

Physical labor, hypertension and multiple meds may reduce male fertility

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Working in a physically demanding job, having high blood pressure, and taking multiple medications are among health risks that may undermine a man's fertility, according to a study by researchers at the National Institutes of Health and Stanford University, Stanford, California. The study is the first to examine the relationships between workplace exertion, health, and semen quality as men are trying to conceive. The

results were published online in *Fertility and Sterility*.

"Nearly 15 percent of U.S. couples do not become pregnant in their first year of trying," said Germaine Buck Louis, Ph.D., the study's senior author and director of the Division of Intramural Population Health Research at NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development. "Male infertility plays a significant role, and our aim is to explore the influence of environmental factors and [health](#) status on [semen quality](#)."

Semen quality is a measure of a man's ability to achieve fertilization and is based on the number, shape, and movement ability of sperm, as well as other factors.

The investigators followed more than 500 couples in Texas and Michigan over a yearlong period. The couples were in committed relationships and stopped using contraception. All male participants completed preliminary interviews in which they were asked about their reproductive history, health, lifestyle and occupational activity. Most of the men provided a semen sample for analysis.

The final study group comprised 456 men with an average age of 31.8 years. Most were white (77 percent) and college-educated (91 percent); more than half had never fathered a pregnancy. The researchers found that 13 percent of the men who reported heavy work-related activity had lower sperm counts, compared to 6 percent of the men who reported no workplace exertion. In contrast, no other work-related exposure, such as heat, noise or prolonged sitting, appeared to influence semen quality.

Of the men who reported receiving a physician's diagnosis of high [blood pressure](#), diabetes, or high cholesterol, the researchers found that only those with high blood pressure had a lower percentage of normally shaped sperm, compared to men who reported no high blood pressure.

"As men are having children later in life, the importance of diseases we once thought as separate from fertility must be re-explored," said Michael L. Eisenberg, M.D., the study's principal investigator and director of Male Reproductive Medicine and Surgery at Stanford University in Palo Alto, California. "Future investigations need to examine whether it's the [high blood pressure](#) itself or the treatment that is driving these trends."

To that end, the researchers observed that the more medications a man reported taking, the higher his risk of a [low sperm count](#). For example, 7 percent of the men who did not take medications had sperm counts below 39 million (a normal sperm count is between 40 million and 300 million). Of the [men](#) who reported taking two or more medications, 15 percent had sperm counts below 39 million.

"The good news is that these factors, if they are confirmed to have negative effects on male fertility, can potentially be modified by medical care or changing job-related behaviors," said NIH's Dr. Buck Louis. "We look forward to additional research in this area."

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