

IS VEGANISM REALLY GAME-CHANGING?



Netflix film *The Game Changers* stirred up a furore around going 'plant-based' to get fitter, stronger and faster, but does the reality match the hype? *David Bradford* investigates

In the opening sequence of *The Game Changers* documentary, presenter James Wilks – a former mixed martial arts champion – explains that his interest in veganism started when he got injured and began genning up on recovery.

He claims to have spent 1,000 hours researching recovery-boosting nutrition. One thousand hours?

Assuming he studied 9am to 5pm without lunch breaks, that's a full six months of solid reading. Anyway, amid these mountains of paperwork, he stumbled upon an article purporting to prove that Roman gladiators ("the original professional fighters") ate a mostly plant-based diet. Wilks's mind is blown. Over the rest of the film, he advances the case, in no uncertain terms, that eating only plant-based foods is better for recovery, health and – crucially – sporting performance. It was no surprise, then, *The Game Changers* garnered enormous attention, even among ordinarily hard-headed cyclists.

Full disclosure to kick off: I eat a mostly plant-based diet; I'm not a strict vegan, but I avoid meat and dairy products most of the time (largely for ethical reasons). If my position were prone to bias, it would be skewed in favour of *The Game Changers* – its message that veganism boosts sporting performance is good news for me. My job here, though, is to be unswervingly objective in answering this question: will going vegan make you a fitter, faster cyclist?

Quite early in the film, we meet Dotsie Bausch, the seven-time US national champion and Olympic silver medallist. This is the segment for the cyclists. Bausch tells us that she was in her mid-30s and "ready to retire" when she switched to a vegan diet, from which



Olympic medallist Dotsie Bausch credits her vegan diet for her late-career improvement

point she unexpectedly "just kept getting better" – pointing out that she went from struggling to leg-sled 300lb to pushing 585lb in sets of 60 reps. She relives the pinnacle of her career: silver in the team pursuit at the London Games, where she stood on the podium aged 39.5 years – "I'm still the oldest person in my event to even go to the Olympic Games."

The film implies the American's late-career improvements were the result of her switch to a vegan diet. However, it doesn't take much research to discover Bausch took up cycling relatively late, aged 26, as part of her recovery from an eating disorder. In light of which, the fact she was still improving at 35 was perhaps not so much proof of 'plant power' as the natural development of a huge talent that for many years had lain dormant and/or been hampered by improper fuelling. Of course, this is to take nothing away from her remarkable achievements.

I contacted Bausch by email and asked what made her so confident her improvements were the result of diet over and above other factors.

"Truly, this was the one thing that I changed," she replied. "My coach and my training stayed consistent – it was the diet change that gave me this advantage. And, let's be honest, I wasn't getting any younger... when my body should have been resisting and slowing me down, I was actually getting fitter, stronger and more resilient."

Bausch is a passionate advocate of veganism, and as a "plant-powered athlete" has become a professional influencer on the topic (dotsiebauschusa.com). Her anecdotal evidence is compelling – but is it supported by hard science?

A one-sided take

Asker Jeukendrup is a sports nutritionist who works with WorldTour cyclists. He is unconvinced by the case for veganism constructed by *The Game Changers*.

"Watching the film as a scientist, it becomes really clear after a few minutes it is going to be very one-sided," he told me. "I looked at all the claims, and then looked for the actual evidence."

According to Jeukendrup, trustworthy research on how a vegan diet affects sporting performance is very thin on the ground.

"There are some reviews, but they rely on a paucity of studies," he explained. "Without research addressing the subject directly, the next best approach is to extrapolate from studies on related topics – such as the body's synthesis of animal versus plant protein." In which regard: "We do have solid science showing the opposite [to the film's claim] – that a vegan diet is actually inferior. We know that, gram for gram, animal protein outperforms plant protein."

In the film, Wilks boldly claims that most people consume 70 per cent

more protein than they need. This may be true for non-athletes, but it could be misleading for cyclists. Having investigated protein intake for a previous CW feature, I know the recommended daily intake for athletes is 1.2-1.8g per kilo of bodyweight per day; I also know my own intake, when I measured it, was at the lower end, only just inside this range. As a vegan athlete, getting enough protein requires a conscious effort to eat the right things in appropriate quantities.

Addressing this point, Wilks claims a peanut butter sandwich contains as much protein as a 3oz piece of beef. For that to be true, the serving of peanut butter would have to be enormous – four tablespoons, or almost one-third of a standard size pot! As a less calorific alternative, you could eat 240g of cooked lentils, but that's a very large portion of a bulky, not especially appetising food.

"It's true that a vegan can compensate by eating bigger quantities [of protein-rich plant foods]," conceded Jeukendrup, "but the practical implication is that the volumes required are large – for some athletes, this is a real challenge, and after a while they let their protein intake fall."

Failing to eat enough plant protein is one risk; another is that, because protein-rich plant foods tend to be very filling, eating lots of them might cause you to eat fewer calories overall – potentially under-fuelling your training (see Callum's story on p27). Of course, this is not an insurmountable problem; provided you eat plenty of easily digestible carb-rich foods (alongside your protein), then getting sufficient calories need not be difficult. On the flipside, for riders keen to lose weight, the filling nature of protein-heavy plant foods, allowing a reduction in calories without an increase in hunger, is a clear bonus.

Differing views

In a recent video interview for CW's website, the Great Britain Cycling Team chef Alan Murchison – who has



experimented with veganism in his own training – made the important point that performance advances tend to be driven from the top down. That is to say, if an innovation is proven effective, those at the top of the sport respond quickest in adopting it. This hasn't happened with

veganism; on the contrary, it's a trend driven largely by environmentalists and social media influencers for whom performance is a secondary consideration

after image, brand and lifestyle. Murchison recounts asking TT world champion Rohan Dennis his opinion on veganism and getting the terse response: "Vegan food is s**t. Next question." The well

connected chef reminds us that Dennis, as a man who demonstrated willingness to sacrifice his WorldTour contract rather than compromise on equipment, would never dismiss any dietary change that had genuine potential to make him faster.

Nonetheless, CW did manage to find two WorldTour pros who are committed vegans and who believe going plant-based has benefited their riding: Simon Geschke and Adam Hansen, both vastly experienced riders with Grand Tour stage wins under the belts.

"I went vegan in 2016," Geschke told me. "I had a knee injury at the time and had heard that a vegan diet could aid recovery, so I was pretty excited to try it."

The German explained he phased out animal products gradually over many months before resolving to remain fully vegan. Did he perceive a benefit to his recovery?

"Yes, I did actually, and [the knee problem] never came back. I can't be

“For riders keen to lose weight, the filling nature of protein-heavy plant foods is a clear bonus”

Simon Geschke firmly believes his veganism has benefited his riding



100 per cent certain [it played a part] but I felt good, so kept it up.”

The diet choice has the blessing of his Team CCC coach and nutritionist – their support bolstered by his medical reports.

“When I came to the team last year, I didn’t say I was eating vegan but the team doctor, on seeing my blood values, noticed I had the lowest cholesterol of the whole team and immediately guessed I didn’t eat meat,” added Geschke. “He made the deduction based solely on those results, which was pretty funny.”

Blood biomarkers were also involved in Adam Hansen’s switch to veganism – he went wholly plant-based three years ago.

“I just wanted to improve every marker in my blood group test,” he told me by email. “So I was cutting out food groups until I had better results – after a few months, I realised I had slowly become a vegan.”

Explaining those biomarker changes, he continued: “I have noticed a huge drop

in my white blood cell count [owing to less] inflammation from not eating toxic foods.”

The technically minded Australian – who during the lockdown has been 3D-printing masks for local hospitals – takes a deep interest in the science of nutrition. Though he doesn’t take iron or B12 supplements, he does keep a close eye on his blood profile. It’s this attention to detail that might prove impractical for a regular amateur rider trying to follow a vegan diet. Would Hansen encourage us all to make the switch?

“I don’t preach about it,” he responded. “People can do what they wish, it’s their health. The reason why I label myself as a vegan is because I want to show the people who might want to switch... that it is very well possible.”

On the question of why so few pros are vegan, Hansen cited a more subtle shift: “I see a lot of pros making better food choices [and] reducing animal product intake, usually for health reasons.” For many riders, it’s quite literally a question of taste. “A lot of guys tell me they just can’t [go vegan] because they would miss

VEGANISM STARTER GUIDE

‘What to expect when you go vegan’

General manager of Veganicity (veganicity.com) Simon Bandy compiles a ‘getting started’ guide for cyclists switching to a vegan diet

Gut bacteria: Introducing more onions, artichokes, bananas and foods rich in prebiotics to the diet means the good bacteria in the gut will begin to thrive, but this can result in you feeling a bit more ‘gassy’. Reducing your intake of processed foods, often packed with excess salt, should help normalise water retention levels, reducing puffiness and bloating.

Iron: Low iron is the most common deficiency. The heme form of the mineral is found only in meat and fish; non-heme iron (found in plants) is less easily absorbed. Vegans may require up to 1.8 times more iron, so it is important to eat iron-rich plant foods (e.g. soybeans, lentils, spinach) and consider the occasional blood test.

Vitamins: In theory, when you start including more fruit and vegetables into your diet, you should be increasing and boosting your nutritional levels. The problem comes

with vitamin B12, as vegans are often found to be deficient in this. This can be overcome by taking a supplement such as Veganicity B12 1000 (£8.45/90 tabs).

Lower calcium: Eliminating dairy from the diet lowers your intake of calcium. However, bread in the UK is fortified with calcium, as are some unsweetened soya, rice and oat drinks. Also make sure you are topping up with dark leafy green veg like kale and spinach, which, surprisingly, are another source of calcium.

Higher fibre: As you increase your intake of pulses and legumes, you’re taking on more fibre. Fibre being good for bowel movements, many people find they become more regular, as their stools have more bulk to them. Studies have indicated that a diet rich in fibre can help protect against colon cancer.

Cholesterol levels: Certain studies have shown that vegans tend to have lower cholesterol levels, owing to a reduction in animal-based saturated fats. Cycling also helps keep cholesterol low and maintains heart health, of course.

cheese or other favourite dishes... they are favouring their taste over their health and an animal's life."

A risky choice

When I told Jeukendrup I'd spoken to two vegan pro riders who had referred to positive changes to their blood profile, he countered with his own experience implying the opposite outcome.

"Of those athletes I see with [sub-optimal] abnormalities in their blood profile, most of them are vegetarian or vegan," said the nutritionist. "It is usually iron deficiency."

Would he advise against veganism on these grounds?

"If you really want to do it and you're prepared to read up really well so that you know for certain what you're doing, then fine – it can be done. But it is more risky, and this is why I see more [vegan] athletes with problems."

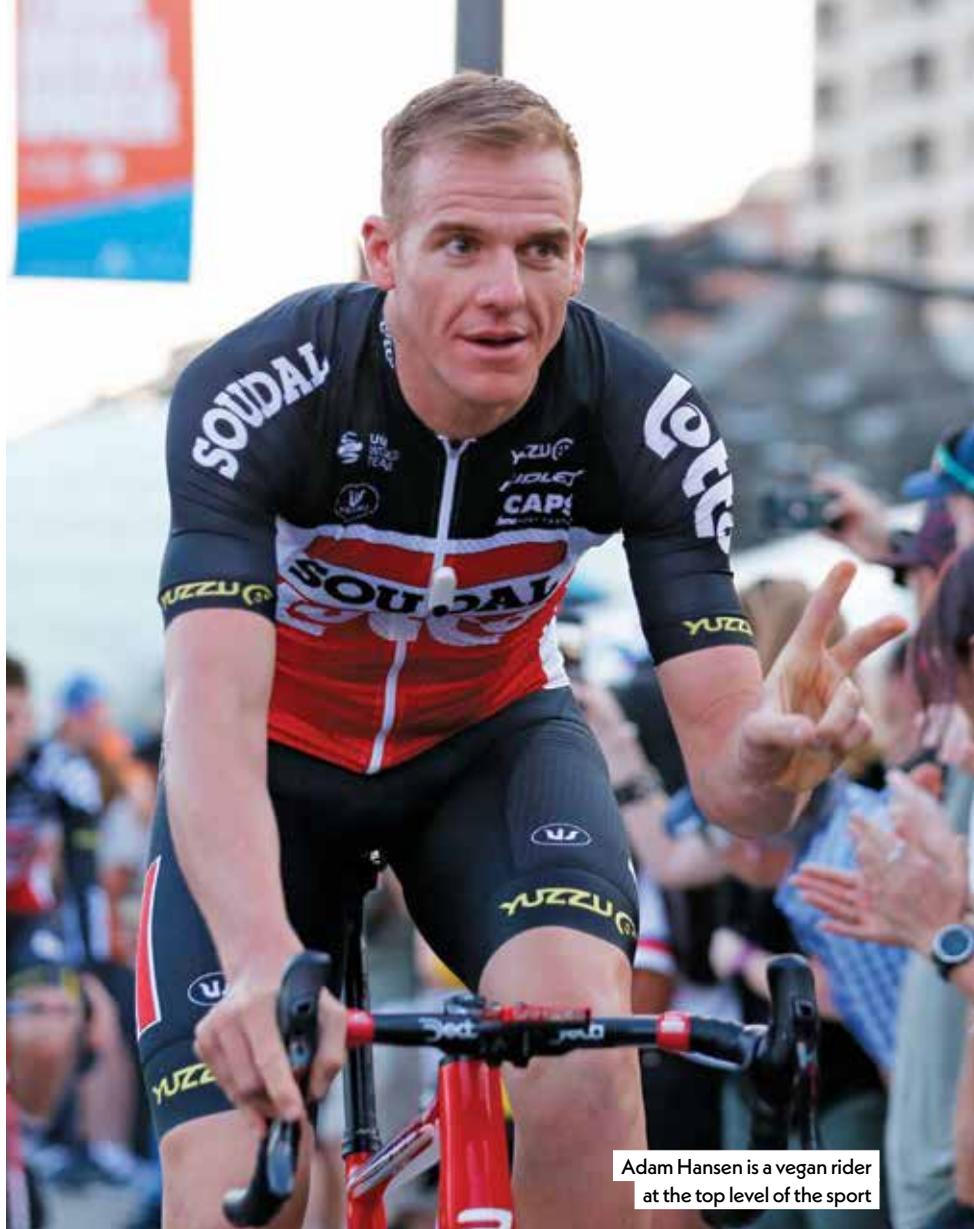
Another expert who has serious reservations about veganism among cyclists is sports endocrinologist Dr Nicky Keay. In her work with sports dietitian Renee McGregor, Keay has observed a troubling correlation between veganism and disordered eating.

"My concerns about any athlete becoming a vegan is based on my clinical experience," explained Keay. "From these medical experiences, I believe veganism can restrict dietary intake and hence put you at risk of having low energy levels. This is purely a clinical point of view."

Keay understands the demands of competitive cycling – her son is a coach and cat-one racer – and is acutely aware that the pursuit of ever-improving 'watts-per-kilo' can sometimes tip over into an unhealthy relationship with food – with veganism sometimes adopted as a disguised weight loss ploy.

"For a cyclist who is already lean, reducing calorie intake via veganism is a risk to health and performance," she warned.

"Of the cyclists I see with abnormal blood test results, most are vegetarian or vegan"



Adam Hansen is a vegan rider at the top level of the sport

"It is challenging to meet energy and requirements through plant-based food alone, and besides, you will need supplementation."

Supplementation is a key issue for

Jeukendrup too.

"Iron deficiency stands out as the big issue for vegans," he said. "It is a big issue in cyclists anyway because it has such an important impact on performance." It must be noted here that iron

deficiency, though more common in vegetarians and vegans, is not solely determined by diet – and there

are many good plant sources. Even so, from a performance perspective, anything that raises the risk of deficiency must be taken seriously.

"People have to realise [veganism] is not a diet you can follow without taking supplements – which, for me, immediately raises questions," Jeukendrup added. "If you cannot follow a particular diet without taking additional supplements to be healthy, then is that a healthy diet?"

It's a provocative and important question. The counter-argument made in *The Game Changers* is that vitamin B12 deficiency does not affect only vegans – some meat eaters, albeit a minority, also fail to get enough from their diet. The same is true of vitamin D, which is scarce in natural foods and must be obtained from exposure to sunlight and, during winter, via

supplementation (recommended for everyone).

All roads in the 'veganism for cyclists' debate seem to lead back to the same conclusion: it's a diet that can support high performance provided you're clued-up and meticulous, consistently eating the right amounts of the right foods. For some riders, summoning that extra diligence is a chore too far – life feels complicated enough already. The smörgåsbord of audacious claims made in *The Game Changers* – promising a slashed risk of cancer, bench press PBs, bigger erections, and all the rest – relies on cherry-picked research and writes a much bigger 'gains' cheque than the current scientific consensus can cash. Far more research is needed before we know for certain how much, if at all, ditching animal products benefits sporting performance.

There is, however, one line of argument in *The Game Changers* that cannot be refuted: going vegan benefits the environment. A study in the journal *Science* found that livestock farming uses 83 per cent of all farmland but supplies only 18 per cent of the calories we need globally, while one-third of arable land is used to grow fodder for animals. It cannot be denied, therefore, that farming animals for food is catastrophically inefficient. Sure, we could improve farming methods, but it may be too late for such piecemeal action – climate change won't wait. For Hansen, the key question on veganism is, what have you got to lose?

"If you followed a vegan diet and the [claimed performance benefits] turned out to be wrong, you would have just followed a healthy diet and helped the environment." It is a fair point: veganism might not make you faster, but provided you're sensible, it's unlikely to do you any harm. Though he hasn't watched *The Game Changers*, the Lotto-Soudal pro is glad for the momentum it has added to the conversation.

"I just hope these documentaries make people think twice about their judgments and the impact that they are having on the world," he concluded his email, "then maybe they'll reduce their intake [of animal products], for their own good and for the future of our planet."

CASE STUDY: CALLUM McQUEEN

'Cutting out eggs and dairy left me depleted'

CW Fitness Project participant and aspiring pro Callum McQueen, 20, experimented with veganism earlier this year, but it didn't work out...

I eased into veganism: removed meat first, then fish, then dairy, over the course of a couple of weeks. Making the change was quite easy, once I'd stocked up on non-dairy milk – except for removing eggs, which was harder. Not only are eggs an ingredient in many meals, but omelette or poached eggs had been my go-to post-ride dish.

I was fully vegan for about six weeks. For the first three weeks, I felt fine. It was at the end of the fourth week – I'd had quite a good week on the bike and training was going well – when I started to struggle. I'd go out and complete maybe two or three of a 10-rep session, then feel completely dead.

I didn't panic but I knew something wasn't right. I struggled through a few sessions, and then on the Thursday morning, upon waking up knowing I had a hard day ahead, all I wanted to do was roll over and go back to sleep.

I forced myself up and out of the door, attempted the first effort and knew instantly I couldn't do it, so I bailed, rode home and went back to bed.

I tried to pinpoint the cause, analysing calories in

versus calories out, and figured I'd been burning more than I was eating. I'd been doing 21-23 hours a week on the bike, with quite a lot of intense training, and the vegan diet just hadn't kept up with my energy expenditure. Looking back, I think that to eat vegan food in the quantities I need would require a real effort – mounds of rice or lentils take quite some getting through. It felt like I was eating loads.

I went back to eating dairy, though continued eating less meat, and things began to improve. After a couple of weeks, I was back to feeling normal again. My weight had dropped from 64kg to 60kg, which for my height [6ft 1in] is probably too light – but I didn't realise at first because I'd felt OK. I think if you have excess weight to lose, veganism would be fine, but my body fat was already quite low.

It hasn't turned me against veganism in principle. It was easy to make the switch; my only special additions were an iron supplement and vegan protein powder – it was just the overall energy intake that caught me out. If you keep a very close eye on energy intake versus

expenditure, you could make it work. My family loved joining in the experiment; they wanted to remain vegan – I spoiled it! Maybe I'll give it another try some day, but for now eggs are back on the menu.



McQueen found a vegan diet left him too tired to train

PLANT-BASED DOMESTIC PROS

**CAMERON MASON:
CYCLO-CROSS WUNDERKIND**

'It's about being the best version of myself'

Rising young cyclo-cross star **Cameron Mason**, 19, on his motivations for going vegan in his mid-teens

When did you go vegan, and why?

I went veggie when I was 13 or 14, about six years ago, after a close friend had gone vegan. I was still eating eggs, cheese and dairy until three or four years ago, when I started to subconsciously reduce the amount of dairy in my diet, after seeing things about the environmental impact. Doing more research opened my eyes up to the fact the problems go beyond just meat – it's the whole industry. I realised

that if I wanted to be the best version of myself, in terms of the environment and being truthful about loving animals, going vegan was the best option.

Have you noticed any effect on your cycling performance?

I get asked that a lot, and I don't know whether I can comment at all, as it was a gradual transition to being vegan. I slowly stopped eating cheese, milk and eggs, and now I'm totally fine with it. Whether it's caused physiological changes, I really can't say. I know from the research that it can reduce your chance of heart disease, but I haven't seen any massive impact on my riding.

Is it harder to keep on top of energy demands on a vegan diet?

Oh yeah, that's definitely a thing. Foods without animal ingredients tend to have less calories in them. While I was growing and developing, I needed a lot of food –

vegan or not – and there were times when I definitely wasn't fuelling the quantity I needed, so that was something we did have to work on.

How do you keep on top of fuelling as a vegan? Any favourite foods?

Don't be afraid of snacking and, if you're looking for calories, you can't go wrong with nuts or peanut butter. While keeping things healthy – avoid cramming in bags of crisps – go for foods higher in fat and therefore more calorie-dense. Nuts are definitely my go-to for this reason.

Do you take any supplements?

Yes, I take an iron supplement, but that's more because of my training load – when my training load is really high, my body needs more iron. I probably wouldn't need it otherwise. I also take vitamin B12.

Do you sense veganism becoming more popular among cyclists?

Yeah, definitely. I think *The Game Changers* documentary had a big impact – I received a lot of messages about it. I've watched some clips from it, which seemed pretty mind-blowing, but it's important to remember the context. What's relevant to body-builders might not apply to cyclists. [The film] has had a big impact, and I think that's positive – anything that opens up people's receptiveness to different ideas is a good thing. With climate change and caring for the environment becoming more mainstream, my generation are definitely pushing more towards veganism.

**OLLY MOORS:
BRITISH DERNY CHAMPION**

'It was more about ethics for me'

Ribble-Weldtite rider and five-time national Dernity champion **Olly Moors**, 23, explains why he stopped eating animal products last year

When did you go vegan, and why?

I'd been an on/off vegetarian for a couple of years, then moved to Belgium in 2017 on the Dave Rayner Fund, and was living a minimalist kind of life with not a lot of money, so really cut down my meat consumption. Last year, I went to Australia in the off-season and started looking into the ethics side. The documentary *Dominion* had a big impact on me. It might be controversial to say it, but in my eyes, the meat and dairy industry is modern-day slavery. Exploiting animals isn't something I can be part of.



Cameron Mason made a gradual move to a vegan diet

**DAMIEN CLAYTON:
MAN OF THE MOMENT**

'I've lost 11kg, yet gained power'

Breakthrough domestic rider of last year **Damien Clayton**, 27, is only a few months into his vegan adventure – we asked him how it's going

When did you go vegan, and why?

I started the journey last November. I wasn't eating dairy anyway because of its effects on my skin. It's a cliché to say it, but I did watch the *The Gamer Changers* documentary a few times. I understand it's vegan propaganda in a way, but it was the push I needed. I thought I'd try being vegan over the winter and if it didn't work just revert back to normal. It was very much for health and performance benefits; I've always struggled with my weight and body image, so I thought I could also use it to cut down my weight. The more I do it, the more I'm really happy about the ethical side too.

Have you noticed any effect on your cycling performance?

Yes. I got in contact with a nutritionist named Charlie Mitten (qualifiednutrition.com) – who also works with Gabriel Cullaigh – and he has done a lot of research for me. He's been instrumental; I don't think I could have got the results I have [from veganism] without him. He uses a tracker, monitoring my weight every day, as well as calories in and calories out. I also send him pictures of myself to check – if my weight is going up, it might be because I'm getting more toned. We've gone from wanting to lose weight and gain power to keeping my weight stable and making sure I'm really well fuelled for my rides. At the start of the off-season last year, I was 86kg, and now I'm down to 75kg, and my last 20-minute test showed I'd put on 25 watts. This being only my fourth year on the bike, you could attribute this to natural progression, but [veganism] might have fast-tracked it. My energy levels seem more consistent too, with less fatigue.

Do you take any supplements?

Yes, iron and vitamin D tablets, as well as omega-3 and a multivitamin.

Are there any vegan foods that you feel have particularly helped you?

The main help has been the MyVegan website (myvegan.com) – their supplements and protein powders, which I always add to my porridge. And mainly just beans – until you're a vegan and tracking your nutrition, you don't realise how much protein they add. Also, now when I go into a petrol station, of all the food items, I can have maybe 10 per cent – that restriction works well for me.

What's the attitude to veganism among fellow pro riders?

I don't shout about it, but people ask about it and they do poke and prod – 'why this, why that?' It's almost like they need to justify [their own dietary preference] by making you justify yours, that's the hardest thing.

It seems safe to assume you'll continue being vegan?

So far so good, yeah... though you might see me eating steaks halfway through the season unless this coronavirus [pandemic] clears up! Then again, if everyone was vegan, the pandemic wouldn't have happened, would it?



Damien Clayton is a recent convert to a vegan diet



The documentary *Dominion* was a big reason behind Olly Moors' decision to go vegan

Have you noticed any effect on your cycling performance?

For me, it was about ethics over performance, but I have been doing more research into the nutritional effects. I found the dietitian Michael Greger's book *How Not to Die* and read it twice, from cover to cover. There are many good-quality studies [showing that veganism has health benefits], and my blood tests – our team is sponsored by Medicecks – have shown that my cholesterol has fallen and is now ridiculously low.

Have there been any pitfalls at all?

The only difficulty I've encountered was at the Tour of Saudi Arabia, where a vegan diet wasn't so well catered for – and I wasn't able to bring any of my recovery shake or protein bars into the country. At the buffet, the only protein sources I could eat were chickpeas, kidney beans and stuff like that – in a stage race, you just need to get in as much protein as you can in the quickest amount of time. It didn't affect my performance, but it wasn't ideal.

Any favourite vegan meals and snacks?

I really love a classic vegan curry, made using potato, spinach and chickpeas – plenty of carbohydrates in the potatoes and protein in the chickpeas. A lot of snacks are vegan without people realising it – Oreos, for example, digestive biscuits or Hobnobs, that kind of stuff.