

The male fertility crisis continues: Quality of sperm plummets

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The rate of men being treated for infertility has increased 700 percent in the last 15 years - and their semen quality is plummeting, new research shows.

Researchers in the US and [Spain](#) analyzed semen samples from two major fertility centers between 2002 and 2017.

They found the number of men seeking treatment went up seven-fold, from 8,000 to 60,000 in that time.

What's more, among those men with fertility issues, the quality of semen plummeted: an increasing number have a sperm count so low they would require IVF to conceive, while the number of men with a 'normal' sperm count dropped.

Lead researchers Dr Ashley Tieg, who is presenting the findings at a reproductive medicine conference on Monday, told DailyMail.com the drop in sperm quality is most likely driven by environmental factors like smoking, stress, obesity, and exposures to chemicals in plastics.

The study comes a year after experts in Israel and the US sparked alarm with shocking data that sperm counts among men living in Western countries had fallen by 59.3 percent in the last 40 years.

According to Dr Tieg, this new data - the first to look at sub-fertile males, rather than fertile ones - is an even more accurate demonstration that there is cause for concern when it comes to male fertility, warning: 'this is a public health concern'.



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Among men with fertility issues, the quality of semen plummeted: far more had close to zero sperm per milliliter, while the number of men close to fertile dropped, new data on men in the US and Spain show

According to Dr Tiegs, of the Reproductive Medicine Associates of New Jersey (RMA NJ), the issue with last year's findings was that the researchers didn't look at total motile sperm count.

'Total motile sperm count has shown to be more predictive of outcomes for pregnancy,' Dr Tiegs explains. 'It's also been correlated with embryo development and expansion routes.

'We wanted to know if total motile sperm count was affected, and if it is declining, then what are the implications?'

The data, which Dr Tiegs will present on Monday at the conference of the American Society for Reproductive Medicine in Denver, Colorado, include samples from men in two continents - at the RMA NJ and the Valencia Institute of Infertility (IVI), with whom they are now affiliated.

A total motile sperm count over 20 million (per millimeter of semen) is considered normal.

Below 15 million qualifies as needing fertility treatment, but the treatment they need depends on how low their sperm count is.

For those with a total motile sperm count between five and 15 million, IUI (intrauterine insemination, giving the sperm a head-start by placing it inside the woman) will suffice.

Those with a count between zero and five million will require IVF to give them realistic chances of conceiving.

The data collected by Dr Tiegs and her colleagues shows that the number of men reporting sperm counts under 15 million has soared, and the number of men with a 'normal' level, above 15 million, has steadily declined.

Since 2002, the rate of men at the two clinics who turned out to have a 'normal' sperm count, above 15 million, dropped. Once, they made up 85 percent of infertility patients. Now, just 15 years later, they make up 79 percent, a significant drop.

Meanwhile, the rate of men with much lower sperm counts is climbing.

It means the number of male-related IVF cases is set to soar.

'We weren't expecting to find that, that the trend of sperm count declining has real treatment implications,' Dr Tiegs told DailyMail.com.

As for why, Dr Tiegs said that, although male age (contrary to mainstream belief) does affect male fertility, this was ruled out. Over the 16 years, the average age of men presenting for fertility treatment remained almost exactly the same (36 years old, plus or minus 12 months).

Dr Tiegs said she believes it is most likely driven by environmental factors that affect fertility - including poor diet, smoking, obesity and exposure to plastics.

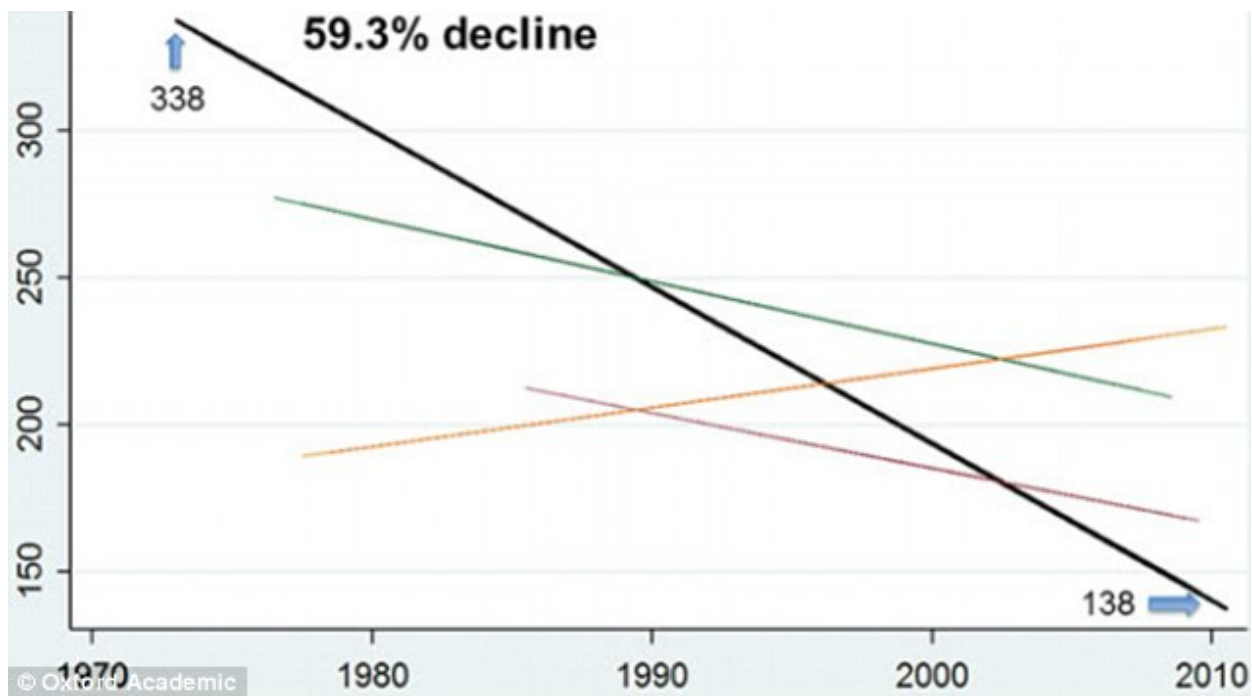
'[Our study] supports a lot of the other literature that shows environmental factors like plastics and smoking and obesity are big ones,' Dr Tiegs said.

'We know obesity is on the rise and it does affect sperm quality. It increases the risk of morbidity and mortality, but it can also affect offspring too.'

Dr Tiegs says the fact that the study involved two continents is key - it shows the issue is a global concern.

Next, she hopes to look at larger groups in other countries.

'That could give you a clue about what the environmental factors are in each country.'



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Last year, research (pictured) showed that sperm counts have fallen nearly 60 percent among Western men since 1973

The researchers of last year's study, at Hebrew University and the Icahn School of Medicine at Mount Sinai in New York, examined nearly 250 studies on sperm count conducted between 1973 and 2011.

By reviewing the previous studies, the researchers were able to get a long term, global perspective and compare fertility among Western men to that of people in other parts of the world.

Since 1973, sperm concentration for Western men have fallen by more than 52 percent, declining by 1.4 percent each year on average.

Overall sperm count fell by 1.6 percent each year, resulting in a cumulative decline of nearly 60 percent in the last 40 years.

The research comes after the US National Center for Health Statics – the Centers for Disease Control and Prevention's (CDC) data arm – announced in July of 2017 that fertility in the US had reached an all-time low.

Birth rates among American women have been falling for decades, but took a sharp downward turn beginning around 2010.

By 2016, the fertility rate in the US was only 62 live births per every 1,000 women.

Fertility specialists emphasize that male and female biology are approximately equally responsive for any reproductive issues or failures.

Taken together, the recent data on sperm counts and birth rates in the US do not bode well for the stability of the American population, as measured through something called the rate of replacement.

Each mother needs to have an average of 2.1 children in order to 'replace' the people who die each year, maintaining an equilibrium in the population.

But in the US, women are having an average of 1.8 children, men are less fertile than they have been for many decades, and – as the baby boomer generation ages – the American mortality rate is set to climb.

Currently, we are only just shy of the replacement rate, and many have argued that a smaller population could be better for an overcrowded, highly-polluted Earth.

Some explanations for the decline in female fertility have suggested that women are simply choosing to have fewer children – or none at all – later in life, as they pursue higher degrees of education and more time-consuming jobs.

But the changes in male fertility are entirely biological in nature, which may be a cause for greater concern.

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