THE HIDDEN EPIDEMIC

Matt Rudd meets the people whose lives and limbs have been ravaged by type 2 diabetes — and asks why millions of us are still ignoring the health warnings

Colin Rattray, above, needed his lower leg amputated after years of ignoring his type 2 diabetes

On a Tuesday morning last November, Colin Rattray watched as a surgeon amputated his lower right leg and popped it into a plastic bag. An infection had turned the bones in his feet to mush and he was too ill to risk general anaesthetic. Local was the only option. As he felt the vibration of the bone saw cut first through the fibula and then the shin bone, his overriding emotion was "relief". "They weren't removing my leg," he says. "They were getting rid of the infection that would have killed me."

Colin was diagnosed with type 2 diabetes 20 years ago. He was 31, a successful executive in the hospitality industry and, as he puts it, he felt immortal. He took the diagnosis in his considerable stride. "I didn't understand it," he says. "I didn't want to understand it. So I ignored it." A sporty youth, he had ballooned in weight after a knee injury at 21. At his heaviest, he weighed more than 30 stone. His doctors' attitude was that he had brought the disease on himself. Twenty years on, Colin also realises he has himself to blame.

"But at the time I wasn't worried," he says. "The only symptoms were that I peed a lot and I was thirsty all the time. Cancer is serious, heart disease is serious, but diabetes didn't feel serious at all." He started taking the medication he was prescribed and carried on living the high life.

In 2011, Colin's sense of immortality was challenged for the first time. A stubbed toe developed an infection — something diabetics are prone to — and, within a few days, he was having his first run-in with the surgeon's saw. "They took two toes and two metatarsal bones. It was a wake-up call."

He made the decision to take better care of himself. He started to listen to the stock medical advice so many of us routinely ignore. He ate well and he took up exercise. "The irony is that, for the past three or four years, I have had good control of my blood sugar."

It was too late. Colin had developed neuropathy, a painful long-term side effect of diabetes in which high levels of glucose in the blood cause nerve damage. It usually starts in the hands or feet and works up. Without constant care, ulcers develop, bones weaken, infections spread easily and, because of the loss of feeling, injuries can go undetected.

When I ask Colin what led to the lower-leg amputation, he tells me he realised that he had broken a metatarsal only when it was too late: "I spent nine months in and out of hospital trying to recover from ulceration and then, in November, I became very ill. My consultant compared an x-ray to one from the month before and pointed out that the bones in my foot had completely dissolved.

"I'm entirely responsible for my own downfall," he adds. "I had a terrible attitude. My attitude to sugar was as bad as a junkie's attitude to heroin."

There are thin people with type 2 diabetes and obese people without it, but there is no question that lifestyle choices are significant. Obesity accounts for 80%-85% of someone's risk of developing the disease. What is equally clear is that we, individually and as a society, are not doing enough to limit those risks. The figures are, quite simply, staggering. An estimated one in 15 people in the UK has diabetes. Ten per cent of them have type 1 diabetes, a largely genetic condition that has nothing to do with diet or lifestyle. The rest have type 2. "There are 3.7m people currently diagnosed and this figure is set to grow," says Chanelle Corena, head of type 2 prevention at Diabetes UK. "We estimate that there are almost 1m more people undiagnosed."

Diagnoses of type 2 diabetes have more than doubled in the past 20 years, and given that 66% of men and 57% of women are now either overweight or obese, these figures will only get worse. "By 2030, we estimate that more than 5.5m people will be living with diabetes in all its forms," Corena says. More than half of the people with the disease will have no symptoms, or at least nothing they would bother a doctor with. For many, the impetus to make lifestyle changes comes too late to prevent the disease's progression.

There has been a lot of focus on how we will manage the financial burden of our ageing population, but the cost of managing our overweight population is increasing exponentially. About 10% of the NHS budget is spent on diabetes and at least one in six people in a hospital bed has diabetes. Too many of us assume it is a relatively benign condition, something that can be managed with medicine, but the truth is that it can bring intractable problems — almost 80% of diabetes money goes on treating associated complications. For some people with type 2, an overload of carbohydrate will essentially wear out their pancreas. This results in glucose circulating like toxic waste in their blood, threatening everything from limbs to eyesight. It is the epidemic of our age, so why is it not being dealt with more robustly?

Yian Jones, once a happy and enthusiastic social worker, has struggled to stay positive as a result of complications arising from type 2 diabetes. He doesn't mince his words — his life has been ruined by a disease he didn't take seriously enough, early enough. He is now determined to warn others of the dangers. "But they haven't got a clue," he says.

Yian's story has parallels with Colin's. He, too, felt immortal in his twenties — who doesn't? He "worked hard and played hard", even after he was diagnosed at just 21. His diagnosis also came before any symptoms. "It didn't sound serious and it didn't feel serious," he says. "It was just something I had, they gave me medication and I got on with my life."

In his late thirties, Yian had a gastric bypass. Surgical staples were clipped around the top of his stomach to create a small pouch connecting to his small intestine. "After that, I had no appetite," he says. "It came as a shock, but I lost weight rapidly. And I was happier. I was on the verge of becoming a normal person."

Ironically, it was a healthier lifestyle that became the catalyst for the onset of more debilitating symptoms. Emboldened by his weight loss, Yian became "a fitness freak", taking up running, cycling and swimming. His weakened bones couldn't take it and so began a gradual loss of mobility. The most demoralising aspect has been a condition that has resulted from the nerve damage caused by diabetes: Charcot foot is a weakening of the bones to the point of fracture. "It takes away your liberty," he says. "My life is a succession of hospital visits, dealing with infections and fractures. I've just had another big operation. The bone in my left foot had twisted and broken through the skin." He offers to show me photographic evidence of the resulting 3in hole, but I tell him I believe him.

Like Colin, he is facing the prospect of amputation. Unlike Colin, he will be unable to have a prosthetic because of blood pressure issues. He will have to use a wheelchair. "I'm only 50 and I never imagined I'd be living like this," he says. "My wife does the caring. We have a good relationship, but it's still hard. I can't work. I enjoyed my job and I can't do it any more. I can't get out of the house. I think about life expectancy. What is going to happen? I tell myself to be positive, but I can't always escape the depression. I'm trapped and I'm bored. It's grim."

There is prejudice surrounding type 2 diabetes. It's commonly perceived as the glutton's disease; just deserts for people who ate all the desserts. In researching this feature, I haven't found a single sufferer who doesn't accept some responsibility for their diagnosis. But it's what happens after that initial diagnosis that is most worrying. How many of the millions of people who are diabetic and the millions more who are prediabetic realise how serious things can get? Do they know about neuropathy or the risk of retinal damage or the deeply medieval Charcot foot?

Nationally, there are now a record 169 diabetes-related amputations every single week. Strangely, the south coast is something of a hotspot. In Portsmouth alone, there were 129 amputations between 2014 and 2017. Yian, from nearby Havant, tells me the foot clinic he has to attend every week is full of people like him. People who shrugged off their initial diagnosis, but whose lives are now damaged irreparably.

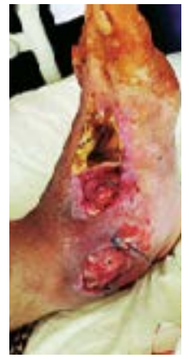
"People don't realise how ferocious it can be," Yian says. "And they certainly don't understand the dangers of sugar in the first place."

The data on calorie consumption over time is patchy, but several studies have found, counterintuitively, that the average amount we consume has gone down since the 1980s. Why, then, aren't we all thinner? The answer is twofold. First, we have become far more sedentary over the past three decades. We shop, work and communicate digitally. We sit more. We move less. We click where we used to walk. It's hardly a surprise that the calories we consume outstrip the calories we burn. And second, the types of calories we consume have changed. We eat out more, we eat more processed food, we eat more sugar, hidden and in plain sight. Today, despite years of warnings, the average Briton still consumes more than double the recommended daily amount of sugar (and the average teenager manages almost three times as much). Despite all the talk of clean eating, our diet has become richer and our health has become poorer.

We all know this. Colin, Yian and other diabetics I've spoken to certainly know it. But many of them tell a similar story. On diagnosis, they didn't realise the gravity of their situation. Why?

When a new type 2 patient comes through the surgery door, the GP will deliver the news and then discuss management of the disease. The approach is usually three-pronged. First, there will be a conversation about lifestyle. It will comprise all the advice we always get — do more exercise, eat better, watch the booze — but with an extra edge. As in, you have diabetes, you should really listen. Then the doctor will move on to diet. The patient may be handed a diagram of the Eatwell Plate to show them how to balance meals — a good third vegetables, slivers of protein and dairy, and another good third carbs (focusing on wholegrain or high-fibre "complex" carbs, which are broken down at a slower, more manageable pace than "simpler" carbs, the sugars found in cakes, processed food and fruit juice). And finally, critically, medicine will be prescribed. The favoured starter is metformin, a drug designed to make your body respond better to insulin and to reduce your blood glucose. From there, via a cocktail of other options, you eventually end up with insulin injections.

You can get the gist of the public health approach to the epidemic on the NHS website. It says: "Type 2 diabetes can cause symptoms like excessive thirst, needing to pee a lot and tiredness. It can also increase your risk of getting serious problems with your eyes, heart and nerves." Just as Colin said, it doesn't sound too alarming. Sure, there's an increased risk of bad things happening, but we've all done enough symptom-googling to know there are risks in everything. Mainly, you're going to be thirsty. It goes on to say that it is "a lifelong condition that can ⟶



Neuropathy in diabetics can lead to Charcot foot, ulcers and other conditions

"I'M RESPONSIBLE FOR MY OWN DOWNFALL. MY ATTITUDE TO SUGAR WAS LIKE A JUNKIE'S ATTITUDE TO HEROIN"

PREVIOUS PAGES: KEVIN DUTTON FOR THE SUNDAY TIMES MAGAZINE. THESE PAGES: ALAN RICHARDSON, SHUTTERSTOCK

affect your everyday life. You may need to change your diet, take medicines and have regular check-ups." "Lifelong condition" implies there is not much to be done anyway. And "you may need to change your diet" is conditional. Maybe you will need to change your diet. Maybe you won't.

Richard Shaw was 54 when he decided he'd had enough of his "lifelong" condition. Three years earlier, the arts marketing executive was diagnosed with type 2 diabetes. He was given the stock "lame" lifestyle advice, he was told to follow the Eatwell diet and he was sent home with a whole new bathroom cabinet full of drugs. "The plan was to manage this condition, to maintain my current state of poor health," he says. "There was no strategy to get rid of it."

Shaw began to read around the subject. He came across a study by Newcastle University's Magnetic Resonance Centre that saw some people reverse type 2 diabetes. After just two months on a 600 calories-a-day diet, seven out of the 11 subjects were diabetes-free. A larger study at Glasgow University in 2017 had equally dramatic results. Of the 306 recruits who were taken off their anti-diabetic drugs and placed on a restricted calorie diet for three to five months, almost half put the disease into remission. More tellingly, 86% of those who had managed to lose 15kg or more achieved remission.

Concluding his study, Professor Mike Lean wrote: "We have shown… that type 2 diabetes is not necessarily permanent. It can often be reversed into remission by sustained substantial weight loss."

For Shaw, this was his lightbulb moment. Rather than accept the maintenance regime, he decided to take action. "It was clear that in a large proportion of people, the prognosis is extremely good," he says. "If you can lose the visceral fat, you can reverse the diabetes."

Visceral fat is the deep abdominal fat that surrounds organs including your pancreas. The pancreas is critical: it produces insulin, the hormone that regulates your blood glucose levels. Several studies have shown that if your pancreas is clogged with fat, it struggles to fulfil its function. Ergo, if you can unclog it, you stand a better chance of getting things back to normal.

"I declared war on my diabetes," Shaw says, although his war was rather more civilised than the battle endured by the volunteers in the Newcastle and Glasgow trials. He decided that the 600-calorie-a-day diet was too extreme. Instead, he developed a "highly unscientific" combination of low carbs, fewer calories, no more doughnuts and some exercise. He ignored all the maintenance advice from his GP and he ignored the advice on avoiding fat (see panel).

"There is an orthodoxy around fats that is very challenging," he says. "We've been brought up to believe they are bad. This was not my experience. My doctor was extremely concerned that a low-carb, high-fat diet would be bad for my cholesterol, but it just wasn't true. At some stage in a low-carb diet, your body starts to burn the fat instead of the carbohydrates. My cholesterol levels remained completely normal."

Six months after he decided to take action, Shaw was diabetes-free. He has documented his experience in a book — Conquer Type 2 Diabetes: How a Fat, Middle-Aged Man Lost 31 Kilos and Reversed His Type 2 Diabetes (Hammersmith Books £12.99) — which is published this week. You can find many, largely American, books, podcasts and websites with similarly enthusiastic titles. Read between the lines and many are pushing various experimental ⋙→

GETTY

HOW ONE MAN CONQUERED HIS DIABETES

Clinical trials involving extreme calorie reduction have had success in reversing type 2 diabetes, but Richard Shaw adopted a gentler approach. Here are the 10 steps that worked for him

1 COMMIT TO A PLAN
Make a clear, simple plan and stick to it ruthlessly. Discuss your regime widely with friends/family/work colleagues. Clear your kitchen cupboards of prohibited foods and talk to your GP or diabetes nurse about your plans.

2 LOW-CARB
Settle on a sustainable and achievable low-carb approach (under 40g of carbs a day) combined with a short-term calorie reduction, which will become progressively less restrictive over the weeks. Any ingredient with more than 10g of carbohydrates per 100g on the label is out.

3 PROTEIN, VEGETABLES & DAIRY
Banish all bread, pasta, flour, cereals, rice, potatoes and starchy vegetables (eg peas, sweetcorn, chickpeas) and switch to a diet rich in meat, seafood, chicken, dairy and green vegetables.

4 FULL-FAT NOT LOW-FAT
Choose natural, full-fat ingredients. Low-fat alternatives frequently contain more added sugar and starch than their full-fat versions.

5 BANISH SUGARS
All refined sugars, fruit juices, honey, confectionery and high-sugar fruit and snacks are out. Strawberries, raspberries and blackberries are fine in modest quantities, but any fruits with a high-sugar content (eg pineapples, bananas, mangoes) are out. If you are desperate for crunch, you can have the occasional apple — the small ones for children's lunchboxes are perfect.

6 FRESH FOOD ONLY
Processed foods of all kinds are out. Ready-meals and convenience meals are banished for the duration of the weight-loss period.

7 LIMIT ALCOHOL AT THE START
Alcohol is out for the first eight weeks. After that, you can drink spirits and dry wine in limited quantities — but no beer, lager, premixed cocktails or mixers.

8 WATER
Water is important — drink at least 2.5 litres of water every day. It fills you up, flushes out the system and prevents constipation.

9 GET MOVING
Begin a modest exercise regime: at least 10,000 brisk steps every day and a vigorous 15- to 20-minute exercise routine every morning at home.

10 MAINTENANCE
Commit to remaining on a reduced carb diet after you have achieved your desired weight-loss and blood scores. Keep up the exercise, which should have become a natural part of your life. This is a long-term commitment to a permanently changed lifestyle, not a short-term weight-loss process.

treatments. If public health systems are not offering a cure, snake-oil salesmen will always spring up to fill the vacuum. But Shaw insists his approach worked for him. He is also frank about where he stands today. "I chose the word 'conquer' rather than 'cure' because, if I put back those 31 kilos, I'd go back," he says. "I was a greedy man for 30 years. I didn't exercise and I ate and drank to excess. Today, I'm sitting here with a glass of wine, but that will be it for the evening. I eat and drink what I like, but what I like has changed. I won't eat two Mars bars for breakfast or a dozen Krispy Kreme doughnuts in a day. I don't take any pills and I feel healthy."

Shaw describes the stock advice he was given as "doing nothing more than managing the decline". He points out that by recommending low-fat diets, doctors are inadvertently encouraging patients to increase their sugar intake. "Low-fat foods are almost always higher in sugar," he says. "At the moment, we're being told to take the path of least resistance: take a pill, walk a bit more, eat a bit better. And that's your life, for ever. But I promise you that's not the case. If you can get rid of the visceral fat quickly enough and the cell damage is limited, you can reverse T2."

At which point, I seek a second opinion from someone with medical training. Adam Kay, the former doctor and bestselling author of the memoir This Is Going to Hurt, points out that "we always need to differentiate between advice from population data (aka trials) and individuals (aka anecdotes)". He adds that there is "very strong evidence that weight loss can play a big role in the management of type 2 diabetes, but it's crucial for patients to check in with their GPs or specialist doctors or nurses before embarking on a very-low-calorie diet. This is double-crucial if it's a homespun diet, rather than one that's proven to be effective and safe in trial."

The experts at Diabetes UK are also circumspect. "The importance of weight loss is reinforced by the first-year results of our trial," says Douglas Twenefour, deputy head of care at Diabetes UK. "This showed that a weight-management programme that involves a low-calorie diet under close supervision from a healthcare team, and within the first few years of diagnosis, can put some people's type 2 diabetes into remission." Yes, there are risks associated with any dramatic change in lifestyle, and yes, it is also essential that withdrawal from anti-diabetic drugs is managed carefully. But given the scale of this epidemic, given the number of people who are sleep-walking into it, it's clear that the existing approach — of maintenance and lifestyle tweaks — is not working.

"I'D BEEN TOLD I COULDN'T FIX THIS. MY DAD DIED FROM TYPE 2 DIABETES ... I WOULD TOO. BUT NOW THAT'S ALL CHANGED"

Shivali Modha spent more than a decade managing her type 2 diabetes as per NHS guidelines after being diagnosed during pregnancy, at the age of 25. She suffered a miscarriage and, although she went on to have two successful pregnancies, she describes her battle with the disease as "unending".

"There's never a time that you don't think about diabetes. Have I got my medicine? Have I eaten enough of this or too much of that? You run low, you get the shakes... Is this a hypo? If it is, what do you do? Do you wait until you get home or run to the nearest house? It's a constant conversation in your head with another you."

A "hypo" is another cruel aspect of diabetes. You try to limit your glucose levels through food and exercise, but if those levels drop too low, you become hypoglycemic. To avoid these attacks, you have to monitor your blood sugar levels constantly. "Nothing in your life is free from it," Shivali says. "It affects how you plan journeys, it affects insurance, driving and holidays. And you worry about it when you're alone with your children."

Just over a year ago, Shivali reached a similar decision to Richard Shaw. She had broken a toe and had to stop running. As a result, she put on a stone and a diabetes nurse prescribed a new injectable drug. The good news was that it would boost her insulin. The bad news? Side effects included kidney problems, stomach problems and the heightened risk of pancreatic cancer.

"This new drug made me very sick," she says. "You get big, bulging sores on your stomach and it can cause cancer. I just decided I needed to do something else."

Out of desperation, Shivali joined Slimming World, convinced that, like so many other programmes she had tried, it wouldn't work. One year on, her diabetes is in remission. "I'd always been told I couldn't fix this," she says. "My dad died from type 2 diabetes... I was going to die too. But now that's all changed."

Slimming World worked for Shivali. Through controlled dieting and exercise, she lost weight and left behind all the injections and their unpleasant side effects. She now eats a healthy, balanced diet. "I still have to be careful," she says. "I do have to believe I'm allergic to sugar. Diabetes is just waiting for me to slip up."

She looks back with mixed emotions on her decade managing the disease. She is clearly delighted to have turned things around, but she regrets not doing it sooner. "I always felt that the NHS was very quick to give me a medicine for each new symptom," she says. "You get the standard line in all of the literature: you should walk more, you should eat well... but I still don't think enough emphasis is put on weight loss."

Yian puts it more bluntly. As he sits in the home that has become his prison, he says we need much tougher advice much earlier. "If they can have an advert showing a cigarette turning into a tumour, why can't they do something similar for a chocolate bar? Sugar is poison. If more people could see what it's done to me, they wouldn't touch it." ■

FIT AS A FIDDLE

That was an unsettling read, wasn't it? But we're not here just to cause alarm. We have solutions, too. Sign up to our new Fit as a Fiddle club and, every Monday morning, we'll email you a free exercise programme designed by our fitness guru, Lara Milward. The exercises are tailored for the over-sixties or anyone wanting to get fit without being shouted at by a shouty six-packed gym bunny. You'll also get lots of fitness tips and healthy recipes to help you on your way. Thousands of you have already signed up... join the club by visiting **thetimes.co.uk/newsletters** and ticking the Fitness box.

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