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# USING A FUNCTIONAL APPROACH TO SUPPORT FERTILITY

*Louise Wates* finds out how providing dietary and lifestyle guidance, through functional nutrition, can be a pathway to supporting prospective parents on their journey to pregnancy

**A**ccording to the NHS, around one in seven couples may have difficulty conceiving. For those who have been trying to have a baby for more than three years without success, the likelihood of conceiving naturally within the next year is one in four; and whilst there can be a range of possible causes of infertility, roughly a quarter of cases may never be explained, with nothing ever being obviously ‘wrong’.<sup>1</sup>

For anyone who experiences this, it can be a painful and distressing time, and one that can often lead to a long process of intrusive medical investigations.

Anyone experiencing fertility problems should speak with their GP, but there is growing evidence that lifestyle changes — from addressing nutrition, to taking up exercise or managing stress — may all potentially make a difference in some cases.

Weybridge-based registered nutritional therapy practitioner Julia Young specialises in working with people who are trying to conceive naturally or who are planning on taking IVF. Having struggled with her own fertility — her own children were conceived through IVF — it’s a topic about which she is passionate, and is now the primary focus of her clinical practice.

## IN BRIEF

- Diet and lifestyle changes can be used to bring down inflammation markers in conditions such as PCOS and endometriosis that reduce the chances of natural conception.
- Stress has a ‘double whammy’ effect on male and female fertility.
- Nutritional status may influence the health of both sperm and egg.

## PCOS and endometriosis

Although a variety of factors can contribute to fertility issues, a condition Young often sees in clinic is polycystic ovary syndrome (PCOS). A common hormonal disorder, it affects many women of childbearing years, disrupting their cycle so that they don’t experience a period every 28 days, as is the average.

“Women with PCOS may have a longer cycle...or they may not be ovulating. And, obviously, if you’re not ovulating, you’re not going to be conceiving, so natural conception can be a lot harder,” says Young.

Along with irregular periods, PCOS comes with a range of unwanted symptoms including weight gain, facial hair, thinning hair on the head, acne and mood swings. It is also often

associated with insulin resistance, which is a precursor to type 2 diabetes.

Diet and lifestyle, however, can be “really effective” in supporting women with PCOS, she says, improving hormone balance, the menstrual cycle, and getting women closer to a 28-day cycle. But the problem with obesity, which often accompanies PCOS, is that it doesn’t just affect the chances of conceiving. “It’s an inflammatory condition, so it can affect the quality of our egg,” says Young.

Endometriosis, another inflammatory condition Young sees in clinic, can also make it harder to conceive. However, as with PCOS, she says, nutrition and lifestyle can help to reduce inflammation in the body.

## Weight loss

Often people will want a quick fix, she says. But there isn’t one.

“I have to explain it’s really about focusing on health first,” she says. “The main goal is to have a healthy pregnancy and a healthy baby. So we need to focus on health. [The weight is] not going to just drop off in two weeks’ time. It’s about making small changes that are sustainable, that are effective. It’s about moving away from...fad diets.”

Young mentions the keto diet, which has grown in popularity because of the rapid weight loss it can bring. “It involves quite a restriction on carbohydrates which are really important for fibre, in terms of supporting the gut bacteria and

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important for supporting ovulation. If they're cutting out a whole food group, it's going to affect them in other ways."

A functional nutrition approach aims to add in nutrition rather than take it out. "We're not restricting [foods] and taking lots away, but putting in all the nourishing foods they need; and they hopefully, naturally, see the weight come off."

She doesn't recommend crash dieting either, explaining that with rapid weight loss, toxins stored in fat cells are released more quickly, potentially affecting egg and sperm health. "We don't want to be losing fat very quickly...it needs to take time with the weight loss. Hopefully it will come off slowly and sustainably. We don't want it coming back on."

Rollercoaster blood sugars, when people experience energy highs and slumps, or frequently feel hungry, are often a factor in inflammation and weight gain. Young says it's not uncommon for the clients she sees in clinic to habitually snack throughout the day, exacerbating the problem. In such cases, she says, the aim is to get them to the stage of eating three satisfying meals a day, "so we're not having that insulin increase throughout the day, which may well have been encouraging fat storage".

### Male factor infertility

Stabilising imbalanced blood sugars and bringing down weight gain — both of which contribute to inflammation

## MICROBIOMES

Whereas diet may help to look after the bacteria in our gut (gut microbiome) the vaginal microbiome is also a growing area of interest, says Young, and one that she thinks is important.

"Probably nine times out of 10, I will encourage the woman to do a vaginal microbiome test." She says this makes it possible to identify whether there are any pathogenic bacteria or microbes associated with bacterial vaginosis that may affect the ability to conceive or that are associated with complications in pregnancy. It may also be possible to see if there are pathogenic bacteria that are being transferred to the partner, and which will also need to be addressed.

For concerns about sexually transmitted diseases, you should consult your GP or your local genitourinary medicine (GUM) clinic.

## Stress is known to directly impact fertility by lowering levels of the main sex hormone, called gonadotropin releasing hormone (GnRH)

in the body — is also beneficial for prospective fathers. "We know in 30 to 40% of cases, the reason for infertility is the male factor," says Young. "With men, working on diet and lifestyle is particularly effective in helping improve their sperm quality."

Young says tests may show whether there is structural damage to sperm. If damage is high, she says there are key areas to address, such as whether there are varicose veins on the testicles; in which case, the client would need to consult a urologist.

"But the other main reason [for poor quality sperm] is down to diet and lifestyle," she says.

stress is important for fertility. As a side note, according to the Office for National Statistics, more babies in the UK are conceived in the weeks leading up to and after Christmas. Could having a bit of time off work or being in the party mood make a difference?

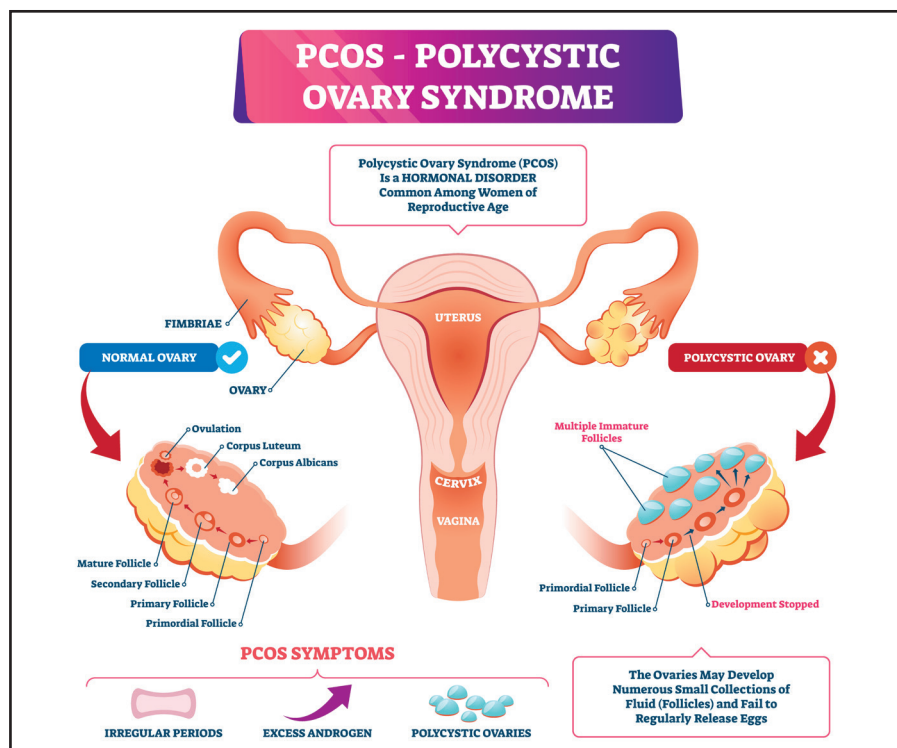
Research shows that stress directly impacts fertility by lowering levels of the main sex hormone (called gonadotropin releasing hormone (GnRH)). And in one study, in what researchers described as a "double whammy",<sup>2</sup> another hormone (GnIH) was found to also suppress GnRH levels, leading to lower testosterone and sperm levels.<sup>2,3</sup>

We might not like to compare ourselves to the rest of the natural world, but the negative effect of stress on fertility is a phenomenon seen in many animals — such as when heat stress causes chickens to lay fewer eggs or cattle to produce fewer calves. From an evolutionary perspective offspring need the right environment to thrive, and stress potentially signals to the body that the time for reproduction isn't quite right.

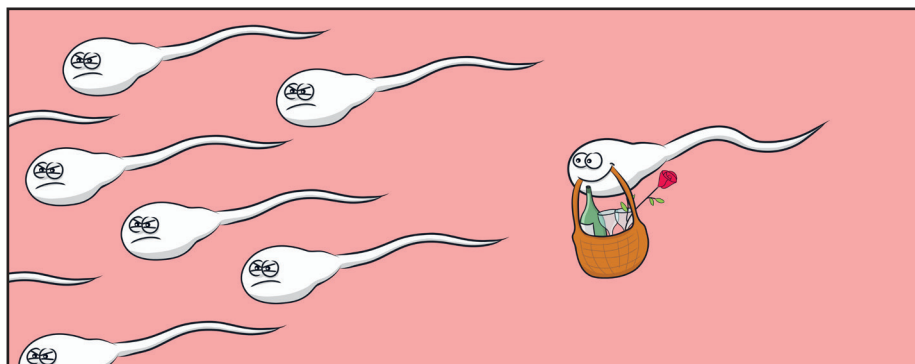
When the body is stressed, Young points out, "reproduction is seen as an unnecessary system and would more or less shut down". Lack of food — another physical stressor — also causes the reproductive cycle to shut down, as can happen with severe weight loss.

Yet, in a vicious cycle, struggling to conceive is stressful. "The stress of infertility is huge whether they're going through treatment or trying naturally," says Young. "It's a huge stressor on both partners, it's a huge strain on their relationship and on them as individuals."

"Personally, I think stress is one of the hardest [obstacles]." And, she says, it is also one that needs to be understood and addressed as a priority.







*“...it takes three months to mature an egg, and roughly three months to produce a healthy batch of sperm...”*

### Taking time

Although people may be anxious to get pregnant quickly, Young says that she aims to work with clients for at least three months.

“We know from a fertility point of view that it takes three months to mature an egg, and roughly three months to produce a healthy batch of sperm.

“So if [people are] coming to me and the diet’s really poor, and there are lots of symptoms going on, and they’re trying for a baby next week, that’s not going to be when their egg and sperm are at the healthiest point.”

Young says three months is a “realistic time scale to start seeing some changes”, although in the case of weight loss, this can often be harder for women than men. The aim, however, is to introduce dietary and lifestyle changes that can be sustained for life.

### Exercise

This also extends to exercise. Although it is great for improving mental wellbeing and balancing blood sugars, Young says it’s important that people do not over-do it. “We know that it’s a stressor on the body and increases oxidative stress,” she says. “But we also know that movement is important.”

If weight and blood sugars are an issue, Young says that a walk after eating

may help to reduce the blood sugar response. Getting out into natural daylight will also help with topping up vitamin D or stress reduction.

“Definitely I encourage movement. I also love couples yoga...[as] a really good bonding experience for them that maybe isn’t focusing on the fertility so much.”

### Starting points

For any couples seeking support with their fertility, Young stresses that it’s beneficial for both partners to be involved from the start. “Nine times out of 10, I get better results when they’re both there,” she says. “You know that they’re supporting each other, which is really important.” If the woman makes changes but it’s then discovered there are male-factor problems, that is time lost. “What a waste of time that he’s missed out when he could have been making improvements that are really important.”

Even when it’s just one partner making changes, such as with IVF and donor sperm, she still believes it’s important for both partners to be on board to support each other.

She doesn’t advocate any particular diet, but does believe the Mediterranean way of eating can support fertility.

“The Mediterranean diet is all about being social, eating together and being

active. It’s not just about food.

“Then it’s all about the vegetables and variety, colour, and making sure we’re having the healthy proteins [and] some fat.”

For those who find the concept of a Mediterranean diet at odds with their own cultural food choices, replacing the term ‘Mediterranean’ with ‘rainbow coloured’ may be more helpful. This approach focuses on eating a variety of whole foods rather than any specific cuisine.

However, Young does emphasise the importance of reducing sugary foods. If we imagine diet as a pyramid, sugar should be “right at the very tip”, she says. People should also avoid ultra-processed and packaged foods as much as possible because these can be high in sugar, which contributes to imbalanced blood sugars, whilst being low in essential nutrients such as fibre.

### Alcohol

Previously, guidance in the UK over alcohol and pregnancy has been mixed. Back in 2015/16, when *Optimum Nutrition* reported on foetal alcohol syndrome (a condition that affects the development of babies whilst in the womb) the NHS stated there was no safe level of alcohol consumption during pregnancy; but if choosing to drink, it was best to limit consumption to one or two units a week.

Now the NHS is much clearer about the effects of alcohol on a developing foetus and recommends avoiding alcohol completely throughout pregnancy. More recently it was reported that in a bid to prevent babies from being born with foetal alcohol syndrome, pregnant women would be asked about their alcohol consumption.

However, even before conception, alcohol consumption is understood to affect fertility for both males and females,<sup>6,7</sup> whilst increasing the risk of foetal loss.<sup>7</sup>

### Personalised approach

Finally, even when people have the same medical diagnosis, such as PCOS, Young stresses the importance of a personalised approach.

“Everyone’s at a different starting point,” she says. “I’ll get people [in clinic] and I’ll see their food diaries and they’re actually eating really well. And, actually, maybe diet isn’t the main issue we need to work on.

“Their sleep might be really poor, or they might be really stressed and we only need to make a few tweaks to the

## ZINC

Possibly what gives oysters their reputation as an aphrodisiac, zinc is important for making new cells and enzymes and playing an important role in fertility. Animal studies have found that zinc deficiency affects the early stages of egg development, reducing the ability of the egg cells to divide and be fertilised.<sup>4</sup> In males, zinc deficiency is reported to have a negative impact on sperm production.<sup>5</sup>

Zinc cannot be stored in the body. Although zinc can be taken supplement form, it is possible to take in enough through a balanced diet. The NHS states that taking in very high levels of zinc can lead to anaemia and weakening of the bones. Zinc is found in meat, shellfish, dairy (such as cheese), legumes (lentils, chickpeas and beans), seeds, nuts and whole grains.

diet. In other cases, they really need lots of help supporting their diet first.”

What works for one person, she stresses, won't necessarily work for another, particularly with supplementation, which involves testing.

Yet whilst the obstacles people face depend on the individual, hoping for a quick fix is common. “I've had clients come to me and say, ‘we're starting IVF next week, what can you do?’ And I'm, like, ‘well in a week, what *can* I do?’”

Although she might be able to support those clients for that short period of time, she says it isn't enough time to work on the health of the egg and sperm.

“We really need that minimum three months. If we have six months that would be ideal.”

It may sound like a cliché, she says, but “it's not a sprint, it's a marathon — because we want this to be a healthy baby”.

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## SLEEP APNOEA

A recent study on rats from researchers at the University of Wisconsin-Madison, USA, found that sleep apnoea during pregnancy increases the risk of brain and behavioural changes in offspring.<sup>8</sup>

Sometimes caused by obesity, sleep apnoea causes sufferers to stop breathing when asleep, triggering a drop in blood oxygen levels (intermittent hypoxia, IH) which, the authors write, is “known to cause adverse pregnancy and neonatal outcomes”; although the long term consequences on the brains and neurodevelopment of offspring is unknown.

During the study, pregnant rats were exposed to IH. As expected, this did not expose foetuses to IH, but behaviour changes were observed in both males and females soon after birth. Impaired cognitive and social functioning in male (not female) offspring, which persisted into adulthood, was also observed.

The authors wrote that, in humans, because of growing obesity, sleep apnoea now occurs in about 15% of uncomplicated pregnancies and more than 60% of high risk pregnancies by the third trimester.

Symptoms of sleep apnoea include feeling tired in the morning, headaches and brain fog. Consulting a GP or health care provider is important. However, where appropriate, weight loss can help. The NHS states that in mild cases, weight loss or sleeping on one side may help.

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