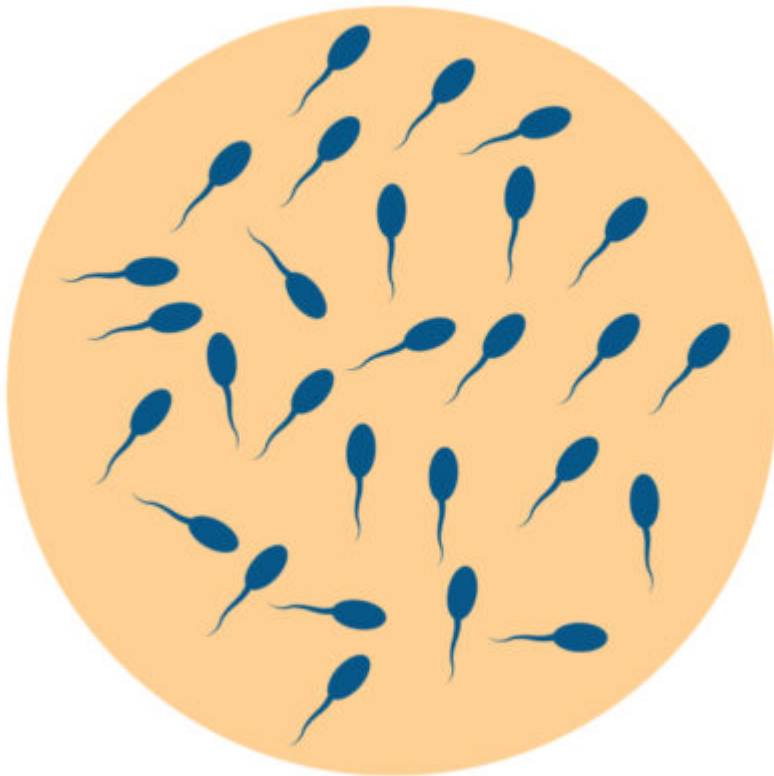


Global Sperm Counts 50 Percent Less in 50 Years

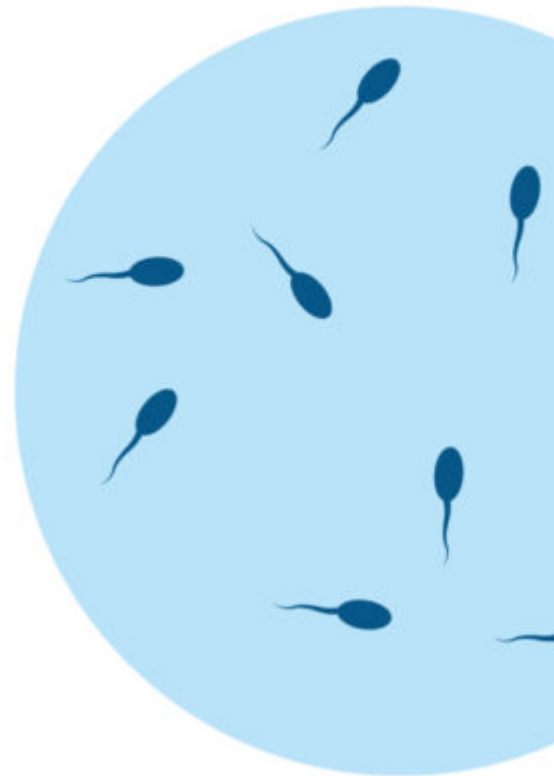
Description

by David Charbonneau, Ph.D. via [The Epoch Times](#)

Normal sperm count



Low sperm count



(Shutterstock)

A recently published meta-analysis shows that global sperm counts are declining worldwide—at an accelerating rate.

The [article](#), published in the journal Human Reproduction Update in November by an international team of researchers, who reviewed 2,936 scholarly abstracts and 868 full articles, analyzed data from 38 sperm count studies done on six continents, updating their landmark [study](#) of 2017. The study is based on semen samples collected from 1973 to 2018.

The 2017 study found sperm counts had fallen in North America, Europe, and Australia by over 50 percent in a fifty-year span. The current study updated this data as well as added data from South/Central America, Asia, and Africa.

“The aim of this study was to examine trends in sperm count among men from all continents. The broader implications of a global decline in sperm count, the knowledge gaps left unfilled by our prior analysis, and the controversies surrounding this issue warranted an up-to-date meta-analysis,” said the authors.

The analysis found that while sperm counts had declined at the average rate per year of 1.16 percent between 1972 and 2000, the rate of decline since 2000 has increased to an average of 2.64 percent per year.

[The new 2022 study updates an earlier 2017 study to cover a broader geographic area and include new studies. Its analysis reveals a significant drop in sperm count. \(Temporal trends in sperm count: a systematic review and meta-regression analysis of samples collected globally in the 20th and 21st centuries/Oxford Academic\)](#)

[Reviewing the findings in an After Skool YouTube episode, study author Shanna Swan said:](#)

“Now we can conclude that among men who didn’t know what their fertility [rate] was, who are, by the way, most representative of the general population, that there was a significant decline [in sperm counts and sperm concentration] in Asia, Africa, and South America—so now we can say that our finding of a significant decline in sperm concentration and count is worldwide—that was a big change from the 2017 paper.

“The other change from the 2017 paper was the rate at which sperm counts are declining: When we look at recent years—particularly since the turn of the century—the rate is 2.64 per year. That’s more than double 1.16, the prior finding.”

The Role of Plastics in Reproductive Disruption

The obvious question is—why the accelerated rate of decline?

Swan dismissed genetic explanations, pointing out that genetic changes take “many generations to appear” whereas these changes are taking place in two generations or less.

“That leaves us with environment,” Swan said.

Swan and other experts believe the problem is a class of chemicals called endocrine disruptors, which interfere with the body’s hormones.

These endocrine disruptors are found in many everyday products, including plastic bottles and containers, liners of metal food cans, detergents, flame retardants, food, toys, receipts from ATMs, and pesticides.

Phthalates, commonly found in personal care products, [plastics](#), and children’s toys are one common

class of these compounds. They're hard for consumers to avoid, particularly since manufacturers are under no obligation to identify these chemical ingredients.

Also, many of these disruptors are slow to break down in the environment, making them a long-term hazard.

One particular area of concern for researchers is reproduction, as these disruptors can interfere with fetal maturation and sexual differentiation in early pregnancy.

In the video, Swan illustrates the process whereby these disruptors can short-circuit testosterone production in the male fetus as it goes through development:

“So, here’s the whole picture. There’s the male fetus developing around the first couple weeks of the first trimester: The genetic signal is for the testicles to develop and start making testosterone and here comes this foreign influence from phthalates telling the body, well, you don’t need to make as much testosterone [because] we got it covered as they occupy the spaces ... of the androgen receptors, the testosterone receptors.”

“They sit there and they say: Okay we’re good here—you don’t need to make any more [testosterone]. So the body says: Okay—it won’t make any more ... and the boy will be under-masculinized.”

[Robin Bernhoft, M.D.](#), past president of the American Academy of Environmental Medicine, told the Epoch Times that plastics are part of a larger picture of toxins impacting reproduction throughout the biosphere:

“The proliferation of estrogenic chemicals is a major concern. Research has shown that 80 percent of male trout in Colorado had intersex genitalia, a high percentage of male crocodiles in Florida lack penises, and so forth. This is happening on many levels: Direct toxicity from PCBs, direct estrogenic effects from plastics, pesticides, and mercury among other toxins—but also a secondary effect—the stimulation of aromatase, a hormone which then converts testosterone to estrogen independently of the other factors. Pollution in general ... stimulates aromatase which then converts available testosterone to estrogen. It is quite scary.”

Criticism of Sperm Count Analysis

The 2017 study by Swan and her colleagues was criticized in an [article](#) published in the journal *Human Fertility* in May 2021 by researchers at Harvard’s GenderSci Lab. The article did not conduct its own detailed meta-analysis of sperm studies but criticized the assumptions and conclusions of the original research.

“The extraordinary biological claims of the meta-analysis of sperm count trends and the public attention it continues to garner, raised questions for the GenderSci Lab, which specializes in analyzing bias and hype in the sciences of sex, gender, and reproduction, and in the intersectional study of race, gender, and science,” Sarah S. Richardson, director of the GenderSci Lab, and a professor of the history of science and studies of women, gender, and sexuality at Harvard University [told the Harvard Gazette](#). The authors argue that rather than concluding the results support a “Sperm Count Decline” hypothesis, they propose “the Sperm Count Biovariability” (SCB) hypothesis:

“SCB asserts that sperm count varies within a wide range, much of which can be considered non-pathological and species-typical. Knowledge about the relationship between individual and population sperm count and life-historical and ecological [i.e., regional] factors is critical to interpreting trends in average sperm counts and their relationships to health and fertility.”

However, the meta-analysis of Swan and her colleagues did not deny the range of variations in individual sperm counts but examined declining overall averages spanning more than a half-century. How such a precipitous overall average decline across all groups can be explained by individual

variation based on life-historical factors or regional variation is unclear.

The Health Consequences of Low Sperm Count

In contrast to the GenderSci Lab's science-as-culture analysis, a [study in Italy](#) conducted by endocrinologists found that low sperm count was associated with metabolic alterations, cardiovascular risk, and low bone mass, according to the lead author Alberto Ferlin, an M.D., and associate professor of endocrinology at the University of Brescia.

"Infertile men are likely to have important co-existing health problems or risk factors that can impair quality of life and shorten their lives," said Ferlin, who is also president of the Italian Society of Andrology and Sexual Medicine. "Fertility evaluation gives men the unique opportunity for health assessment and disease prevention."

Specifically, Ferlin and his colleagues found that about half the men had low sperm counts and were 1.2 times more likely than those with normal sperm counts to have greater body fat (bigger waistline and higher body mass index; higher blood pressure (systolic, or top reading), "bad" (LDL) cholesterol and triglycerides; and lower "good" (HDL) cholesterol.

Low sperm count was defined as less than 39 million per ejaculate, a value also used in the United States. All the men in the study had a sperm analysis as part of a comprehensive health evaluation in the university's fertility clinic, which included measurement of their reproductive hormones and metabolic parameters.

They also had a higher frequency of metabolic syndrome, a cluster of these and other metabolic risk factors that increase the chance of developing diabetes, heart disease, and stroke, the investigators reported. A measure of insulin resistance, another problem that can lead to diabetes, also was higher in men with low sperm counts.