

Are We Going to Go Extinct: A Story of Declining Sperm Count in Homo Sapiens Male

A Journal Club Presentation

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Abstract

Concern is increasing about impact of the environment on public health, including reproductive ability. Controversy has arisen from some reviews which have claimed that the quality of human semen has declined. However, only little notice has been paid to these warnings, possibly because the suggestions were based on data on selected groups of men recruited from infertility clinics, from among semen donors, or from candidates for vasectomy. Furthermore, the sampling of publications used for review was not systematic, thus implying a risk of bias. It is, however, noteworthy that the lower reference value for a "normal" sperm count has changed from $60 \times 10^6/\text{ml}$ in the 1940s to the present value of $20 \times 10^6/\text{ml}$. As a decline in semen quality may have serious implications for human reproductive health, it is of great importance to elucidate whether the reported decrease in sperm count reflects a biological phenomenon or, rather, is due to methodological errors. Accumulating evidence suggests that early life influences make a difference. Some researchers say that there is a vulnerable period, perhaps between eight and 14 weeks of gestation, in which influences are irreversible. One of the most robust links with decreased sperm count is maternal smoking during pregnancy. A recent study among a sample of 5210 sperm bank donors from Shandong Human Sperm Bank in China, found evidence suggesting there may have decreases in various semen parameters. These results indicate that there may be a severe and generalized decrease in semen quality among males in Shandong. This presentation looks at some key researches on this topic.

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RAINE STUDY: The Western Australian Pregnancy Cohort (Raine) Study.