HELPING YOU TO LOWER YOUR BLOOD PRESSURE

THE DASH DIET AND YOU
Dietitian Priya Tew explains how fruit and veg can lower blood pressure

LEVELLING UP
We’re reaching people from different ethnic backgrounds with help from dietitian Azmina Govindji

BLOOD PRESSURE BOOK CLUB
Looking for a summer read? We share our current favourites

THE HORMONAL CAUSES OF HIGH BLOOD PRESSURE
Professor Gareth Beevers looks back on some of his rarest cases

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Welcome

I would like to welcome you to this summer’s issue with a huge and heartfelt thank you for your continued membership and support during the pandemic, and to pay tribute to everyone working to save lives. To the public figures Professors Chris Whitty, Patrick Vallance and Jonathon Van Tam, and all the healthcare workers, researchers and key workers we don’t know by name. This includes you too, even if that simply means staying at home and looking after yourself. It’s been a long and difficult year, and your health matters.

While one pandemic remains in the headlines, we return our focus to another – the forgotten pandemic of the millions living with uncontrolled high blood pressure. With routine health appointments delayed or on pause, Covid-19 has, in a way, presented an opportunity for blood pressure self-management.

Knowing your numbers means you can find out about an important part of your health, then take action to improve it. For this year’s Know Your Numbers! Week (page 8), we will encourage the nation to take up home monitoring – a strategy that’s gaining traction for long-term blood pressure care with ever-expanding research and a new NHS project giving away 200,000 monitors (page 5).

I also have some news of my own. After eight years as CEO, my tenure is coming to an end. I have enjoyed my time here so much and, while it’s hard to say goodbye, I will still be fighting your corner in public health. It’s also a perfect opportunity to take forward our exciting new strategic plan with involvement from you in our new ‘Pressure Panel’ if you’d like to join (page 9), and your insights from last year’s survey. We will ensure there is no disruption to you, our wonderful members, while we welcome a new leader, and I look forward to a bright future for the charity.
Out and about
A few things we’ve been up to lately

SLEEVES UP, RISKS DOWN
We’re supporting May Measurement Month as it returns after a year off due to COVID-19, aiming to measure 1 million people’s blood pressures between May and November. Health professionals from 85 countries have volunteered to roll their sleeves up and get to work, and you’re invited to roll your sleeves up and get a blood pressure test, all to lower the risks of high blood pressure. Visit www.MMM.com for details.

Act F.A.S.T.
We supported Public Health England this March as they relaunched their Act F.A.S.T. campaign which aims to prevent disability and save lives after a stroke. The F.A.S.T. acronym stands for face, arms, speech and time, reminding people of the signs of stroke. If you spot any of these signs, it’s time to call 999.
You can help spread the message too. Talk to your friends and family and share our images for twitter, facebook, digital screens for waiting rooms and pharmacies, and a poster to print out and put in your window. Visit www.bloodpressureuk.org/news/ for details.

A COMMUNITY APPROACH, NATIONALLY
CEO Katharine spoke to members of the Ismaili community online this May for World Hypertension Day, supporting volunteer group The Aga Khan Health Board to promote better heart health. She gave a crash course in blood pressure awareness, knowing your numbers and a home monitoring demo to attendees around the UK.

SEASON WITH SENSE
CEO Katharine joined a panel of nutrition experts at the online launch event for Season with Sense, a new campaign from low-sodium seasoning company, LoSalt. The public health awareness campaign aims to educate people on their salt habits, urging them to take control of their health by looking for lower salt food options and ‘seasoning with sense’ both in and out of the home (page 22).

WORKING TOGETHER
There are multiple charities and organisations making great efforts to reach people at home, including ourselves and the NHS. We’re all communicating with each other in an effort to reach people with shared messages, especially encouraging home monitoring.

MORE FLAVOUR, LESS SALT
The 21st Salt Awareness Week celebrated home cooking and practical ways to enjoy food with less salt. We co-created a fascinating webinar with campaigners Action on Salt, updating UK health professionals with the latest evidence and advice around salt and health.
More research shows home blood pressure monitoring “can form the centrepiece of disease prevention”

Leading researchers have found that measuring blood pressure at home, in combination with an online tool that connects people with their GPs, helps lower blood pressure. In a one-year study, home monitoring led to a reduction in systolic blood pressure of 3.4mmHg more than usual care. This is enough to lower the risk of stroke by 10-15% and heart disease by 5-10%, and was not expensive at £11 per mmHg.

The HOME BP trial (Home and Online Management and Evaluation of Blood Pressure), published this January, divided over 600 people in the UK with poorly controlled high blood pressure into two groups. While one group received their usual care, the other was given home monitors complete with instructions, information about the benefits and email reminders to submit their readings online. Their GPs were alerted when blood pressure remained high for two months and medicines could then be adjusted. Average blood pressure dropped in both groups, but the effect was greater in the home monitoring group, falling from 151.7/86.4mmHg to 138.4/80.2mmHg.

The online tool overcame barriers to home monitoring such as extensive record keeping, expensive technology and time-consuming training.

Lead author, Richard McManus, Professor of Primary Care and GP said “At a time when it is harder to see patients face to face, this is more evidence that self-blood pressure monitoring can form the centrepiece of cardiovascular disease prevention in primary care.” The authors say the next step is to put a strategy in place to benefit the whole population, including alternatives for those who don’t use the internet.

Every study takes us that little bit closer to the reality of efficient, simple, self-monitoring and treatment of blood pressure, and adds weight to our call to make monitors available for free.
The NHS makes 200,000 blood pressure monitors available for free

**Blood Pressure @Home project makes home monitoring a reality for many**

Over the past year, many NHS services have moved to telephone and video consultations to minimise the spread of COVID-19, presenting challenges for people who need to manage their blood pressure with their primary care team.

The NHS has identified home blood pressure monitoring as a priority to make sure people can manage their blood pressure well remotely, as it enables them to measure and share their readings with their GP safely in their own home. Home monitoring can also save lives by preventing emergencies: in a population of 50,000 people, it could prevent up to 300 heart attacks and 477 strokes over three years.

Now, the NHS is offering free blood pressure monitors to tens of thousands of vulnerable people at risk of strokes, heart attacks and becoming seriously ill with coronavirus through their GP or community-based clinical team. This offer will also help to reduce health inequalities as the poorest people are four times more likely to die from diseases of the heart and blood vessels than the richest.

In October 2020, 500 blood pressure monitors donated by the British Heart Foundation were sent out to sites around the UK. Since December 2020, over 22,000 further monitors have been distributed across England, and in April 2021, NHSX and NHS England & NHS Improvement made just under 200,000 blood pressure monitors available. The monitors have been given to vulnerable people at risk of disease.

This work aims to support the NHS Long Term Plan ambition to prevent up to 150,000 heart attacks, strokes and dementia cases over the next 10 years.

We’re delighted that the NHS have made free home monitoring a reality for so many people. With millions of people living with high blood pressure and many facing financial difficulty, the next step we’re calling for is monitors to be made available on prescription to all those most in need.

**Looking after your blood pressure during the pandemic**

- **You might not have had your annual or routine check-ups with your GP or practice nurse over the last year. GPs are now working through their backlog of patient appointments and if you are due an appointment you should be invited soon, but if you are concerned, you can call your GP to make sure.**

- **Sometimes people start to worry about their numbers and check them every day, but this can simply make you feel more worried. There’s no need to check them this often.**

- **With most long-term conditions such as high cholesterol or high blood pressure, missing one appointment is unlikely to make a difference as they develop slowly. While you wait for your appointment, home monitoring is an effective way to keep an eye on your numbers.**

- **After the first week or so when you’re getting to know your numbers, you only need to measure your blood pressure from time to time, for example, once a fortnight or once a month.**

- **You only need to contact your GP or practice nurse if you notice a consistent rise over several weeks.**
More flavour, less salt

Salt Awareness Week 2021 celebrates home cooking without the salt in a year of firsts for the campaign

Every year, research group Action on Salt put the spotlight on salt, encouraging people to be more aware of the salt hidden in the foods they buy and manufacturers to add less to their products.

This year, their campaign focused on finding new recipes and flavours to cook with at home. The pandemic has meant that many of us have been spending more time at home cooking, providing an opportunity to get creative in the kitchen.

With the campaign moving online, it was a year of firsts and a great success with support from charities including ourselves and public figures such as Professor Sarah Jarvis MBE, and their highest ever public engagement online.

They published their first ‘Policy Pod’ podcast discussing the campaign’s history, and ran their first ever Instagram Live Q&A in collaboration with Nutritank, reaching nearly 1,000 people.

Finally, we teamed up with them to co-create a webinar for health professionals, hosted and coordinated by MyNutriWeb, discussing salt reduction for preventing premature heart attacks and strokes, reaching over 1,500 registrants.

Salt in the spotlight

Highlights from the Salt Awareness Week webinar

- Salt raises blood pressure, specifically, a part of salt called sodium.
- Salt affects the body in other ways too, leading to kidney disease, stomach cancer, osteoporosis, dementia and obesity, for example.
- High sodium (or salt) intakes account for 1.8 million deaths globally.
- There’s more conclusive evidence linking salt to health than any other nutrient!
- Even modest salt reduction causes significant falls in blood pressure.
- The greater the salt reduction, the greater the fall in blood pressure.
- Anyone over the age of 11 should eat less than 6g of salt a day.
- It’s hard to stay below 6g because salt is added to the foods we buy, even simple things like bread.
- At the moment we eat 8.4g of salt a day on average.
- Salt reduction efforts in the UK have lowered average salt intakes by 1g per day so far.
- By 2050, that’s enough to avoid 83,000 cases of premature heart disease and almost 111,000 premature strokes, saving the NHS £1,640 million in England, according to a new paper out this year. An argument for strengthening salt reduction by UK food manufacturers.

It’s time for the government to make it mandatory for business to reduce the salt they add to food. Do you agree? If so, we’d love you to join our new Pressure Panel (page 9)
New research links blood pressure with brain health

Brain scans suggest that good blood pressure control in midlife could protect brain health later on

Scientists in the US have shown that high blood pressure during midlife is linked to changes in the parts of the brain that are affected by Alzheimer’s disease in later life.

The researchers looked at brain scans of 547 people aged 46-54 along with ultrasound scans of their arteries and an assessment of their heart health. They found that high blood pressure, early signs of atherosclerosis (hardening of the arteries) and other risk factors for heart disease were linked to reduced brain metabolism even at this age, and this was mostly due to high blood pressure.

The results, published this February, reinforce the need to keep high blood pressure and other risk factors under control throughout life.

This study does not prove that lower blood pressure reduces this risk of Alzheimer’s disease or other types of dementia, but it does support the growing research linking blood pressure control with brain health.

The ‘healthy’ snacks sabotaging our health

Corn and pulse-based snacks with a ‘health halo’ of nutritional claims are saltier than seawater

A new survey has found that snacks made from pulses can contain worrying amounts of salt despite their healthy-looking packaging. Claims such as ‘vegan’, ‘less fat’ and ‘no added preservatives’ give the products a ‘health halo’ when in reality they could be raising our blood pressure with their high salt content.

As part of Salt Awareness Week, Action on Salt surveyed 119 dried or processed pulse-based snacks including roasted pulses, lentil curls and chickpea puffs. While they were generally lower in fat and calories than potato crisps and flavoured nuts, four in ten products were high in salt. More than half would have a red light for fat, salt and/or sugar, though most don’t have colour-coded labelling.

Just one 45g bag of the crunchy corn snack Love Corn in Habanero Chilli flavour, for example, contains 1.3g salt – more than 3.5 bags of Walkers Ready Salted crisps. With 2.8g salt per 100g, they’re saltier than seawater. The survey made headlines, including in The Guardian, The Times and a discussion on This Morning.

People looking to make healthier choices will notice claims such as ‘low fat’ but won’t always notice the salt content. Do you think health claims on packaging for high salt foods should be restricted? Have your say in our Pressure Panel (page 9).
Take part in
Know Your Numbers! Week 2021

LET’S MAKE THIS THE YEAR OF HOME MONITORING

Our annual campaign to get the nation checking their blood pressure, Know Your Numbers! Week, will take place from 6-12 September 2021. We’re focusing on the forgotten pandemic of high blood pressure and a golden opportunity to improve blood pressure control both now and in the future. We want to make this the year of home monitoring and we need your help to spread the word in your community.

Home blood pressure monitoring is an effective and inexpensive way to keep blood pressure under control and the evidence behind it continues to get stronger. It gives you a way to take control of your health, feel confident and take the pressure off the NHS at the same time, as there’s no need to visit your GP, practice nurse or pharmacist in person. It puts you in the driver’s seat, and it really can save lives.

YOU CAN HELP:

❤ Host a ‘Home Pressure Station’ and measure the blood pressures of the people you’re in contact with.

❤ Encourage friends and family to buy or borrow a blood pressure monitor.

❤ Share our fabulous new home monitoring resources which we can send you.

❤ Speak to community groups about home monitoring, such as your local Rotary, library or patient groups.

❤ Start a group chat called ‘We Know Our Numbers’ where you can share healthy living ideas.

❤ Tell us your blood pressure story (anonymously if you wish) so we can inspire others to know their numbers.

❤ Direct people to our website and helpline.

❤ Share your videos of healthy cooking tips and recipes (see page 11).

For more information visit www.bloodpressureuk.org/know-your-numbers
Register to take part before the end of August, and save the date!

KNOW YOUR NUMBERS WEEKS 2021

Shop for our charity cards and gifts

Do you have a special occasion coming up?
Choose from our range of greetings cards and Christmas cards, wrapping paper and gifts for all occasions, available from Care Cards. You can personalise presents with the special person’s name, such as notebooks for adults and playful placemats for children. 25% goes to fund our life-saving work.
Join our new Pressure Panel
Take a seat on our patient panel to help influence blood pressure care

You are an expert in your own experience, and your perspective can help guide our work influencing blood pressure care in the UK. We are setting up a Pressure Panel and we would like to invite you to join. This will be a small group of people affected by high blood pressure who are willing to share feedback every now and then, for example, by questionnaire every few months.

TOPICS WILL INCLUDE:
• Your experience of treatment, such as whether you have enough support from us and your healthcare professionals to manage side effects.
• Language, including whether the language we and healthcare professionals use is inclusive and easy to understand.
• Advice, such as whether the advice we give is practical, and what stands in the way of you achieving your health goals.
• Campaigning on matters such as better labelling for salt on food packaging.
• Experiences with GPs, pharmacists and other health professionals, such as whether you felt you could have been supported more to manage your own health at home.
• Co-signing letters such as our letter to Matt Hancock asking for monitors to be available on prescription.

It’s very important to us that our work and recommendations involve the experience of people living with high blood pressure. We received lots of valuable insights in our Focus on the Future Survey last year and we’d like to make this kind of feedback a central part of our work.

If you would like to join our Pressure Panel, email us at info@bloodpressureuk.org

Visit www.care-cards.co.uk/shop/?charity=blood-pressure-UK
The pandemic has exposed health inequalities in the UK, particularly the greater risks linked to being from different ethnic backgrounds, including high blood pressure and type 2 diabetes. There is surprisingly little tailored health information for different ethnic groups, and little guidance for organisations on how to produce it and get it out to people.

We provide some of the few resources available, including our blood pressure booklet translated into 32 different languages, and our booklets for the South Asian, Black African and Black Caribbean communities. Our helpline, campaigning and community work also cater for different needs, but we want to do more.

This year, we’re teaming up with our colleagues at Action on Salt to research what’s needed and we’re in touch with health professionals from different ethnic backgrounds to learn from their successes.

One such expert is award-winning dietitian and media nutritionist, Azmina Govindji, an expert for the NHS Better Health campaign. You might recognise her from The One Show, The Wright Stuff and This Morning; she is also a spokesperson for the British Dietetic Association and has written over 20 books.

Here she shares how she gets the right information to those who need it.

**What are your areas of focus as a dietitian?**

I was Chief Dietitian at Diabetes UK for eight years. Being from a South Asian background, I’m at higher risk of type 2 diabetes and other conditions so this started my specialist journey working with different ethnic communities.

My other area of interest is plant-based diets. I have a 23-year-old daughter who came home one day and told me she was going vegan and my heart sank. I thought “How is she going to get enough nutrients?” So, I did my research and found that a plant-based diet can be healthy if planned wisely. I thought it was really important to challenge the scepticism and wrote a book about it called Vegan Savvy.

**Can you tell us about your recent work with Public Health England’s Better Health campaign?**

I was a Campaign Dietitian for Better Health, which offers free tools and support for kickstarting your health. I created culturally appropriate tips on weight management for South Asian communities and conducted live TV and radio interviews to get people inspired.

**How did you design the content so that it can cater for different groups?**

It’s really important to be empathetic to people from different cultures, religions and backgrounds. It’s not enough to add a samosa or biryani to the end of general advice or use a...
photo of someone from an Asian background. People can sense it and it can put them off.

Most resources tend to group different ethnicities all together under one ‘diversity’ umbrella, but they are not one group. It’s possible to engage with people by showing you understand that.

I assisted on the PHE photo shoot for their posters (shown to the right) showing people holding up plates of food. I made sure the foods were culturally relevant to those particular people and their cultural backgrounds.

How did you approach getting the information to different groups?
This is something I was honoured to be working on – I was interviewed on various South Asian radio stations sharing experience and practical advice, which is more engaging than written information. For example, advice about using brown rice instead of white, replacing salt with other flavours and adding more fruit and veg.

Have you done other work reaching communities?
I worked on an amazing project for the British Heart Foundation leading a team of dietitians working with volunteer cooks at places of worship. We trained them on how to add less salt and make meals healthier.

This was a key learning: you need to find a ringleader in the community, such as a religious leader, community celebrity, role model or patriarch – people listen to them.

You don’t necessarily need to speak the language but it really helps if you inject some humour and build trust.

You are very friendly, fun and enthusiastic. Do you think this is an important part of reaching people?
I think it’s mandatory. If you’re going to be inspired to make a change that improves your quality of life, you’re more likely to be engaged by a method of communication that’s lively as well as educational.

It’s not just ticking boxes. It’s about learning to be one of the community, being an “expert friend”.

Are there other ways that organisations can get their services out to the people who would benefit?
Cultural differences need to be considered and funded from the start of a new project, not as an afterthought, including funding for communications. South Asian communities are more at risk of certain conditions (compared to the wider population), so funding should be appropriate for these risks.

It’s important to work with multiple stakeholders. That could mean practice nurses, community nurses, GPs, dietitians, pharmacists and dentists, but also Asian food stores, community radio and community groups.

It also includes people like me who are at ground level – the last but crucial level. We have an understanding of religion and culture and know the nuances, such as respecting in-laws and seniors. It’s about understanding where all these things fit in in terms of motivation and desire to change.

Ideally the professional needs to be from the same specific community, but I think passion and rapport are more important.

Do you have any advice around weight loss you’d like to share?
I’ve found people benefit from my ‘Veggie Veggie Protein Carbs’ concept. It’s a model where your plate is half-filled with veg (and fruit), a quarter (wholegrain) carbs, and a quarter of lean protein.

It means you can cut calories without counting because you eat more filling veg and fibre, and there’s less room for fatty foods like ghee and meat. Moving from a carb-loaded diet of roti, potatoes or rice to one that limits carbs to a quarter of the plate also helps achieve weight loss.

Are you from a South Asian or Black background and do you have any healthy recipes or cooking tips to share? We’re collecting tips and videos in time for Know Your Numbers! Week in September. Get in touch to take part at info@bloodpressureuk.org
What you eat and how active you are can make a big difference to your blood pressure, and one way of eating that’s been developed especially for lowering blood pressure is the DASH diet. So, what is it, does it work, and what does the research say?

Leading Dietitian and Nutritionist Priya Tew, who you may know from the BBC’s Eat Well For Less and Food: Truth or Scare and many more TV and radio appearances, has recently written a book answering exactly these questions complete with 40 recipes to put the DASH diet into practice. Here, Priya explains what you need to know.

What is the DASH diet?

DASH stands for Dietary Approaches to Stop Hypertension (hypertension is the medical word for high blood pressure) and it’s been around for quite some time. It was developed in the 1990s when the US Government began funding research to find out whether dietary changes could lower blood pressure.

The DASH diet is similar to the Mediterranean diet, which is well known for its heart health benefits in that it encourages lots of fruits, vegetables, wholegrains, lean proteins, and less salt.

These foods form the basis of healthy eating guidelines the world over, and the DASH diet goes a step further with more specific guidance on how much of each of these foods to eat, shown below.

- 7–8 portions of wholegrains a day
- 4–5 portions of fruit a day
- 4–5 portions of vegetables a day
- 2–3 portions of low-fat dairy a day
- 2 portions or less of lean protein a day, with a focus on plant proteins such as legumes (including beans and peas)
- Nuts 4–5 times a week
- Reduced salt

Does it work?

There is a wealth of quality evidence showing that this way of eating can lower blood pressure and cholesterol – the fatty substance that builds up in the arteries – lowering the risk of heart disease risks.

One review from 2020 looked at all the research trials to date examining 12 different diets for lowering blood pressure. It found that the DASH, Nordic, and Portfolio diets all significantly lowered blood pressure but the DASH diet had the greatest effect. Notably, all these diets share a common theme: they are rich in fruits, vegetables, whole grains, legumes, seeds, nuts, fish and dairy products, and low in processed meats, saturated fat and sweet treats.

Trials show the DASH diet can reduce blood pressure by around 5–8 mmHg systolic (the top number) and around 3–4 mmHg diastolic (the bottom number) – enough to make a meaningful difference to your risk of serious illness later on. Eating less salt also reduces blood pressure, but interestingly, following the DASH diet and eating less salt at the same time has a greater effect than one or the other.

The DASH diet has also been shown to lower blood pressure independently of weight – another factor that raises blood pressure. It can have other effects too. There is some evidence that it can improve insulin sensitivity – important for people with type 2 diabetes or pre-diabetes.

While there is no gold standard way of eating and it’s important to find what works for you, basing your diet on these unprocessed, heart-healthy foods won’t do any harm and could make a meaningful difference to your blood pressure and your overall health.
Banana Flapjacks

These fruity flapjacks are easy to make and instantly add fruit, seeds and wholegrains to your day. They’re delicious and satisfying too, so you won’t be tempted to snack on other things.

Ingredients - 12 servings
Each serving contains half a portion of fruit
- 2 large ripe bananas, peeled
- 250g (9oz) rolled oats
- 100g (3½oz) raisins
- 40g (1½oz) sesame seeds
- 40g (1½oz) pumpkin seeds
- 150g (5½oz) reduced-fat olive oil spread, plus extra for greasing
- 2 tablespoons thick or clear honey

Method
Preheat the oven to 180°C (350°F), Gas Mark 4. Grease and line a 20cm (8inch) square shallow baking tin.

Mash the bananas in a heatproof bowl, then stir in the oats, raisins and seeds.

Melt the olive-oil spread and honey together in a suitable bowl in the microwave on medium for 1 minute at a time until melted (or you can do this in a small saucepan over a low heat).

Pour the melted butter mixture into the banana-oat mixture and mix well to combine. Tip into the prepared tin and spread out evenly.

Bake for 45 minutes until lightly browned on top and firm. About halfway through the baking time, I suggest covering the top with foil or greaseproof paper to prevent the seeds or raisins from burning.

Remove from the oven and cool slightly, then mark into 12 squares. Transfer to a wire rack and leave to cool completely in the tin.

Once cold, cut into squares, remove from the tin and serve. Store in an airtight container for up to 3 days. These flapjacks also freeze well for up to 3 months (defrost at room temperature before serving).

A holistic way to reach a healthier weight
While research shows that a healthy weight is important for your blood pressure, many health professionals are now encouraging people to take the focus off numbers on the scales and instead focus on building healthy habits into your life. This could include eating more fruit and veg every day or going for a walk every lunch time. These will not only lead to a healthier weight but to a healthier you overall. See page 18 for ideas.

More veg please

Priya’s book, The DASH Diet: Lower your blood pressure in just 21 days, explains the science behind this way of eating in easy-to-understand language. It includes practical tips for eating more fruit and veg and less salt, plus positive lifestyle changes including 21 days of meal plans, recipes and shopping lists. The DASH Diet is available in bookshops and online retailers including Amazon.

Visit Priya’s website at www.dietitianuk.co.uk
Follow her on Instagram @Priya_Tew and on Twitter @PriyaTew

THE DASH DIET
Lower your blood pressure in just 21 days

PRIYA TEW
As seen on TV
The hormonal causes of high blood pressure

Only 5% of people with high blood pressure have an underlying condition causing their numbers to rise – the rest are thought to have primary or “essential” hypertension caused by a combination of age, lifestyle and genes. Almost half of these 5% have kidney diseases, and the other half come down to the overproduction of hormones involved in blood pressure.

In this issue of Positive Pressure, Gareth Beevers remembers three intriguing patients he encountered over 30 years at City Hospital, Birmingham, with different hormone-secreting tumours, one of which is extremely rare.
A daring operation and an astonishing recovery

The most dramatic hormone-secreting tumour is a phaeochromocytoma. This long name is usually shortened to the more manageable “phaeo”. They are usually found in the adrenal glands, just above the kidneys (see figure 1).

The adrenal glands have two distinct zones. The cortex (the outer layer) produces the hormones aldosterone and cortisol, which control salt and water balance and blood sugar. The medulla (the inner part) produces adrenalin and noradrenalin – where most phaeos are found. But in this, my most memorable case, things were particularly complicated.

37-year old Julie was admitted to City Hospital desperately unwell with pneumonia and heart failure. She had an awful past history having had part of one lung removed for a lung abscess and had been on long-term steroid tablets for severe asthma. Her medical records revealed persistently mildly raised blood pressure which was (wrongly) attributed to the steroids.

As her pneumonia and heart failure slowly improved with intensive treatment, we noted that her blood pressure fluctuated dramatically between 150/90 and 210/159mmHg. For the past year she also had palpitations (where you can feel your heart beating extremely fast) and excessive sweating for which she had been referred to a psychiatrist. These symptoms are all highly-suggestive of a phaeo.

Our investigations confirmed the diagnosis. Urine tests revealed raised levels of metanephrines (produced when adrenaline and noradrenaline are broken down) and kidney scans showed a 6cm tumour in her right adrenal gland.

The question then was, what should we do? Major surgery is needed to remove phaeos, a difficult operation at the best of times, but in Julie’s case things were complicated by her lung and heart conditions.

I consulted two senior colleagues: a cardiologist and a chest physician. Both shook their heads. They thought that, because of her terrible chest, she would not survive the anaesthetic and surgery.

I asked another hugely respected surgeon to see her. He thought that without surgery she was bound to die as the phaeo could be worsening her heart failure. There was also a 10% chance that the phaeo might be a malignant tumour (cancer) meaning it could spread around the body. He would take her on, backed up by an excellent anaesthetist.

Surgery to remove phaeos is a dangerous business. Blood pressure and heart rate can rise to extremely high levels with the anaesthetic. As the surgeon frees the tumour, adrenaline and noradrenaline can pour into the blood stream causing worrying surges in heart rate and blood pressure. Then, once the tumour is removed, blood pressure can drop to dangerously low levels. So, at one stage the anaesthetist is fighting with sky-high blood pressure and minutes later they are struggling to bring the pressure up.

Preparation is crucial. We gave Julie drugs to block hormone production, control her blood pressure and manage her heart failure and asthma, combined with intensive chest physiotherapy.

I did not go to watch the operation – I had hated entering operating theatres ever since my student days – but the operation and anaesthetist went smoothly and Julie was fit enough to go home one week later. A truly astonishing outcome.

About 10% of phaeos recur, which sadly was the case for Julie, but thanks to the daring efforts of the surgeon, the anaesthetist and the team, she lived for 12 more years with good blood pressure and reasonable health. She was even able to resume her hobby of attending major golf tournaments, enjoying watching from the stands near the final green.

Figure 1. Normal kidneys and adrenal gland showing a tumour (phaeochromocytoma) originating from the adrenal medulla.

Figure 2. Julie’s right adrenal gland showing a tumour (phaeochromocytoma) originating from the adrenal medulla.
The case of the giant adenoma

In 1955, a doctor named Jerome Conn from Michigan published the first report of a patient with severe hypertension caused by a benign (non-cancerous) tumour, known as an adenoma of the cortex of the adrenal gland. The tumour was secreting large amounts of the hormone aldosterone which controls salt and water balance and, with it, blood pressure. Since then, thousands of similar cases have been reported and the condition is now given the eponym of Conn’s Syndrome.

Many clinicians believe that Conn’s syndrome is rare, but it is not. I have met two GPs who have seen three cases on their 2,000 patient practice list and I am sure a systematic search would reveal even more.

A 65-year-old lady named Ursula was referred to the City Hospital blood pressure clinic. She had had high blood pressure for 15 years which could not be brought down by four different drugs. Her blood pressure was 214/124mmHg.

Our first-line investigations showed a picture typical of Conn’s Syndrome, with high plasma sodium and low plasma potassium. There was however, one other remote possibility. In the Netherlands and some parts of northern Europe, many people consume large quantities of liquorice. Liquorice mimics the hormone aldosterone in that it also causes raised blood pressure, high sodium and low potassium. Some Dutch liquorice sweets, amazingly, also contain added salt – an important cause of high blood pressure.

Ursula was German, so I asked her whether she ate a lot of liquorice. She gave me an odd look and said that she did not.

Her high aldosterone levels without high renin (a hormone which stimulates aldosterone production) proved she had Conn’s Syndrome and, as expected, x-rays showed the tumour in the adrenal cortex. But this tumour was far too big. The consultant radiologist thought it looked more like a phaeo or even some form of malignant tumour (cancer). She needed surgery urgently.

The surgeon removed the tumour with no problems and, thankfully, it was indeed a Conn’s tumour, not cancer.

Conn’s tumours are “canary yellow” in colour and are usually 0.5 to 1.0cm in diameter, but Ursula’s was 3.8cm. When we looked through the world literature, we found that Ursula’s was the largest ever reported.

Over five years of check-ups, Ursula’s blood pressure was well controlled with a single drug.

Given that it had taken such a long time for Ursula to be diagnosed with Conn’s Syndrome, we later analysed the delay in referral and diagnosis in 28 patients with Conn’s Syndrome who had come to our department in the past. We were horrified to find an average delay from their first diagnosis of high blood pressure to referral to our clinic of 7.2 years.

There is some evidence that patients with long delays in diagnosis and treatment are less likely to achieve normal blood pressure than those diagnosed and treated earlier. This was seen in our patient. Ursula’s blood pressure was badly controlled with four medicines before her operation but was well controlled with just one drug after her giant adenoma was removed.

The moral of the story? All hypertensive patients need routine elementary investigations when first diagnosed to detect the rare causes of high blood pressure. (See the end of this article for more).

Adrenal cancers secreting aldosterone are, mercifully, exceedingly rare, as they grow rapidly and spread around the body. There are only about 50 cases reported worldwide. The patients are usually elderly and are extremely ill when they first see a doctor. I saw one case in 2007 and there was just one other case in Birmingham in the 1970s.
A Rugby player goes to A&E

Toby was a student at Warwick University and a keen Rugby player. Judging from his appearance he would have been a good fly-half. One Saturday he sustained an injury to his left ankle and was sent to his local A&E department.

His ankle injury was not serious but his blood pressure was 170/110mmHg – grossly high for a lad of his age. He was referred to our unit for investigation.

Our tests showed normal kidney function, but his serum potassium was low and his sodium was normal. The low potassium (known as hypokalaemia) suggested high aldosterone levels – as seen in the previous case.

Toby’s plasma aldosterone was in fact 14 times above the upper limit of normal, but his plasma renin was not low as it would be in Conn’s syndrome; it was seven times higher than normal. This indicates a state of secondary aldosteronism where the raised aldosterone is caused by the hormone renin. It couldn’t be Conn’s syndrome.

Ultrasound and CT scans revealed a tumour 3cm in diameter in his left kidney. He had surgery to remove the kidney and investigations under a microscope showed the tumour was a benign (non-cancerous) “juxta-glomerular cell” tumour. These tumours secrete renin, and they’re very rare.

Toby’s blood pressure returned to normal after surgery and he was discharged from hospital after three days. After he passed his degree examinations two years later, he decided to travel to Australia and New Zealand doing odd jobs so I lost touch with him. I warned him that he needed annual checks of his blood pressure and the function in his remaining kidney – because he’s only got one left.

Juxta-glomerular cell tumours are exceedingly rare and, so far at least, none have been malignant (cancerous). Interestingly, the world’s first case was also from Birmingham, in 1967. The author of the report was P W Robertson and at one stage some people referred to the disease as Robertson’s syndrome, but the eponym didn’t stick.

I saw one other case in a 12-year-old girl when I was a junior doctor in Glasgow in 1974. There are about 40 cases of juxta-glomerular cell tumours reported in the entire world’s literature and I’ve seen two of them: astonishing!

Who should be referred to a specialist?

In the years since 1970, when hypertension became my main speciality, I have seen six patients with phaeos, 49 with Conn’s syndrome, one with an aldosterone-secreting cancer and two with renin-secreting tumours. All required specialist investigation by a multi-disciplinary team including physicians, surgeons, radiologists and biochemists.

The question is, how can general practitioners know which of their 200-300 patients with high blood pressure they should refer? The answer is this:

All patients with high blood pressure under the age of about 30 require detailed investigation as there is a strong chance that there may be an underlying cause.

All other patients can be investigated in general practice with a simple urine test for blood and protein, a measure of serum creatinine to test kidney function, and a test of plasma sodium and potassium to look for aldosterone excess. Patients should be asked about any intermittent (on-off) symptoms of fast pulse, panic attacks and excessive sweating with unusually variable blood pressure. Anyone with these signs need tests to exclude a diagnosis of phaeochromocytoma. The rest never need to attend hospital if their blood pressure is well controlled.
Dr Rangan Chatterjee is a British GP who has been practising for the last two decades. He is an author, television presenter and podcaster best known for his TV show Doctor in the House, and he is resident doctor on BBC One’s Breakfast Show and a regular commentator on BBC Radio. Dr Chatterjee co-created and teaches the widely acclaimed ‘Prescribing Lifestyle Medicine’ course with the Royal College of GPs, reaching thousands of doctors and healthcare professionals across the country.

His latest book, Feel Better in 5: Your Daily Plan to Feel Great for Life, contains more than 30 5-minute tips to help you lose weight, improve sleep and move more, and I think it’s a great tool for helping you to find the good in every day. The colours are lovely and bright and the photos are friendly and inspiring.

Dr Chatterjee accepts that we can’t all spend hours in the gym and train for marathons to get healthy, so he wants to give people the tools to transform their health and happiness with small sustainable changes. The book is full of doable 5-minute interventions he calls “health snacks” that you do three times a day, helping you to form meaningful habits as opposed to striving for giant, unattainable goals.

The book is split up into three super important aspects of health – mind, body and heart – each containing a range of health snacks. He recommends you choose one health snack from each section to perform daily until it becomes a habit you start to crave “just as you might crave a chocolate bar or a glass of wine”.

There are different categories of activities, each with multiple benefits to your wellbeing. Look out for the ‘how to get more’ and ‘how to get less’ lists which will help if you feel overwhelmed, and the suggested combinations for common conditions such as high blood pressure and anxiety.

The health snacks include things like:
- spending 5 minutes out in nature (he discusses all the amazing benefits of this)
- breathing exercises, with clear instructions
- a recipe to make a nourishing smoothie
- 5-minute workouts and yoga sessions, with diagrams and instructions
- reaching out to a friend
- forgiveness practice
- gratitude game.

The health snacks are very easy to fit into your day even if you have very little time! He also discusses how you can easily add them onto habits you have already formed. There are case studies and tips for making your new habits stick and a chart at the back to record your success.

I found that I already do one or two of the activities. Now my aim is to start adding more. It feels motivating to know I can make a difference to my health 5 minutes at a time.

While the book is focused on health as a whole, it’s important to say that for lower blood pressure in particular, the essentials will always be to take your medicines, monitor your numbers, maintain a healthy weight, eat a healthy diet, eat less salt, be active, limit alcohol and stop smoking. However, I appreciate Dr Rangan Chatterjee for encouraging everyone to take a more holistic and proactive approach to health. I very much recommend this book to help you develop healthy daily habits and I think it will give everyone a realistic chance of making those changes stick.
Reviewing Bill Bryson’s *The Body* was a daunting task because it’s such a masterpiece I don’t know how I could do it justice. You may already know Bill Bryson from his bestseller *A Short History of Nearly Everything*, as well as his classics *At Home* and *The Road to Little Dribbling*. This was my first Bill Bryson experience and having read this one twice I’m going to have to read all his others as well, probably twice.

With the ingenious subtitle, *A guide for occupants*, *The Body* does exactly what it says on the tin. It is very much a guide for anyone currently occupying a human body, which probably includes your good self, and would like to know a little bit more about how it works.

Starting with an estimate of how much it would cost you to buy all the elements to build the actor Benedict Cumberbatch (who happens to be a typically-sized human), Bryson guides you through your ‘warm wobble of flesh’ more or less by region, from your head and brain to your ‘nether regions’ via your microbes, immune system and much more besides.

He discusses what can go wrong, but marvels much more at the countless things that go right. He answers questions you didn’t know you had, such as how many times do you blink in a day? And how many red blood cells do you make in a second? (I can’t tell you the answers because it will spoil the fun.) He also raises life’s greatest unanswered questions, like why does our skin wrinkle in the bath? And what’s the point of a chin?

My favourite fact might be how humans came to develop such large, high-functioning brains – it comes down to the humble sweat gland. Sweating allows us to regulate our temperature far more than panting, which many of our mammalian friends rely on, and the brain is extremely temperature sensitive. Who knew?! For anyone interested in blood pressure, you’ll find an excellent summary of what it is and how it works in Chapter 7, *The Heart and Blood*, with the other helpful references sprinkled throughout.

As well as introducing your unseen systems and senses (apparently, we have 33 senses, not the mere five we all know of) Bryson introduces you to the unsung heroes of medicine you’ve never heard of and reintroduces you to many you probably have. You might even notice a few ‘heroes of hypertension’ previously praised by our medical advisor Professor Gareth Beevers, also a fan of Bryson’s magnum opus. Notably, Bryson gives credit to the men and women who were not recognised in their day but who really deserved a Nobel prize, and elaborates with many entertaining anecdotes that some might rather stayed forgotten.

Amongst the wonder and amusement, Bryson raised important topics. For example, the under-representation of women in medical research and the pitfalls as well as the successes of modern medicine. There are also some fairly stark reality checks about antibiotics, viruses and microbes – just to forewarn you.

Bryson has somehow distilled libraries of research into concise and entertaining sections. Every paragraph covers new ground and every sentence contains new, jaw-dropping knowledge. If you’re remotely impressed by the skin you’re in, one reading won’t be enough.
What are the Government doing about obesity?

Holly Gabriel, Registered Nutritionist and Nutrition Manager at Action on Sugar holds the government to account

We live in a food environment that does not, for the most part, support us to live a healthy life. We are surrounded by processed food and drink that is full of salt, sugar and fat. It’s heavily advertised with special offers, misleading labelling and inconsistent, often damaging, information online. As a nation we are suffering the consequences, with obesity, type 2 diabetes and high blood pressure becoming the norm. The Government has a huge part to play in creating a healthy environment and it’s time they do so.

Two thirds of men and women in England have a weight classed as overweight or obese, and more than one in five children are considered overweight or obese when they start primary school, rising to more than one in three by the time they leave.

The UK has one of the highest rates of obesity and related conditions in the world even though it’s one of the richest countries, that’s because obesity is a complex issue with many causes. Where you live, your ethnicity, genetics, background, bank balance and environment all have an impact.

Over the years, there have been many obesity plans by various governments, their leaders and health ministers. The most recent was the commitment in July 2020 by Boris Johnson to ‘Tackle obesity’. He cited his own experience as a catalyst for action after he was admitted to hospital with COVID-19, and noted that being in the obese category may have contributed. Sadly, we now know that if you are living with health conditions including obesity you are more at risk of severe illness due to COVID-19.

The Prime Minister’s new plans included commitments such as:

- a new healthy weight campaign called Better Health
- gathering views and evidence on the current ‘traffic light’ front of pack nutrition labelling
- making it mandatory for restaurants, cafes and takeaways to add calorie labels to the food they sell
- potentially introducing calorie labelling on alcohol
- legislating to end some types of special offers such as Buy One Get One Free on unhealthy food
- consulting on whether to end advertising for unhealthy food before 9pm on TV and online.
Much of this is yet to come to fruition, and importantly, there is no mention of the UK’s food reformulation policies which are some of the most effective for changing our food environment: the salt reduction programme has successfully and gradually reduced rates of high blood pressure in the UK by reducing salt intakes; a sugar reduction programme which has made some progress; a fairly new calorie reduction programme; and a soft drinks industry levy (the sugar tax) which has been successful in getting drink makers to reduce sugar in drinks to avoid paying the levy. The levy is successful because it’s mandatory, which means there are no easy get-out clauses. The sugar reduction programme has real potential too, but businesses need to be held to account.

We hope that these reformulation programmes stay on the top of the priority list and continue to be reviewed and improved. They have real potential to change our food environment for the better and address some of the many complex causes of weight gain. The Government have a habit of scrapping things and starting again, but we need consistency if we are to have any chance of living a healthy life without being bombarded with food and drink that doesn’t nourish us. Let’s hope the Prime Minister’s intent is here to stay.

Find our Podcast, Policy Pod, by CASSH on Spotify
Follow Holly on twitter:
@actiononsugar @holly_gabe

**If you’re looking to lose weight, have a look at what the experts said on pages 11 and 13 and get ideas for forming healthy habits on page 18**
Advice from Hariet Smith, BSC (HONS), Award-Winning Registered Dietitian

“When it comes to the nation’s salt intake, we need to be realists – the public will not stop using salt overnight. This is why the Season With Sense campaign is so important as it aims to educate consumers on their salt habits and the dangers of consuming too much, whilst also teaching that small changes don’t need to be difficult.”

Advice from Professor Sarah Jarvis, GP & Media Medic

“As a nation, we tend to focus on the dangers of sugar; however, sugar isn’t the only white stuff we need to be aware of. If salt intake fell by a third, it would prevent 8,000 premature deaths in the UK and could save the NHS over £500 million annually.”

Sea Bass with Tomato Salsa & Crushed Potatoes

**INGREDIENTS:**
- 350g new potatoes, halved
- 3 tomatoes, diced (200g)
- 4 spring onions, thinly sliced
- ½ x 25g pack basil, shredded
- 2 tbsp olive oil
- ½ tsp LoSalt
- 2 sea bass fillets (180g)

**METHOD:**

**Prep:** 10 minutes  
**Cook:** 20 minutes  
**Serves:** 2

1. Cook the potatoes in boiling water for 10 minutes or until tender, drain and roughly crush.
2. Meanwhile, mix together the tomatoes, spring onions and basil and set aside. Heat 1½ tbsp oil in a large frying pan and fry the potatoes with the LoSalt for 4-5 minutes until golden and crispy. Remove and keep warm.
3. Add the remaining oil to the pan and fry the sea bass, skin side down for 2-3 minutes, turn and cook for a further 1 minute.
4. Divide the potatoes between 2 plates and top with the sea bass. Spoon over the tomato salsa, to serve.

For more simple, healthy meals, please visit our new look website:  
www.seasonwithsense.com
Have you thought of including Blood Pressure UK in your Will?

A lasting way to help others with high blood pressure
Finding out that you have high blood pressure can be traumatic, particularly if you are young. Most people don’t know anything about the condition and worry about how it will affect them and those around them.

Blood Pressure UK is here to help. With our information packs, range of leaflets and our helpline, we provide reassurance and support to those who need it. All of this work is expensive, and while membership subscriptions and donations help enormously, leaving a gift in your Will can help us make a bigger difference.

Leaving a gift isn’t as complicated as you might think. It doesn’t have to be a large amount, and it will give you the assurance that our work will continue long into the future.

Obviously, providing for your family and friends comes first, but once that is done please consider leaving a gift to Blood Pressure UK in your Will.

We have put together a simple leaflet to guide you through the process. You can get a copy by telephoning (020) 7882 6255, visiting our website at www.bloodpressureuk.org or by writing to Blood Pressure UK, Wolfson Institute, Charterhouse Square, London, EC1M 6BQ.

JOIN THE MOVEMENT

SEASON TO TASTE, SEASON WITH SENSE

Follow us at www.instagram.com/seasonwithsense
We have a range of booklets and fact sheets giving valuable information about living with high blood pressure to help you understand it, lower it and manage it.

**Introducing high blood pressure**
This booklet explains what high blood pressure is, who gets it and why. It gives basic information on lifestyle changes to lower blood pressure, and about measuring your own blood pressure at home.

**Healthy lifestyle and blood pressure**
This booklet shows how getting more active and keeping to a healthy weight can help lower your blood pressure. It looks at how you can start to build more activity into your day, and what types of activity may be best for you. It also talks about sensible approaches to losing weight if you need to.

**Measuring your blood pressure at home**
This booklet can help you decide whether measuring your blood pressure at home is right for you, and how to choose the right type of monitor. It also gives you tips about how and when to measure your blood pressure to be sure you are getting reliable readings.

**Getting the most from blood pressure medicines**
Most people with high blood pressure will need to take medicines to control it. This booklet talks about the different medicines for high blood pressure and about how you can get the best results from them. It also looks at side effects of blood pressure medicines and what you can do to avoid these.

**Healthy eating and blood pressure**
This booklet looks at how what you eat can affect your blood pressure. It shows you how you can start to eat less salt, and how to get your five daily portions of fruit and vegetables. It also explains how alcohol, fats and sugar can all affect your heart and body.

With great thanks to the Big Lottery Fund, we have been able to translate our award-winning ‘Introducing high blood pressure’ leaflet into 32 languages. They are all available to download from our website only.

Our full range of resources includes ‘Love your heart: a South Asian guide to controlling your blood pressure’ and factsheets on all the common blood pressure medicines.

All these publications are free to Blood Pressure UK members. Visit www.bloodpressureuk.org for your copy.