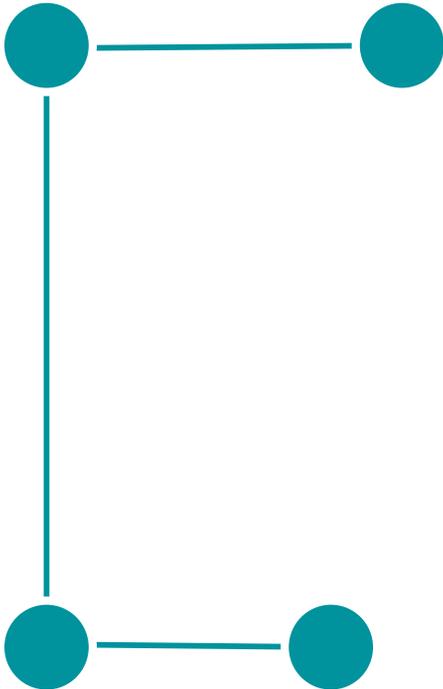




# DIETING

PERSONALISED NUTRITION PLANS TAILOR YOUR DIET TO YOUR UNIQUE GENETIC MAKEUP. BUT IF THAT SOUNDS LIKE THE PERFECT SOLUTION TO ALL YOUR NUTRITION NEEDS THE REALITY IS A LITTLE MORE COMPLEX, AS DIETITIAN TABITHA WARD EXPLORES >>





rom ketogenic to vegan and even the baby-food diet, the debate about the best approach to nutrition rolls on and on (you can put that rusk down, though). Instagram bloggers promote a different diet every week and the mainstream media are quick to pick up on any new food trends, all of which means choosing what to eat for maximum health can be a daunting decision.

The truth is, the perfect diet is a myth. But while there is no one-size-fits-all approach, new technology means it's easier and more accessible than ever to tailor nutrition to our individual needs.

### YOU DO YOU

While there's no agreed definition of personalised nutrition, it's essentially about eating what's best for your body (not anyone else's). Personalised nutrition looks at information based on your unique characteristics, to provide targeted nutritional advice and help you make dietary changes that are beneficial to your health. We all differ in terms of our genetic makeup and lifestyle and, as a result, we all respond differently to food. The challenge, therefore, lies in figuring out which foods we react well to, and deciding what to eat based on that data.

"Different people metabolise food in

different ways," says Tim Spector, Professor of Genetic Epidemiology at King's College London, and author of *Spoon-Fed: Why Almost Everything We've Been Told about Food is Wrong*. "Two people can eat the exact same food and react completely differently: you could eat a sandwich and your blood sugar might not be affected very much, but I know if I eat a sandwich, my blood sugar skyrockets. That's not to say that sandwiches are bad, but it just emphasises how different we are and that we need to eat in a way that's personalised to us as individuals."

It was previously thought that our food response was largely due to genetics, but new research – specifically the PREDICT study – has shown that genes only play a small part in the equation. The study looked at over 1,000 participants (mostly twins) and measured their responses to the exact same foods. Results showed that virtually none of the participants showed the same results – even the identical twins, which suggests factors aside from our genes play a key role in our food response.

### GUT FEELING

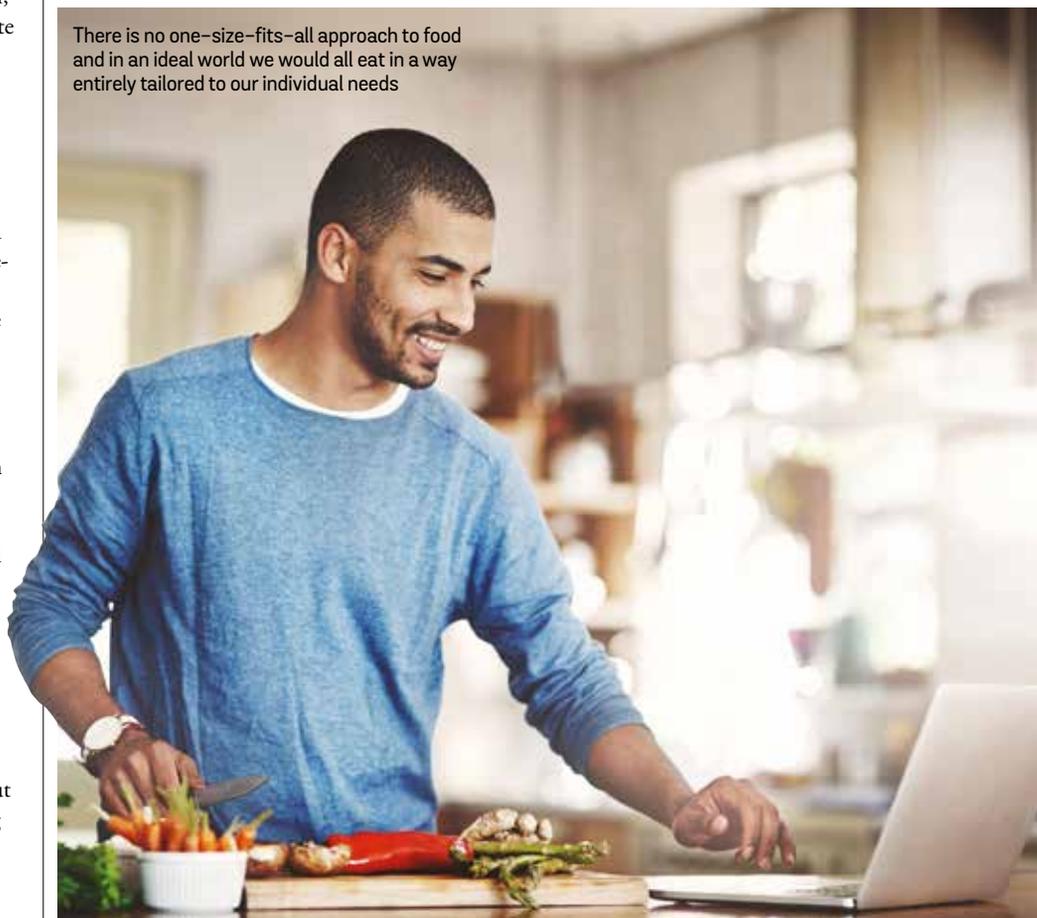
One of those key factors is the gut microbiome: the trillions of bacteria that live in our stomachs. The microbiome plays a central role in digestion, but it also affects metabolism, appetite and weight.

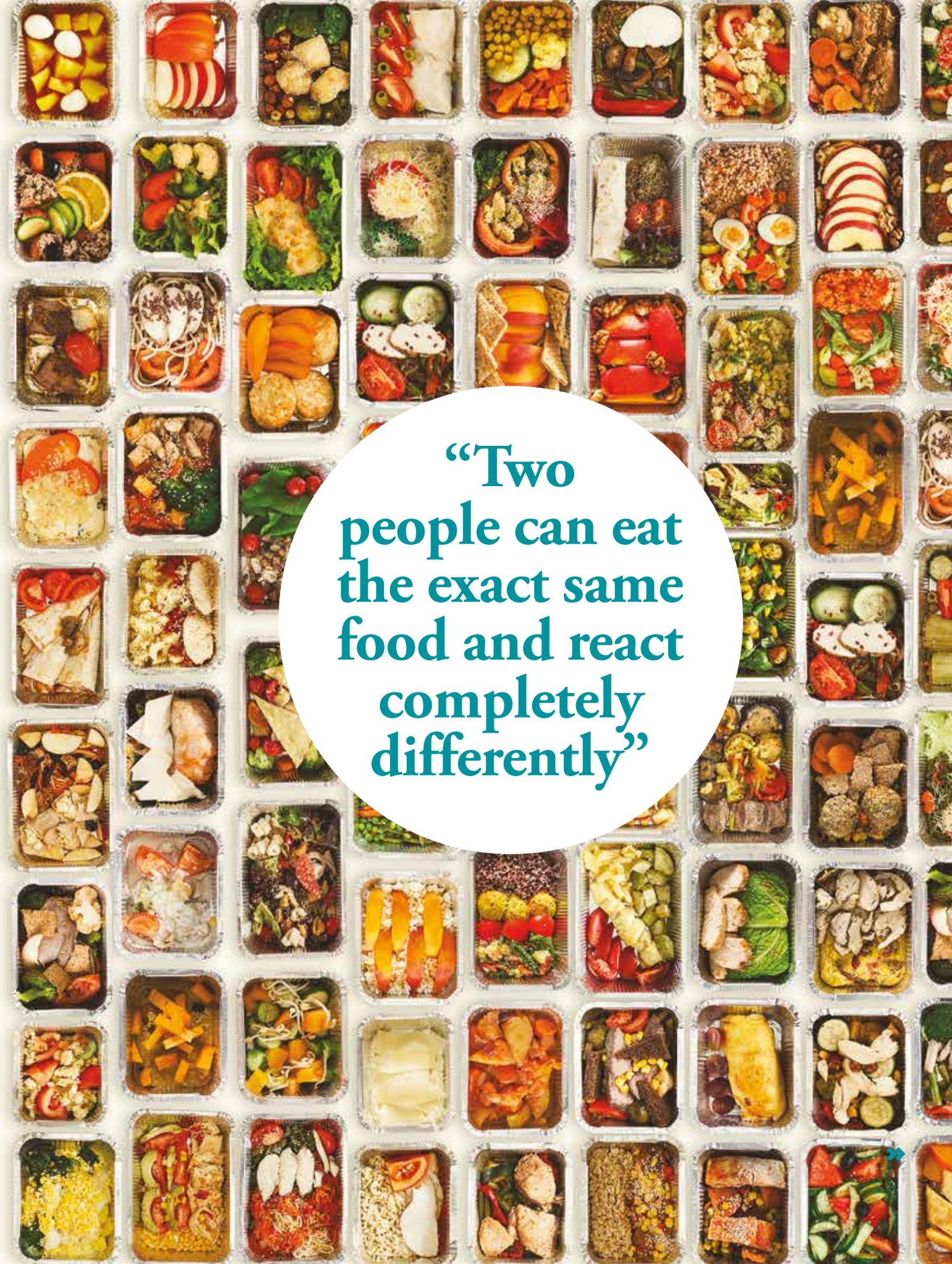
"Everyone's microbiome is different," explains Professor Spector. "That means when we eat identical foods, our unique microbes break it down differently and have a different effect on the body."

In short, our food response is not defined solely by genes, so we have the potential to change it and improve our health. But if that's the case, what's the deal with the increasing number of DNA tests marketing themselves as the solution to your nutrition needs?

"It all depends what you are trying to do, says Giles Yeo, a geneticist at the University of Cambridge who specialises in the genetics of obesity. "Genetic testing can be useful for some things that look at single-gene characteristics. For example, lactose intolerance is due to a single gene being turned off, so a test could tell you if you >>>

There is no one-size-fits-all approach to food and in an ideal world we would all eat in a way entirely tailored to our individual needs





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» could tolerate lactose or not. But most dietary traits, such as how well we respond to different nutrients, are much more complex than that. That's because they are due to hundreds and hundreds of gene sequences in unique combinations. That makes dietary predictions very difficult and means genetic test kits can't give definitive answers on what you can and can't eat."

### AI INSIGHTS

But if genetic tests aren't worth your money, how are you meant to personalise your diet and decide what's best to eat on an individual level? Professor Spector is on the case.

The Department of Twin Research at King's College London is collaborating with some of the world's leading scientists, as well as the nutritional science company ZOE, to come up with a home test kit and app. This will allow anyone who takes the test to understand their personal nutritional response to different foods, so they can make

## "Genetic test kits can't give definitive answers on what you can and can't eat"



While everyone responds differently, fermented foods like kimchi are scientifically proven to improve the health of the microbiome



The ZOE app will use artificial intelligence to provide a level of personalised nutrition insight not currently available

choices based on their unique metabolism.

The aim is to use artificial intelligence to compare thousands of people's results to create meal plans. These will be based on an algorithm which gives a prediction on how well you respond to different foods. It can then provide helpful advice and recipe ideas based on the foods you should be eating more or less of. Head to [joinzoe.com](http://joinzoe.com) to find out more and sign up for early access.

### THE FUTURE OF FOOD

Personalised nutrition has the potential to be revolutionary, but don't expect the current DNA test kits to provide all the answers.

That said, these are exciting times in nutrition, and with diet-related diseases on the rise, figuring out exactly what you should be eating for better health is more important than ever. This can now be done without restricting the amount of calories or choice, by maximising the body's metabolism, while minimising stress and inflammation. **MF**

## HOW THE ZOE APP WILL WORK

**STEP 1:** Take the home test. This involves eating muffins with varying quantities of carbohydrates and fats, taking blood tests, a stool sample, and keeping a food journal. These will then be sent off to the lab.

**STEP 2:** Get your personalised insights report. Learn how your body responds to food. You will get a list of specific foods to boost beneficial gut bacteria.

**STEP 3:** Receive a personalised plan with advice on which foods to eat more and less of.

**STEP 4:** Ongoing insights to sustain change. Use the ZOE app for expert advice and feedback on meals.

# GO WITH YOUR GUT

UNTIL PERSONALISED NUTRITION TESTS BECOME MORE WIDELY AVAILABLE, FOCUS ON IMPROVING YOUR GUT MICROBIOME WITH THE FOLLOWING ADVICE FROM PROFESSOR TIM SPECTOR



## EAT 30 DIFFERENT PLANT FOODS A WEEK

This isn't as hard as it sounds, as it includes any food that has been grown – not just fruit and veg. Think seeds, nuts, spices, legumes and wholegrains.



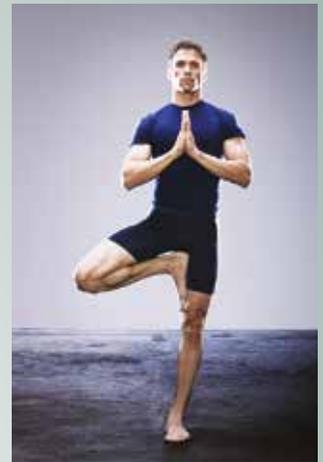
## PACK IN POLYPHENOLS

Polyphenols keep our microbes healthy and support the immune system. Polyphenols are found in a range of foods, including dark berries, chocolate with a high cocoa percentage, and even red wine.



## GET ENOUGH SLEEP

Quality sleep can improve gut health, so aim to get at least seven, preferably eight, hours of good-quality sleep every night.



## MANAGE STRESS LEVELS

Stress can negatively affect your gut health, so it's best kept to a minimum. Give daily yoga or meditation a go to calm your mind.



## EAT PLENTY OF FERMENTED FOODS

This includes unpasteurised cheese, full-fat yogurt, kefir, kombucha, kimchi and sauerkraut. It's best to have a small amount of these regularly, rather than large amounts every now and again. Just make sure to read the label to check it contains live cultures and has an expiry date.



## AVOID ULTRA-PROCESSED

This basically refers to foods made with loads of unknown or unpronounceable ingredients – packaged cakes and biscuits made with hydrogenated fats or sweeteners, for example. These can be harmful to the gut microbiome and provide little nutrition.



## EXERCISE REGULARLY

Research shows exercise can increase the number of beneficial bacteria in the gut and enrich the diversity of gut bacteria. Regular exercise has the added benefit of keeping you regular.



## AVOID TAKING ANTIBIOTICS UNNECESSARILY

Although antibiotics are sometimes necessary to treat bacterial infections, taking too many can harm the microbiome.