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CARDIOVASCULAR HEALTH

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OUTLOOK

Getting to the heart of a societal problem

Despite great strides forward, cardiovascular disease remains a killer, particularly among the less well off in society

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MARTIN BARROW

First, the good news. The reduction in early deaths from cardiovascular disease or CVD is one of the success stories of modern healthcare. Since 1961, the UK death rate from CVD has fallen by 75 per cent. In the past 15 years alone, early deaths from heart disease have been reduced by 40 per cent. That's quite an achievement.

Yet still CVD affects around seven million people in the UK and is a significant cause of disability and death, affecting individuals, families and communities. CVD, essentially diseases of the heart and circulation, is the second highest cause of death after cancer, accounting for 27 per cent of all deaths each year, around 160,000. To put that into the starkest context, this amounts to one death every three minutes.

Lest we be tempted to think of this as a uniquely British problem, global figures for the incidence of CVD are also bleak. CVD is the number-one cause of death globally; more people die annually from it than from any other cause. According the World Health Organization, an estimated 17.7 million people died as a consequence of CVD in 2015, representing 31 per cent of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke.

The absolute tragedy is that around 80 per cent of CVD deaths in the UK are attributed to preventable factors, such as obesity, poor physical activity, heavy drinking, eating unhealthy foods and smoking. These are, essentially, lifestyle choices that men and women make from an early age. Thousands of lives might be saved every year through what appear to be relatively simple changes in lifestyles and habits.

Not only do we know what causes CVD, but we also know who is most at risk and even where they live. Broadly speaking, early deaths from CVD are most common in the north of England, central Scotland and South Wales, and lowest in the south of England. But deaths can be broken down much further than that, almost by postcode. We know, for example, that the premature (under-75) death rate for Glasgow (126 per 100,000) is more than three times higher than for Chiltern in Buckinghamshire (36 per 100,000).

Carl Court/Getty Images

With that level of information at our disposal, it would appear relatively straightforward to agree a targeted approach to CVD prevention, identifying those most at risk and providing the information they need to make choices that probably will add years to their life expectancy. Yet CVD remains a scourge of our society, ending lives prematurely and leaving many others with life-shortening conditions such as diabetes and vascular dementia.

CVD can also have a serious impact on quality of life and cause considerable disability. Stroke survivors may lose their speech and have impaired mobility, and those with peripheral arterial disease may lose a limb. The breathlessness and exhaustion of severe heart failure can preclude even minimal daily activities and all of these can prevent people returning to employment.

In addition to the high human cost, CVD is also a significant drain on NHS resources and on the UK economy. NHS England spends more than £7 billion a year treating patients with CVD, while the total cost to the economy, including aftercare and sickness benefits, is believed to be around £30 billion.

CVD is one of the conditions most strongly associated with health inequalities. The poorer you are, the greater the risk. Smoking, physical inactivity and obesity are greater in lower socio-economic groups, and the burden of morbidity and mortality is disproportionately shouldered by the most deprived.

Mortality rates for CVD vary markedly by levels of deprivation. People in the most deprived decile experienced under-75 mortality rates of 105 per 100,000 from CVD compared with a rate of 59 per 100,000 in the least deprived decile in 2012-14. In layman's terms, this represents a difference in life expectancy of many years, depending on whether you are poor or better off.

In a sense, CVD is a disease of our times. Current political discourse centres on the widening gap between rich and poor. Even the European Union referendum seemed to turn, in simplest terms, on differences between the haves and the have-nots. If we are serious about addressing society's inequalities, there is no better place to begin than with the prevention and treatment of CVD.

Further, at a time when a cash-strapped state is forced to make tough decisions over how it spends taxpayers' money, CVD raises profound questions about where government responsibility ends and where personal responsibility begins. CVD risk is strongly influenced by what we eat and what we drink, by how much exercise we do and how much we weigh.

There is no question that it becomes more difficult to manage our lifestyle when we are anxious about family finances and there is no job security. The consequences of poverty are far reaching. But too many people live the lives their fathers and grandfathers lived. They smoke because family and friends have always smoked, and they drink alcohol regularly because their family and friends have always done so.

The challenge is to help younger people break the cycle. We must find engaging ways to make the public health agenda relevant to them and to find role models who can inspire them to challenge the way their parents lived. It is no easy task.

ON AN AVERAGE DAY IN THE UK...

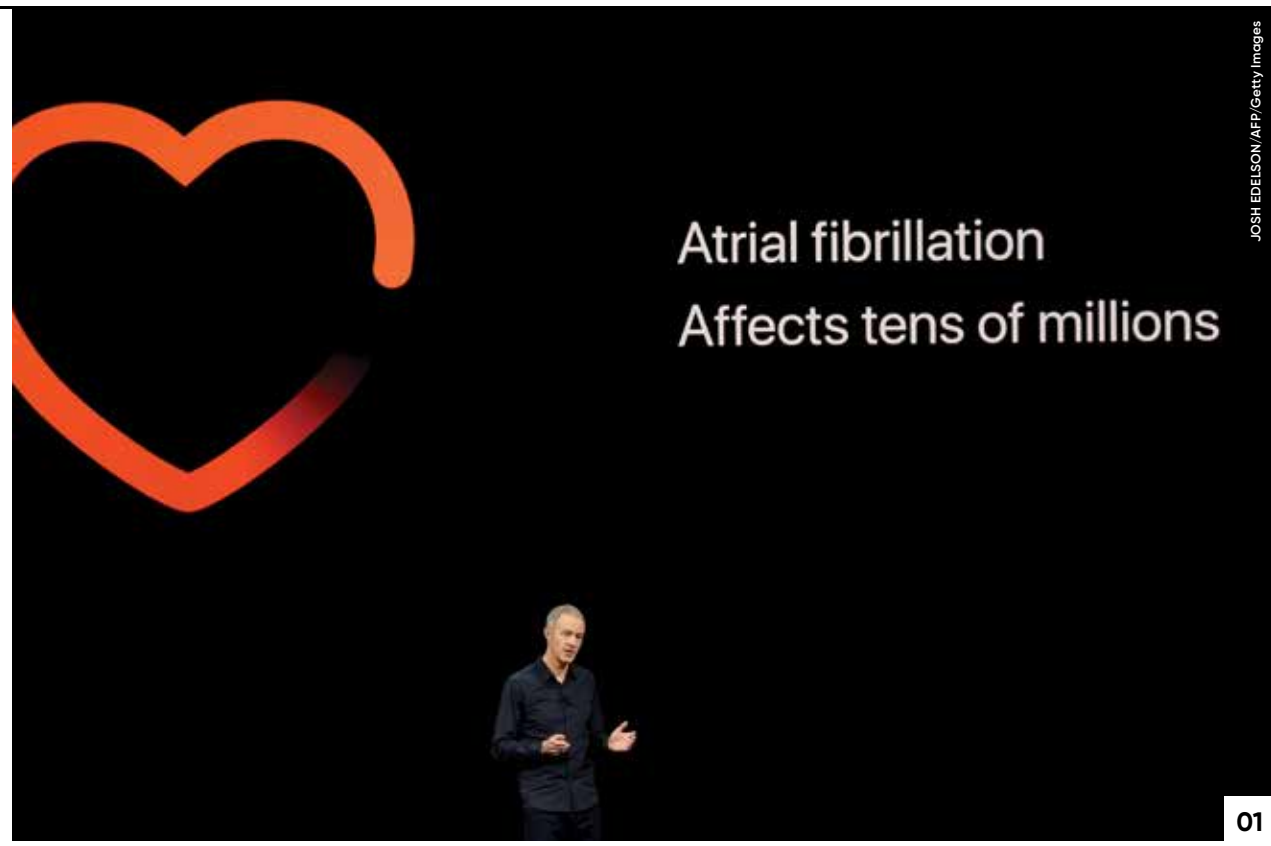
435
people will lose their lives to cardiovascular disease

530
will go to hospital due to a heart attack

190
people will die from a heart attack

British Heart Foundation 2017

TECHNOLOGY



JOSH EDELSON/AFP/Getty Images

01

Safeguards will help boost sales

Wearable technology has the potential to monitor medical conditions, but fears have been raised that not all devices are accurate or reliable

JOHN ILLMAN

This month Apple claimed that its much-feted, but reportedly under-selling, Apple Watch had saved lives. In one case a 62-year-old builder felt terrible after lunch. His watch had revealed an abnormally high pulse and he called an ambulance. Doctors were said to have told him that he might have died if he had gone straight home.

This is a good news story, but medical specialists fear that it may create a misleading impression about the accuracy of personal pulse checkers in hand-held monitors and smartphones.

Apple has not yet marketed its watch as a medical device as this would contravene US Food and Drug Administration (FDA) rules. The Apple Watch is categorised as a "wellness tool", leaving it outside FDA jurisdiction. But all this may change as Apple is collaborating with the world-renowned University of Stanford in a study to see if its watch can detect cardiac arrhythmias or irregular heartbeats such as atrial fibrillation (AF).

If it is successful in rigorous clinical trialling, it could be reclassified as an FDA-approved medical device. This could boost sales at a critical time for Apple, but cost is a major constraint; price tags for the Apple Watch Series 3 launched in the UK last week range from £329 for £1,349.

There are cheaper alternatives, but are they accurate and safe? The question about when an app ceases to be a wellness tracker or monitor and becomes a medical device is a regulatory quagmire. The medical device industry, like the pharmaceutical, aviation and nuclear industries, is tightly regulated.

In contrast, the booming health app market is more like a free-for-all gold rush. In December 2014, *Digital Trends* estimated there were some 100,000 health apps, worth about $4 billion, and predicted the market would increase to $26 billion by 2017.

How many health apps are used as personal pulse checkers? No one knows. How accurate are they? Again, no one really knows. Many apps carry disclaimers that they are not medical devices, but Trudie Lobban, founder and chief executive of the Arrhythmia Alliance and the Atrial Fibrillation Association, fears many apps are being used as such even though they haven't been tested in clinical trials, which is the only certain way of finding out if a treatment or a diagnostic technique works.

Ms Lobban is concerned because AF, the most common arrhythmia or heart rhythm disorder, significantly increases the risk of disabling or fatal strokes. Inaccurate apps could produce false positives or false negatives, with potentially fatal consequences.

AF can cause a quivering or irregular heartbeat, but some sufferers don't experience symptoms at all, so their condition is only detectable upon physical examination. More than 1.5 million people in England alone have been diagnosed with AF. Experts estimate that at least a third more remain undiagnosed. With an ageing population, this number is expected to double by 2050.

Small wonder then that Apple and other big companies such as Fitbit are playing catch-up in the booming health app market. Last year doctors in New Jersey were able to identify when a 42-year-old patient went into AF by looking at his wristband Fitbit fitness tracker. Fitbit is now researching ways to assist those who suffer from AF by identifying periods when abnormal heartbeats may be occurring.

How can patients in the UK distinguish between fitness or health trackers and medical devices? In law a medical device marketed in Europe must carry a so-called CE mark, which is a declaration from the manufacturer that it meets minimum legal requirements set out in European directives.

The London-based Medicines and Healthcare Products Regulatory Agency (MHRA) says: "The CE mark should be visible on the app when you are looking at it in the app store or on the further information or 'landing' page. If you can't see these details or are unsure, we suggest you contact the developer to ask and in the meantime that you don't use it. Please use only medical device apps that are CE marked."

CE-marked products include AliveCor's Kardia Mobile for detecting AF. This delivers a medical-quality ECG to a smartphone in about 30 seconds. It had a ringing endorsement in 2015 from the UK's

source

02

01 Apple chief operating officer Jeff Williams unveiling the latest Apple Watch's new heart-tracking features at a launch event in September

02 Apple chief operating officer Jeff Williams unveiling the new heart-tracking features of the latest Apple Watch at a launch event in September

National Institute for Health and Care Excellence on the back of successful clinical trials. In one study, researchers at the Chinese University of Hong Kong found that the device was able to identify AF in patients who had not been previously diagnosed.

The CE-marked Preventicus Heartbeats app has also been clinically evaluated in a trial with patients at Barts Heart Centre in London when it was compared to the Beatscanner app. Preventicus enables you to measure your cardiac rhythm with your smartphone camera without any additional equipment. Of 83 patients (59 per cent) with smartphones, 94 per cent were interested in using them to self-screen for AF. Almost all the patients (96 per cent) found the apps easy to use and 63 per cent preferred the Preventicus app, which also had a superior sensitivity rating of 94 per cent compared with 89 per cent.

But the AF Association says the consumer still has to rely on the manufacturer's promise that a CE-marked product is fit for purpose. Bodies such as the MHRA, Health and Safety Executive, and Trading Standards Services are responsible for enforcing CE-marking legislation, but the AF Association insists that this is not good enough.

In addition, as part of gaining a CE mark, virtually all products marketed by major medical device manufacturers will have been produced to conform to the ISO (International Standards Organization) 13485 quality management system.

John Showell, founder of Product Approvals, a device-testing and certification consultancy, says: "ISO 13485 is one of the world's most stringent quality management systems, but ISO 13485 certification is not mandatory for health apps. This means that a device could obtain a CE mark without having ISO accreditation, but it would first have to be assessed by a so-called 'notified body' such as, in the UK, the British Standards Institute (BSI)."

> There is worrying evidence that health apps should be subjected to more rigorous scrutiny

The BSI says: "ISO 13485: 2016 provides the basis for ensuring the consistent design, development, production, installation and delivery of products that are safe for their intended purpose."

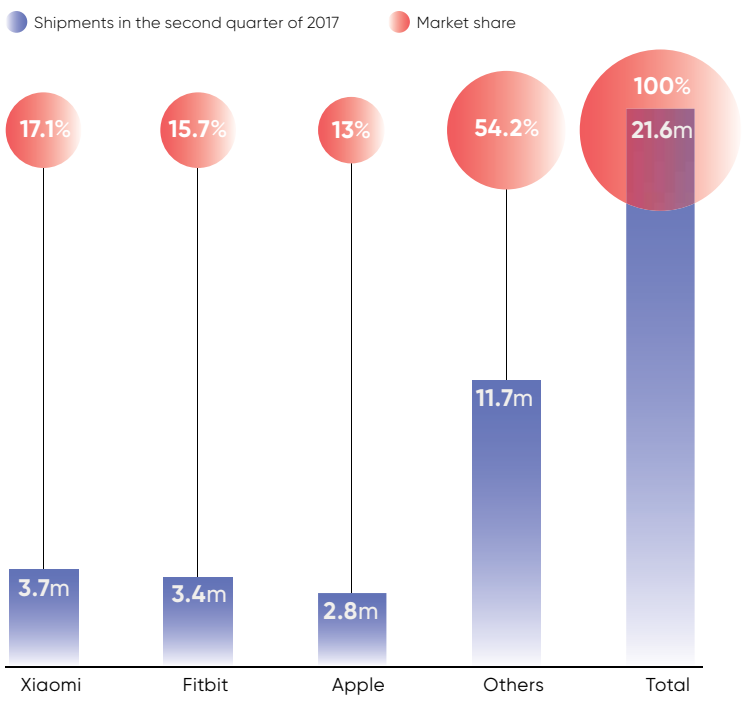
But there is worrying evidence that health apps should be subjected to more rigorous scrutiny. For example, one app purported to measure blood pressure by placing the microphone and LED light of an iPhone on the consumer's chest. Once among the highest grossing apps in the health section of the iTunes App Store, this was reported to reassure falsely four of every five people with high blood pressure that their blood pressure was not elevated.

In another case, two developers, who claimed their app reduced acne through coloured lights emitted from smartphones, were fined and ultimately removed from the iTunes App Store and the Android Marketplace.

Reform is underway in the form of the new European Medical Device Regulation. The BSI says: "It addresses concerns over the assessment of product safety and performance by placing stricter requirements on clinical evaluation and post-market clinical follow-up." But the new rules will not apply until May 2020.

GLOBAL WEARABLE MARKET LEADERS

With fitness trackers accounting for the vast majority of the wearables market, the potential to diagnose cardiac irregularities is huge



Strategy Analytics 2017

COMMERCIAL FEATURE

Q&A What is the Preventicus Heartbeats app?

The Preventicus Heartbeats app is a mobile phone app for detecting atrial fibrillation (AF) and other abnormal cardiac rhythms with a smartphone camera, and it has ECG-comparable accuracy. The app has been evaluated in independent clinical trials at leading medical centres in the UK, Switzerland and Germany

PREVENTICUS
RHYTHM IS LIFE

THOMAS HUEBNER
CHIEF EXECUTIVE
PREVENTICUS

What is AF?
One of the most common heart rhythm disorders, AF is a major cause of strokes. Lifetime risk for AF is one in four. A quarter of people with AF have a stroke within five years and 5 per cent within one year if the condition is left untreated. People with high blood pressure, angina, diabetes or who are 55 plus are also at increased risk of AF. Up to a fifth of all heart attack patients develop AF. There is effective treatment for diagnosed AF.

What are the signs and symptoms of AF?
Fifty per cent of people with AF do not feel anything. Other people may experience a sometimes fast, irregular heartbeat and occasional palpitations. Other symptoms include dizziness, shortness of breath and tiredness.

So AF is easily recognised and diagnosed?
Not at all. Many people with mostly occasional AF are totally unaware of it.

How does AF cause strokes?
AF and the subsequential irregular blood flow in the heart are the strongest risk factors to the formation of dangerous blood clots; blood clots going from the heart to the brain cause strokes.

But won't an ECG detect AF?
AF and other cardiac rhythm disorders often occur sporadically and without symptoms, so they are not always detected in the doctor's surgery. AF is only detected in a quarter, at maximum, of all affected patients with a conventional 24-hour ECG.

How does this compare with the Preventicus Heartbeats app?
Clinical studies have shown that the app can distinguish normal from abnormal heart rhythms such as AF with an accuracy of 95 per cent and higher.

What are my options with the Preventicus Heartbeats app?
Try the one-minute free version or test the full version for free for 30 minutes before deciding to migrate to the paid-for version which costs £4.99 a month or £23.99 a year.

How does it work?
The critical bit involves placing your smartphone camera lens over your finger. The app then records all heartbeats. When more than 5 per cent of all beats are extra beats, the app signals the suspicion of arrhythmia with a yellow traffic light symbol. A red traffic light indicates a possibly significant absolute arrhythmia suspicious to AF. Pulse rates that are consistently too high (tachycardia) or too low (bradycardia) are also recorded. The app will generate an ECG-comparable pdf report for you and your doctor. You can also book telecare services to obtain detailed notes. Telecare service for a single suspicious measurement costs £29.99; for up to five suspicious measurements, a one-time purchase is £36.99.

> The app will generate an ECG-comparable pdf report for you and your doctor

How often would I need to monitor myself with the Preventicus Heartbeats app?
For at least two weeks, possibly four weeks; in the morning, the evening and whenever palpitations occur. This is easy when you have your smartphone to hand.

Why should I use the Preventicus Heartbeats app when I can just as easily use a standard fitness tracker?
Fitness trackers measure heart rate or pulse, but cannot document if your heart rhythm is regular and healthy. You need cardiac rhythm analysis for this.

Has the Preventicus Heartbeats app been clinically evaluated?
In a clinical study at the Basel University Hospital in Switzerland, the app correctly classified 90 per cent of subjects within a two-minute measurement. Accuracy rose to 95 per cent over five minutes. Similar results emerged in a study at the Barts Health Centre, London, involving 140 patients of whom 83 had their own smartphones. Of this group, 94 per cent were interested in using their smartphone to self-screen for AF. Almost all – 96 per cent – said they found the app easy to use.

For more information visit www.preventicus.com/en/

RISK INDICATORS

Five things you didn't know are 'heart risky'

There are some surprising lifestyle habits and little-known factors that can indicate increased risk of cardiovascular disease

OLIVER PICKUP

1 WEAK HANDSHAKE

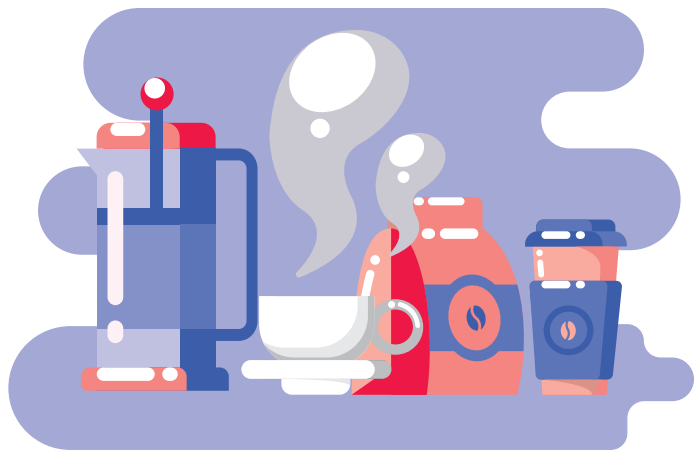
Limp handshakes get a bad press, especially when it is men giving them out. Some think it is an indicator of character – are you weak or strong?

Well, there is further bad news, unfortunately. Believe it or not, the firmness of your grip could tell you a lot about your risk of developing heart disease, which remains by far the leading cause of death in the UK.

Two years ago a report, with the catchy title of *Prognostic value of grip strength: findings from the Prospective Urban Rural Epidemiology (PURE) Study*, was published in *The Lancet* that found those with a weaker handshake are more at risk of cardiovascular disease (CVD).

"The scientists showed that a person's grip strength was as strongly associated with dying from CVD as their blood pressure," says Dr James Brown, senior lecturer in biology and biomedical sciences at Aston University. "It suggests that a grip-strength test may be as useful as a blood-pressure reading in predicting whether heart disease will kill you.

"It is not clear why grip strength may be linked to heart disease, but it is possible that it is a marker of other underlying illnesses that may put people at increased risk."



2 NOT ENOUGH COFFEE

Coffee lovers, rejoice! Contrary to popular belief, it is good for your heart's health if you drink a handful of cups every day or at least it's not as bad as many believe, so the experts say.

A study, published in 2015, revealed that coffee lovers who consume between three and five mugs a day are less likely to develop heart attack-inducing clogged arteries.

The global research team, headed by medics at the Kangbuk Samsung Hospital in Seoul, the capital of South Korea – a country that boasts the lowest heart-related deaths per capita on the planet, according to the latest World Health Organization results – found that those who drink a moderate amount of coffee have the least risk of producing coronary artery calcium (CAC).

CAC is an early indicator of coronary atherosclerosis, a tightening and hardening of the arteries that could lead to blood clotting and might trigger a heart attack or a stroke.

"Our study adds to a growing body of evidence suggesting that coffee consumption might be inversely associated with CVD risk," the authors of the report say.

So next time someone quizzes you, as you reach for the cafetière again, about how many cups of coffee you drink, tell them you are simply warding off heart disease.

AIR POLLUTION

3 "Air pollution is an invisible but deadly problem," says John Maingay, director of policy and public affairs at the British Heart Foundation (BHF).

The BHF has funded substantial research which has shown that both long-term and short-term exposure to air pollution can make existing heart conditions worse, and can increase the risk of heart attack and stroke.

"The association between air pollution and cardiovascular disease is strongest for exposure to PM2.5 [atmospheric particulate matter that have a diameter less than 2.5 micrometers] and ultrafine particles which come from diesel vehicle exhausts," says Mr Maingay.

"Most recently, research at the University of Edinburgh has shown that tiny nanoparticles in diesel exhausts produce highly reactive molecules called 'free radicals' that can injure blood vessels and contribute to cardiovascular disease.

"If you have heart and circulatory disease it's important to regularly monitor the air pollution level where you live and work, and try to avoid spending long periods of time in places where there are high levels of air pollution."

It has been reported that an estimated 40,000 people die prematurely in the UK every year because of air pollution. To check today's levels wherever you live and see the pollution forecast, head to the government's UK-AIR website at uk-air.defra.gov.uk.

GETTING DIVORCED

4 Those married in an Anglican church will have to repeat the following wedding vows, taken from *The Book of Common Prayer*: "To have and to hold from this day forward, for better, for worse, for richer, for poorer, in sickness and in health, to love and to cherish, till death us do part."

Paradoxically, those who part before death – become separate or divorced – are less likely to survive a heart attack than if they were to stay with their husband or wife.

Research this year from Aston University has shown that divorced patients who suffer a heart attack are much less likely than their married counterparts to pull through. "In fact, married patients were 16 per cent more likely to survive a heart attack than divorcees and 7 per cent more likely to survive than other singletons," Dr James Brown of the university says. "Divorce not only breaks your heart, it seems it also increases the risk of dying from heart disease, too."

However, it's not all doom and gloom. The latest Office for National Statistics numbers show that in 2013 some 130,473 UK couples divorced, which was almost 3 per cent down on the previous year. The overall rate fell to 9.8 per 1,000 married men or women and was the lowest level since 1975.

GUM DISEASE

5 A third of us in the UK are apparently unaware that there is a connection between gum disease and cardiovascular disease, as well as other life-threatening ailments, according to National Health Service findings.

New research from the Imperial College London confirms the link. Their report suggests that those who tend to suffer with gum disease not only possess the bacteria that cause heart issues, but also have been found to have a chemical link that leads to inflammation mirroring itself in other parts of the body.

"With severe gum disease, the inflammation can present itself in the bloodstream, which can slowly damage the blood vessels in the heart," says Dr Harold Katz, founder of California Breath Clinics.

"Gum disease is caused by relatives of the bad-breath bacteria. When gum disease is full blown, dead gum tissue and red blood cells provide fuel for bad breath bacteria in the oral cavity. Therefore, those people who suffer with gum disease tend to have horrible bad breath.

"If gums are bleeding and an open wound site is created, the opening allows oral toxins and bacteria to enter the blood stream and cause physical damage to heart valves."

The Ozaki procedure

Royal Brompton and Harefield Hospitals are leading the way with groundbreaking treatments for aortic valve disease

RB&HH SPECIALIST CARE

Cesare Quarto, consultant cardiac surgeon at Royal Brompton and Harefield Hospitals Specialist Care, is an irrefutable expert when it comes to matters of the heart. He was appointed as a consultant at Royal Brompton Hospital in 2013 and two years later earned a trio of international awards for his role in a world-first transcatheter heart valve implantation (TMVI/TAVI).

More recently, in 2016, Mr Quarto led the Royal Brompton and Harefield Hospitals (RB&HH) team which carried out the first adult Ozaki procedure – a groundbreaking treatment for aortic valve disease, a life-threatening condition – in the UK. This cutting-edge technique, devised by Professor Shigeyuki Ozaki in Japan a decade ago, uses heart tissue from the patient or an animal to reconstruct a damaged aortic valve, instead of replacing it entirely with a prosthetic implant.

"This is an exciting development," enthuses Mr Quarto. "Between 2007 and 2015, Professor Ozaki performed his procedure on 765 patients and over 98 per cent of them have not required any further aortic valve operations, which is impressive and very encouraging.

"Aortic value disease is common for those in their 70s, although sometimes we have patients in their 40s, 50s or 60s who have severe aortic valve stenosis or degradation. I think it is this younger group who can really benefit from the Ozaki procedure because they are unlikely to need repeat surgery.

"Our hope is that this procedure, using the Ozaki valve, will last longer than a normal aortic valve replacement and has a better haemodynamic, meaning that the blood flows better to the valve. If the valve can be repaired it should be, of course, but if not then this is a good option for reconstruction.

"The evidence shows it can be a longer-term solution than the other options due to its more natural physiology. We hope many of our patients will benefit from this novel technique in the future."

Mr Quarto presented a "short business case" to the management team at RB&HH to "explain the Ozaki procedure and outline why it would be good for the hospital". He continues: "They were very open to the idea, as I thought they would be; that positive attitude is the main difference between Royal Brompton and Harefield Hospitals and many of the other hospitals at which I have worked.

"I was asked what I required and I said, 'I need to go to Japan to see the procedure and it is also important that Professor Ozaki comes here to London to support me.' The management were happy with that and supported this happening."

RB&HH is the UK's only unit that is able to provide this treatment to adult patients, both privately and on the National Health Service. In addition, Mr Olivier Ghez, a leading paediatric cardiac surgeon at the hospital, who alongside Mr Quarto performed the first Ozaki procedure in the country, offers it to children and young adults as an alternative to valve replacement surgery.

It is the latest example of how innovation is at the beating heart of the Royal Brompton and Harefield Hospitals NHS Foundation Trust, which boasts the largest specialist cardiac and lung centres in Britain, and whose world-leading consultants use the most sophisticated treatments available anywhere in the world.

> The Ozaki valve will last longer than a normal aortic valve replacement

"The sole reason I came to this country in 2007 was to work at Royal Brompton and Harefield Hospitals because I knew they had a brilliant vision for the future," adds Mr Quarto. "For me, it is the number-one place in Europe. All my colleagues are very supportive of new ideas and it makes for a great, happy atmosphere. We work together to continually improve and raise the standard.

"Consultants who work at the Royal Brompton and Harefield Hospitals benefit from being exposed to outstanding innovation and having exceptional support from management. Peers and industry leaders from around the world often approach me to discuss innovative surgical techniques and products as our hospitals are known to be open to the latest cardiac technologies. So at the international level we are very well regarded. It's a very competitive space, but we are leading the way."

CESARE QUARTO
CONSULTANT CARDIAC SURGEON
ROYAL BROMPTON AND HAREFIELD HOSPITALS SPECIALIST CARE

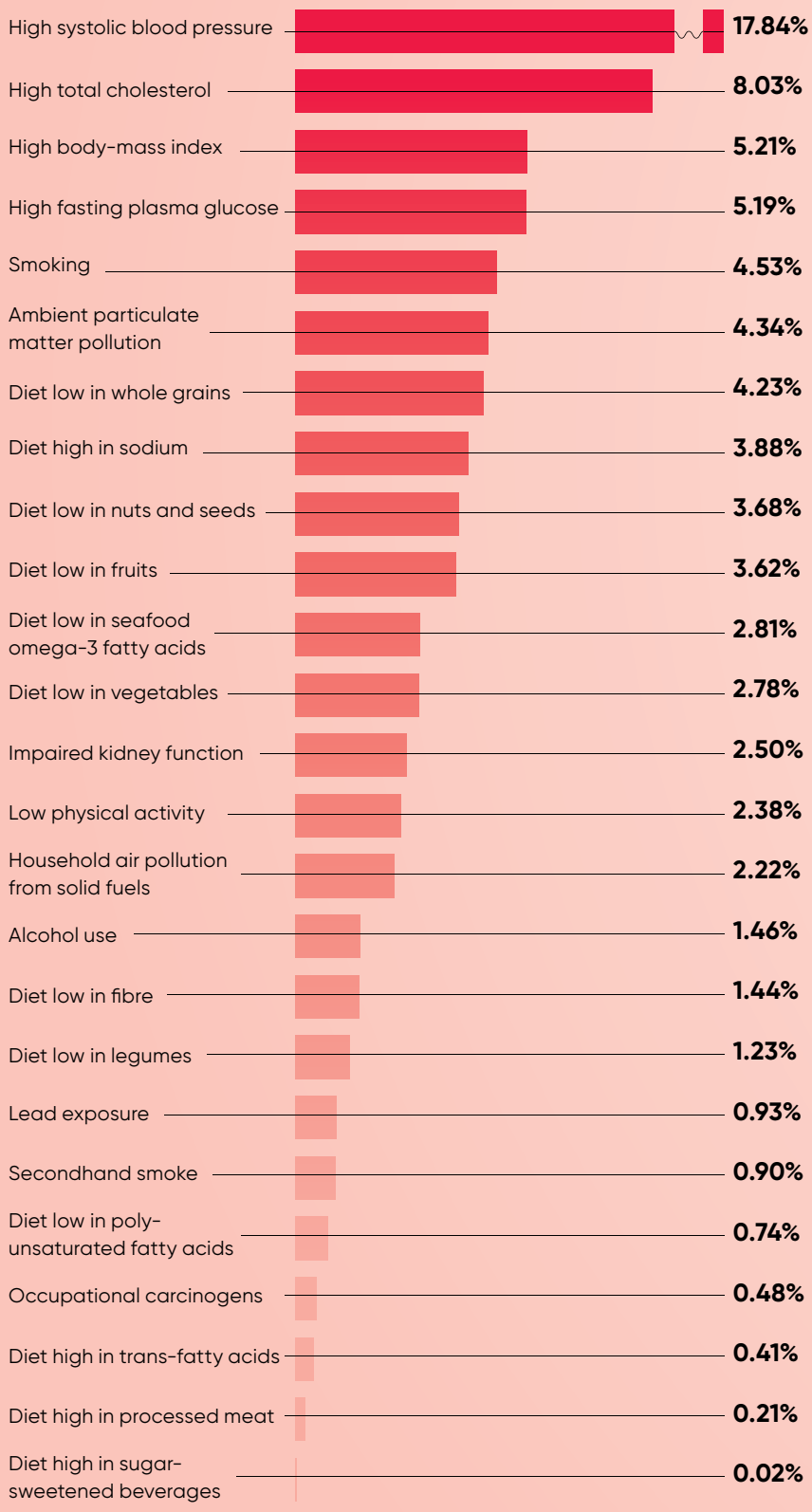
For more information please visit www.rbhh-specialistcare.co.uk

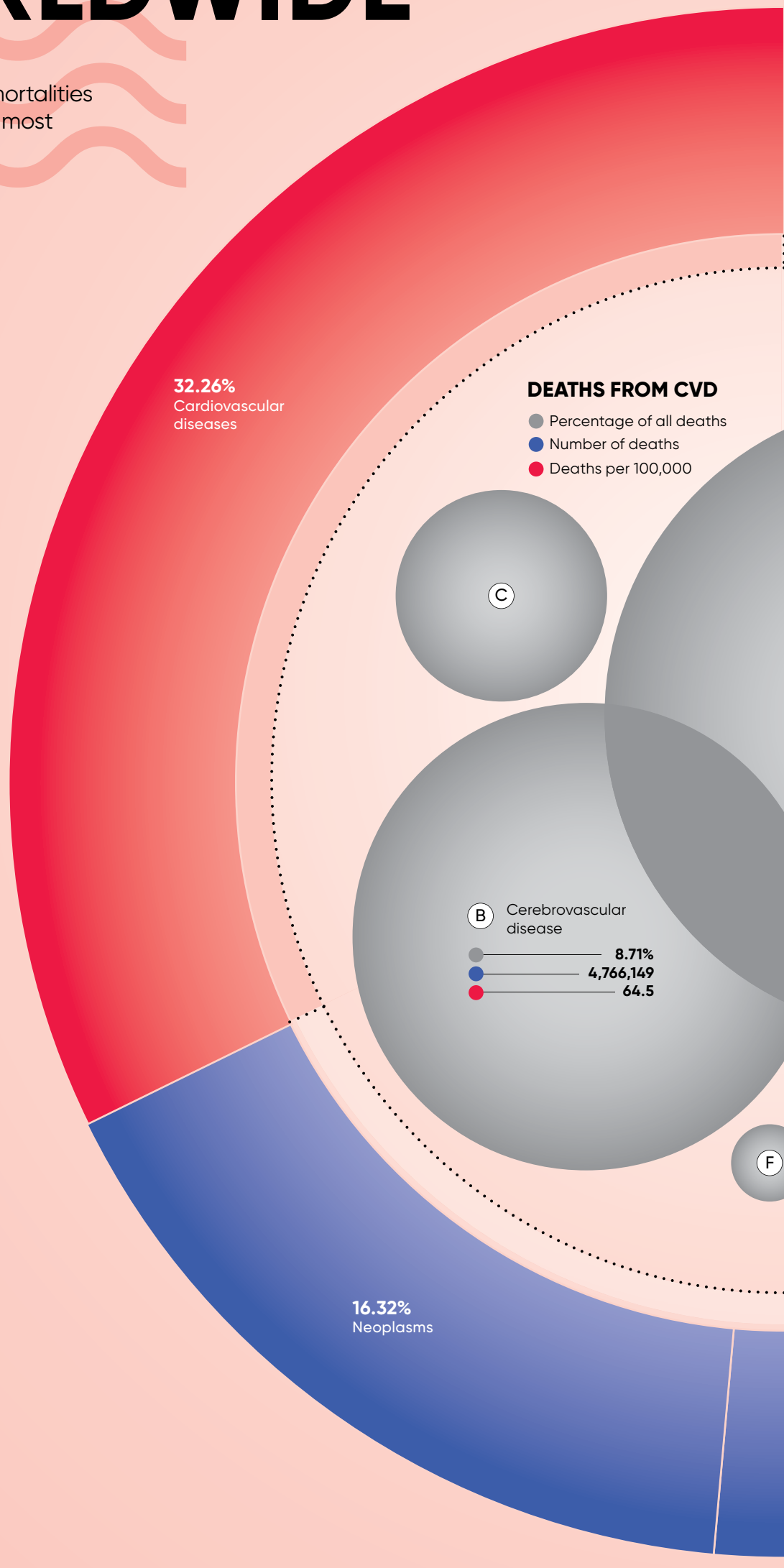
CARDIOVASCULAR DISEASE WORLDWIDE

Cardiovascular disease (CVD) accounted for one third of all mortalities last year and, despite being largely preventable, remains the most common cause of death worldwide

TOP CAUSES OF DEATH FROM CVD

PERCENTAGE OF ALL DEATHS FROM CVD

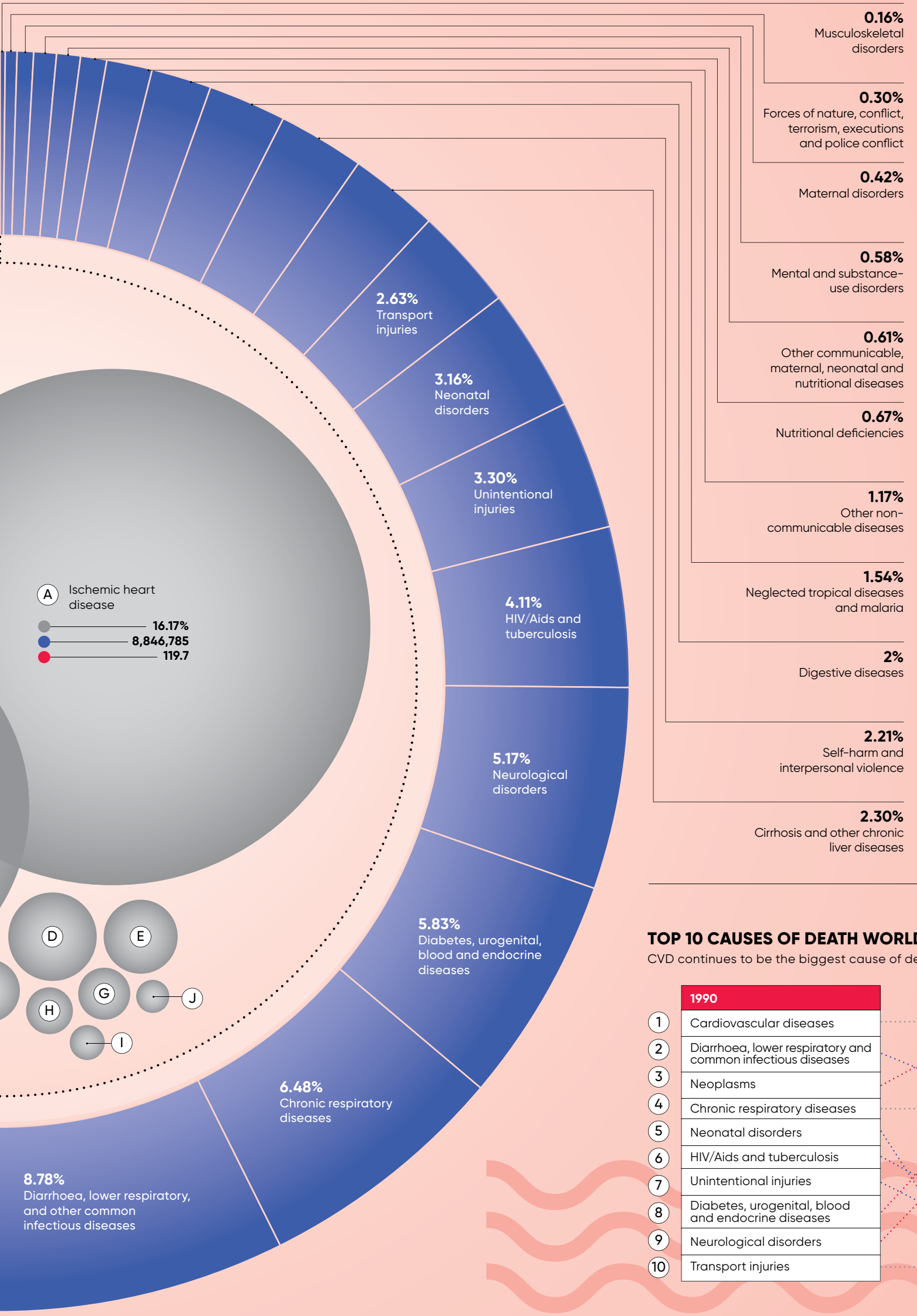




Institute for Health Metrics and Evaluation 2016

CAUSES OF DEATH WORLDWIDE IN 2016

PERCENTAGE OF ALL DEATHS



Institute for Health Metrics and Evaluation 2016

TOP 10 CAUSES OF DEATH WORLDWIDE

CVD continues to be the biggest cause of death

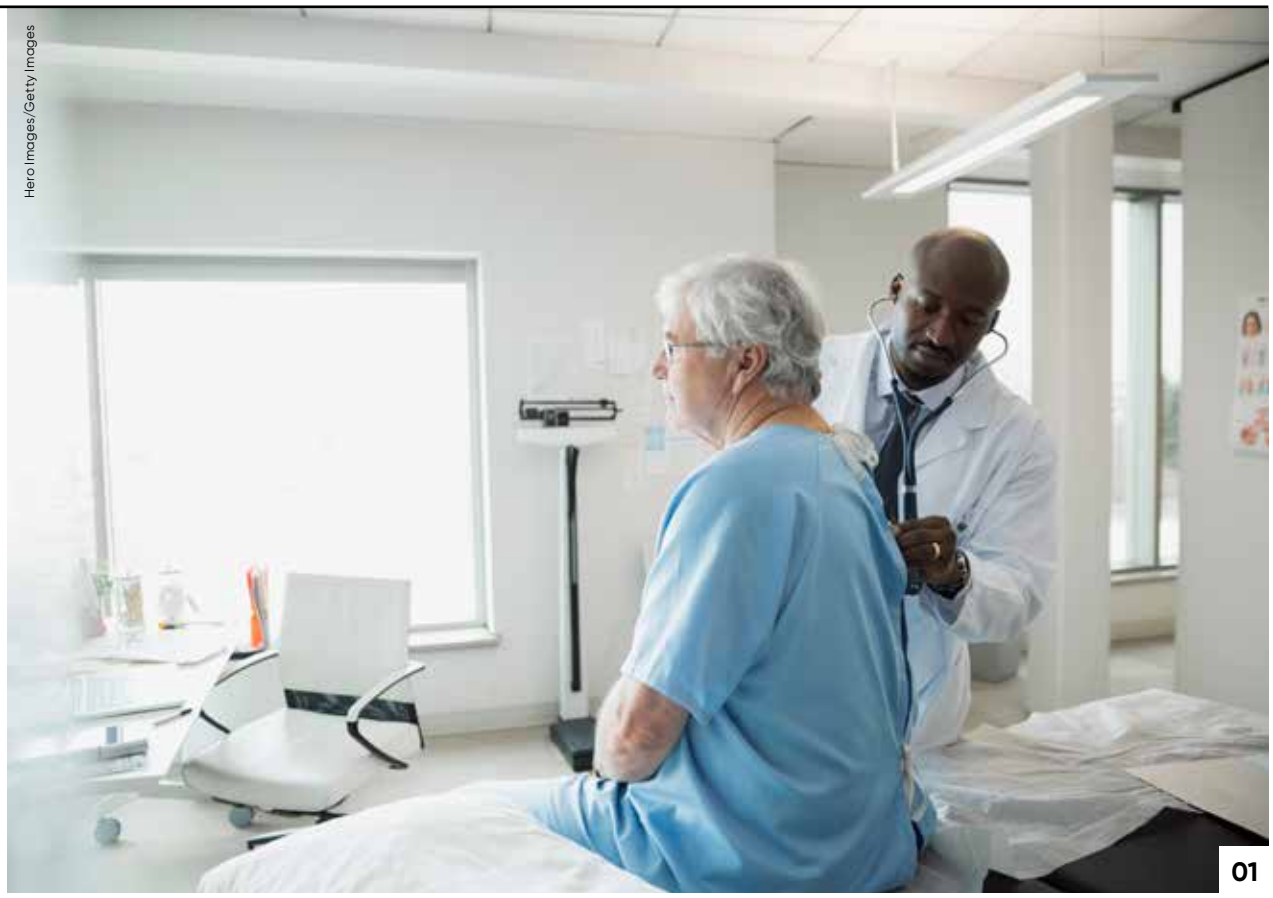
	1990	2016
1	Cardiovascular diseases	Cardiovascular diseases
2	Diarrhoea, lower respiratory and common infectious diseases	Neoplasms
3	Neoplasms	Diarrhoea, lower respiratory and common infectious diseases
4	Chronic respiratory diseases	Chronic respiratory diseases
5	Neonatal disorders	Diabetes, urogenital, blood and endocrine diseases
6	HIV/Aids and tuberculosis	Neurological disorders
7	Unintentional injuries	HIV/Aids and tuberculosis
8	Diabetes, urogenital, blood and endocrine diseases	Unintentional injuries
9	Neurological disorders	Neonatal disorders
10	Transport injuries	Transport injuries

Institute for Health Metrics and Evaluation 2016

PREVENTION

Time to take prevention to heart

The National Health Service is committing resources to preventative programmes aimed at keeping people out of hospital and saving the cash-strapped NHS billions


Hero Images/Getty Images

01

MARTIN BARROW

Been for an MOT recently? That's a health MOT for you, not a road test for your car. By law we are compelled to submit our motor vehicle, after a certain age, for inspection every year. Yet most of us spend far less time and money taking stock of our own "roadworthiness".

This could be about to change, with NHS England launching a drive to encourage more over-40s to have a check-up to reduce the risk of heart attack and stroke. The initiative brings together the NHS and Public Health England, promising a more joined-up approach to cardiovascular care. They say this will prevent almost 10,000 heart attacks and 29,000 strokes over the next three years, saving the NHS more than £500 million.

The scheme, called the NHS Right-Care Cardiovascular Disease Prevention Pathway, aims to identify people with heart disease risk factors by doing simple checks at GP surgeries and pharmacies. It will also take steps to ensure that people who have previously been diagnosed with high blood pressure or high cholesterol are on the appropriate medication.

So far the scheme has been rolled out at 84 of the 209 clinical commissioning groups (CCGs) in England, with plans to introduce it at the remaining CCGs within the next two years.

The programme is the latest example of how the focus of the health service is shifting from treatment to prevention. While acknowledging the importance on investing in effective care pathways, significant resources are now being committed to keeping people out of hospital for as long as possible, for the multi-billion-pound cost of treating so-called lifestyle diseases, such as cardiovascular disease (CVD) and diabetes, is threatening to overwhelm hospital trusts.

As Simon Stephens, NHS chief executive, says in the *NHS Five-Year Forward View*, it makes little sense that the health service is now spending more on bariatric surgery for obesity than on a national roll-out of intensive lifestyle intervention programmes that were first shown to cut obesity and prevent diabetes over a decade ago.

Action is being taken on a number of other fronts, from higher taxes on sugary drinks to repurposing smoking cessation schemes. There are high hopes for the sugar tax, which takes effect from April 2018.The tax will be imposed on companies according to the volume of the sugar-sweetened drinks they produce or import.

There will be two bands; one is for total sugar content above 5g per 100 millilitres and a second, higher band for the most sugary drinks with more than 8g per 100 millilitres. Analysis by the Office for Budgetary Responsibility suggests they will be levied at 18p and 24p per litre.

Examples of drinks which would currently fall under the higher rate of the sugar tax include full-strength Coca-Cola and Pepsi, Lucozade Energy and Irn-Bru. The lower rate would catch drinks such as Dr Pepper, Fanta, Sprite, Schweppes Indian tonic water and alcohol-free shandy.

> Significant resources are now being committed to keeping people out of hospital for as long as possible

Campaigners hope higher prices will encourage consumers to moderate consumption. Manufacturers have reduced sugar content in some drinks in advance of the new tax, so it appears to already be having a positive effect.

The government has relaunched its anti-smoking strategy, with a target to cut the adult smoking rate to 12 per cent from 15.5 per cent at present within five years. The tobacco control plan will target children and pregnant women, in particular, and have a focus on the poorest communities where smoking rates are highest.

Less high-profile initiatives are also underway. For example, national procurement standards have been introduced for caterers, with strict nutritional criteria, aimed at creating a healthier environment in the workplace.

But how far can the state involve itself in the lives of individuals before it is accused of being too intrusive? A scheme to send those at highest risk of developing diabetes to cookery classes has met fierce opposition, particularly over the cost. Yet NICE, the health and care watchdog, calculates that the £435-a-head courses will pay for themselves over 14 years by reducing the NHS's bill for treating diabetes, which currently stands at around £9 billion a year.


Erik Jonsso/EyeEm/Getty Images

02

As health authorities tiptoe around public sensitivities over the degree of nannying they are prepared to tolerate, a separate strategy to reduce CVD involves clinical interventions. Up to six million adults in the UK currently take statins to lower their cholesterol levels and thereby reduce the risk of heart attacks and strokes. Despite some concerns over side effects, there is a growing body of evidence that suggests statins should be prescribed to almost twice as many people, many of whom are in relative good health, but have high cholesterol.

Increasingly, this form of early intervention is seen as an effective way to prevent CVD and is the focus of significant investment by the pharmaceutical industry. For example, there is strong interest in the new drug inclisiran, which can dramatically lower blood cholesterol. The drug is given twice a year with an injection by a health professional, which has the added benefit of making it more likely that patients will adhere to the treatment.

Compliance is a recurring issue. A recent study published in *BMJ Open* estimated that if 10 per cent of the 450,000 adults in the UK at risk of recurrent CVD took a polypill combining aspirin, atorvastatin and ramipril it would improve adherence to medications and prevent an extra 3,000 heart attacks or strokes and 600 CVD deaths over a decade, compared with requiring patients to take three drugs separately. It appears that just as it is difficult to persuade people to live healthier lives, it is also a challenge to persuade them to take medication provided to extend their lives.

Given the scale of the problem, governments will continue to nudge, cajole, bribe and order people to do more to look after themselves. But, in the end, this problem has a simple solution – you are what you eat.

01 A new NHS scheme aims to encourage more over-40s to have a check-up to reduce the risk of heart attack and stroke

02 The government aims to cut the adult smoking rate to 12 per cent from 15.5 per cent at present within five years

COMMERCIAL FEATURE

Cardiologists and patients support move to transradial approach

Catheterisation into the groin was for some time a preferred approach for treating arterial disease. But the clinical, cost and patient benefits of entering via the wrist have made transradial intervention commonplace

Transradial catheterisation to access and treat blocked arteries, via the radial artery in the wrist, offers significant benefits over traditional methods. By accessing a patient's coronary system this way, there is reduced pain level, much lower risk, and typically much less bleeding and related mortality. The forearm artery does not transport a particularly large volume of blood and it is located conveniently near to the surface.

The advantages of this method over transfemoral approaches via the groin have become clearer to clinicians and patients over recent decades. The first studies in this field, in the 1990s, established a much lower risk of major vascular complications when attempting percutaneous coronary intervention (PCI), a procedure to improve blood flow that involves accessing the heart and opening up plaque-covered vessels with a stent. Further studies showed increased survival rates with the transradial approaches.

In 2015, a major study published in *The Lancet* and funded by medical device maker Terumo, showed that a month after the procedure there was a significantly reduced rate of adverse clinical events in terms of bleeding and even death. This study, known as *MATRIX*, was a randomised controlled trial of more than 8,400 people and it demonstrated why transradial intervention needed to become the main approach for patients with acute coronary syndrome (ACS).

By using transradial as opposed to femoral access, according to a recent meta-analysis of nearly 23,000 patients published by Giuseppe Ferrante and others in *Journal of the American College of Cardiology*, mortality was cut by 29 per cent and major adverse events by 13 per cent. Major bleeding and serious vascular complications were cut by 47 per cent and 77 per cent respectively.

The increasing evidence supported the procedure significantly and the European Society of Cardiology moved its level of recommendation from IIA to IA, the highest level of support. The guidelines recommend that centres treating patients with ACS shift from transfemoral to transradial access. They also encourage a transradial approach for coronary angiography and percutaneous coronary intervention in heart attack patients, as long as it is carried out in experienced centres with staff appropriately trained. Many centres begin with the radial approach for diagnostic procedures and progress from simple to more complex percutaneous coronary intervention.

Professor James Nolan, one of the UK's most well-known interventional cardiologists, says the transradial approach is "now used in over 80 per cent of percutaneous coronary intervention procedures" in the UK because of its benefits. Despite the robust evidence and strong recommendations from guidelines, there is significant variation in uptake between countries in Europe with adoption rates varying from 35 per cent to more than 80 per cent.

But he also notes that the benefits of transradial intervention go beyond the clinical setting by saving hospitals money. "This is due to the greatly improved effectiveness, reduced complications and the much lower risk of bleeding, meaning most patients are only in hospital for the day," he explains.

With inpatient stays typically costing hospitals more than £400 per night, there is a strong incentive to discharge people the day they are treated and clinics are increasingly finding safe ways to do so with the transradial approach. "Although use of the transradial technique in the cath lab does not ensure that all patient care processes have been optimised for same-day discharge of a catheterisation or PCI patient, it does significantly improve the opportunity," according to an article by Denise Brown and Ginger Biesbrock in *Cardiac Interventions Today*. Combined with the reduction in complications and the quicker recovery, there is a major opportunity for savings.

A study of more than 7,000 US patients, called *Costs of transradial percutaneous coronary intervention,* found hospitals performing the procedure as little as 1,000 times in the year would save over $800,000, with more than half the savings from cutting hospital stays and 12 per cent due to decreased bleeding.

As patients themselves are increasingly given the choice of transfemoral or transradial catheterisation, many select the benefits of the latter, a less painful and more straightforward procedure. If they are well enough, they can walk in and out of the treatment room, sit up after the procedure and go to the toilet on their own.

"The much more effective clinical attributes of transradial intervention, combined with the reduced costs and the preference of patients for a more comfortable approach with quicker recovery, mean the procedure is strongly favoured," says Professor Nolan.

One company particularly active in transradial catheterisation is Terumo, historically one of the largest manufacturers of vascular access products, both radial and femoral. In Europe, it is a top supplier of transradial access technology for interventional cardiology.

"Our radial introducers have a very small diameter and are therefore easy to use. They are truly minimally invasive, according to experienced users," says Peter Coenen, president of Terumo Europe Interventional Systems. "Our goal is to offer a complete solution for transradial interventions with devices that minimise patient discomfort and optimise procedure outcomes."

Terumo is active in training clinicians to perform this procedure, with a Centre of Excellence for Transradial Training in the UK and others globally.

> Terumo is a top supplier of transradial access technology for interventional cardiology

The company's most used products include radial introducers such as the hydrophilic coated Radifocus M Coat introducer and the ultra-thin wall Glidesheath Slender (0.16mm smaller than traditional sheaths), as well as its TR Band radial closure device. All of its introducer kits, catheters and radial closure technology are backed with a near 100-year heritage of technology engineered in Japan.

As clinicians increasingly favour the transradial approach due to its increased effectiveness and reduced risks, as hospital managers opt for the greater efficiency and reduced cost, and as patients choose the more comfortable and easy solution, transradial intervention is now commonplace.

To find out how to provide effective transradial intervention in your clinic please visit www.terumo-europe.com

TRANSRADIAL ACCESS HAS BEEN SHOWN TO REDUCE EVENTS COMPARED WITH TRANSFEMORAL ACCESS AND IS ASSOCIATED WITH...

- lower risk of bleeding
- shorter length of stay
- potential cost and efficiency savings

NUTRITION

‘Natural dietary supplement does lower risk’

A trial of a new dietary supplement suggests natural compounds can reduce the risk of heart disease

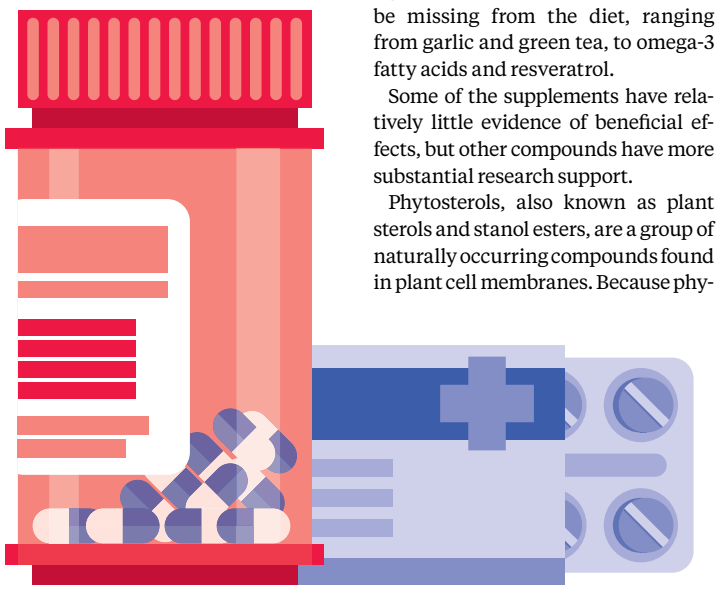

Jana Leon/Getty Images

ROGER DOBSON

Levels of bad cholesterol dropped by a nearly a quarter in patients given a new pill.

After eight weeks, total cholesterol tumbled too, by 16 per cent, and blood pressure went down by nearly 6 per cent, while blood levels of uric acid, another risk factor for cardiovascular disease (CVD), dropped by 12.3 per cent.

But these improvements were not due to a new expensive prescription drug, but to a dietary supplement containing natural compounds called phytosterols.



The new research at the University of Bologna reported in the journal *Advances in Therapy*, which involved 60 people genetically predisposed to high cholesterol, is the latest of a number of studies to suggest that some dietary supplements can lower cholesterol and reduce other risk factors for CVD.

According to NHS Choices, we spend almost £700 million a year on dietary or nutritional supplements and vitamins. There are many hundreds of different supplements designed to provide nutrients that may be missing from the diet, ranging from garlic and green tea, to omega-3 fatty acids and resveratrol.

Some of the supplements have relatively little evidence of beneficial effects, but other compounds have more substantial research support.

Phytosterols, also known as plant sterols and stanol esters, are a group of naturally occurring compounds found in plant cell membranes. Because phytosterols are structurally similar to the body’s own cholesterol, when they are consumed the two compete to be taken up by the digestive system. As a result, it’s suggested, blood cholesterol levels drop.

According to a Cleveland Clinic report, the evidence is substantial enough for the US Food and Drug Administration to have approved a health claim for phytosterols saying that foods containing at least 0.65gm of plant sterol esters, eaten as part of a healthy diet, may reduce the risk of heart disease.

Probiotics or live bacteria and yeasts have been shown to be particularly effective. According to a new review in *Preventive Nutrition and Food Science*, analysis of results from 15 studies with a total of more than 700 patients showed a significant lowering of total and bad cholesterol when consumed in the form of fermented milks or yogurts.

Omega-3 fatty acids, found in oily fish, have also been shown in a number of studies to have cardiovascular protective effects, on cholesterol, blood vessel relaxation and reduced clotting.

They are a best seller in the UK supplement market worth £139 million a year.

The American Heart Association recommends eating fish, particularly fatty fish, at least twice a week, but also says supplements are an option: “Those with coronary artery disease, may not get enough omega-3 by diet alone and these people may want to talk to their doctor about supplements.”

But according to NHS Choices, in the UK, the jury is still out on supplements: “Studies have looked at their possible benefits in people with heart disease and high cholesterol, but government bodies advise that current evidence does not support the use of supplements to prevent cardiovascular disease.”

Although a large number of studies have found beneficial effects from a number of supplements, they have not been the subject to the same large, long-term trials that prescription drugs face.

Gary Frost, professor of nutrition at Imperial College London, says: “There is some evidence that plant sterols are effective in lowering cholesterol, but the level of evidence is not up to the standard that NICE [National Institute for Health and Care Excellence] requires. They are mostly small trials over relatively short periods of time and not in the same league as those for cholesterol-lowering drugs.

“There is also some good evidence that fish oil reduces levels of triglycerides and makes blood less sticky, and so may reduce the risk of heart disease. But again the evidence on prevention of a heart attack is not consistent enough for NICE to make a recommendation.”

> If you’re thinking about taking a supplement that hasn’t been prescribed, talk to your doctor and make sure you do not exceed your daily requirement

In addition, there is a risk in some cases of unwanted side effects. As NHS Choices points out, fish oil supplements could be potentially harmful to pregnant women.

British Heart Foundation dietitian Victoria Taylor says potential users need to be aware that there can be adverse effects. “High intakes of some vitamin and mineral supplements can come with adverse effects,” she says. “The antioxidant vitamins A, E and beta-carotene, for example, should definitely be avoided. Research has shown that these may actually have a harmful effect on health when consumed as supplements.

“If you’re thinking about taking a supplement that hasn’t been prescribed, talk to your doctor before spending your money and make sure you do not exceed your daily requirement.”

INSIGHT

TOP NUTRIENTS FOR CARDIOVASCULAR HEALTH

01 OMEGA 3 FATTY ACIDS

WHY? These unsaturated fatty acids can reduce inflammation, decrease triglycerides and lower blood pressure; research has shown they can also cut the risk of arrhythmias. **FOUND IN** fatty fish such as salmon, sardines and mackerel.

02 QUERCETIN

WHY? A type of flavonoid antioxidant found in deeply coloured fruits and vegetables, known to contain natural anti-inflammatory properties and reduce cholesterol. **FOUND IN** apples, blueberries and red wine.

03 MONOUNSATURATED FATS

WHY? Reduces levels of triglycerides and bad cholesterol, or low-density lipoprotein (LDL); offers protection against metabolic syndrome. **FOUND IN** avocados, nuts and olive oil.

04 COENZYME Q10

WHY? An antioxidant known to lower blood pressure; low levels have been linked with heart failure and chest pain. They have also be found to reduce muscle pains associated with statin usage. **FOUND IN** beef, chicken, nuts and seeds.

05 LYCOPENE

WHY? An antioxidant that prevents the oxidation of LDL cholesterol, which cuts the risk of plaque build-up in the arteries. **FOUND IN** red and pink-coloured fruits, and vegetables such as tomatoes.

06 L-CARTININE

WHY? An amino acid, essential for healthy cholesterol levels, that contributes to healthy heart-muscle cells, especially after a cardiac episode. **FOUND IN** avocados and red meat.

07 MAGNESIUM

WHY? A mineral essential for maintaining a steady heartbeat and normal blood pressure; the heart has the highest magnesium requirement of any organ. **FOUND IN** nuts, green leafy vegetables and added to breakfast cereals.

08 POLYPHENOLS

WHY? Increases nitric oxide production to lower blood pressure; also found to increase levels of good cholesterol or high-density lipoprotein. **FOUND IN** blueberries, raspberries and strawberries.

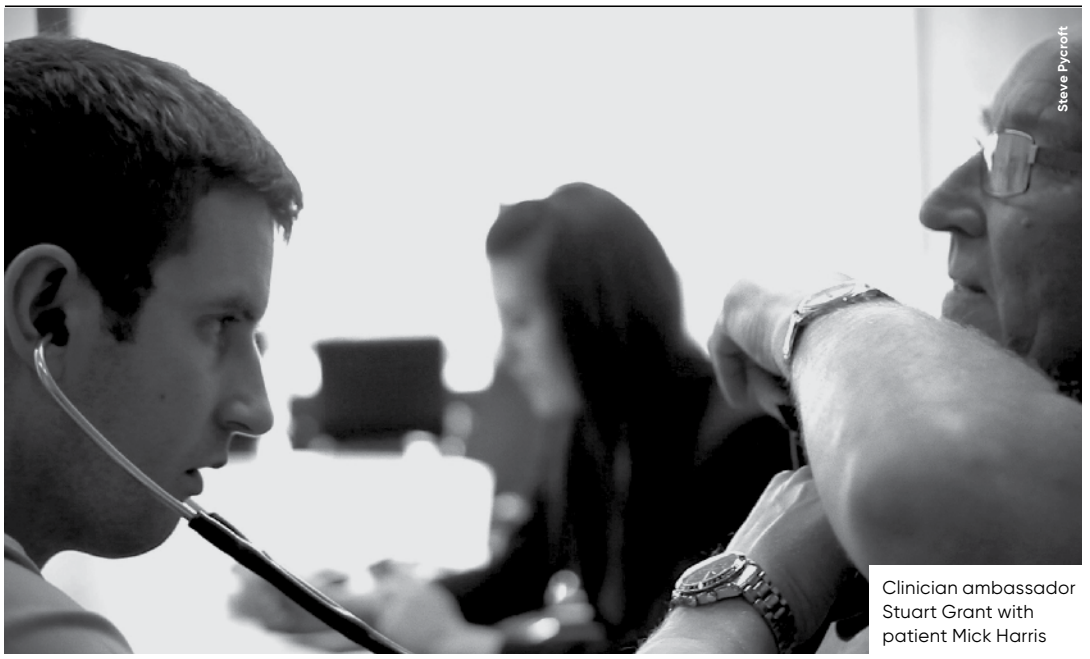
09 RESERVATROL

WHY? Prevents blood clotting and lowers blood pressure; occurrng naturally at low levels in food so best taken as a supplement. **FOUND IN** chocolate and red wine.

10 FOLATE

WHY? B vitamin that helps to maintain healthy levels of homocysteine; higher levels of homocysteine are associated with arterial hardening and thickening. **FOUND IN** green leafy vegetables such as spinach and kale.

COMMERCIAL FEATURE



Clinician ambassador Stuart Grant with patient Mick Harris

The gift of an active life

Heart Valve Voice is a charity that aims to transform the diagnosis, treatment and management of heart valve disease by raising awareness of its severity, to ensure patients are diagnosed early and treated to have the best chance of returning to normal life

Heart Valve VOICE

Since its formation in 2013, Heart Valve Voice has evolved into a patient-led initiative with an action group and team of ambassadors throughout the UK, so the charity reflects the genuine concerns and opinions of patients.

Heart valve disease is a condition caused by wear, disease or damage to one or more of the heart's valves, affecting the flow of blood, which can cause symptoms such as breathlessness, chest pain, dizziness and fainting. The chances of developing heart valve disease increase with age and approximately 1.5 million people over 65 across the UK are affected by the disease, with this figure expected to rise to 19 million by 2050.

Wil Woan, chief executive, says: "Studies like the OxVALVE Population Cohort Study, published in the *European Heart Journal* in June 2016, tell us that the number of heart valve disease patients is going to double by 2046 and we are likely to see a fourfold increase in less invasive procedures such as transcatheter aortic valve implantation (TAVI). Yet awareness of the disease remains stubbornly low. TAVI is a less invasive treatment which allows the replacement aortic valve to be inserted via a catheter usually through a small incision in the groin."

13%+ prevalence of heart valve disease by the age of 75

1.5m people in the UK over the age of 65 are affected by heart valve disease

The charity works on behalf of patients to improve diagnosis, treatment and management of the disease. It supports a growing network of patients who now have a good quality of life after treatment. One such patient is Bill Hanson. Bill has been an avid cyclist for many years, but at the age of 82 he found himself slowing down significantly from his usual 150 miles a week. He was beginning to experience shortness of breath, tiredness and dizziness, which was affecting his life.

In December 2015 an annual test for his pacemaker showed that his aortic valve had become hardened quite quickly. He was informed that he would need to have his valve replaced, which would require open heart surgery. However, his cardiologist suggested to have him placed in the UK TAVI trial being run at Leicester University.

The trial is a multi-centre, randomised controlled trial that compares the clinical and cost effectiveness of TAVI with conventional surgical valve replacement. After explaining that there was a 50-50 chance that he would receive a TAVI procedure, Bill decided to go for it and was lucky enough to be randomly chosen.

On March 30, 2016 Bill had his TAVI procedure at the Liverpool Heart and Chest Hospital. The procedure went well, and was quick and painless. Bill went in for his treatment at 11am and was in recovery by 12.30pm. Dr Joe Mills, his physician, checked in on Bill and found he was feeling quite well. So well, in fact, that Dr Mills suggested, jokingly, that Bill might want to go home the same day. Bill was safely discharged the next day saying that he felt "as right as rain".

> "They really helped to give me my life back

His recovery went well and within a couple of days of being home, he was back to driving his car. Within a fortnight, he was back on his bike. He attended rehabilitation sessions at the Countess of Chester Hospital's Rehabilitation Care Services and was back to his normal, active self within 12 weeks.

Now Bill is as active as ever, keeping up with his cycling and is back to his impressive 150 miles a week. "It has been a real game-changer for me, having this treatment. I just thought that at 82, I would have to slow down and stop doing some of things I loved, but that is no longer the case," says Bill. "I'm fitter than I have been in a long time and I have lots of energy. I can't thank the doctors at LHCH and Chester Hospital enough, they really helped to give me my life back."

For more information please visit www.heartvalvevoice.com

SOUTH KOREA


Nghia Khnanh/Shutterstock

Defying the odds as a 'heart-healthy' country

Famous for manufacturing smartphones and cars, South Korea can add another reason for being in world top rankings – reducing heart disease

OLIVER PICKUP

What springs to mind when asked to think of the things South Korea is most famous for? *Kimchi*, the ubiquitous side dish of fermented cabbages and radishes is likely to be a common first thought.

Next in line might be Seoul-headquartered tech giant Samsung, which last year shipped some 311.4 million smartphones, 96 million more than its greatest rival Apple. And it is probable that Hyundai will feature somewhere in the top three, after all, the automobile company's Ulsan manufacturing facility turns out 1.6 million units a year, making it easily the most productive car factory on the planet.

Few would answer that South Korea is one of the leading countries in the world when it comes to having the lowest rate of fatalities caused by cardiovascular disease (CVD) though. But those who do would be absolutely right.

The World Health Organization (WHO) estimates that 17.7 million people died from CVD in 2015, representing 31 per cent of all global deaths. It is the number-one killer and in the UK specifically British Heart Foundation statistics show that 158,155 people died because of CVD in that same year. And yet in South Korea the number of fatalities caused by heart problems has dropped dramatically in the last 15 years.

The WHO's most recent findings, taken again from 2015 figures, indicate that South Korea has 74.6 CVD-related fatalities every 100,000 people a year, second only to France (72.9), using an age-standardised death rate as opposed to a crude reading, which can skew comparisons between countries. If you were wondering, the UK is currently 12th in the table, on 94.4.

South Korea's low reading is all the more impressive when you consider how far and quickly it has fallen in the last decade and a half from 181.3 per 100,000 in 2000, to 138 five years later, and from 96.7 in 2010 to its present mark.

What has led to this unprecedented decline in deaths caused by CVD? Is it because of the national diet or countrywide lifestyle changes, or is it due to the increase in affluence and access to better medical care? As usual with complex questions such as this, the answer appears to be a combination of elements, says Gretchen Stevens, a technical officer in the Department of Health Statistics and Information Services at the WHO.

"South Korea is a very interesting country because it has had such a rapid change in this area," says the American statistician, speaking from her organisation's Geneva base.

"Cardiovascular diseases are very complicated and there are quite a few lifestyle factors which are important distal determinants, such as tobacco smoking, physical activity, diet and nutrition. And there are more proximal determinants, including raised blood pressure, raised blood cholesterol and diabetes.

"Unlike wealthy countries, like France or Great Britain, which have had high-quality healthcare for two or three generations, South Korea even 20 years ago was a totally different setting. It is quite amazing that it's now almost at the top of the rankings.

"Not so long ago it was a middle-income country and now it is classed as a high-income nation. So South Koreans can afford better medical care and that plays a part. That said it ends up being very hard to pinpoint one reason why the country is doing a little bit better than most others. It is probably a mix of numerous factors coming together."

A surprising discovery is that coffee consumption could play a pivotal role, for South Koreans adore it. Early last year, *The Korea Times* reported that on average eight out of ten adults drink at least two cups of coffee every day, and a large number of them also grind and make their own coffee at home, in addition to café visits.

A 2015 study revealed that coffee lovers who consume between three and five mugs daily are less likely to develop clogged arteries. An international team, spearheaded by researchers the Kangbuk Samsung Hospital in the South Korean capital Seoul, found that those who drink a moderate amount of coffee have the least risk of producing coronary artery calcium, an early indicator of coronary atherosclerosis. This hardening of the arteries could lead to blood clotting, triggering a heart attack or stroke.

> It is quite amazing that South Korea is now almost at the top of the rankings

That South Koreans enjoy an alcoholic drink and cigarettes, and yet their CVD rates are so low, is a puzzle. A WHO report on the global tobacco epidemic, published earlier this year, found that 39.3 per cent of the men in the country, aged 19 and above, smoke. Ms Stevens' colleague Dr Hai-Rim Shin, who spends all of his time in Asia, says that the South Korean government's recent push to establish a nationwide "multi-section medical service system" has balanced out the effect of smoking and is another reason why CVD-related deaths have decreased.

"Although there is a high prevalence of drinking and smoking," he says, "high blood pressure and sugar levels are well managed thanks to greater accessibility to medical services at the primary healthcare level, which are covered by national health insurance. This offers high-quality medical diagnosis and treatment."

In the last 20 years, a number of specialist cardiovascular centres have sprung up across South Korea, including a unit at the Gangnam Severance Hospital (GSH). Since opening in 1997, doctors at the facility have performed tens of thousands of coronary angiography and in the past decade have added a suite of intervention treatments, such as balloon dilatation and stent insertion using cutting-edge technology and techniques.

An Irish diplomat, who wishes to remain anonymous, travelled to GSH to undergo a "very serious open-heart operation" and testifies: "It made a lasting impression. Firstly, I was treated in a highly professional manner at all times. It was not only the senior staff whose attitude was admirable, all the support staff were, too. My operation was a great success, due to the superb competence and expertise of my doctors, to whom I owe my life."

GLOBAL CVD RATES: BEST AND WORST NATIONS

AGE-STANDARDISED MORTALITY RATES PER 100,000 IN 2015

BEST NATIONS		WORST NATIONS	
FRANCE	72.9	TURKMENISTAN	618.4
SOUTH KOREA	74.6	YEMEN	569.4
JAPAN	76.1	KYRGYZSTAN	547.6
CANADA	76.4	UKRAINE	528.2
ISRAEL	76.8	AFGHANISTAN	524.7

World Health Organization 2017

FOCUS ON EX-SOVIET COUNTRIES


AndreyCherkasov/Shutterstock

France and South Korea may be smugly jostling for top spot in the table of countries that have the fewest cardiovascular health-related deaths, with 72.9 and 74.6 per 100,000 people respectively. But at the other end of the 2015 rankings, complied by the World Health Organization (WHO), the former Soviet Union (fSU) and satellite countries are dominating. And it makes for shocking reading.

Indeed, six of the bottom ten nations used to be part of the Soviet Union, which was officially dissolved in December 1991. Turkmenistan ranks the lowest, with 618.4 deaths per 100,000 people caused by CVD. Kyrgyzstan (547.6), Ukraine (528.2), Uzbekistan (491.7), the Russian Federation (491) and Belarus (479.7) have only slightly better rates, with Yemen (569.4), Afghanistan (524.7), Sierra Leone (517) and Mongolia (483.3) the only non-fSU nations worthy of comparison at that level.

It's an alarming trend and Gretchen Stevens, a technical officer at the WHO Department of Health Statistics and Information Services, believes it's largely down to alcohol consumption.

"It is a major factor," she says. "It's not lack of medical care, because if you compare those countries with, say, Latin American nations, they have better provisions yet fare much worse.

"The data that we have shows very high quantities of alcohol consumption in those countries. And there are also very unhealthy patterns of binge drinking in contrast to some of the western European nations, which also have a relatively high alcohol consumption level, although the pattern is much healthier.

"It is widely known that excessive drinking can lead to high blood pressure, and hypertension shows up again and again as a major determinant for CVD."

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NINE OUT OF TEN STROKES ARE PREVENTABLE!*

*O'Donnell et al. The Lancet. 2016.

photo: Adignos

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WHY?

Stroke is the second most common cause of death world-wide. The main risk factors include undetected cardiac rhythm disorders – primarily atrial fibrillation. Atrial fibrillation frequently occurs only sporadically and without symptoms, making it often difficult to detect by routine diagnostics or check-ups. Preventicus Heartbeats was developed for exactly that unmet need – as an effective add-on to a physician's or even a cardiologist's diagnosis. Regular self-measurements can detect sporadic atrial fibrillation and are especially indicated in persons aged 55 years and older in association with risk factors like high blood pressure, heart palpitations, diabetes or chest pain.

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