

Warning to male mobile phone users: chatting too long may cut sperm count

- US study based on 361 attending clinic
- Other scientists call for further investigations

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By Ian Sample
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Men who use mobile phones for long periods at a time may be at risk of damaging their sperm, according to research by American scientists.

Samples taken from men attending a fertility clinic revealed that their sperm declined steadily in number, quality and ability to swim as mobile phone usage increased. **Where men used their mobiles for more than four hours a day, researchers found a 30% drop in sperm motility or movement and viability when compared with men who did not use a mobile phone.**

Scientists believe the study is too preliminary to prove an unequivocal link between mobile phones and falling sperm counts, but the work received a cautious welcome from other scientists who called for further studies to rule out other factors known to influence sperm quality, such as age, weight, smoking, stress and whether people had sedentary jobs.

Ashok Agarwal, who presented his findings at the American Society for Reproductive Medicine conference in New Orleans, stressed the study did not prove mobile phones were damaging male fertility, but urged scientists to investigate the possibility.

"There was a significant decrease in the most important measures of sperm health and that should definitely be reflected in a decrease in fertility, which is seen worldwide," he said. "People use mobile phones without thinking twice what the consequences might be. It is just like using a toothbrush, but mobiles could be having a devastating effect on fertility. It still has to be proved, but it could be having a huge impact because mobiles are so much part of our lives."

Almost 1 billion people use mobile phones around the world and the number is growing in many countries at 20%-30% annually. In another five years, the number of mobile phone users is predicted to double.

Dr Agarwal and colleagues at the Cleveland Clinic Lerner College of Medicine at Case Western Reserve University in Ohio divided 361 men attending the centre for infertility tests into four groups, depending on their mobile phone usage. The groups ranged from none, less than two hours a day, two to four hours a day and more than four hours a day.

Subsequent tests on the men's sperm showed significant declines in four standard measures of sperm quality, including count, viability, motility and shape, with each falling with increased phone usage. Men who used mobile phones for more than four hours a day were found to have median sperm counts of 50m per millilitre. Those using mobiles for two to four hours a day had sperm counts of 59m per ml,

increasing to 69m per ml for less than two hours' usage a day and 86m per ml for men who did not use mobile phones. According to the World Health Organisation, a normal sperm count can be anything between 20m and 200m per ml.

Dr Agarwal said mobile phone radiation may harm sperm by damaging DNA, disrupting cells that produce testosterone in the testes, or shrinking the tubules where sperm are created. "It is true that all the men in the study were seeking infertility treatment, but not all these men have fertility problems themselves," he said.

Allan Pacey, senior lecturer in andrology at Sheffield University, said: "This is a good quality study, but I don't think it tackles the issue. If you're using your phone for four hours a day, presumably it is out of your pocket for longer. That raises a big question: how is it that testicular damage is supposed to occur?"

"If you are holding it up to your head to speak a lot, it makes no sense it is having a direct effect on your testes," he said. "Maybe people who use a phone for four hours a day spend more time sitting in cars, which could mean there is a heat issue. It could be they are more stressed, or more sedentary and sit about eating junk food getting fat. Those seem to be better explanations than a phone causing the damage at such a great distance," he added.

Last year, scientists in Hungary claimed that men who carry mobile phones in their pockets may risk damaging their sperm count after studying mobile phone usage of 221 men, but no conclusive impact on sperm count or motility has ever been found by other scientists. Another study last year at Newcastle University in New South Wales showed that blasting mice with radiowaves similar to mobile phone radiation 12 hours a day for a week damaged the DNA in their sperm.

Alasdair Philips, director of the consumer pressure group Powerwatch, suggested men might want to hold the phone away from them before sending texts, but added that mobile phones might only affect sperm by causing heating in the groin area, especially if men were texting from their laps. "Sperm is very temperature sensitive as shown by many studies, and a short-term rise in temperature could be responsible," he said.