



You know the dates,
but do you know
what's happening to
your body?

RUNNING in cycles

**Lack of information
and understanding of
the relationship between
your menstrual cycle
and exercise could be
compromising your
running and your health.
Kate Carter investigates**

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FEW YEARS AGO, GB runner Jessica Judd made a startling admission: depending on the stage of her menstrual cycle, her 3,000m time could vary by as much as 15 seconds – the difference between first place and glory, and finishing last.

It made for headline news – no surprise, given the lingering omerta around the issue – but it's not just elite athletes who find their cycle affects their performance. Leading distance coach Tom Craggs tells the story of one of his runners who started taking iron when a doctor finally diagnosed anaemia, which is frequently caused by heavy periods. Three weeks later she took 15 minutes off her half-marathon PB.



GB runner Jessica Judd made headlines when she talked about the influence of her menstrual cycle on her performance

This shouldn't come as a shock, either, considering the hormonal fluctuations of the menstrual cycle can cause stomach issues, cramps, insomnia, elevated heart rate and shortness of breath. There is even evidence that you are more prone to certain injuries – such as ACL (anterior cruciate ligament) tears – at certain times of the cycle. And that's before you factor in state of mind: confidence levels can be affected, too.

In one recent survey, 54 per cent of women said they stopped exercising as a result of their menstrual cycle – that figure rose to 73 per cent in 16-24-year-olds. And yet, for most women, there is absolutely no physical reason to stop being active.

Unfortunately, discussion of the menstrual cycle largely remains taboo: 'Auntie Flo is visiting', 'the painters are in', 'the curse' – the language is certainly creative but almost entirely euphemistic. Even the direct approach – 'I'm on my period' is strange – why would you be 'on' it rather than 'having' it?

What is clear, however, is that everyone's cycle is different and that the female body's reaction to it is complex and under-researched. For most girls, menstruation begins at around 12 and continues until the menopause at around 50-55. Yet cycles of anywhere between 21 and 35 days – and bleeding for anywhere from two to 10 days – are all within what is considered a 'normal' range. ►



Cramps are terrible, but exercise can help.

The infographic features a central circle with the title "WHAT TO EAT, WHEN" and subtitle "A GUIDE TO MATCHING YOUR NUTRITION TO YOUR CYCLE, FROM SCIENTIST GEORGIE BRUINVELS". Four large arrows radiate from the center towards the corners, each representing a phase of the cycle. Each arrow has its name at the tip and points to a corresponding section of text.

Phase 1

Your hormone levels are at their lowest, triggering an inflammatory response. Your white cell count is also lower, increasing risk of illness. Boost iron levels with iron-rich foods like leafy green veg, beef, and beans. Include anti-inflammatory foods such as vegetables, nuts, seeds and salmon. Foods rich in omega-3s can also help alleviate symptoms – flaxseeds and chia seeds, oily fish, walnuts. Your body is mainly using carbs for fuel, so up your carb intake before your longer runs.

Phase 2

Your oestrogen levels rise but your progesterone is very low. You will probably find that your energy levels rise, so you can train harder but this needs to be supported by your diet. Include sources of collagen to aid soft-tissue recovery – kiwi fruit, berries, almonds and avocados. Add foods rich in vitamin C to help with muscle, tendon and ligament recovery. Consume protein after intensive sessions: eggs, cottage cheese, peanut butter or lean chicken.

Phase 3

If your run is over an hour, consider midrun carbs. Muscle breakdown may increase, so aid recovery within 30 minutes of your run. Blood sugar levels may be unstable, so reduce dips by including protein with every meal.

Hormone levels rise. You may feel less ‘strong’ and have an increased heart rate and appetite. For moderate exercise your body is using fats as its main fuel source, so increase your intake of healthy fats such as oily fish, unsalted nuts, seeds and avocados.

Phase 4

Hormones decline sharply, with the inflammatory response causing PMS (pre-menstrual syndrome) symptoms. Near the end of this phase, your body switches from fats to carbs for fuel, so up your carb intake! Counter cravings with protein-rich food and eat plenty of fruits and veggies. Slow-release carbs. Fruit, veg, eggs, nuts and other foods high in anti-inflammatories can help reduce symptoms. Avoid foods high in saturated fats, as these may worsen symptoms. Not sleeping? Try foods rich in melatonin, eg bananas and oats.

‘Because people don’t talk about it, they don’t know if their situation is abnormal,’ says Bruinvels. ‘Women often experience symptoms and just accept them and think, “I’m a woman, ►

'MANY RUNNERS JUST DON'T PREPARE FOR THEIR MENSTRUAL CYCLE'

that's what happens.'" But she stresses that you should see a doctor if you suspect anaemia.

Heavy bleeding and anaemia can be significant detrimental factors in athletic performance. But can a perfectly 'normal' cycle still affect performance? Yes, says Bruinvels, if you don't understand and adapt to it properly. 'Many runners just don't prepare for their menstrual cycle,' says Bruinvels. 'They prepare for everything else, but not for their period. When I was interviewing women at the London Marathon, so many of them said – just a few days before the race – "I'm going to be on the worst day of my

period on race day. What am I going to do?". It was all last-minute panic.'

But what can you do? Many women may have heard of, or taken, norethisterone, the 'period delay' drug. This synthetic form of the hormone progesterone stops the womb from shedding its lining by keeping up hormone levels. It's a pretty common way of

ensuring bleeding arrives at a less inconvenient moment, whether that's your wedding day or marathon day.

The trouble is that side effects of hormonal treatments can end up affecting your performance, too. This was what caused Jess Judd to talk about her period back in 2013: as a British hopeful in the 800m at the World Championships she was worried about the timing of her big race. So she took the drug.

'I think it played with my hormones more,' she said afterwards. 'I had to risk that. I thought, whatever happens it's going to be better than being on my period. But it still affected me, I still felt heavy-legged. And I was very emotional, especially after the race. I wasn't myself that day.'

Other elite athletes have also spoken out. Paula Radcliffe said at the time she felt that it made things 'a hundred times worse' and was critical of British Athletics for not listening to female athletes' feedback.

Bruinvels isn't a fan either. 'Effectively,

you're elongating your premenstrual state, but that's typically when you feel rubbish,' she says.

If you are going to take it, she adds, then it should be done in advance. Ideally – and, of course, this does rely on a predictable cycle – do it a few months before, when potential side effects matter less, but it still shifts your cycle for the big day.

While norethisterone is taken as an occasional one-off, two to three million women in the UK take one of the hormone-based contraceptive pills daily. Could this, too, affect your running performance?

Frustratingly, even though the pill has been in common use for more than 50 years, there's not a large amount of research either way. Certainly, a huge number of athletes have taken it for many years to no obvious detriment – a 2008 survey found that more than 80 per cent of elite female athletes were on the pill. But there are few studies large enough to draw any firm conclusions – some, such as a study published in *The British Journal of Sports Medicine* have found a slight decrease in VO₂ max among female athletes on the pill, while another, published in the same journal, found no difference in performance.

But while we wait for more studies, there are options. Many women are moving away from long-term use of hormonal pills owing to more general concerns, such as the impact on mental health. LARCs – long-acting reversible contraceptives such as the copper coil or IUD – are increasingly popular (39 per cent of women accessing contraceptives from NHS sexual health clinics in England now choose an LARC, up from 21 per cent in 2007).

From a performance point of view, Bruinvels recommends them, because her research suggests that taking certain types of pill increases levels of underlying inflammation and oxidative stress. 'There is also a suggestion that it may blunt an adaptation to training,' she says, 'so just from a performance perspective, it may not be the best option.'

Positive steps

KNOWING ALL THIS, should you adapt your training depending on your cycle? Definitely, says Bruinvels. 'We know that oestrogen, for example, influences adaptation. So research demonstrates that resistance training in the first half of your menstrual cycle is more beneficial than in the second half.'

Bruinvels, along with colleagues at Orreco, which focuses on applying data to improve sports science, has created FitrWoman, an app that tracks the cycle of female athletes and is full of tips as to when and why certain related symptoms might occur, how to mitigate them and what type of training might be best at different times of the month.

And what if race day falls at a bad time? For Bruinvels, understanding is key: 'The first thing to do is to work out why that is the worst day for you, and what you can do to help naturally control your cycle and reduce the symptoms,' she says. 'I worked with someone last year who gets really bad sleep disruption at certain points, and it had really affected her races. So we put a sleep strategy in place, which meant we didn't have to do anything to (medically) deregulate her.'

Focusing on diet can also help. 'Premenstrually, as oestrogen and progesterone levels decrease, there's an increase in hormone-like substances called prostaglandins, which drive an inflammatory response,' says Bruinvels. 'Diet at that time is very important because you might avoid having anything that's pro-inflammatory in your diet, like processed meats, or even dairy, which has been shown to exacerbate symptoms. Then you can include anti-inflammatory foods, antioxidants and fibre.'



Adjust your easy days to suit your cycle.

The key message here is that while all the potential issues might appear worrying, there's no reason to stop training. Adjusting your rest days or easy days according to your own cycle can work really well, and just being informed can help. 'Knowledge is power,' says Bruinvels. 'Loads of women tell us that just understanding makes them feel much better. There are so many simple things that can be done – optimising your diet, looking after your general health and wellbeing – that can reduce the severity of symptoms.'

It is also, though, a good idea to avoid making assumptions about how you might feel. A day after talking to us about her terrible cramps, Dixon got back in touch with RW. 'After all I said, today I got my period three days early,' she explained. 'I had a 10-mile tempo planned, so I thought I'd warm up and see how I felt. I didn't feel bad, so I went for it – and it ended up being my best tempo since this time in 2017!'

'I think, like a lot of things, you can get an idea in your head and it controls you. I know in the past I've had some real shockers, and if I really looked into it, it might be more to do with training fatigue. But now I just associate it with my period. Having said that, I also haven't had my normal restless night's sleep that I tend to get. The body is very complicated!'

Meanwhile, Bruinvels also has a message for female athletes who fear that their menstrual cycle could cost them a PB, or even an Olympic medal. 'I think if you don't do something about it, it could,' she says. 'But if you are savvy and understand your cycle, there is no reason why you can't perform at your best on any one day.'



Marathon runner Aly Dixon knows her body well, but sometimes it just breaks the rules



It is important that you work out what is your worst day

PHOTOGRAPHS: GETTY

