

## NUTRITION

Eating less meat is one of the fastest-growing lifestyle trends. Four in 10 of us have either cut out meat or have cut down, according to a YouGov survey commissioned by Eat Better. The number of vegans has risen by more than 350 per cent since 2006 and at least half a million people are now following a vegan diet.

Interestingly, this trend away from meat isn't just about health – although there is compelling evidence that vegetarian diets are associated with a lower risk of cardiovascular disease, certain cancers and increased longevity. For many people, it's more about reducing their environmental footprint. Ditching meat can cut your carbon footprint by up to 50 per cent, which (if enough of us got on board) could go a long way towards solving the global problem of scarce environmental resources and global warming. A vegetarian or vegan diet requires far less energy, land, pesticides, fertiliser, fuel, feed and water than a meat-based diet, and does less environmental damage, which makes it unquestionably more sustainable.

There are now real fears that, if current trends in meat consumption continue, we will not be able to feed the world's expanding population. Livestock agriculture is grossly inefficient and requires five to 10 times more land than arable agriculture. If we ate less meat, we could

free up about 640 million hectares of land currently dedicated to growing animal feed. And that would go a long way to sustainably feeding everyone.

Livestock agriculture is responsible for 15 per cent of greenhouse gas emissions: as much as the entire transport sector. According to research from the World Resources Institute (WRI), a global switch to diets with less meat and to vegetarian or vegan diets would more than halve those emissions and significantly reduce agriculture's pressure on the environment.

According to a 2015 report from Chatham House, the Royal Institute of International Affairs, eating less meat would also keep global warming below the 'danger level' of 2°C. This echoes the findings of the Carbon Trust, which recommends eating less meat and more plant proteins if we want a healthier and more sustainable future for our planet.

For many, choosing a vegetarian or vegan lifestyle is also an ethical decision. Eating meat and animal products is seen as a form of exploitation and cruelty to animals.



Bovine bottom burps: livestock agriculture is responsible for 15 per cent of global greenhouse gas emissions







A study found that female vegetarians were fitter than meat-eaters

In the UK, over two million land animals are slaughtered daily and almost 600,000 tonnes of fish are killed each year. The truth is we don't need to eat meat to live or to be healthy. According to the British Dietetic Association, a well-planned vegetarian or vegan diet can "support healthy living in people of all ages".

#### CAN A VEGETARIAN OR VEGAN DIET MAKE YOU A BETTER RUNNER?

Currently, there's no evidence that a vegan or vegetarian diet gives a distinct performance advantage. On the other hand, according to Australian researchers, well-planned, varied vegetarian diets are no disadvantage to performance either. A recent study at Arizona State University found vegetarian athletes had the same aerobic fitness and strength as those who ate meat – in fact, the female vegetarians were fitter aerobically than the meat-eaters.

Vegetarian and vegan diets are linked to a lower BMI and a lower risk of chronic diseases and certain cancers (particularly of the bowel, breast and prostate). They can also help control blood sugar levels and lower the risk of type-2 diabetes. According to Harvard scientists, at least one third of early deaths could be prevented by switching to a vegetarian diet. However, these benefits may be due to the higher intake of fruit and vegetables, fibre, antioxidant nutrients and phytochemicals (plant substances that have beneficial health properties) and lower intakes of saturated fat, rather than an absence of animal products.

#### CAN YOU GET ENOUGH PROTEIN WITHOUT MEAT?

As a lifelong vegetarian, I'm frequently asked where I get my protein from and whether I get enough to support my training. As a former British bodybuilding champion, I can fully testify you don't need to eat meat to build muscle! The truth is, you can easily obtain all the protein your body needs from many sources other than meat, such as milk, yogurt, cheese, eggs, beans, lentils, soya products, whole grains, quinoa, nuts and seeds. Indeed, a review of studies by Canadian researchers concluded that vegetarian diets provide more than enough protein and other nutrients to support athletic training and performance.

**“ACCORDING TO SCIENTISTS, AT LEAST ONE THIRD OF EARLY DEATHS COULD BE PREVENTED BY SWITCHING TO A VEGETARIAN DIET”**

# “But where do you get your protein?”

Check out this run-down of protein-rich vegetarian and vegan food sources...

FOOD	PROTEIN
1 slice (25g) Cheddar cheese	6g
2 eggs	12g
1 cup (250ml) dairy milk	9g
1 cup (250ml) soya milk	8g
1 cup (250ml) almond milk	1g
3 tbsp (150g) strained low-fat plain yogurt	15g
3 tbsp (150g) soya yogurt	6g
100g tofu	13g
4 heaped tbsp (200g) edamame beans	22g
4 heaped tbsp (200g) cooked beans or lentils (75g dry weight)	18g
1 small handful (25g) pumpkin seeds	7g
1 small handful (25g) almonds	6g
1 tbsp (25g) peanut butter	7g
1 small handful (25g) cashews	5g
4 tbsp (50g) oats (dry weight)	7g
5 heaped tbsp (250g) cooked quinoa (75g dry weight)	11g
5 heaped tbsp (250g) cooked pasta (75g dry weight)	10g
5 heaped tbsp (250g) cooked brown rice (75g dry weight)	7g
2 slices wholemeal bread (80g)	8g





Lots of people also worry that plant protein is inferior or less readily absorbed by the body. Although many plant sources – with the exception of soya, quinoa and hemp – don't contain all the essential amino acids in as large quantities as animal sources, if you eat a variety of foods containing protein, any shortfall of amino acids in one food is compensated by the higher amounts found in another. For example, rice with lentils will provide more than enough essential amino acids. The key is to combine more than one plant protein source, ideally within each meal, although this isn't essential. Try:

- Grains with pulses (black bean and vegetable curry with rice)
- Grains with dairy (porridge)
- Soya with vegetables (tofu and vegetable stir-fry)
- Grains or pulses with nuts (chickpea and nut burgers with pitta bread)
- Dairy or eggs with vegetables (spinach frittata)

If you consume non-dairy milks, such as almond or coconut, bear in mind that these – apart from soya – are much lower in protein than dairy milk. For vegans, I would recommend a soya milk alternative, although vegan protein supplements are now widely available if you struggle getting enough protein from your diet or want a convenient post-workout alternative to food.

## “YOU CAN EASILY OBTAIN ALL THE PROTEIN YOU NEED FROM MANY SOURCES OTHER THAN MEAT”

### WHAT ARE THE PITFALLS OF A VEGETARIAN OR VEGAN DIET?

Following any diet that's restrictive in terms of cutting out food groups increases your risk of nutritional deficiencies. Pasta with tomato sauce or avocado toast may seem like healthy options but, on their own, don't qualify as balanced meals for runners. You'll need to substitute suitable foods for meat if you don't want to miss out on important nutrients. The most common pitfalls of vegetarian diets are iron and omega-3 and, for vegans, vitamin B12, calcium and iodine. This can have serious health implications. For example, iron deficiency can lead to anaemia, fatigue, a weak immune system and a loss of endurance and power. The good news is there are lots of foods that can help you obtain all the nutrients you need on a vegetarian or vegan diet.

### IRON

Good meat-free iron sources include whole grains, quinoa, nuts, seeds, beans, chickpeas, lentils, leafy green vegetables, dried apricots and egg yolk. Although iron from plants is harder for your body to absorb than iron found in meat, you can get around this by always consuming foods or drinks rich in vitamin C, such as red peppers, broccoli, oranges or berries, at the same time. The citric acid found naturally in fruit and vegetables also promotes iron absorption.

Fortunately, the body adjusts its absorption according to its iron needs, so if your diet contains only small amounts of iron, then a higher percentage of it will be absorbed. Interestingly, studies have shown



## How much protein do you need?

If you exercise for more than 30 minutes at least three times a week, you'll need between 1.2 and 2g of protein per kg of body weight per day. For example, a 60kg runner would need 72-120g protein, but if you do mostly endurance running then an intake towards the lower end of this range would be appropriate. If you do mostly sprints, intervals and strength training, then an intake at the upper end of the range would be suitable.

For optimal muscle recovery, aim for 0.3g per kg of body weight, equivalent to 18g for a 60kg person, post-exercise and per meal. Get this from:

- 500ml dairy or soya milk
- 3 tbsp (150g) cooked beans or lentils with 3 tbsp (150g) cooked quinoa
- 100g tofu with 3 tbsp (150g) cooked whole wheat noodles
- Chickpea and spinach curry, made with ½ a tin (200g) chickpeas
- 150g strained yogurt with 1 tbsp (15g) nuts



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that iron-deficiency anaemia is no more common in vegetarians than it is in meat-eaters. Haemoglobin levels are very similar between non-vegetarian and vegetarian female runners.

### VITAMIN B12

Deficiency of vitamin B12 is a particular risk for vegans, as it isn't found in plant sources. Lack of B12 can result in anaemia and impact adversely on endurance performance. The Vegan Society recommends taking a supplement containing 10 micrograms of B12, or obtaining vitamin B12 from B12-fortified non-dairy milk alternatives, yeast extract or breakfast cereals. Vegetarians can get B12 from eggs and dairy products.

### OMEGA-3 FATTY ACIDS

The main source of the essential fatty acids EPA and DHA is oily fish, so vegetarians and vegans will need to get them elsewhere. Certain plant foods provide the omega-3

fatty acid, alpha linoleic acid (ALA), which can be converted to EPA and DHA in the body (albeit inefficiently). You'll find ALA in flaxseeds, hemp, chia seeds, pumpkin seeds and walnuts. Try to include at least one tablespoon of these in your diet each day, or take a vegetarian omega-3 supplement made from algae oil.

### CALCIUM

Obtaining enough calcium can be trickier if you don't consume dairy products. The best solution is to use non-dairy milk or yogurt alternatives with added calcium instead. Mainstream brands contain similar amounts to dairy milk. Tofu that's been made with calcium sulphate (check the label), beans, chickpeas, kale, broccoli and almonds are other good sources.

### WHAT'S THE CONCLUSION?

A diet with less meat is undoubtedly more sustainable and a better use of land. Fears

that it can't support a training programme are certainly unfounded – studies show vegetarian athletes are no worse off than meat-eaters when it comes to fitness, strength and performance measures – and experts agree plants can provide more than enough protein and other nutrients for runners.

You don't need to give meat up completely to reap the benefits of vegetarian or vegan diets. Switching to a plant-based diet by substituting some of the meat in your diet for beans, lentils, soya products, whole grains and nuts means you'll be getting more fibre, phytonutrients (plant nutrients) and polyphenols, all of which benefit your gut health. And there's growing evidence that a healthy gut microbiome improves your running performance and recovery. *WR*

### FIND OUT MORE

FOR MORE INFO AND RECIPES, PICK UP ANITA'S BOOK, *THE VEGETARIAN ATHLETE'S COOKBOOK* (£14.99, BLOOMSBURY).



## Your meat-free meal planner

Check out Anita's seven-day vegetarian diet plan for delicious mealtime inspiration!

	BREAKFAST	LUNCH	DINNER	SNACKS
MONDAY	<ul style="list-style-type: none"> <li>• Porridge with blueberries</li> </ul>	<ul style="list-style-type: none"> <li>• Falafel and avocado pitta sandwich (whole wheat pitta, falafel, avocado, spinach, tomato, hummus)</li> </ul>	<ul style="list-style-type: none"> <li>• Tofu Pad Thai* (rice noodles, tofu, red and green peppers, carrot, spring onion, peanuts)</li> </ul>	<ul style="list-style-type: none"> <li>• Clementines</li> <li>• Toast with nut butter</li> </ul>
TUESDAY	<ul style="list-style-type: none"> <li>• Porridge with bananas and cinnamon</li> </ul>	<ul style="list-style-type: none"> <li>• Halloumi** and red pepper salad with olive oil dressing (halloumi, salad leaves, red peppers, avocado, tomatoes)</li> <li>**Vegan option: Falafel</li> </ul>	<ul style="list-style-type: none"> <li>• Chickpea and vegetable tagine* with whole wheat couscous and plain yogurt (chickpeas, butternut squash, aubergine, onion, red pepper, courgette, tinned tomatoes, apricots)</li> </ul>	<ul style="list-style-type: none"> <li>• Yogurt with fruit</li> <li>• Mango</li> </ul>
WEDNESDAY	<ul style="list-style-type: none"> <li>• Porridge with apple, yogurt and nut butter</li> </ul>	<ul style="list-style-type: none"> <li>• Bean and salad wrap (wrap, mixed beans, grated carrot, tomato, watercress, hummus)</li> </ul>	<ul style="list-style-type: none"> <li>• Black bean tacos with salsa* (corn tacos, black beans, cumin, paprika, fresh salsa)</li> </ul>	<ul style="list-style-type: none"> <li>• Oatcakes with nut butter</li> <li>• Strawberries</li> </ul>
THURSDAY	<ul style="list-style-type: none"> <li>• Green smoothie (spinach, banana, milk, chia seeds, blueberries)</li> <li>• Peanut butter on toast</li> </ul>	<ul style="list-style-type: none"> <li>• Rainbow salad with goat's cheese** (roasted butternut squash and sweet potato, mixed peppers, carrot, salad leaves, avocado, goat's cheese)</li> <li>**Vegan option: tempeh</li> </ul>	<ul style="list-style-type: none"> <li>• Baked sweet potato, hummus, beetroot, avocado</li> </ul>	<ul style="list-style-type: none"> <li>• Rice cakes with hummus</li> <li>• Berries and yogurt</li> </ul>
FRIDAY	<ul style="list-style-type: none"> <li>• Bircher muesli with blueberries</li> </ul>	<ul style="list-style-type: none"> <li>• Bean and salad wrap (wrap, mixed beans, grated carrot, tomato, watercress, hummus)</li> </ul>	<ul style="list-style-type: none"> <li>• Black bean and vegetable curry* with plain yogurt and brown rice (onion, butternut squash, potato, broccoli, peas, black beans, cashews)</li> </ul>	<ul style="list-style-type: none"> <li>• Kiwi fruit</li> <li>• Mixed nuts or seeds</li> </ul>
SATURDAY	<ul style="list-style-type: none"> <li>• Green smoothie (spinach, banana, milk, chia seeds, blueberries)</li> <li>• Peanut butter on toast</li> </ul>	<ul style="list-style-type: none"> <li>• Quinoa, black bean and sweetcorn salad with olive oil dressing (cooked quinoa, sweetcorn, black beans, red onion, red pepper, tomatoes, spinach)</li> </ul>	<ul style="list-style-type: none"> <li>• Butternut squash and pea risotto with pine nuts* (onion, rice, butternut squash, red kidney beans, peas, pine nuts)</li> </ul>	<ul style="list-style-type: none"> <li>• Whole wheat toast with hummus</li> <li>• Clementines</li> </ul>
SUNDAY	<ul style="list-style-type: none"> <li>• Avocado toast with poached egg (or nut butter)</li> </ul>	<ul style="list-style-type: none"> <li>• Red lentil and vegetable soup with whole wheat bread (red lentils, carrots, onion)</li> </ul>	<ul style="list-style-type: none"> <li>• Tofu and vegetable kebabs* with bulgar wheat (tofu, red and yellow peppers, courgette, aubergine, mushrooms, tomatoes)</li> </ul>	<ul style="list-style-type: none"> <li>• Banana</li> <li>• Yogurt with nuts and honey</li> </ul>

\*RECIPES FOR THE MAIN MEALS CAN BE FOUND IN *THE VEGETARIAN ATHLETE'S COOKBOOK* BY ANITA BEAN