

Keep on running... *an athlete's story*



Competing at international level since the age of 16, Jessica Piasecki, (née Coulson), has represented team GB at senior level on the road, track and cross-country. She has previously been the English 10,000 metre and British half marathon champion. In 2012 she won the European under-23 cross-country title. However, her success in the athletic world has come at a cost. She has experienced RED-S and is determined to help and raise awareness and educate others.

"At seventeen my menstrual cycle had still not started," explained Jess. Already a self-confessed sports fanatic she spent her early years playing hockey and cross-country running. At 16 she qualified for GB at the Euro Cross as the youngest on the team.

"Juggling my sixth form studies I trained hard continually and still my menstrual cycle failed to make an appearance," said Jess. "I went to a gynaecologist who wanted to put me on metformin, but I didn't want to take it because of the side effects. I did have a scan of my ovaries.

"From my scan they said it was probably polycystic ovaries. So why wasn't I having periods then?"

I went to a gynaecologist in London. They felt the reason for me not having a period was more likely to be multi-cystic ovaries.

"At 18 I was not that concerned at the time as I felt healthy and it was almost convenient not to have periods, so I didn't feel that bothered. I felt I ate well – albeit in what I thought was a healthy and controlled manner.

“So, I went on the pill and found I was able to have a bleed. I first tried a progesterone-only pill, but it didn't agree with me...I felt very lethargic.

“We finally decided on Microgynon – which was fine. I was able to have a withdrawal bleed – but of course I realised, later on that this wasn't really a normal period, so the position was still not clear and, in effect, the bleeding was ‘fake.’ although at the time I was quite content and everything seemed okay.”

Then came the first fractures...

In 2008 she began to experience foot pain and a large navicular stress fracture was finally diagnosed. Although mortified Jess finally got back running and got into Loughborough University.

Fast forward and Jess experienced three further stress responses, another stress fracture, bone bruising and anaemia. In 2012, she was found to have two compression fractures in my spine – something experience in older women with osteoporosis.

“Due to my extremely poor bone health I was then prescribed bisphosphonates by a bone metabolism specialist in Sheffield who I still see to this day.”

In spite of this Jess went on to win her Euro Cross under-23 race.

However, further scans over the next few years revealed her bone health was continuing to deteriorate.

“I did have other tests – still never having had a proper menstrual cycle. I was becoming concerned that I had not reached menarche and would I be able to go on to have a family later on. I had a brain scan to check whether my pituitary gland was an issue. That was not pleasant but it proved to be all fine.

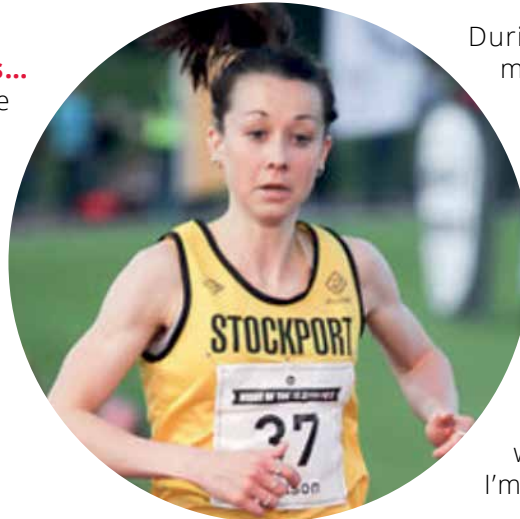
“I then went to a spine specialist. To my horror it was found that I had multiple compression fractures in my spine and had lost 3cm in height.

“The next move was to see an endocrinologist who prescribed teriparatide treatment.

“All this time I had been running and training hard for the London Marathon, with a view to getting Olympic qualification.

“My doctor in Sheffield said she had to tell me to stop running, although she knew I would want to continue. The specialists in London were saying – ‘how is this girl still managing to walk around’?

“The teriparatide treatment meant I had subcutaneous injections for 18 months, again in the hope of improving my bone health and calling a halt to the fractures.”



During this time Jess had to make a decision to have the injection treatment now or later on in life, as it was only something Jess would only be able to have once and if she were more in need of it at a later date it would not be possible.

“However, explained Jess, “It was my choice to go on it. I was on it for 18 months, which is the maximum, and I'm no longer taking it.

“I stopped the bisphosphonates prior to starting teriparatide. Normally after teriparatide you then go back on bisphosphonates. I didn't want to go back on them as if you want to conceive you have to have been off them for twelve months prior. I wanted to come off all medication and see if I could start my cycles naturally for the first time.

What is RED-S?

Relative Energy Deficiency in Sport (RED-S) comes about when too few calories are being consumed resulting in low energy availability.

The syndrome, which can impact both men and women, is an entirely new term, which also encompasses the Female Athlete Triad. It has health consequences including, but not limited to impairments to:

- **menstrual function**
- **metabolic rate**
- **bone health**
- **immunity**
- **heart health**



"My eating habits changed from the age of 24. I now advise other aspiring athletes about their nutritional needs. Food is fuel... the right fuel helps you go faster.

"Life is good now. I am married, I have finished my PhD and I hope to start a family in the future. What I have learnt through all of this is that you have to put your health first and achievements second.

"Sport in general...still does not realise the extent that hormones impact on bone health. We need to ask more questions. You need energy to have your cycles. Minor changes can kick start them."

Jess now lectures in Exercise Physiology at Nottingham Trent University and is still running 60 miles a week whenever possible. "My aim is to make athletes aware of the symptoms and issues around RED-S before they experience it

"I booked an appointment to be assessed in 6 months but before then I did start to have some cycles, albeit intermittently. Not regular but they were there."

At the time Jess was also seeing a nutritionist for gastro problems, "The usual runners trots, sort of thing," laughed Jess. "To my surprise they said I needed to put on 5kg, which to an athlete is an anathema. I was mortified but my then boyfriend, now husband, said it did make sense. I made sure I increased my protein and had three meals a day. At the time I was running my personal bests even though I was putting on weight.

"This began to change my perceptions around food.

"When I came off the pill, after my wedding, I ate more – things like avocado, eggs, nuts and made sure I was never feeling hungry.

"I spent five and a bit weeks on an extended honeymoon – no stress, no work, no responsibilities and began to feel so much better. I was finally getting enough of the right fuel in my body.





“At Manchester Metropolitan University, we carried out our own research on some of the UK’s most renowned female endurance runners, investigating the effects of altered menstrual cycle on bone health. Athletes with amenorrhea presented with a greater endocortical circumference (the outer circumference of the cortical bone) in the tibia and radius than controls. Only the eumenorrheic athletes (those with regular menstrual cycles) had a greater cortical area, in the tibia and radius, compared to controls. The athletes with amenorrhea had an expansion in bone size but not density, meaning they had wider but thinner bones.

“More research is being conducted to better understand the issues, and accurate diagnosis will hopefully become more frequent. But what we really need is education at a young age, as most athletes become familiar with the triad only once they have been diagnosed with a bone injury. Prior to this, they may have never known why their menstrual cycle stopped, as it can be seen as a ‘normal’ thing to some when training at such a high level. If athletes are made aware of the symptoms and issues around the triad before they occur, then nutrition and menstrual cycles can be more closely monitored as they progress through their athletic careers. The increasing number of elite female athletes having children during

their competitive careers offers hope to all younger athletes, and may even encourage them to take care of their bodies in a more informed way.”

Jess graduated with a BSc Hons in Anatomical Science from Manchester University and went on to get her Masters by research looking into bone health of female athletes. Her PhD focused on bone and muscle health in ageing.

Runscience.co.uk

More is not always better.

...Jess says: “Elite female athletes, particularly those involved in sports that usually adopt a leaner physique with low body fat, are at a greater risk of disordered eating; they are more likely to disturb the balance between optimal health and recovery by reducing energy intake.

“Without the necessary energy intake, the menstrual cycle will most likely become irregular and eventually cease, which is known as amenorrhea. Amenorrhea is as prevalent as 65% in distance runners and 69% in professional ballet dancers. Without a regular menstrual cycle the levels of estrogen are significantly reduced, which causes a disproportionate level of osteoblasts and osteoclasts, leaving a higher rate of bone resorption than formation. This may ultimately lead to bone injuries, osteopenia, or even osteoporosis at a very young age, making any further career achievements even more difficult.”