type of dementia, seen in around 1 in 4 cases.
- Vascular dementia is estimated to affect at least 150,000 people in the UK.
- By 2050 it’s predicted that the numbers living with vascular dementia could double.

Linked conditions

- People with a history of heart diseases are at least twice as likely to develop vascular dementia
- Vascular dementia accounts for three quarters of dementia cases in stroke survivors
- People with diabetes are 2-3 times more likely to develop vascular dementia

For more info please visit: Vascular dementia
Out-of-Hospital Cardiac Arrest (OHCA)

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

- There are around 30,000 out-of-hospital cardiac arrests (OHCAs) in England each year.
- The overall survival rate in England is 1 in 11.
- Every minute without cardiopulmonary resuscitation (CPR) and defibrillation reduces the chance of survival by up to 10 per cent.
- Performing CPR can more than double the chances of survival in some cases (ventricular fibrillation).
- It’s estimated that public-access defibrillators (PADs) are used in less than five per cent of OHCAs.
- The Chain of Survival (below) is a sequence of steps that together maximise the chance of survival following cardiac arrest.

For more info please visit:

- Cardiac arrest
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 150 births - that’s an average of 12 babies each day in England - with more diagnoses later in life.
- Estimates suggest that in total 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.

Inherited (Genetic) Conditions

These are conditions which can be passed on through families, affect people of any age and may 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 525,000 people in England 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.
- Using high intensity statins can reduce cholesterol levels by half. For many people with FH this will be reduced to a safe level, lowering the risk of death from heart disease.
Medical Risk Factors

Many different risk factors increase your likelihood of developing heart and circulatory diseases.

High Blood Pressure

- High blood pressure is the leading risk factor for heart and circulatory disease in England.
- An estimated 27% of adults in England have high blood pressure and most are not receiving effective treatment.

Diabetes

Diabetes is a condition in which blood sugar levels are elevated over a prolonged period of time. This results in damage to the inner lining of blood vessels. Consequently, diabetes is an important risk factor for heart and circulatory diseases (CVD).

- Around 3.2 million adults in England have been diagnosed with diabetes.
- Around 90 per cent of those diagnosed are living with Type 2 diabetes and 10 per cent have either Type 1 or rarer types.
- It’s estimated that hundreds of thousands of people in England are living with undiagnosed Type 2 diabetes.

Linked conditions

- Around 50% of heart attacks and strokes are associated with high blood pressure.
- Adults with diabetes are 2-3 times more likely to develop CVD, and are nearly twice as likely to die from heart disease or stroke as those without diabetes.
- In the UK, one third of adults with diabetes die from a heart or circulatory disease.
High Blood Cholesterol

- High blood cholesterol is a significant risk factor for developing heart and circulatory diseases.
- Around 6.5 million adults in England are currently taking lipid-lowering drugs such as statins

Other Risk Factors

- Poor air quality is responsible for up to 36,000 deaths per year in the UK, with a significant impact on heart and circulatory health.
- Other risk factors can significantly increase your risk of developing heart and circulatory diseases, including age, gender, family history and ethnicity.

For more information, visit our website:
- High Blood Pressure (Hypertension)
- High Cholesterol
- Diabetes
Lifestyle Risk Factors

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

Smoking
- More than one in seven adults smoke cigarettes in England— that’s around 6.5 million adults.
- Around 78,000 smokers in England die from smoking-related causes each year.
- It’s estimated that nearly 16,000 deaths in England each year from heart and circulatory diseases can be attributed to smoking.

Overweight/Obesity
- An estimated 29 per cent of adults in England are obese and in addition more than a third are overweight (by BMI).
- It’s estimated that around 28 per cent of children in England are overweight or obese.

Diet and Exercise
- An estimated 38 per cent of adults in England do not meet current physical activity recommendations.
- Only one in four adults and one in six children in England consume the recommended five portions of fruit and veg per day.

More than 1 in 7 adults smoke in England
29% of adults in England are obese
38% of adults in England do not meet physical activity recommendations
About the British Heart Foundation (BHF)

One in four of us in the UK and one in three globally die from heart and circulatory diseases. That’s why the British Heart Foundation funds world-leading research into their causes, prevention, treatment and cure. Advances from our research have saved and improved millions of lives, but heart diseases, stroke, vascular dementia and their risk factors such as diabetes still cause heartbreak on every street. With the public’s support, our funding will drive the new discoveries to end that heartbreak.

We are the biggest independent funder of heart and circulatory disease research in England.

bhf.org.uk/donate

More BHF CVD Statistics

Including exclusive content, local statistics and maps
Visit our website

This factsheet is compiled by the British Heart Foundation.
Last reviewed and updated August 2019.

Statistics are the latest available from the UK’s health and statistical agencies.
For any queries, please contact us and we will do our best to help.

Factsheets are also available for the UK, Scotland, Wales and Northern Ireland.
## References

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<thead>
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<tr>
<td><strong>HEART &amp; CIRCULATORY DISEASES (CARDIOVASCULAR DISEASE)</strong></td>
<td></td>
</tr>
<tr>
<td>CVD deaths, men/women</td>
<td>NOMIS - Office for National Statistics - Deaths registered by cause, gender and age, 2018. <a href="www.nomisweb.co.uk/articles/1171.aspx">www.nomisweb.co.uk/articles/1171.aspx</a></td>
</tr>
<tr>
<td>CVD ASDRs (death rates); England CVD map</td>
<td>BHF/University of Birmingham calculated rates in collaboration with the Office for National Statistics (2015-17 data)</td>
</tr>
<tr>
<td>Numbers living with CVD</td>
<td>BHF estimate based on Quality &amp; Outcomes Framework prevalence data and latest UK health surveys with CVD fieldwork 2017/18; NHS Digital</td>
</tr>
<tr>
<td><strong>CORONARY HEART DISEASE (CHD; ISCHAEMIC HEART DISEASE)</strong></td>
<td></td>
</tr>
<tr>
<td>CHD deaths, vs breast cancer, biggest killer worldwide</td>
<td>NOMIS - Office for National Statistics - Deaths registered by cause, gender and age, 2018. <a href="www.nomisweb.co.uk/articles/1171.aspx">www.nomisweb.co.uk/articles/1171.aspx</a></td>
</tr>
<tr>
<td>World Health Organization, The Top 10 Causes of Death</td>
<td></td>
</tr>
<tr>
<td>CHD ASDRs (death rates)</td>
<td>BHF/University of Birmingham calculated rates in collaboration with the Office for National Statistics (2015-17 data)</td>
</tr>
<tr>
<td><strong>HEART ATTACK (MYOCARDIAL INFARCTION, MI)</strong></td>
<td></td>
</tr>
<tr>
<td>162k heart attack hospital visits, 82k admissions</td>
<td>Hospital Episode Statistics, 2017/18; NHS Digital</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="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><strong>ATRIAL FIBRILLATION (AF)</strong></td>
<td></td>
</tr>
<tr>
<td>STATISTIC</td>
<td>REFERENCE</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>HEART FAILURE (HF)</strong></td>
<td></td>
</tr>
</tbody>
</table>
| 486k diagnosed with heart failure by GP | Quality & Outcomes Framework prevalence data 2017/18; NHS Digital  
https://heart.bmj.com/content/104/7/600 |
| **STROKE (CEREBROVASCULAR DISEASE)** |                                                                                                                                          |
| 30k stroke deaths         | NOMIS - Office for National Statistics - Deaths registered by cause, gender and age, 2018.  
https://www.nomisweb.co.uk/articles/1171.aspx |
| 110k+ stroke hospital admissions | Hospital Episode Statistics, 2017/18; NHS Digital  
| 1m+ stroke/TIA survivors  | Quality & Outcomes Framework prevalence data 2017/18; NHS Digital  
| U75 stroke survivors      | The Health Intelligence Network (THIN), 2015                                                                                              |
| Linked conditions: CHD or heart attack more than twice as likely to have a stroke | http://stroke.ahajournals.org/content/22/8/983                                                                                             |
| Linked conditions: People with heart failure are 2-3 times more likely to have a stroke. | http://stroke.ahajournals.org/content/42/10/2977                                                                                           |
| Linked conditions: People with diabetes are twice as likely to have a stroke as people without diabetes | https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5298897/                                                                                      |
| **VASCULAR DEMENTIA**     |                                                                                                                                            |
| 12k+ deaths; underestimate/diagnoses | NOMIS - Office for National Statistics - Deaths registered by cause, gender and age, 2018.  
https://www.nomisweb.co.uk/articles/1171.aspx  
Alzheimer’s Society  
https://www.alzheimers.org.uk/about-dementia/types-dementia/diagnosis-vascular-dementia |
| **CONGENITAL HEART DISEASE** |                                                                                                                                            |
| 1:150 babies diagnosed   | Public Health England, NCARDRS congenital anomaly statistics: 2017 data  
| Survival comparison (pre-BHF/today) | MacMahon BMJ (http://heart.bmj.com/content/heartjnl/15/2/121.full.pdf) and Wren & O’Sullivan, BMJ (http://heart.bmj.com/content/85/4/438.long) |
| 1-2% prevalence          | Various estimates including Hoffman & Kaplan, JACC –19 per 1,000 includes BAVs which will eventually need cardiologic care  
(www.sciencedirect.com/science/article/pii/S0735109702018867) |
### INHERITED (GENETIC) CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>525K with faulty gene</td>
<td>BHF analysis of PHG Foundation, <em>Heart to Heart: inherited cardiovascular conditions services</em> (2009); with revised FH prevalence estimates (see below) and DCM from Hershberger et al 2013 (<a href="http://www.nature.com/nrcardio/journal/v10/n9/full/nrcardio.2013.105.html">www.nature.com/nrcardio/journal/v10/n9/full/nrcardio.2013.105.html</a>)</td>
</tr>
<tr>
<td>1:250 with familial hypercholesterolaemia (FH)</td>
<td>Consensus is 1:250 - Public Health England cite this but also 1:270 - refs include Benn, Watts et al. <em>J Clin Endocrinol Metab</em> 2012/14; Nordestgaard et al. <em>Eur Heart J</em> Aug 2013; Akiyama et al BMJ Open 2017</td>
</tr>
<tr>
<td>1:500 with hypertrophic cardiomyopathy (HCM)</td>
<td><em>Priori et al., Task Force on Sudden Cardiac Death ESC</em> (<a href="http://eurheartj.oxfordjournals.org/content/ehj/22/16/1374.full.pdf">eurheartj.oxfordjournals.org/content/ehj/22/16/1374.full.pdf</a>)</td>
</tr>
</tbody>
</table>

### OUT-OF-HOSPITAL CARDIAC ARREST (OHCA)

<table>
<thead>
<tr>
<th>Event</th>
<th>Reference</th>
</tr>
</thead>
</table>

### RISK FACTORS

#### High Blood Pressure

<table>
<thead>
<tr>
<th>Factor</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>High blood pressure prevalence</td>
<td>BHF analysis of Health Survey for England 2017; NHS Digital and ONS population estimates</td>
</tr>
</tbody>
</table>

#### Diabetes

<table>
<thead>
<tr>
<th>Condition</th>
<th>Reference</th>
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</table>

### Linked conditions

- **Around 50% of heart attacks and strokes are associated with high blood pressure**
- **Adults with diabetes are 2-3 times more likely to develop CVD, and are nearly twice as likely to die from heart disease or stroke as those without diabetes**
- **In the UK, one third of adults with diabetes die from a heart or circulatory disease**
<table>
<thead>
<tr>
<th>STATISTIC</th>
<th>REFERENCE</th>
</tr>
</thead>
</table>
| Smoking; number of smokers 78k/16k smoking/CVD deaths | Statistics on Smoking, England – 2019; NHS Digital  
| Obesity, physical activity, 5-a-day (fruit and vegetables) | BHF analysis of Health Survey for England 2017 (NHS Digital) |
| Air pollution deaths - up to 36,000 deaths per year | COMEAP 2018 – contributes to all mortality with equivalent impact of 28-36k deaths  
http://www.gov.uk/government/collections/comeap-reports |