

Heart Matters

Inspiration | Information | Support

Autumn 2024

Mouth-watering curries

Healthy tweaks to your favourite meals

Waiting for lifesaving treatment

We're campaigning for people like Dot who waited 20 months for heart care

Happy tummy, healthy heart

Best foods to boost your gut health

Stress and your health

What's the link? Plus, tips to feel better

Atrial fibrillation science

What the future might bring for people with this heart rhythm condition

British Heart Foundation



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Content you can trust

We put together each issue of Heart Matters with the help of healthcare professionals including doctors, cardiologists, psychologists and specialist nurses.

Every article is triple-checked by our specialist cardiac nurses and dietitians, as well as our research and statistics experts.

We take pride in being editorially independent, meaning our information will never be influenced by BHF's partners or any other third parties.

So you can feel confident that what you're reading is medically accurate, unbiased and up to date.

Editor's letter



Hello, I've got two exciting pieces of news!

Heart Matters won best email newsletter at this year's PPA Awards, the 'Oscars' of the magazine world. And we also recently reached a big milestone: we now have 400,000 members signed up to our email newsletter and magazine. I'm so proud of this community and how you support each other to live better with your conditions.

Your shared stories also have the potential to drive bigger change. In this issue we hear from Dot and Glynn, two readers whose lives have been impacted by delays to vital heart care. British Heart Foundation is calling on our new government to ensure those waiting for appointments, tests and treatments get the help they need. Turn to page 10 to find out how you can support the campaign.

In this issue, we focus on the connection between your emotional and physical health. We examine recent headlines claiming that anger can raise your risk of a heart attack (page eight) and share helpful tips for managing stress (page 26). For many of us, living with a heart condition can bring up worries about the future. We hear from an expert and two people who have learned to cope with fears of dying (page 30).

This issue is also filled with simple ways to boost your health. We offer tips for coping with low blood pressure (page 14), explain how to make sense of your cholesterol test results (page 16), and share Neil's inspiring story of getting back to his favourite sport after a difficult diagnosis (page 40).

If you've got a story, tips or feedback, we'd love to hear from you. Email us at hmeditor@bhf.org.uk or send a letter to the address on page four.

We want to keep Heart Matters free for everyone who needs it. If you have found this magazine helpful and can afford to donate, we'd be grateful. Visit bhf.org.uk/HMdonate or send a cheque payable to British Heart Foundation, addressed to BHF, 2300 The Crescent, Birmingham, B37 7YE.

Rachelle Beaven

Rachelle Beaven, Editor



Have your say on Heart Matters

Is there something we could do better? Go to bhf.org.uk/heartsurvey to complete our short questionnaire and tell us what you thought of this issue. We'd love to hear your views on our latest articles, as well as your own ideas for future stories you'd like us to cover. Prefer to write us a letter? You can also post your comments to Heart Matters at our address on page four.

Heart Matters is published by the British Heart Foundation, Greater London House, 180 Hampstead Road, London NW1 7AW. ISSN17459753 The British Heart Foundation is a registered charity in England and Wales (225971) and in Scotland (SC039426). Views expressed in this magazine are not necessarily those of the British Heart Foundation. The BHF does not endorse third-party products and services featured in Heart Matters. Information is correct at time of going to press. © BHF 2024. G204/0924



Your letters



We love to read your emails, letters and tips, so keep writing: hmeditor@bhf.org.uk or **Heart Matters, British Heart Foundation, 180 Hampstead Road, London NW1 7AW**

‘Oldies’ need equal treatment

I was interested to read Professor Vijay Kunadian’s article about championing under-represented groups to provide better heart healthcare as I can relate to it closely (Spring 2024, page 35; bhf.org.uk/health-inequalities).

Aged 61 I had an angiogram to determine what treatment I needed for angina and now, aged 75, I have an appointment for another angiogram. Perhaps I’m a lucky one, nevertheless, I am happy to see the professor’s efforts to campaign for us ‘oldies’ to get the treatment we need.

Mike Spencer, Somerset

Feeling better about fatigue

I have just finished reading your article ‘Living with fatigue’ (Spring 2024, page 10; bhf.org.uk/fatigue).

We’d love to hear your views: take our survey

Here at Heart Matters, we value your feedback. Whether you read the magazine cover to cover, or just enjoy browsing for recipes and tips, we’d like to know what you think of our latest issue.

Our short readers’ survey takes about 10 minutes to complete and will help us make the magazine even better. Your answers will be used to shape future Heart Matters stories — so take this chance to tell us what you would like to read about next.

- Go to bhf.org.uk/heartsurvey to take the survey.



I experience fatigue and this article explains it all so well. I love the idea of the pie of energy and how to pace yourself. It was all such useful information that has made me feel a lot better about myself and how to deal with the fatigue.

Joanne Clarke, Kent

Healthy recipes guaranteed

I always love your recipes as I don’t have to think, ‘Is it healthy?’ Also, importantly for me, a lot of your recipes do not take too long to prep and cook, as I get fatigued if I’m on my feet for too long. I want to continue to cook and eat healthily, so your simple recipes that take little time to prepare are key for me. Thank you for all you do.

Lesley Finn, Leicestershire

Tried and tested by you

‘I have lost over seven stone’

I’ve been making your healthy pasta recipes (Spring 2024, page 19; bhf.org.uk/pastarecipes) for my wife and myself. In 2013 my doctor gave me six months to live if I didn’t change my ways. I have lost over seven stone in total!

Peter Haylor, West Midlands

Fish tacos full of flavour

I had all the ingredients to make your fish tacos (Summer 2024, page 21; bhf.org.uk/fish-tacos), for tea. So, that’s what we had! I had to substitute cod for haddock and Greek yogurt for natural kefir yogurt but, oh my word it was delicious. Super tasty and healthy!

Julie, Cornwall



Tahini dressing tips

Thank you for your article on salad dressings. (Summer 2024, page 24; bhf.org.uk/salad-dressings). Tahini dressing goes well with falafel, and I like using lime juice instead of lemon. Tahini dressing seems to solidify if kept overnight, but a few drops of water solve this issue.

Peter Kerry, Kent



Try my homemade dessert

I make this instead of buying ultra-processed desserts:

- 500g fresh strawberries (or fruit of your choice)
- 1 banana
- 4 tbsp of low-fat Greek yogurt
- 3 or 4 small leaves of neutral gelatin
- 100ml low-fat milk

Soak gelatin leaves in water for 5 minutes. Squeeze out excess water. Heat milk and dissolve gelatin in the milk. Blend strawberries, banana and milk then mix in yogurt.

Pour into bowl, pie dish, individual cups or similar containers and leave to set in the fridge for four hours, preferably overnight.

Janet Brink, Benitachell, Spain

Veggie gravy idea

I noticed a letter asking about a vegetarian gravy (Spring 2024, page four). I make sauces with my electric soup maker. It is a handy way to make a ‘gravy’ to go with other meals. You can experiment to get a mix that suits you and add herbs and spices for lots of different and tasty flavours.

Carolyn Lewis, Shropshire

Dehydration warning

At 46 I was diagnosed with atrial fibrillation (Summer 2024, page 10; bhf.org.uk/AFtips) with no other heart condition. My tip is how critical hydration is. My last episodes were triggered by going to the gym then sauna and not being hydrated — I have since given up saunas.

Simon Smith, West Midlands

Have a nap if you need it

I was born with a heart condition and when I’m feeling really tired (Spring 2024, page 10; bhf.org.uk/fatigue), I will have an hour’s nap as my body needs it. But otherwise, I will go for a walk for fresh air, meditate, do crafts or exercise by doing tai chi or Pilates.

Clare Williams, Cowny

Emotional care is key with fatigue

Your article showed me I am on the right track when it comes to managing the fatigue that comes with coronary heart disease and heart failure, but I particularly found the emotional management very useful. The fact that people think you’re just lazy is very real, especially if you’re retired.

Amanda Mary Stokes, Surrey



His Majesty the King appointed BHF Patron

King Charles III has been welcomed as BHF's Royal Patron. He succeeds his late father, Prince Philip, who was our patron for 60 years.



BHF Chief Executive, Dr Charmaine Griffiths, said: "It is an absolute privilege to welcome His Majesty the King as our Royal Patron. His Majesty's commitment to BHF reflects our proud heritage of over six decades funding groundbreaking research into heart and circulatory diseases to save and improve lives."

Heart information in your language

Do you read Bengali, Polish, Punjabi, Romanian or Urdu?

Then head over to our new language hub where our most popular pages have been translated into these five languages.

You'll find a wide range of heart-health information on different topics, including common heart conditions like angina, plus tips on how to live a healthier lifestyle.

- Read now by going to bhf.org.uk/inyourlanguage



MRIs take an image so have fewer risks than an invasive coronary angiogram

Scans could help diagnose heart attacks without the need for an invasive test

Thousands of people with a suspected heart attack in the UK every year could avoid having an invasive procedure if they have an MRI scan of their heart first. This is the suggestion of research part-funded by British Heart Foundation (BHF).

The study looked at whether MRI scans could be used as the first investigation for people admitted to hospital with symptoms of NSTEMI heart attack – when the coronary arteries may be partly, rather than completely, blocked.

This differs from current guidance that recommends invasive coronary angiography (ICA) as the first investigation for about 50,000 people hospitalised with NSTEMI heart attacks a year.

ICA uses a thin tube to insert dye into the coronary arteries. Then an X-ray is used to see if the arteries are narrowed.

In the new study, University of Oxford researchers used MRI scans to look at the hearts of 100 people with suspected NSTEMI

heart attacks before they had an ICA.

They found the scans cast doubt on a heart attack diagnosis in just over a quarter of them (29 people), either showing their heart was normal (11) or affected by another heart condition, such as myocarditis (18).

If MRI scans had been used to plan their treatment, other non-invasive investigations, like a heart CT scan, could have been done before an ICA, the researchers said.

Doing more tests after a scan would often still be needed. They noted that four of the 11 people with 'normal' hearts were found to have obstructed coronary arteries after having an ICA. The research concluded that an MRI scan-first approach could

change care for 50 per cent of people with suspected NSTEMI heart attacks.

The study was published in the journal JACC: Cardiovascular Imaging and presented at the British Cardiovascular Society conference in June.

“A scan-first approach could change care for 50% of people with suspected NSTEMI heart attack

Obesity drug lowers heart attack risk even without weight loss

Weight-loss drugs containing semaglutide – the key ingredient of Wegovy and Ozempic – could reduce people's risk of having a heart attack or stroke, even if they do not lose any weight, according to an analysis presented at an obesity conference.

The analysis looked at research published in 2023. In this research people with heart disease and excess weight or obesity were either given weekly semaglutide injections or a dummy injection for an average of 2.75 years. The health outcomes of the two groups were compared.

The research, which included 17,604 people, showed semaglutide lowered the risk of having a heart attack, stroke or dying from coronary heart disease by 20 per cent. It also found that people treated with semaglutide lost 9.4 per cent of their body weight on average after two years.

The new analysis, presented at the European Congress on Obesity, delved deeper into this data.

20% lower risk of heart attack, stroke or dying from coronary heart disease

It discovered that those taking semaglutide who lost no weight, or a small amount, or even gained weight, also benefitted from a fall in the risk of having a heart attack, stroke or dying from coronary heart disease.

This suggests the drug's heart benefits are similar to those who lose a larger amount of weight.

"This large study shows that for people already diagnosed with heart and circulatory conditions, semaglutide could be a useful addition to the medicines they take," said BHF Associate Medical Director, Dr Sonya Babu-Narayan. "Because, even when they had not lost weight, the drug still lowered their risk

of heart attack and stroke, maybe due to beneficial effects on blood sugar, blood pressure and inflammation on the heart."

Novo Nordisk, which makes Wegovy and Ozempic, funded the analysis and the 2023 New England Journal of Medicine study.

Stop binning old homeware and join the 'slow-ware' trend

Are you about to throw away some cushions, curtains, crockery or a kettle?

Well, stop right there. A new BHF survey of 2,000 people shows that nearly two-thirds of them threw away homeware that was good enough to be donated to charity and that over half regularly bought new items.

Instead, BHF is encouraging shoppers to adopt 'slow-ware' by donating what they no longer want and buying pre-loved homeware instead of new items. "We've made it easy to stop quality pieces from going in the bin. You can book home collections, post them to us or drop them into your local shop," said BHF Retail Director, Allison Swaine-Hughes.

- Go to bhf.org.uk/shop/donating-goods to discover more ways to donate.

Former England football star becomes BHF ambassador

Former Arsenal and England football player Jack Wilshere and his wife Andriani have become BHF ambassadors after their daughter, Siena, was diagnosed with a heart defect at the age of five.

Siena, now six, was having coughing fits before doctors found she had a hole in her heart. She had open-heart surgery to repair the defect and has recovered well.

The couple turned to the BHF website to learn more about Siena's condition, and aim to raise awareness about congenital heart conditions (ones you are born with).

"We're supporting BHF because without lifesaving research keeping children's hearts beating, we might not have Siena here with us today," Jack said.

- Find out more at bhf.org.uk/congen



Diary dates

October 2024

BHF Virtual Walking Challenge. Join hundreds of others walking 31 miles over the month to power lifesaving research. Walk your miles wherever you like, in your own time, and at your own pace. Sign up at bhf.org.uk/WalkforHeart

27 April 2025

Manchester Marathon. Join Team BHF at one of Europe's largest marathons. Run through the fantastic city of Manchester on a super-fast and friendly route. Find out more by going to bhf.org.uk/hmmanchester or call 0300 222 5721 (weekdays 9am to 5pm).



Behind the headlines

The Sun, 21 May 2024

“Cheap 4p supplement could INCREASE heart disease risk rather than lessen it, scientists warn”

Fish oil supplements could raise healthy people’s risk of atrial fibrillation (AF) and stroke, suggests research covered by several UK newspapers.

Oily fish is a rich source of omega-3s, which have been linked to a lower risk of coronary heart disease when part of a healthy diet. But the study in BMJ



Medicine found that healthy people who took fish oil supplements had a 13 per cent increased risk of developing AF and a 5 per cent raised risk of stroke, compared to those who did not.

The study also found that people with heart conditions who were taking the supplement had a lower chance of developing other heart issues.

OUR VERDICT

While food high in omega-3s can help lower your risk of heart and circulatory diseases, this study shows the jury is still out on the benefits of taking supplements, like fish oil, that contain omega-3s. Instead, look at your whole diet to prevent coronary heart disease. The Mediterranean diet, which is rich in omega-3s from fish, nuts and seeds, has consistently been shown to lower the risk of heart attack and stroke.

For example, those with AF were 15 per cent less likely to have a heart attack, while those with heart failure had a 9 per cent lower chance of death.

The Chinese researchers looked at data from 415,737 British people who did not have heart or circulatory problems at the start of the study.

They followed them for about 12 years to see who developed heart issues, who did not, and how fish oil supplements affected their health.

The data showed 31 per cent ‘regularly’ took fish oil supplements at the beginning of the study. But the researchers did not know what ‘regularly’ meant, what fish oils the supplements contained, and if people took them long-term.

A number of UK media outlets accurately reported that the study was observational, so did not prove cause and effect, as other unknown risk factors for heart and circulatory diseases may have affected the results.

However, The Telegraph and The Sun incorrectly said the researchers studied the effects of “cod liver oil supplements” rather than any form of fish oil supplement.

And The Sun and The Times stated people took the supplements daily, which was not true.

Daily Mail, 1 May 2024

“Getting angry may increase your risk of a heart attack or stroke for 40 minutes afterwards, study suggests”

Feeling angry could temporarily stop blood vessels working properly, which over time could damage blood vessels leading to a higher risk of heart attack or stroke, say US researchers.

Their study of 280 healthy adults looked at their blood vessel function immediately after they performed an eight-minute task that created feelings of either anger, anxiety, sadness, or a neutral feeling.

They found with anger the blood vessels did not open (dilate) as well for at least 40 minutes after the task, compared to having neutral feelings.

Several UK media outlets covered the study published in the Journal of the American Heart Association.

The Sun claimed, “Fits of fury could raise your death risk by damaging the heart.” But the study did not find short bursts of anger affected participants’ hearts. It just looked at how one moment of anger affected blood vessels shortly afterwards.

Meanwhile, The Daily Mail and The Times wrongly reported that the study found anger may increase the risk of a heart attack for up to 40 minutes – when the study only found blood vessels remained more restricted than usual for this length of time.

OUR VERDICT

Feeling angry every so often is not going to increase your risk of a heart attack or stroke. But more research is needed to see how frequent anger could affect the heart over time. What we do know, however, is that anger can be a sign of stress, which can lead to unhealthy habits that increase your risk of coronary heart disease.

- Turn to page 28 for tips to relieve stress in the moment and reduce it in the long term.

What we've learned this issue



Every issue of Heart Matters teaches us things we did not know before. Here are a few of the nuggets we found interesting and useful this time

Chew 300mg of aspirin if you think you're having a heart attack (as long as you're not allergic to it). Aspirin helps stop blood clots forming, which cause most heart attacks.

Ask the expert, page 15



Atrial fibrillation may not be one condition but many. Now scientists are studying people's hearts, cells and genes to unravel all the different types.

What's next in atrial fibrillation, page 34



Popular low-carb diets have given carbs a bad name. But gram for gram, they contain less than half the calories of fat and are part of a healthy diet.

Ask the expert, page 20



Stress is part of the body's 'fight or flight' response. It likely evolved to help our ancestors survive sudden dangers, like wild beasts.

Stress and your health, page 26

Deaths from heart disease among the under-75s in the UK have reached a 14-year high, reversing decades of progress on reducing early deaths from heart and circulatory diseases. **"We're waiting too long for heart care", page 10**



If you have a heart condition, doing some physical activity can be better for your health than doing nothing. If you're doing a new activity, start slowly and build up gradually.

How to find safe exercise limits, page 43



If you do just one thing...

Eat 30 different types of plant foods a week to boost your gut health, which in turn helps improve heart health. They should include fruits, vegetables, wholegrains, nuts, seeds and legumes.

Why a healthy gut is good for the heart, page 24

"We're waiting too long for heart care"

A British Heart Foundation campaign is urging the new UK Government to act on the current crisis in heart care that's leaving people struggling with symptoms, missing out on time-critical treatments and contributing to a rise in early deaths

"I was very worried that I'd become housebound if I didn't get the treatment I needed soon," says Dot Addley.

Dot spent 20 months waiting for a procedure to open up a blood vessel which, if left untreated, could have led to a heart attack or stroke. She was struggling with breathlessness, chest tightness, and pain in her left shoulder, neck and arm, which came on when she exerted herself.

"Just carrying the vacuum cleaner up the stairs brought the symptoms on," says the 81-year-old, who lives on her own in her home of 28 years in Faversham, Kent.

"My health was worsening all the time. I could do less and less every day. It was getting more difficult to be independent and do the things I love, like bird watching. I used to go out with my local group all the time, but that dropped to once a month."

Dot's ill health had been caused by a build up of fatty plaques in her coronary artery, which meant not enough blood and oxygen was getting to her heart, causing the angina-like symptoms she describes.

Dot felt so unwell in April this year she went to A&E and doctors said they would put her on the 'urgent' waiting list for the procedure she was

waiting for – a percutaneous coronary intervention (PCI) to unblock her artery and put a stent in. She was told the waiting time for 'urgent' cases was four weeks. But it was another three months before she had the procedure.

Hospital care delayed 18 hours

It's not just people like Dot who have diagnosed heart disease who are waiting for care. Those needing emergency heart treatment have been hit by delays too.

Glynn Evans waited 18 hours to get hospital treatment for a heart attack when he was on holiday in Cornwall.

421,000 people are on the heart care waiting list in England

"My wife, Lyn, called 999 in the evening. She kept phoning, and they kept saying 'we're very, very busy, you're on the list'. It went on and on like that until the ambulance eventually arrived the next morning," says the 76-year-old from Bourne in Lincolnshire.

Glynn then waited for hours in a queue of 24 ambulances outside A&E. He waited so long a clinician came out to the ambulance to do the blood test needed to see if he'd had a heart attack. The clinician seemed very worked up about the situation, Glynn remembers.

The delay meant he missed the 'golden hour' for heart attack care – being admitted to hospital within an hour of symptoms means doctors can perform treatments quickly, which helps prevent more serious damage to the heart and even death.

These treatments include giving drugs to dissolve blood clots that are blocking the coronary arteries, or a PCI (the same procedure Dot was waiting for) to open up the arteries. Blood clots are the cause of most heart attacks.

Once in hospital, Glynn had more tests to see the extent of his heart attack and a PCI to put two stents into his coronary arteries. But Glynn, who has since been diagnosed with heart failure, says: "The fact is I waited too long for heart care. And I do wonder if my health would be better now if I'd been seen sooner."

Health services under pressure

Ambulance waiting times in England ►

Photography by Tim Bekir

Dot's worsening condition left her cooped up at home rather than out bird watching

have improved since Glynn's 18-hour ordeal in April 2022, which occurred in a part of the country with some of the worst delays at the time.

Now, people wait almost 35 minutes on average for an ambulance if they're having symptoms of a heart attack or stroke, according to NHS England figures for June 2024. This falls short of the 30 minute target for these calls.

There has also been a dramatic rise in the number of people waiting more than 12 hours to be admitted to hospital via A&E – sitting in waiting rooms, admission units or ambulances, like Glynn did.

NHS England figures show this was a rare occurrence up until early 2021. But since then, numbers have shot up with more than 38,000 people waiting more than 12 hours to be admitted to hospital via A&E in June this year.

Meanwhile, hundreds of thousands of people with diagnosed heart and circulatory diseases, like Dot, are

“We know NHS staff are doing all they can, but heart patients have told us they're worried

waiting for appointments, tests and treatments. More than 421,000 adults were on the heart care waiting list in England in May 2024, show NHS data. This is a record high.

In February 2020, before the Covid-19 pandemic, this waiting list stood at just over 233,000.

As Dot points out, the delays are “no one person's or department's fault.” The whole of NHS England is under immense pressure. “You wait to see a GP, you wait to see a specialist, you wait for investigations, you wait for the results, then you wait for treatment. It all adds up, until you're waiting too long,” Dot says.

Glynn agrees: “The ambulance guys were superb. The doctors and nurses were superb. But they were under enormous pressure. I just got the feeling they could not cope.”

But, as Dot and Glynn's experiences highlight, waiting too long for heart care can come at a hefty price. It can lead to more severe disabilities and complications – and even earlier death.

Heart disease deaths rising

A British Heart Foundation (BHF) analysis of public data for 2022 reveals deaths in the under 75s from heart and circulatory diseases in England have risen to a 14-year high.

This reverses decades of progress on reducing the number of people dying prematurely with these conditions.

“Worst heart care crisis”

It's the “worst heart care crisis in living memory,” says Dr Sonya Babu-Narayan, BHF's Associate Medical

Director and Consultant Cardiologist. “More than 11,000 people are waiting over a year for heart care, including procedures like stents and even surgery. This was unheard of in the past. Only 28 people in England were waiting this long in February 2020.”

“People are also facing delays in emergency care for heart attacks and strokes, where every minute matters. And for treatments and services to help lower health issues that raise the risk of heart disease such as high blood pressure, high cholesterol and excess weight,” says Dr Babu-Narayan.

“We know NHS staff are doing all they can, but heart patients have told us they're worried and feel in limbo. And while they wait, their condition may get worse because they're missing out on time-sensitive treatment.”

Hearts need more, says BHF

In response, BHF has launched a campaign to put heart care at the top

of the new UK Government's agenda. The ‘Hearts need more’ campaign urges the government to take action in three areas: to prioritise heart care to minimise the time it takes to get help, to better prevent heart disease and stroke by addressing risk factors,

and to boost research to unlock future treatments and cures.

“The scale of the challenge facing heart care is immense,” Dr Babu-Narayan warns. “That's why we need everyone to back this campaign.”

How to support ‘Hearts need more’ campaign



- Visit bhf.org.uk/heartpledge or scan the QR code below to sign our pledge calling on the new government to act on heart care.



- Tell us your story about waiting for heart care by emailing hmeditor@bhf.org.uk

Glynn's story

“There were 24 ambulances queuing up”

Retired teacher Glynn Evans called an ambulance for a heart attack but it took 18 hours for him to get into A&E.

“We were down at our house in Cornwall, supposed to be taking care of the grandkids, and I got a pain like indigestion in my chest, which got worse through the day.

By evening, I knew it was more serious than indigestion. My son-in-law was going to take me to hospital, but he said the last thing he wanted was for his father-in-law to keel over in the back of the car. So, my wife called 999.

We waited and waited for the ambulance. It eventually turned up the next morning. Then when I got to the hospital I couldn't get into A&E. I reckon there were 24 ambulances queuing up. I just stayed in the ambulance and a clinician came out to see me to do a blood test. He came back later and said: ‘It's not good news, you've had a heart attack’. I waited 18 hours for hospital treatment.

Once I got into hospital everyone was very, very good. But when I heard someone say I'd missed the ‘golden hour’ for heart attack care, I felt quite angry. There's nothing anyone can do about my 18-hour wait now. But I don't want anyone else to have to wait that long and possibly miss out on the best available treatment.”



Dot's story

“I was worried if I had to wait much longer they wouldn't be able to put the stent in”

Dot Addley waited 20 months for a potentially lifesaving procedure to open up a coronary artery. She finally had the PCI procedure in July this year.

“People say I don't look 81, because I don't have grey hair. It's still auburn, my natural colour. I didn't use to feel my age either, until this past year when my angina symptoms were making it hard to do anything. I had to stop doing the things I love, like bird watching and gardening, because the next day I'd be so whacked out.

My underlying condition is that, genetically, I make a lot of cholesterol that has clogged up my arteries. I had triple-bypass surgery nine years ago to treat blocked arteries. Then in November 2022, I started having angina symptoms, and late last year I had a scan that found my coronary artery was blocked and possibly needed a stent.

I used to work in the NHS and I know the pressure it's under. I know there are many people still on the waiting list that are just as deserving as me. But I was worried if I had to wait much longer they wouldn't be able to put a stent in. When I finally had the PCI, the artery was totally blocked, but the doctors thankfully got a stent in.” ●



5 tips to try if you have low blood pressure

If you feel dizzy or faint when you get up in the morning, after sitting for a long time or following a large meal, you might have low blood pressure (below 90/60mmHg). Here are five tips on how to manage low blood pressure symptoms at home

1 Get up slowly

To avoid feeling lightheaded when you're getting up from bed, take your time. Stretch out to get blood flowing around the body before moving to a sitting position, then stand slowly. Sleeping with your head elevated can also help. You can do this with extra pillows under your head or by placing wedges under the mattress or bed legs. And when you're getting up from sitting, cross and uncross your legs a few times before standing.



2 Move more

Sitting watching TV or working at a desk for too long can cause your blood pressure to fall. If you can, go for regular walks throughout the day – or why not try a standing desk? If you're unable to move around, then supportive elastic stockings can also help. They raise your blood pressure by putting extra pressure on your legs which helps keep blood pumping around the body. But speak to your GP first.

3 Eat smaller meals, more often

Ever wondered why you slump after enjoying a big festive spread? One of the reasons is because your blood pressure drops as more blood flows to the gut to help with digestion. So, try having smaller meals, more frequently.

4 Drink plenty of fluids

About 55 per cent of blood is plasma, which is 90 per cent water. This means making sure you drink plenty of water is key to keeping your blood pressure healthy. The NHS recommends six to eight glasses of fluid per day. But if your doctor has put you on fluid restriction, speak to them before increasing your fluid intake.

5 Choose saltier foods

You may know that eating too much salt is bad for the heart. However, if your blood pressure is very low, your doctor may recommend increasing your salt intake. When doing so, choose healthy nutritious foods instead of salty processed foods. Olives, anchovies and smoked fish are good options. But, it's important to speak to your GP before eating more salt. ●

Ask the expert

Send in your health questions

Email: hearthelpline@bhf.org.uk

Call our Heart Helpline: **0808 802 1234**

Write to: **Heart Matters, British Heart Foundation, 180 Hampstead Road, London NW1 7AW**

Q Should I take aspirin if I think I'm having a heart attack?

A Ruth Goss says:

When someone has a heart attack, the blood supply to the heart is blocked. This is often caused when a blood clot breaks off from hardened fatty material in coronary arteries, and lodges in the blood vessel.

Some of the ways doctors treat a heart attack include stopping these clots from getting bigger and blocking the artery more, and making the blood thinner so more can get past the clot and deliver oxygen to the heart.

This is where aspirin comes in. Aspirin is an 'anti-platelet medicine' which means it acts on small blood cells called platelets. These play an important role in blood clotting and wound healing because they make the blood stickier.

Aspirin works by reducing this



stickiness, which in turn lowers the risk of blood clots forming and makes the blood thinner. This is why the NHS recommends chewing 300mg of aspirin if you think you're having a heart attack. You can do this while waiting for an ambulance to arrive.

However, only do it if you have aspirin nearby, or if someone can get it for you. Do not go looking for it if you think you're having a heart attack because it's important to rest and stay calm until help arrives. And do not take aspirin if you're allergic to it.

If you have had a heart attack, or are at risk of having another one, your doctor may suggest you take a low dose of aspirin every day, for the long term. NHS advice says this can reduce your risk of having another heart attack.

If you have questions about being on aspirin, speak to your GP or pharmacist.



Ruth Goss,
Senior Cardiac
Nurse at
British Heart
Foundation

Q Can exercise really help lower cholesterol?

A Dr Louise Bradshaw says:

When it comes to lowering cholesterol, many people will think of the need to have a diet low in saturated fats. For others, medicines like statins, prescribed to help lower cholesterol (a type of fat), will come to mind. But exercise can help too.

Studies show regular physical exercise decreases 'bad' cholesterol (non-HDL cholesterol) levels in the blood and increases 'good' cholesterol (HDL cholesterol) levels. It does this by stimulating the body to move 'bad' cholesterol to your liver so it can be removed from the body.

A BHF-funded study from 2024 also suggests that the more active you are the more saturated fat your muscles use for energy. This means there

is less saturated fat circulating in the body, which lowers your non-HDL cholesterol levels. Scientists think exercise can increase the heart muscle's ability to breakdown lipids too. All these processes help prevent fatty material from forming on artery walls, reducing the risk of a heart attack or stroke.

So, if you're exercising to lose excess weight, or as part of a healthy lifestyle, the good news is you're lowering your cholesterol levels too.

It's still not clear what exercise is most beneficial. But scientists are looking into this. For example, a University of Bath study is investigating whether eating before or after exercise is best for lowering cholesterol. However, what we do know is that any amount of exercise is beneficial for overall health. ●



Dr Louise Bradshaw,
Researcher,
Department
for Health,
University of
Bath

Your cholesterol test explained

BHF Senior Cardiac Nurse Ruth Goss describes the different terms and numbers on your lipid blood test results, and why it's important to lower high cholesterol

If you've had a blood test to check your cholesterol levels, or are due to have one, you may be wondering what cholesterol is, why you need the test, what it will look for, and what the results mean.

Cholesterol is not in itself a bad thing. It's present in everyone's blood. It comes from the food you eat and is made by the liver too. Cholesterol is essential for many functions in the body, such as making hormones and building cells.

But having too much of certain types of cholesterol, which doctors often call 'high cholesterol' or 'hyperlipidaemia', can increase your risk of having a heart attack or stroke. This is because some types of cholesterol can cause fatty material (plaques) to build up in blood vessels called arteries. This process, known as atherosclerosis, reduces blood flow to your heart and brain.

'Good' and 'bad' cholesterol

To find out whether you're in danger of this happening, doctors carry out a blood test to measure the different

types of cholesterol in your body. This is often called a 'lipid profile'.

The test shows how much 'bad' cholesterol, called non-HDL cholesterol, you have. This type of cholesterol contributes to the buildup of fatty material in your arteries.

Your doctors may also test for another type of 'bad' cholesterol, called LDL cholesterol, but only if they think you may need treatment.

Cholesterol tests measure how much 'good' cholesterol, known as HDL cholesterol, you have too.

HDL cholesterol helps remove excess cholesterol from your blood and in doing so protects your arteries from fatty material, helping to prevent you from having a heart attack or stroke.

What are triglycerides?

Another type of fat in the blood called triglyceride is often tested for alongside cholesterol. Triglycerides are linked to a raised risk of heart and circulatory diseases too, especially if you also have high levels of 'bad' cholesterol or low levels of 'good' cholesterol.

Once they know your blood cholesterol and triglyceride levels, your medical team can advise you on what steps to take to lower your levels to the healthy range if needed (see opposite page).

This could include making changes to your lifestyle and taking medicines like statins.

Are healthy levels the same after a heart attack or stroke?

If you've had one heart attack or stroke, you are at higher risk of having another.

Because of this the recommended cholesterol and triglyceride levels for you are lower than for the general population (see box below left).

Aiming for lower levels helps prevent you from having another heart attack or stroke. This is something healthcare professionals call 'secondary prevention' and usually involves taking medicines like statins, as well as making lifestyle changes, to help lower your cholesterol levels.

Eating a diet low in saturated fats is recommended for everyone, but is particularly important if you have high cholesterol. This means cutting down on butter, red meat and cheese, and upping the amount of fresh veg, fruit, wholegrains, nuts and seeds you eat. Regular physical exercise also helps lower cholesterol (see page 15).

Go to bhf.org.uk/cholesterol to learn more about high cholesterol. ●

Healthy cholesterol levels after a heart attack or stroke	
Total cholesterol	Below 4.0 mmol/L
Non-HDL cholesterol	Below 2.6 mmol/L or 40 per cent below your first test result
LDL cholesterol	Below 2.0 mmol/L

What do the cholesterol and triglyceride results mean and what are healthy levels?

Total cholesterol

Shows the total amount of cholesterol in your blood. It's also sometimes called 'serum cholesterol' or 'TC'.

✓ Below 5.0 mmol/L

LDL cholesterol

Shows levels of 'bad' cholesterol. LDL is short for low-density lipoprotein. It's only tested for if your medical team asks for it because they think you may need treatment. You must fast beforehand.

✓ Below 3.0 mmol/L

Non-HDL cholesterol

Is all the cholesterol in your blood minus your 'good' HDL cholesterol. So it's the total amount of 'bad' cholesterol.

✓ Below 4.0 mmol/L

Total cholesterol: HDL cholesterol ratio

Shows how much 'good' HDL cholesterol you have compared to total cholesterol. The number should be as low as possible and is looked at alongside your other test results.

✓ Below 6

HDL cholesterol

Shows levels of 'good' cholesterol. HDL is short for high-density lipoprotein.

✓ Men: Above 1.0 mmol/L

✓ Women: Above 1.2 mmol/L

Fasting triglycerides

Shows levels of triglycerides after you've been fasting for 10-14 hours. It's more accurate than the non-fasting test and is only done if your non-fasting triglycerides result is high.

✓ Below 1.7 mmol/L

Non-fasting triglycerides

Shows your normal levels of triglycerides. Results can vary depending on what you ate and drank before the test.

✓ Below 2.3 mmol/L

LIPID PROFILE TEST

LDL

HDL

TRIGLYCERIDE

TOTAL CHOLESTEROL

Make healthier curries

Nutritionist Azmina Govindji shares some easy tweaks for you to try at home

Many of us enjoy making South Asian-style curries at home. With a few ingredient swaps and simple changes to the way we cook and serve them, curries can be a healthy part of your diet.

Make your own paste

Bought curry pastes may be convenient but many are high in salt and fat. You can make your own curry paste quite easily and store it in an airtight container in the fridge.



“

You can blend or puree fresh tomatoes and onions and use that as the base of your curry

Here's how:

- Dry roast aromatic whole spices such as cumin seeds, coriander seeds, cloves, cinnamon sticks and whole black pepper. This will provide beautiful flavours without having to add too much salt.

- Grind the roasted spices.
- Add pureed garlic, ginger and green chillies. Mix in a touch of turmeric for a vibrant colour.
- Tailor to suit your taste and mix with a teaspoon of vegetable oil. This will make a paste with a truly authentic, fresh flavour that can be a base for many curries.

Switch saturated fats for oils

Traditionally curry is cooked by first frying onions and spices in either butter, ghee or vegetable ghee. These are all high in saturated fat, and are the fats we want to cut down on.

Make homemade curries healthier by switching to unsaturated oils: rapeseed, corn or sunflower oils, which are all suitable for curries as they are neutral in flavour.

A recipe may suggest using quite a lot of fat to fry in, but you can use smaller amounts. One tablespoon of oil should be enough for a curry for four people.

Or, if you want to make your curry really low in fat, use 10-20 sprays of a spray oil. Using a non-stick pan will help to prevent the onions and spices from sticking. Simply add a little water if it starts to burn.

Swap out coconut milk

Lots of recipes use coconut cream, milk or powder, all of which contain a high level of saturated fat. Adding low-fat Greek yogurt instead will make your curry thick and creamy. If you like, add a tablespoon of gram flour, mixed with a little cold water. It is a low-fat, high-protein flour made from chickpeas.

You can also blend or puree fresh tomatoes and onions and use that as the base of your curry. Cook it in a little oil with your spices, for an aromatic, thick sauce.

Choose your protein carefully

There are no proteins you need to avoid when making curry: meat, fish, eggs, soya mince or chunks, beans and lentils are all good. If you choose lamb or beef, make sure to remove all the visible white fat, and cut the skin from chicken.

Whether you're vegetarian or not, lentils, canned beans or chickpeas make a great low-fat protein addition to your curry, with added fibre. You can make a dal with red lentils or with split mung beans in about 20 minutes as they cook quickly. You will



find these lentils in the Asian food aisle of supermarkets. Or, add a handful of cooked lentils to any curry, which will also make it go further.

Tofu is a good substitute for paneer cheese, which is very high in saturated fat. Choose firm tofu, which will hold its shape, and cook it in an air fryer, or dry fry it in a non-stick wok or frying pan.

Rethink your side dishes

Curry is often served with a lot of side dishes: rice, breads, chutneys, pickles and papadums. They can add a lot of calories, which can lead to weight gain.

Think about swapping from white to brown rice. Brown rice is a wholegrain, which has more fibre.

The same goes for chapatis. If you buy these, look for the brown or wholegrain varieties, or use wholemeal tortilla wraps instead. Avoid spreading butter or ghee on top.

Ready-cooked papadums



Tried this at home?

Followed any of the tips in this article? Or do you have a healthy curry tip to share? Email hmeditor@bhf.org.uk with your thoughts and any photos, or write to the address on page four for a chance to be featured in the next magazine.

For a healthy side, make your own raita with low-fat Greek yogurt, cucumber, fresh coriander leaves, black pepper and cumin seeds. There's no need to add salt – if you like, top with pomegranate seeds for a beautiful, jewelled look.

- Find healthy curry recipes from around the world at bhf.org.uk/curries

Meet the expert



Azmina Govindji is a nutritionist with more than 20 years' experience. She is a published author, has won several professional awards, and is a Fellow of the British Dietetic Association.



Green minestrone soup



Preparation time: 10 mins
Cooking time: 20 mins
Serves: 4
Suitable for home freezing

Each portion contains

Energy 596kJ 143kcal 7%	Carbo- hydrate 14.5g	Fibre 7.6g 25%	Sugars 4.3g Low 5%	Fat 4.7g Low 7%	Saturates 0.9g Low 5%	Salt 0.17g Low 3%
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% = of an adult's reference intake (traffic light colours are based on per 100g)

Ingredients

1 tbsp olive oil

1 small onion, peeled and finely diced

½ leek, finely diced

1 stick celery, finely diced

1 clove garlic, finely chopped

500ml (17fl oz) low-salt vegetable stock

1 courgette, diced

75g (3oz) frozen peas

100g (3½ oz) asparagus tips, or green beans, or broccoli stems, chopped

200g (7oz) or ½ can haricot or butter beans, drained

1 sprig rosemary, or marjoram or thyme

Fresh basil, shredded

Juice of ½ lemon



How we made it healthier

This soup is packed with veggies to help towards your 5-a-day, while the low-salt stock, garlic, onions, leek and herbs create a delicious savoury base without too much salt.

2 Add the stock to the pot, with the courgette, peas, asparagus (or beans or broccoli, depending on what you choose) as well as the haricot (or butter beans) and the rosemary (or marjoram or thyme).

3 Bring to the boil and cook for 10 minutes until the vegetables are

tender. Stir in the basil and lemon juice just before serving.

Cook's tip

As an alternative, use wholewheat pasta instead of the canned beans. This soup can be frozen for up to 3 months. Defrost in the fridge and reheat thoroughly. ▶



Method

1 Heat the oil in a large pot and gently fry the onion, leek and celery for 5 minutes until tender but not browned. Add the garlic and fry for 1 minute.

Lentil and mushroom shepherd's pie with sweet potato

Preparation time: 15 mins

Cooking time: 30 mins

Serves: 2

Suitable for home freezing

Each portion contains

Energy 1513kJ 360kcal 18%	Carbo- hydrate 53.1g	Fibre 13.2g 44%	Sugars 28.7g High 32%	Fat 7.9g Low 11%	Saturates 0.8g Low 4%	Salt 0.36g Low 6%
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% = of an adult's reference intake (traffic light colours are based on per 100g)

- Ingredients
- 350g (12oz) sweet potatoes

½ tsp harissa (optional)

1 tbsp vegetable oil

1 small onion, finely chopped

1 clove garlic, crushed

1 carrot, finely diced

1 celery stalk, diced

1 sprig rosemary leaves, chopped

200g (7oz) or ½ can tomatoes

2 tbsp tomato puree

1 pinch smoked paprika

1 tsp black pepper

200g (7oz) flat mushrooms, chopped

125g (4oz) cooked puy lentils

Method

1

Wash the sweet potatoes but do not peel them. Pierce the skin once with a knife, then boil the potatoes in water for 25 minutes or until a knife goes into them easily. Drain and allow the potatoes to cool until you can peel off the skins and then mash the flesh with a fork and add the harissa (optional).

2

In the meantime, heat the oil in a pan.

3

Add the onion, garlic, carrot, celery and rosemary and cook over a low heat for 10 minutes, until softened.

4

Add the tomatoes, tomato puree, paprika and mushrooms and cook for 5 minutes, then stir in the lentils.

5

Place in a baking dish and top with the mashed sweet potatoes.

6

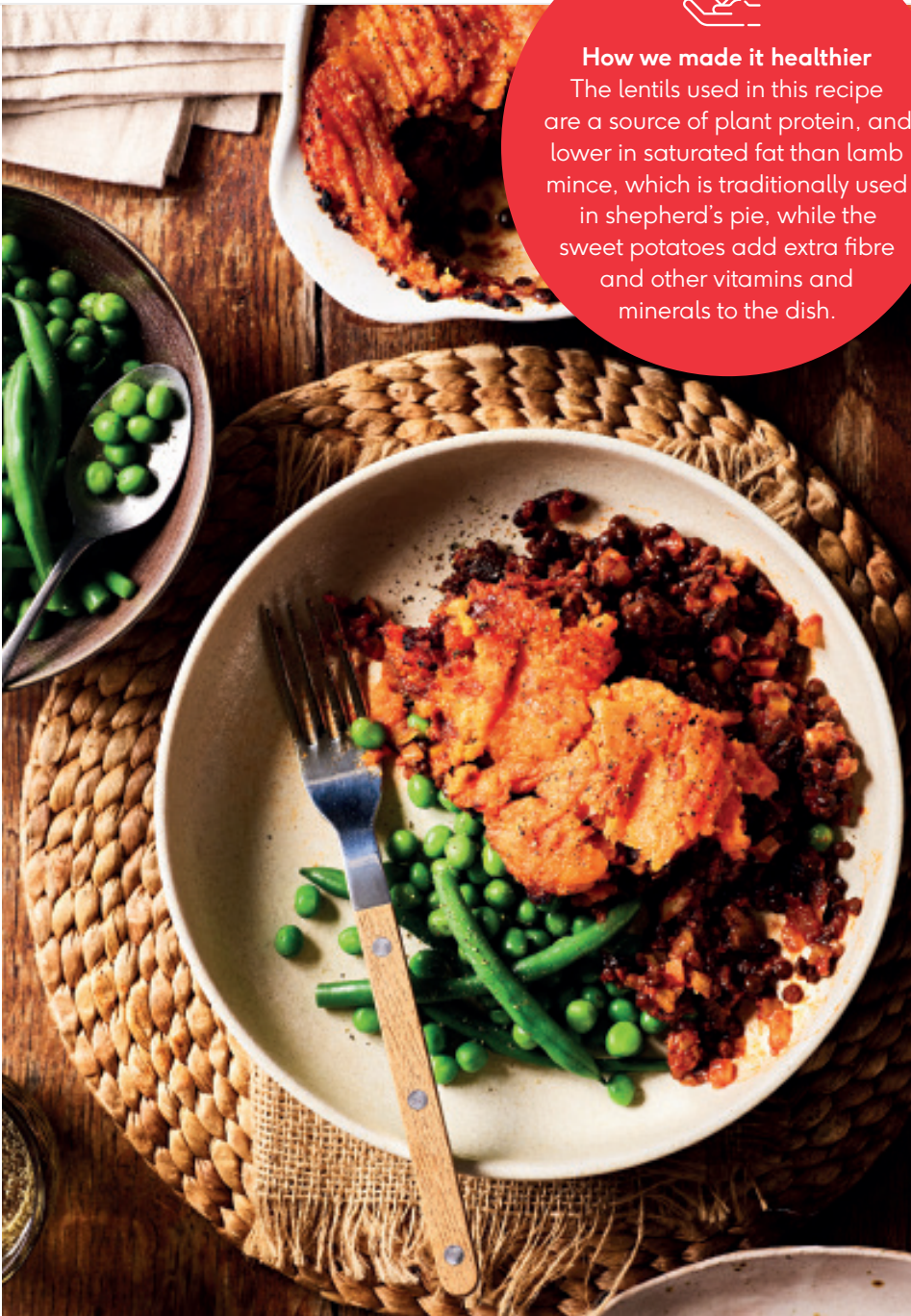
Place the dish under a grill and cook for a couple of minutes until browned.

Cook's tip

Add ½ tsp of harissa to the sweet potato topping to make it a little more savoury in taste.

How we made it healthier

The lentils used in this recipe are a source of plant protein, and lower in saturated fat than lamb mince, which is traditionally used in shepherd's pie, while the sweet potatoes add extra fibre and other vitamins and minerals to the dish.



Vegetable moussaka

Preparation time: 30 mins

Cooking time: 1 hour

Serves: 2

Suitable for home freezing

Each portion contains

Energy 2222kJ 530kcal 27%	Carbo- hydrate 63.2g	Fibre 15.3g 51%	Sugars 19.9g Low 22%	Fat 18.3g Med 26%	Saturates 4.2g Low 21%	Salt 0.41g Low 7%
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% = of an adult's reference intake (traffic light colours are based on per 100g)

- Ingredients
- 1 aubergine, thinly sliced

1½ tbsp olive oil

1 large potato, thinly sliced (approx. 275g or 10oz)

½ onion, finely chopped

1 stick celery, finely chopped

1 red pepper, diced

1 garlic clove, crushed

½ tsp dried mixed herbs

1 tbsp tomato puree

125g (4oz) cooked green or brown lentils from a can

200g (7oz) or ½ can chopped tomatoes

Freshly ground black pepper

For the sauce

1 tbsp vegetable oil

1 tbsp plain flour

200ml (7fl oz) skimmed milk

1 pinch grated nutmeg

25g (1oz) reduced-fat mature cheddar, finely grated

How we made it healthier

Using skimmed milk and a little reduced-fat mature cheddar to make the sauce means this dish is lower in saturated fat than other moussaka recipes. The lentils are a great source of plant protein and add extra fibre.



Method

1

Slice the aubergine thinly and lay it on a tray before brushing it with 1 tbsp olive oil.

2

Heat a frying pan until hot then fry the aubergines in a single layer until softened and lightly charred.

3

Thinly slice the potato and cook in boiling water for 5 minutes, then drain and set aside.

4

Heat the remaining ½ tbsp olive oil in a medium pan and fry the onions, celery and pepper for 10 minutes until softened. Add the garlic, herbs and tomato puree. Cook for 1 minute, then add the lentils

and tomatoes. Cook for 5 minutes, adding a pinch of sugar if needed, and plenty of black pepper.

5

Layer the potatoes, aubergine and lentil mixture into a medium baking dish.

6

To make the sauce, heat the oil in a small pan, add the flour and cook until thickened. Gradually add the milk, stirring until smooth. Stir in half the grated cheese.

7

Pour the sauce over the top of the moussaka, sprinkle with the remaining cheese and bake for 30 minutes at 180°C/160°C fan/gas mark 4 until golden on top. ●



Tried this at home?

We'd love to hear what you thought of our recipes, and any tweaks you made to them. Email your thoughts and photos to hmeditor@bhf.org.uk or write to the address on page four.

Ask the expert

Send in your health questions

Email: hearthelpline@bhf.org.uk

Call our Heart Helpline: 0808 802 1234

Write to: **Heart Matters, British Heart Foundation,**
180 Hampstead Road, London NW1 7AW

Q Do carbs make you gain weight?

A The rise of low-carb diets has seen carbohydrates undeservedly become the baddie when it comes to weight gain. But it's not the carbs themselves that are the problem: gram for gram, carbs contain less than half the calories of fat.

The problem is when you take in too many calories (energy from food and drink). If you eat more calories than your body can burn off, the excess will be stored as fat in your body.

Carbs are an essential part of a healthy diet, and current

recommendations say half our energy should come from carbs.

This may seem high, but there's a good reason you need this amount. They are our body's preferred source of energy for supporting daily activities and exercise, and to help fuel the brain. They also provide vitamins, minerals and fibre, which are important for our overall health.

But not all carbs are equal. Most of us eat too much sugar and processed foods like chips, biscuits, cakes, white breads and refined breakfast cereals. These

are digested quickly, making it easy to eat too much of them. This can ramp up calorie intake, leading to weight gain.

The best carbs for weight loss or maintaining a healthy weight are ones that are not processed. This means whole fruit and veg, lentils and beans, wholegrain and high-fibre varieties of oats, breads, cereals and pasta. These are digested slowly, helping you feel full for longer on fewer calories.

- Go to bhf.org.uk/low-carb for more information.



Tracy Parker
Senior Dietitian
at British Heart
Foundation

Q Margarine vs butter – which is better for your heart?

A Butter and margarine contain a similar amount of fat. But when it comes to your heart health, it's the type of fat that makes the difference.

Butter contains around 50 per cent saturated fat. One teaspoon contains 5g saturated fat, which is a large proportion of our daily recommended intake of 20g for women and 30g for men. This is the same for ghee, grass-fed butter and vegan butter. Eating too much saturated fat can raise non-HDL (bad) cholesterol levels.

Margarines are made from healthy unsaturated oils such as sunflower, olive and rapeseed.

They are no longer made with trans fats, which are not good for the heart.

Some may contain small amounts of palm or coconut oil, both saturated fats, to make them more solid, but most are at least 50 per cent lower in saturated fat than butter. Check the nutrition label to find the ones that are lowest in saturated fat.

It's better for our hearts to replace saturated fats with unsaturated fats. Swapping butter for margarine is one way to do this. But which you choose depends on your overall

diet. If you have a diet high in saturated fat from foods like fatty meats, cakes and biscuits, this is a simple and important swap. But if you're lightly buttering your toast and the rest of your diet is healthy, then butter is unlikely to be a problem.

If you're still unsure, try healthier alternatives like olive oil, mashed avocado, or nut butters. But, all types of fats are high in calories, so use them sparingly. ●



Why a healthy gut is good for the heart

Did you know that poor gut health can also harm your heart? Gut health specialist dietitian Dr Megan Rossi shares her expertise on this fascinating topic

The gut contains trillions of tiny organisms called microbes. These include bacteria, viruses and fungi, which are collectively known as the gut microbiota.

The gut microbiota is found all along the digestive tract that goes from the mouth, through the food pipe, stomach and intestines to the anus. It helps keep the lining of the gut healthy and regulates the immune system.

It also plays an essential role in breaking down the food you eat, which the body then uses to create the chemicals it needs to function properly.

These chemicals include small proteins, fatty acids, hormones and vitamins that help with things like blood clotting and bone, nerve and brain health.

Bad gut health harms the heart

It's not yet fully understood how the gut microbiota and the chemicals it helps create negatively affect heart health.

However, over the past few years, several laboratory studies have shown that changes to the gut microbiota are directly linked to a higher risk of developing, and dying from, heart and circulatory diseases.

These changes may involve the number, species and make-up of microbes in the gut microbiota. Scientists have also been studying the

effect that chemicals created by the gut have on the heart.

One of these chemicals is called trimethylamine N-oxide (TMAO), which lab-based research has shown is linked with worsening disease for people with heart failure.

Scientists also think high levels of TMAO in the blood may cause inflammation of the lining of the blood vessels, which may lead to high blood pressure.

They are also looking at TMAO's role in high cholesterol.

These lab-based studies have given scientists an idea of how the gut microbiota and chemicals it helps create affect heart health, but more research in humans is needed to understand it fully.

Even though we do not know exactly how the gut harms the heart, what we do know is that what's good for the gut is also good for the heart.

Your gut and heart love fibre

For example, we know that microbes love fibre, so eating more fibre is key to keeping your gut working properly.

Research in the British Medical Journal also shows that the more fibre you eat, the lower your risk of developing coronary heart disease and other heart and circulatory conditions. Scientists think this is because fibre

helps to remove 'bad' cholesterol from the body so less is absorbed into your blood.

The more microbes the better

Scientists also know that polyphenols – types of antioxidants and other chemicals found in plants – are linked to better heart health.

This is one of the reasons the NHS recommends having five portions of fruit and vegetables a day – often referred to as your '5-a-day'. And why the Mediterranean diet is healthy because it includes extra virgin olive oil, nuts, seeds, beans and legumes, that are all rich in polyphenols.

But human cells cannot digest 90 per cent of polyphenols. We rely on gut microbes to ferment them before they can be absorbed into the body.

And as there are thousands of different plant polyphenols, we also need a wide variety of microbes to ferment them. This is why foods like live yogurt, kefir (fermented milk drink), kimchi (Korean fermented vegetables) and sauerkraut (fermented cabbage), are worth considering. They are full of 'good' bacteria and often contain extra nourishment for your gut microbes in the form of prebiotics (think of it as like fertiliser for them).

These bacteria are thought to help restore the natural balance of

6 simple food swaps for a healthier gut

1



Crisps

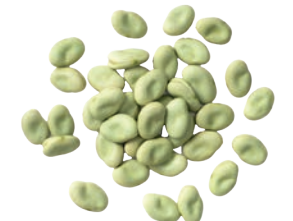


Plain popcorn

2



Salted peanuts



Dried fava beans

3



Bolognese sauce



Add half a can of lentils

4



Ice cream



Frozen berries with live yogurt or kefir

5



Sweets



Dried mango

6



Broccoli



Mixed-veg stir fry or sauerkraut

microbes in the gut, helping the body to absorb more polyphenols, which in turn benefits the heart.

Eat 30 plant foods a week

Because microbes are reliant on what we feed them, diet is one of the biggest influences on our gut health.

They require a diverse range of nutrients, so one of the best things you can do is have a diet that includes

a wide variety of foods. One of the strategies I recommend is to eat 30 different plant foods every week.

This might sound a lot, but it includes fruit, veg, wholegrains, nuts, seeds, and legumes like chickpeas and lentils. It could be as simple as adding mixed seeds to your morning meal. So, even if you love routine, try to mix up your snacks and meals. See my food swaps above for inspiration. ●

Meet the expert



Dr Megan Rossi is a registered dietitian and nutritionist with a PhD in gut health. She leads research at King's College London investigating nutrition-based therapies in gut health. She is the founder of The Gut Health Doctor and the author of *Eat Yourself Healthy and Eat More, Live Well*.

Stress and your health

Learn what stress does to your body, and find simple ways to relieve the pressure and help protect your heart and circulatory system

Everyone experiences stress from time to time. It's a natural response that can help our bodies cope with challenging situations. But what happens inside us when we feel stressed? And how might this impact our health?

Your 'fight or flight' response

When you're faced with a stressful situation, your body goes into what's known as 'fight or flight' – a human response to potential danger where the body gets ready so you can physically defend yourself or run away.

When this happens, your brain sends signals to your body to release hormones such as adrenaline and cortisol. These chemical messengers enter your blood and temporarily increase your blood sugar, blood pressure and cholesterol levels, and your heart rate.

In the short term, these changes help more energy and oxygen get to your brain and muscles, so you're more mentally alert and physically prepared. Even your blood changes: it becomes more likely to clot, stopping you from bleeding too much if you were to be injured.

This 'fight or flight' response evolved to help our ancestors survive sudden dangers such as wild animals. And there are still some scenarios today when stress, and the effects it has on our body, can be useful.

For example, it's helpful for your brain and body to be prepared when you're about to take an exam, need to meet a tight work deadline, run a race, do an important talk in front of others, or face a situation where you might be physically harmed.

So, in the short term, stress can be helpful. However, if this 'fight or flight' stress response keeps being switched on again and again, over time this can take its toll on the body.

This type of chronic stress can happen for many reasons such as work,

financial difficulties, family life or loneliness.

It can leave us with emotional and physical symptoms such as feeling easily angry, upset or worried, or having headaches, odd pains and trouble sleeping.

Is stress linked to heart disease?

Since the release of stress hormones affects the heart and circulatory system by increasing your heart rate and blood pressure, people often wonder whether stress can lead to heart problems.

More research is needed to be able to better answer this. But what we can say is that there is a link between the two.

In 2017, research part-funded by British Heart Foundation (BHF), reviewed many of the largest studies that have looked at how stress affects the heart. This involved data from hundreds of thousands of people.

Published in the journal *Nature*, it showed that adults experiencing stress at work or in their private life have a small increased risk of coronary heart disease and stroke. It also suggested

that for people who already have heart and circulatory diseases, stress is linked with worse outcomes.

What is less clear is whether, and in what ways, stress might cause a greater risk of heart and circulatory diseases.

Some early lab-based studies are beginning to suggest that stress-triggered changes to blood flow and inflammation could be responsible for an increased risk.

For example, in 2021 a study in mice, part-funded by BHF, reported that stress hormones lead to inflammation in blood vessels, particularly in areas of fatty deposits that can lead to coronary heart disease. But we need more real-life studies to fully understand this.

Stress and unhealthy habits

What we do know for certain is that stress can make us more likely to turn to unhealthy habits such as smoking, drinking too much alcohol, overeating and eating too much food that is high in salt, sugar and saturated fats, and being less physically active.

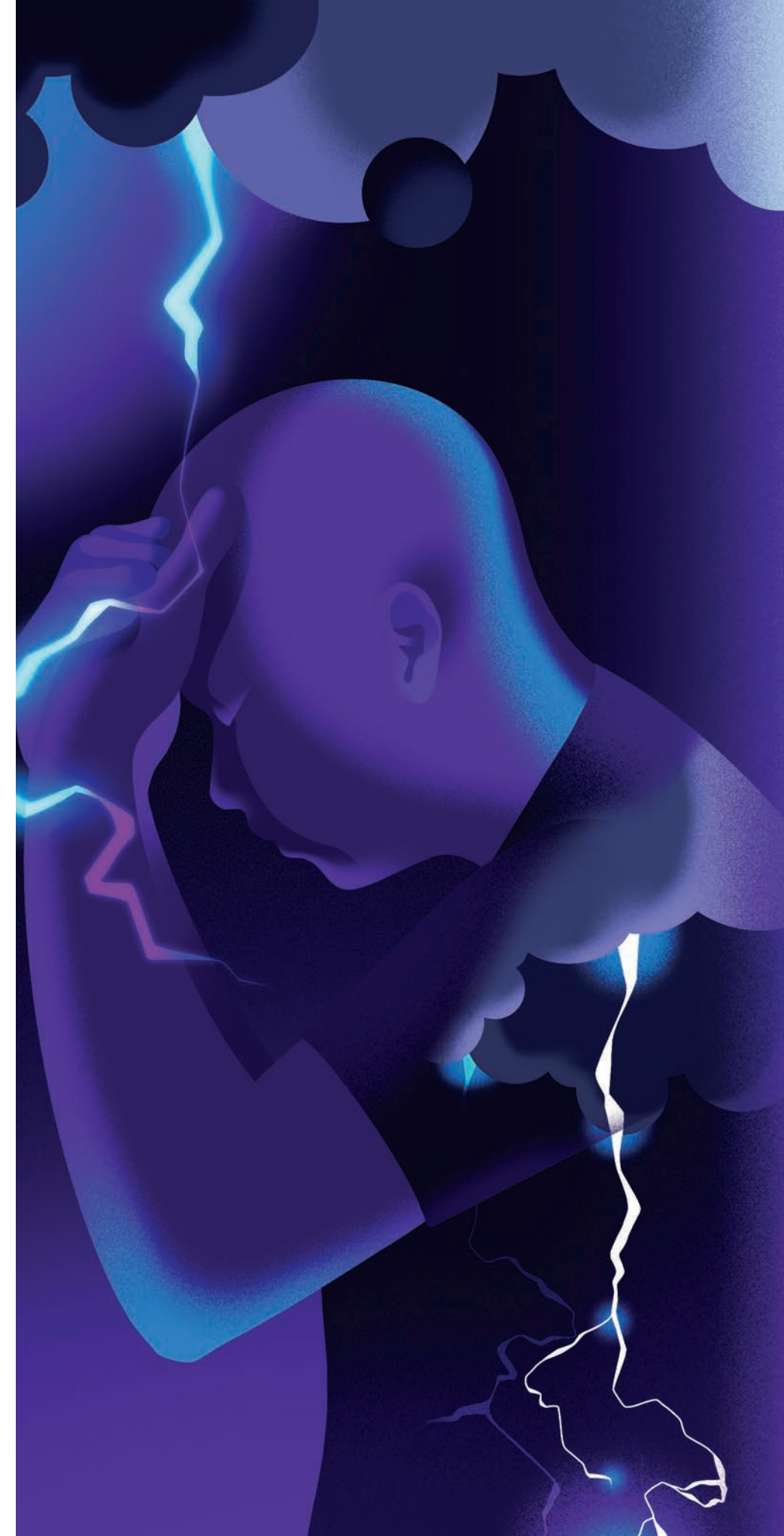
These ways of dealing with stress can lead to high cholesterol levels, high blood pressure and type 2 diabetes, which increase your risk of heart and circulatory diseases.

While it might not be possible to remove sources of stress from our lives, the good news is that there are things we can do to improve how we respond to them and how we feel.

Turn over for some simple tips to help you lower your stress levels. ►

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The release of stress hormones affects our heart and circulatory system

Illustrations by Ollie Hirst



Tips for dealing with stress

Simple techniques to try when you're feeling frazzled and want to ease life's ongoing stressors

When it comes to stress relief, what helps one person might not help another. And different tools can be more, or less, useful for us at different times. Why not try out some of the tips below and see what works best for you.

How to manage stress in the moment

These fast-acting strategies can help you to immediately reduce feelings of stress. Use them when you feel yourself getting frustrated or when you're about to face a challenging situation.

It can also be helpful to make them a regular habit by building these five-minute practices into your everyday.

For example, when you first wake up or before you go to sleep, when you're in the shower, or straight after lunch.

Physical activity can help you 'burn off' feelings of stress

1 Move to relax the body

Regular exercise can make you more resilient to stress in the long run.

Bursts of physical activity can also help you in the moment by allowing you to 'burn off' feelings of stress and relieve muscle tension.

You could try going for a short, brisk walk or even just doing a few jumping jacks if you do not have much time.

Some people find a technique called progressive muscle relaxation helpful. This is when you tighten, then relax,

each group of your muscles in turn, working through your forehead, jaw, neck and shoulders, arms and hands, buttocks and legs, feet and toes.

2 Deep breathing

When we're stressed, our breathing can become quick and shallow, which sends distress signals to our brains. To break this cycle, try methods that slow your breathing down, such as the 4-7-8 technique:

- Breathe in through your nose for a count of four.
- Hold your breath for seven.
- Breathe out through your mouth for eight.

Go to [bhf.org.uk/breathing-exercises](https://www.bhf.org.uk/breathing-exercises) for other techniques.

3 Picture your 'happy place'

Sometimes it can be helpful to take yourself away from a stressful situation by taking your mind on a trip to a better place.

You can do this through a recorded guided visualisation meditation. Or simply close your eyes and imagine a peaceful place you've been to before, such as a beach or forest. Think about what you'd see, hear, smell and feel in that location to make it feel more real.

4 Use the power of sound, smell and touch

It's possible to get stressful thoughts out of your head by instead focusing on sensations outside your body.

This could mean listening to a soothing piece of music, lighting a candle with a relaxing scent, stroking a pet, squeezing a stress ball, or giving yourself a hand massage.

How to lower long-term stress

If you have chronic stress, though it can be tricky, there might be things you can do to make your situation better.

1 Cut back and reprioritise

Working out what makes you stressed can allow you to reduce those triggers. For example, if you find constant updates and messages stressful, can you build in time in your day when you can be free of your phone?

Feeling overwhelmed with 'must-dos'? Can you work out what is most important, do that first and accept that you might not get everything done at once. If you've taken on too much, are there responsibilities you can cut back on?

Try, if possible, to prioritise some time for relaxation in your day and week.

2 Keep a journal

Many people find getting their thoughts on paper can be a way to work through them and make them less overpowering. If the idea of keeping a diary sounds like too much work, you could instead get into the practice of reflecting when you wake up or before you go to bed each day.

Questions to regularly ask yourself could include:

- What am I grateful for?
- What went well today or yesterday?
- What might I do differently today or tomorrow?

3 Connect with others

Having someone you can share your worries with, or people who can help distract you from them, is important. Confiding in friends or family members about how you're feeling may help. Or you could join a support group with others who are going through similar situations, such as our online forum at [healthunlocked.com/bhf](https://www.healthunlocked.com/bhf)

4 Get the support you need

Some sources of stress are difficult to change on your own:

- Get tips if your financial situation is troubling you at [moneyhelper.org.uk](https://www.moneyhelper.org.uk)
- Talk through your heart health concerns with our cardiac nurses at [bhf.org.uk/helpline](https://www.bhf.org.uk/helpline) or call 0808 802 1234 (9am to 5pm weekdays).
- Find mental health support from Mind at [mind.org.uk](https://www.mind.org.uk) or call 0300 102 1234 (9am to 6pm, weekdays).
- If stress is significantly impacting your ability to cope with daily life, talk to your GP. Or, in England, you can refer yourself: search online for 'NHS talking therapies'.



Have you tried any of these tips?

Did any of these tips help you feel less stressed? Or do you have your own to share with other readers? Send your thoughts to hmeditor@bhf.org.uk or write to the address on page four.

How to cope with fears about dying

Having a heart condition can lead to natural anxiety about death, but there are ways to manage those feelings and enjoy a fulfilling life. An expert and those who have experienced it offer inspiration to get through the emotional challenges

If you find that your heart condition makes you worry about dying or having a shortened life expectancy, you're not alone.

Consultant Clinical Psychologist Dr Anne-Marie Doyle, who works

with patients at Royal Brompton and Harefield Hospitals in London, says: "It's quite common to have this anxiety, because the heart is one of our vital organs. Worrying about dying or losing a loved one is completely

normal and is probably one of the most fundamental anxieties that humans live with."

This anxiety can increase if you feel unwell, go into hospital or have a change in your diagnosis. But, Dr Doyle says, it's possible to manage those fears and live a meaningful life.

Practise acceptance

It's helpful to concentrate on what you can control. This includes taking care of your physical and mental health. "Good sleep, eating well, staying mobile within your limits and making decisions about your treatment with your medical team are all ways to get your health as strong as possible," Dr Doyle says.

But, she adds, "Ageing and changes to the heart are not necessarily within our control." That's why it's important to get to a point of acceptance.

"The reality is that some of us will have a very long life, and some of us will have a shorter life – it's about accepting the circumstances of our lives as they are," Dr Doyle says.

Accepting our fears does not mean we resign ourselves to them, but rather that we try to understand them. It's best not to push away thoughts about dying. "Paradoxically if you try not to think about painful thoughts, that will keep the anxiety going," Dr Doyle explains.

Instead, she encourages writing down worrying thoughts and trying to understand them: "Is it worry about pain, about people not being able to manage without you, or about not having done everything you want to do? Understanding difficult thoughts can make them less frightening. Even if it means you feel upset and have a cry. Reflecting on what is worrying you can help you process it."

Prioritise what matters to you

Sometimes a fear of dying can spring from a traumatic experience related to your heart condition, such as surgery that did not go well or feeling you came close to death.

Anything that links to the memory, such as being back in hospital, or even seeing a dentist in scrubs, can cause those frightening feelings to resurface. If your anxiety becomes overwhelming, and it is interfering with your life, it's a good idea to seek professional help.

Dr Doyle says with support, many people find a new perspective and start to prioritise what really matters to them. "People who have had a traumatic experience can have a new gratitude for life. This often leads to a restructuring of life to focus on activities and relationships that bring you happiness," she says.

"It's about making the most of the time we do have and living in line with our values, our skills and our strengths. It's balancing the reality that one day our life will end, with having a meaningful life, a good quality of life."

Marian's story

"I think about the future now and things I can look forward to"

After experiencing some problems with a neighbour, Marian Sedgwick, 76, from Cornwall, was diagnosed in May 2023 with takotsubo syndrome – a condition where the heart muscle becomes suddenly weakened in response to stress.

She found talking therapy helped her overcome a fear of dying and supported her to live more positively.

"I was a completely healthy person and then out of the blue I had a heart event. When I got home from hospital, I tried to carry on as normal and put on three lots of washing. But I was exhausted and breathless, and it floored me.

Because I had not been given much information, I googled 'takotsubo' and it said it could affect my life expectancy. It terrified me.

I started thinking about the end of my life all the time. I was scared to lie down in case I couldn't breathe, and scared to go to sleep in case I would die in my sleep. I couldn't sleep until it was light, when my husband Barry was awake.

I reflect on what I've enjoyed

My heart wasn't pumping as well as it should and a cardiac nurse started to call me, which made me feel at least someone was guiding me. The nurse referred me to Cornwall Talking Therapies to

help with my anxieties. The therapist I spoke to gave me a different perspective. She reminded me of the things I have in life that I am grateful for: my home; my garden; the birds.

Now I write down things I've enjoyed, for example I write about the birds I've seen. She suggested I read a book called Ikigai: The Japanese Secret to a Long and Happy Life. It's about people on the island of Okinawa, who live to a great age. They simplify their life. They do a bit of gardening, a bit of stretching, they have friendship groups. I found it therapeutic just reading it.

I learned to ask for help

The therapy changed my outlook. Although I have a lot of friends, I don't rely on them for help. But I have learned to ask for help. I never used to admit when I wasn't well, but now if I feel tired and am not up to talking to a friend I say so. The relationship is more equal.

I found that thoughts about dying disappeared. The only time they return is if I can't sleep. So I don't lie there. I get up, make a hot drink and watch a relaxing TV channel which has aerial views of the countryside and relaxing music. It takes my mind away from the worry.

I am less fearful now. I think about the future and things I can look forward to." ▶

“

I learned to ask for help. I never used to admit when I wasn't well, but now if I feel tired and am not up to talking to a friend I say so



Talking therapy can help you manage difficult thoughts



“Be kind to yourself: if you are feeling anxious, get over it at your own pace

Vicki's story

“Doctors said I wouldn't live past 21 years”

As a child Vicki Macdonald, 40, from London was diagnosed with high blood pressure in the arteries of the lungs, a condition called pulmonary hypertension. It can lead to damage to the heart. She reflects on how she manages fears about dying.

“On my 21st birthday my mum told me that the doctors did not expect me to live past 21.

I was shocked. I knew my condition was serious, but I thought if I took my medication and kept appointments, I could live a normal life.

But I didn't feel scared at that time; I felt excited that I'd been able to buck their expectations. I went to university, started my career and in 2008 I met my husband-to-be, Paul, at a New Year's Eve party.

I collapsed in a train station

When I was in my twenties, I pushed my condition to the back of my mind. I focused on my career, I was sociable and went out a lot. Then in 2018, when I was 34, I collapsed in a train station. I woke up with all these people around me, asking questions.

Doctors told me I needed to wake up, to realise I had a heart condition and look after myself better. I'd been quite carefree until then, but all these fears quickly bubbled up. I began to think: 'Is this the beginning of the end?' I started to worry about the people I would leave behind if I died. I thought about my husband – how

was he going to feel? I worry more about that than the actual dying.

I did a six-week course with a yoga therapist. We did breathing work, which helps calm down my heart rate when I feel anxious, and she helped me connect with how I was feeling.

I kept coming back to the same thing, that my fear was centred around Paul. She said, 'You need to have a conversation with him'. So Paul and I shared how we felt. I wanted him to know that if anything happened to me, he had done everything he could.

Writing down worries makes them less scary

My anxiety can get worse at times. When my dad died, my anxiety about dying started up again. I saw a grief counsellor who explained that this was the way my grief was showing.

She said I should write down what was worrying me, including the worst things that could happen. Once you look at it, it starts to feel less scary.

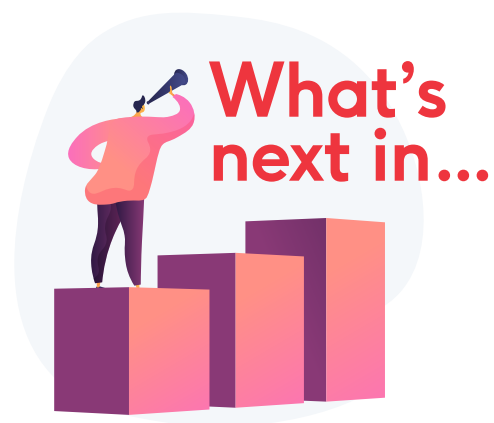
There's another technique that works for me: I have an elastic band on my wrist; when I'm feeling anxious, I just snap it. That brings me back to the real, physical world.

You need to find what works for you. Be kind to yourself. If you're feeling anxious, get over it at your own pace. It doesn't matter if it takes you longer – you're working through it. You can take that as a triumph.” ●



INFORMATION AND SUPPORT

- Get support with anxiety and depression at [bhf.org.uk/emotionalsupport](https://www.bhf.org.uk/emotionalsupport)
- Speak to your GP about finding a local therapy service. Or, in England you can refer yourself: search online for 'NHS talking therapies'.



Atrial fibrillation

World-leading scientist, BHF Professor Barbara Casadei from the University of Oxford, answers our questions on what the future might bring for people with AF

What's most promising in atrial fibrillation science right now?

Until recently, we tended to look at atrial fibrillation (AF) as one condition, when in fact there could be many different types.

What is atrial fibrillation?

Atrial fibrillation, also known as AF, is a common abnormal heart rhythm. A problem in the top chambers (atria) of the heart causes it to beat irregularly or too fast.

- Learn more about the condition at bhf.org.uk/afib
- Get tips for managing it at bhf.org.uk/AFtips

Now, scientists across the world are using imaging and studies in cells, blood and genes to unravel these different types.

In future, we might be able to see which types of AF may put you at greater risk of heart failure or stroke, and whether it matters at what age you develop the condition or if you experience it for short or longer periods of time.

With this knowledge, we'll be able to give more targeted and personalised treatments, instead of the current more one-size-fits-all approach.

Why is this research important?

AF can be very unsettling: your heart rate can feel out of control, you can

feel dizzy and short of breath and may even get chest pain. If your AF comes and goes (known as paroxysmal), not knowing when you might experience an episode can really affect your confidence and quality of life.

With the right treatment, AF is not life-threatening and you can still live well with it, but it does link to other serious conditions. It can both cause heart failure and be caused by heart failure. It's a vicious circle that creates a lot of trouble. It's also linked to an increased risk of strokes and dementia.

The chances of getting AF increase as you get older. So, with more of us living longer lives, there's even more reason to find new and better treatments for it.



In the UK **1.5m+** people have been diagnosed with AF



People with AF are **5 times more likely** to have a stroke



BHF is currently investing **£16m** in AF research



In the AMALFI study, Professor Barbara Casadei, Professor Louise Bowman and Guilherme Amorim (all pictured right) are trialling whether an ECG skin patch monitor could be used to remotely screen for AF. Participant Hugh Wybrew (pictured left) is shown examining the patch being used in the trial which is placed on the skin

What's your research looking at?

We know there are people out there with AF that have not been diagnosed.

This is because the condition can be symptomless (asymptomatic or silent AF). And because the abnormal heartbeat can come and go, people might not be picked up when they have a routine ECG (electrocardiogram, used to record heart rhythms).

My team and I are working with UK Biobank, a database of people who have generously provided heart, body and brain scans, blood samples and other information about their health to be used in research.

In our study, over 26,000 UK Biobank participants, aged over 65, will wear a skin patch ECG monitor for two weeks to spot silent episodes of AF and other irregular heart rhythms (arrhythmias).

This will help answer whether silent AF, detected by the patch, has the same risks as the kind of AF with symptoms that is picked up by GPs or at hospitals. We're not just looking at the risk of large strokes. We're also seeing whether smaller events, which may go unnoticed, might cause damage to the brain and dementia.

I am also involved in the Active Monitoring for Atrial Fibrillation

(AMALFI) study. This is looking at whether screening for AF by sending a skin patch ECG monitor through the post, for people to wear for two weeks, could lead to more people being picked up earlier.

About 5,000 people aged over 65, who are not known to have AF but have heart and circulatory risk factors, were either given the skin patch or their usual treatment. The beauty of this approach is that hassle for the participants is minimal. Instead of having to come into hospital, they get the skin patch through the post and put it on themselves at home. They only need to see their GP if the patch shows they have AF.

This could be scaled up to form a nationwide screening programme for AF. But before that investment is made, we need to understand whether having, say, five minutes of AF over two weeks, picked up in this way, puts you at enough risk to be treated.

Will we find a cure for AF?

Current treatments to stop AF, such as cardioversion and ablation, focus on correcting the heart's abnormal electrical activity.

But AF is often not just an electrical problem. For example, we know that ablation is unlikely to be successful and AF is more likely to come back in people who have heart scarring (fibrosis).

My colleague Dr Svetlana Reilly at the University of Oxford is doing cell-based studies to better understand the link between heart scarring and AF, which I hope may lead to new treatments. We are also building up evidence that inflammation and the immune system play an important role in the development of AF, and this could open up new treatments for AF and heart scarring too.

This is what medical research is. There's rarely a 'eureka moment' where one scientist with a pen and paper suddenly finds a cure. To reach a breakthrough, you need researchers working together who can tackle a problem from different angles, with fresh eyes and the latest technology. ●



To donate and support more important research like Professor Barbara Casadei's visit bhf.org.uk/hmdonate

Taking research from bench to bedside

Ever wondered how scientific discoveries funded by us are turned into new tests and treatments? BHF Research Advisor Dr Kavita Raniga explains

While the phrase 'bench to bedside' is short, developing a new medicine is a long and complicated process. It typically takes 10 to 15 years, at an average cost of around £1 billion.

About 90 percent of potential drugs fail in clinical trials, usually for three main reasons: because they do not work as they are meant to, because of concerns about their safety or because there are other

effective drugs already available.

A great deal of the process of developing a new drug is focused on making sure it is effective and safe.

There are four stages in developing a new medicine: discovery, preclinical studies, clinical development and market approval.

In the boxes one to four, on the right, we unravel what happens at every stage.



1 Discovery

Researchers start by finding 'targets' in the body that play a key role in causing a specific disease. These could be faulty genes or proteins, which are the body's building blocks. Proteins are one of the most common targets because they play so many roles.

Scientists then search for substances called compounds (made from two or more chemical elements) that interact with the target to limit or stop the disease from progressing. They can screen thousands of compounds to find one which shows signs of working – they call this a 'candidate'.

Sometimes it's possible using computers to make or 'design' a compound that interacts with the target. This is called 'rational drug design' and advances in artificial intelligence (AI) are now making this easier.

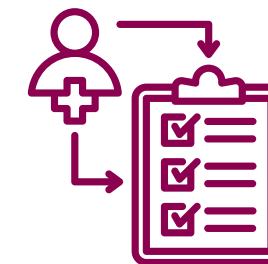


2 Preclinical trials

Researchers carry out rigorous testing of the candidate in the lab, using computer models, human cells and testing in animals.

The aim is to find out if the potential drug works as it is meant to and is safe before it can be studied in humans. These first two stages together can take up to six years.

“**Advances in artificial intelligence (AI) are now making it easier to make or 'design' drugs**



3 Clinical development

If a potential drug is successful in the lab, researchers need to find out if it could work in real life. They do this through three stages of testing in humans known as clinical trials.

Phase 1 – A small number of healthy volunteers try the new medicine to see if the lab findings translate to humans. The trial aims to make sure the treatment is safe, to understand its side effects and how it works in the body.

Phase 2 – A larger group of people with the disease try the drug and the focus is on finding out how well the treatment works.

Phase 3 – Typically, several thousand patients volunteer in carefully controlled tests where the new treatment is compared to the current standard treatment, or a dummy pill known as a placebo.

Only one in 10 potential medicines will make it through all three clinical development phases successfully.



4 Market approval

After a treatment is shown to be effective and safe, it can be approved by the regulator for doctors to prescribe for specified diseases and conditions.

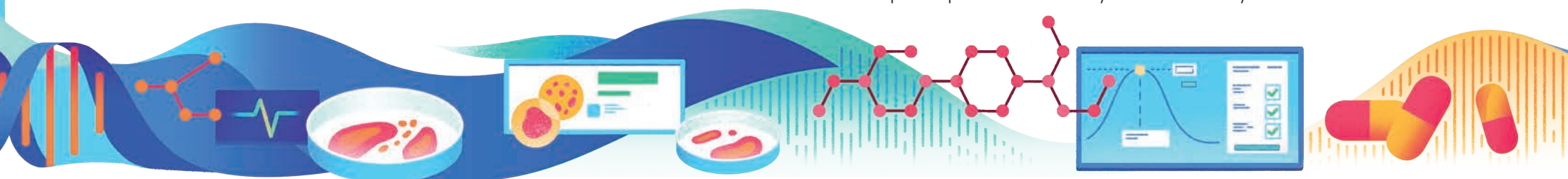
In England, Scotland and Wales this is the Medicines and Healthcare products Regulatory Agency and in Northern Ireland, the European Medicines Agency.

Once patients are taking the new medicine, clinical studies called phase 4 trials begin. These collect data on the long-term side effects and adverse reactions to newly-approved treatments.

In England, the National Institute for Health and Care Excellence (NICE) also assesses any new drug to decide if it should be made available to people being treated on the NHS, and whether there should be any rules on its use. ▶



Illustration by Mark Boardman



What is BHF doing to help heart researchers?

Much of the research British Heart Foundation (BHF) funds aims to create new treatments and tests that transform and save lives.

We provide scientists with funding and support to translate their research into new ways of diagnosing, treating and preventing heart and circulatory diseases.

BHF Translational Awards

Translational Awards aim to develop innovative technologies with the potential to transform the health of people with heart conditions. Researchers can apply for up to £750,000 over three years to bring their research to market.

CardioStars

BHF has joined forces with Panacea Innovation, a life sciences and health platform, to launch CardioStars.

The programme aims to equip researchers with the entrepreneurial and business skills to get their groundbreaking science out of the lab and into the hands of doctors so they can better diagnose, treat and prevent heart diseases.

Scientists doing any kind of research, from behavioural science, to medicines, devices or computer software can apply for the fully funded programme.

NIHR-British Heart Foundation Cardiovascular Partnership

BHF is working with the National Institute for Health and Care Research (NIHR), the UK Government's major funder of

“ Much of the research BHF funds aims to create treatments and tests that save and transform lives

health and social care research, to speed up the benefits of science to people with heart and circulatory conditions. The partnership connects world-leading researchers funded by BHF and NIHR, based in major universities and NHS trusts across the country.

By working together, they can identify projects that will create the greatest benefit, secure funding, and work with industry to get new treatments to patients.

Game-changing science

Here are four projects we're funding to innovate care for people living with a heart or circulatory disease.

Preventing bypass grafts failing: Professor Andy Baker, University of Edinburgh

Professor Baker and his team are finding ways to improve coronary artery bypass grafting (CABG). This is a very common procedure for a blocked coronary artery, to improve blood supply to the heart.

Surgeons use healthy blood vessels from another part of the body to create a new route for blood to flow around the blocked blood

vessels. Doctors usually use veins from the patient's leg, but veins often become damaged when having to adapt to the higher blood pressure in the heart. In nearly half of cases, the graft fails and people start to experience symptoms again.

Professor Baker has discovered that after bypass grafting, cells in the vein called vascular smooth muscle cells start to divide abnormally and this may contribute to the graft failing.

He has found a way, using a drug, to block a key gene which is involved in this happening. This stops the excess cell division. The research team are improving their technique and testing it to see if it can prevent grafts from failing.

Developing a way to stop bypass grafts failing will reduce the number of people needing further graft surgery and benefit those whose health gets worse because the graft is not working well.

Earlier detection of heart attacks: Professor Damion Corrigan, University of Strathclyde

When someone has a heart attack, rapid treatment is vital to limit the damage caused to the heart muscle. Any delay to the tests carried out in hospital to diagnose a heart attack can delay crucial treatment.

One of the main tests to diagnose a heart attack is a blood test that measures levels of troponin, a protein released into the blood during a heart attack. Currently, this can only be done in hospital.

But Professor Corrigan and his team are developing a troponin test

that is portable, easy to use, and provides a diagnosis outside of a hospital lab in less than 15 minutes. Using similar technology to Covid-19 and pregnancy tests, the kit would work by measuring the amount of troponin in a blood sample.

Taking the test out of hospital would provide faster diagnosis, potentially saving lives, especially in rural and remote areas.

Better blood flow mapping in coronary heart disease: Professor Julian Gunn, University of Sheffield

Coronary heart disease is when the coronary arteries become narrowed by fatty deposits building up in their walls. These arteries supply the heart with oxygen-rich blood, which is vital to keep the heart healthy.

The images we currently take of blood vessels with scans in hospital show the narrowing, but not how it is affecting blood flow. Until recently, cardiologists had to make judgements about how much the narrowing affected blood flow and decide on treatment based on this.

Now, Professor Gunn has developed a computer model that takes the images of the blood vessels from a heart scan and models the blood flow within them. His previous BHF-funded research showed that in a fifth of cases the computer model changed the cardiologist's mind about what treatment to give.

Professor Gunn will follow up the people in the earlier studies to see if the computer model he developed provides greater long-term health benefits than the traditional method. If the results are positive, it could

“ A new drug could prevent and treat dangerous blood clots

provide the evidence needed for this computer model to be adopted more widely, helping doctors make the best treatment decisions for each patient.

New drug to prevent blood clots with less risk of bleeding: Professor Helen Philippou, University of Leeds

Professor Philippou and her team are looking for new ways to protect people with heart and circulatory diseases from developing more blood clots.

Currently these people receive an anti-platelet drug and an anti-clotting drug, which work in slightly different ways by targeting different groups of molecules in the blood.

But it can be difficult to balance the benefits of preventing further clots with the potentially dangerous side effects of these drugs, which include excessive bleeding.

Professor Philippou has founded LUNAC Therapeutics to develop a new type of anti-clotting drug to treat and prevent life-threatening blood clots that cause heart attacks and strokes, which does not have the same risk of bleeding as current drugs.

With fewer risks, this new medicine might mean more people could be treated, while those at high risk of blood clots may be able to have higher doses of the new treatment. ●



"How I got back to the sport I love"

Being diagnosed with a heart condition put an end to the weekend mountain biking that had been an important part of Neil Caton's life. But through electric bikes, the 58-year-old has built back both his confidence and his fitness

"I have been a keen cyclist for many years. When I moved to Bristol with my wife Jo and our two sons, I kept my IT job in London. So, three days a week I would commute to work, getting up at 5.30am, cycling to the station and doing three pretty tough days before working two days at home.

I was very active. I would always use a bike to get around London, and then I got into weekend mountain biking in the woods around Bristol with a group of cyclists. I used to really look forward to that as a way of de-stressing after a hard week.

But by my late forties I noticed I was getting more fatigued from the daily grind. When I got back on a Wednesday evening, I would just lie on the sofa. Then in 2016, when I was 50, something strange happened. I was on my bike approaching some traffic lights on my early morning commute and suddenly my heart started to race, and I felt my eyes beginning to roll back in my head. I stopped and waited until I felt better, and then ploughed on.

I blacked out answering the door
The next year my son got back from the pub one summer evening and tapped

on the window, as he'd forgotten his keys. I jumped up from the sofa to let him in and on my way, I blacked out and crashed into the door.

After that I saw my GP and she sent me for ECGs (electrocardiograms that measure the heart's rhythm) and blood tests. I was thinking, 'This is such a fuss', and confidently waited for the announcement that it was nothing.

But the GP referred me to see a cardiologist, who did more tests. I did not get a diagnosis at first and carried on with my normal routine, commuting to London and out mountain biking at the weekends. But in March 2018, I received a letter from the cardiologist.

New manual for my new body

The letter said I had hypertrophic cardiomyopathy. It's a condition where the muscle wall of the heart becomes

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Bam! My life became a different story. Suddenly I was dealing with a long-term condition

thickened and stiff, making it hard for the heart to pump blood around your body. It said I should not do weightlifting or any kind of competitive sport.

I felt as if I had been reading a book, and turned the page and – Bam! – my life became a different story. Suddenly I was dealing with the fact that I had a long-term condition. I needed the manual for this new body I had.

My condition is usually inherited, and the letter had said my children and my siblings should have a genetic test to see if they had it. I was worried I was going to set off this domino effect. But all the tests my family members had were clear, which was a massive relief.

I was put on a beta blocker, which reduces the amount of work your heart has to do. My consultant made it clear that I would have to slow down a bit.

The mountain biking was very strenuous, so I stopped it. I thought I couldn't afford to be off on some hillside somewhere blacking out. ▶



Photography by Ollie Holder

Some of the people in the group were very lovely and sent personal messages. But it was a big, social, sporting part of me that I just cut off.

Hill walking became a lifeline

I switched back to more sedentary things. I became more introverted and home-based. I had done a degree in visual art, and I loved photography, so to get myself out of the house during the Covid-19 lockdowns I started doing more of that. Exploring the Welsh hills with my dog and taking photos of the landscape. That became a real lifeline.

A heart condition is not only a physical battle it's a psychological one too. It's about how you feel on a given day. I lost both my parents when I was younger, and that taught me that sometimes you need to stick your chin out and get on with it. So that's what I tried to do.

After lockdown I resigned from my job. I was getting really tired, feeling exhausted by the afternoon, and was struggling with motivation to do almost anything. I was thinking, 'This is getting worse and it's the disease that's causing it.'

A change happened when I agreed to go on a big trip to Belize and Mexico with my wife Jo and two old friends. I was very worried about it, convinced I was going to have to drop out of the things they had organised and go back to the hotel and sleep. But although there were times I had to rest, I found what happened was that I got distracted by the good things on the holiday. I gradually began to get active and realised I could cope.

“Returning to an activity I love has helped me accept my condition

E-bikes helped get me back to the sport I loved

It got me out of this rut I was in and made me come to a different understanding about my heart condition. I was probably ascribing too many of life's problems to it. Every time I was tired, I said, 'It's my heart', and every time I didn't want to go out, 'It's my heart'. But it's a part of me and I've got to live with it.

I gradually started to re-engage with cycling, thanks to having the chance to try electric bikes, or e-bikes. I now have two: a lighter powered general-purpose bike, that gives a 'wind at your back' feeling; and a more high-powered mountain bike.

My first rides were with Jo to the local countryside around Bristol and to Bath. Knowing I have the motor, and I can control the help it gives me, encourages me to get up and out. It stops me from worrying about running out of steam.

I've taken things gently and have not set any goals to increase my distance. I've learned to listen to my body and to be careful when I feel it starting to struggle. But I have found my fitness increasing and that encourages me to keep cycling.

Being able to return to an activity I love has helped me accept my condition and learn to live with it, rather than resent it for what it has cost me.

It's all too easy to slip into feeling bad about yourself when you have a chronic condition. I had a sense that I was physically fragile, or broken, and I had become too cautious.

Now I'm excited about finding places to explore, I'm reconnecting with friends and I'm even going on this year's mountain biking annual trip for the first time in six years. E-bikes have given me a key to reopen a part of me that I'd locked away.” ●



Finding safe exercise limits

Cardiac rehabilitation expert Dr Aynsley Cowie shares her top tips on how to be active without harming your health when you have a heart condition



Many people with heart conditions worry about pushing themselves too far. But staying physically active is important for our heart health. So how can you find that balance?

Start slowly

If you have a heart condition, doing some activity can be safer and better for your health than doing nothing. If you're beginning a new activity, it's best to start slowly and build up gradually.

Aim for moderate intensity

For most people, exercising regularly at a 'moderate intensity' has the greatest benefit for heart health.

You should feel that your breathing rate has increased but that you are still able to talk and continue exercising comfortably. It might not take much movement to feel you've reached moderate intensity. But you can feel confident that this is the exercise level that's right for you. It does not matter if someone else can do more before reaching this intensity, what matters is how it feels to you.

“

Doing a small amount of activity can be safer and more beneficial than doing nothing

You might be keen to try, or return to vigorous exercise, meaning activities where you're breathing hard and fast. If you are, discuss this with a healthcare professional to make sure these activities are safe for you.

Work out a 'training heart rate'

Heart rate monitors are not always accurate so it's most important to focus on how you feel to ensure that you stay at the right pace.

Wearable devices can help you track your heart rate. However, as everyone's heart rate is different this will be more useful if an exercise professional has worked out a training heart rate for you.

Slow down when you need to

It can be helpful to exercise with others, for example in a class at your local gym, to help you pace yourself. But remember everyone's exercise limits are different. Each time you exercise, start and finish at a slower pace to allow your body to prepare and recover.

If you are feeling overly breathless or tired, slow down. If you need to, slowly come to a pause. Once you feel recovered, gradually restart the exercise at a slower pace.

Do not ignore symptoms

Stop exercising if you experience any chest pain, palpitations, dizziness or feeling lightheaded. If the symptoms do not go away quickly with rest, or with a GTN spray if you use it, seek urgent medical advice.

- Get tips at [bhf.org.uk/hfexercise](https://www.bhf.org.uk/hfexercise) and [bhf.org.uk/exercising-with-breathlessness](https://www.bhf.org.uk/exercising-with-breathlessness) ●

Meet the expert



Dr Aynsley Cowie is a consultant physiotherapist in cardiac rehabilitation based in NHS Ayrshire and Arran



Tried this at home?

What helps you exercise safely and confidently? Email your thoughts and any photos to hmeditor@bhf.org.uk, or write to the address on page four, for a chance to be featured in the next magazine.



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