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Exposure to aluminium may have impact on male fertility

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New research from scientists in the UK and France suggests that human exposure to aluminium may be a significant factor in falling sperm counts and reduced male fertility.

Fluorescence microscopy using an aluminium-specific stain confirmed the presence of aluminium in semen and showed aluminium inside individual sperm.

And the team of scientists, at the universities of Lyon and Saint-Etienne in France and Keele in the UK, found that the higher the aluminium, the lower sperm count.

The research, led by Professor Christopher Exley, a leading authority on human exposure to aluminium at Keele, and Professor Michele Cottier, a specialist in cytology and histology at Saint-Etienne, measured the aluminium content of semen from 62 donors at a French clinic.

Professor Exley said: "There has been a significant decline in male fertility, including sperm count, throughout the developed world over the past several decades and previous research has linked this to environmental factors such as endocrine disruptors.

"Human exposure to aluminium has increased significantly over the same time period and our observation of significant contamination of male semen by aluminium must implicate aluminium as a potential contributor to these changes in reproductive fertility."

The mean aluminium content for all 62 donors was found to be very high at 339 ppb with the aluminium content of semen from several donors being in excess of 500 ppb. A statistically significant inverse relationship was found between the aluminium content of semen and the sperm count. Higher aluminium resulted in a lower sperm count.

More information: J.P. Klein, M. Mold, L. Mery, M. Cottier, C. Exley, "Aluminium content of human semen: implications for semen quality," *Reproductive Toxicology*, DOI: 10.1016/j.reprotox.2014.10.001

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