

# Do we really face a human fertility cliff-edge? Science offers hope

August 4 2017, by Jules Siedenburg

---



Credit: Unsplash/CC0 Public Domain

A friend recently confided in me about his fertility problems. His physician had told him his sperm were small and malformed, to the point that he might struggle to get his wife pregnant. In an effort to make him

feel less bad, perhaps, she added that male fertility problems were currently at "epidemic" levels in the UK.

Recent articles in several major news outlets told this same worrisome tale. For instance, one BBC [headline screamed](#), "sperm count drop 'could make humans extinct'". These articles were based on [authoritative new research](#) that found a large and continuing fall in sperm count across numerous countries, as also reported in The Conversation.

Under current trends, this could lead to human males being largely infertile by 2060, with exposure to toxic chemicals and unhealthy lifestyles thought to be the main causes. As if there weren't already enough problems in the world, what with geopolitical tensions and issues such as war, poverty and climate change ...

So are we doomed? Well, there may be cause for optimism.

Various natural remedies are touted as ways to increase men's [sperm count](#) by the [popular press](#), [fertility websites](#) and [blogs](#). Examples include eating healthy foods, exercising regularly, and limiting time spent at a computer.

I cannot comment on such claims. I can, however, share relevant insights from [my own work](#), which involves researching algae and its potential to help poor communities in the global South meet their food needs. While I focus on algae as a food, it also has various other uses, such as animal feed, pharmaceutical applications, and energy production. Given the headlines about infertility, I wanted to report what researchers have learned about edible algae (notably [spirulina](#)) and its linkages to fertility.

## **What the science says**

One way to assess any new health treatment is human trials, another is to

test it with animals. To date, most research on the significance of edible algae to fertility has involved animal studies. Firm conclusions therefore cannot be drawn about the applicability of this work to humans. These early studies nonetheless flag linkages that could equally apply to humans.

The available science reveals substantive and sometimes dramatic improvements in male [reproductive function](#) thanks to spirulina. The following examples show this effect consistently in a range of different contexts, as reported in peer-reviewed academic papers by researchers from institutions such as the University of Cairo, the University of Tasmania and Mexico's National Polytechnic Institute.

One group of studies involved different animals of importance to agriculture. For instance, two studies found enhanced [male reproductive function for boar](#) when spirulina was incorporated into their feed, while a third found this same effect for [bulls](#).

Similarly, studies on fish found higher fertility and larger gonad size among farmed [red swordtail](#), [gourami](#) and [yellow-tailed cichlid](#) when their diet included spirulina.

A second set of studies involved laboratory rodents, and found that spirulina protected their sperm and reproductive organs from various pathogens. For instance, several studies showed this for key industrial toxins, such as [mercury](#), [arsenic](#), and the carcinogen [benzo-alpha pyrene](#).

Other studies showed spirulina minimising the adverse effects of chemotherapy on testicular function of both [rats](#) and [mice](#), while yet another study showed spirulina protecting the reproductive function of male mice from [gamma radiation](#).

Several recent reviews of the early research on spirulina are also

pertinent. [One](#) covered studies on the potential of spirulina to enhance the health, growth rates and quality characteristics of different agricultural animals. [Another](#) covered experiments on the capacity of spirulina to help laboratory animals cope with diverse pollutants and industrial toxins. A [third](#) covered research on the capacity of spirulina to help protect humans from different types of pathogens, including microbes, heavy metals, and cancer. All three review papers were highly positive regarding the impacts of spirulina, while also noting that further research is needed.

Please don't misunderstand: I am not claiming that eating algae can address humanity's fertility concerns. The available scientific evidence is limited, and more research is needed to clarify these linkages.

The provisional take home message from the early research is nonetheless clear: various studies give cause for hope that edible algae could significantly boost reproductive function in men, notably where it is threatened by industrial toxins. For me at least, such findings offer one good reason for optimism that a human fertility crisis might be averted.

This article was originally published on [The Conversation](#). Read the [original article](#).

Provided by The Conversation

Citation: Do we really face a human fertility cliff-edge? Science offers hope (2017, August 4) retrieved 11 May 2024 from <https://medicalxpress.com/news/2017-08-human-fertility-cliff-edge-science.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--