

50% Fertility Reduction Because of These Household Chemicals

Source: [Dr. Mercola](#)

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Story at-a-glance

- Male fertility has been on the decline for at least 40 years, with a 50 percent global reduction in sperm quality noted from 1938 to 2011
- A similar decline in sperm quality has been observed in dogs living in human households, with sperm motility declining by 30 percent over a 26-year period
- The corresponding declines suggest that something in the environment, and likely in our homes, could be causing the drop in fertility among both dogs and people
- Exposure of sperm samples to the environmental chemicals diethylhexyl phthalate (DEHP) and polychlorinated biphenyl 153 (PCB153) led to reduced sperm motility and increased DNA fragmentation
- In separate research, both sperm motility and DNA fragmentation were influenced by cellphone exposure, with the cellphone group having decreased sperm motility and increased DNA fragmentation

Male fertility has been on the decline for at least 40 years, with a 50 percent global reduction in sperm quality noted from

1938 to 2011.¹ A similar decline in sperm quality has been observed in dogs living in human households, with sperm motility declining by 30 percent over a 26-year period.²

The corresponding declines suggest that something in the environment, and likely in our homes, could be causing the drop in fertility among both dogs and people. In the canine study, the researchers linked certain environmental chemicals to sperm problems and suggested they could also be responsible for the sperm quality declines in humans – a notion supported by a recent study published in Scientific Reports.³

The findings present one likely factor leading to fertility reductions, but it's not the only one – there are other reasons why fertility continues to decline as well – namely the pervasive influence of electromagnetic fields (EMFs).

Environmental Chemicals Linked to Fertility Declines in Dogs and People

Researchers from the University of Nottingham used sperm samples from 11 men and nine dogs from the same U.K. region. They exposed the sperm to doses of two types of environmental chemicals, diethylhexyl phthalate (DEHP) and polychlorinated biphenyl 153 (PCB153), currently found in the environment.

The result was reduced sperm motility and increased DNA fragmentation. Study author Rebecca Sumner, a developmental biologist at the University of Nottingham, said in a news release:⁴

“We know that when human sperm motility is poor, DNA fragmentation is increased and that human male infertility is linked to increased levels of DNA damage in sperm. We now believe this is the same in pet dogs because they live in the same domestic environment and are exposed to the same household contaminants.

This means that dogs may be an effective model for future research into the effects of pollutants on declining fertility, particularly because external influences such as diet are more easily controlled than in humans."

The researchers believe dogs may act as a "sentinel" for declines in male fertility and that man-made chemicals used widely in home and work environments are the likely culprit. A previous study even detected such chemicals in dog sperm and some dog food.⁵

DEHP is an industrial plasticizing chemical used in vinyl-type plastics to make them soft and pliable. Unplasticized PVC is hard and brittle, so the DEHP polymer is added to soften it. You can be exposed to DEHP through air, water, food, intravenous fluids or skin contact with DEHP-containing plastics.

Phthalates and other [endocrine-disrupting chemicals](#) such as [bisphenol-A](#) are estrogen mimickers, and when male fetuses are overexposed in utero, it permanently alters their reproductive system, rendering them less male and more female. In adults, the more phthalates a man has in his system, the lower his [testosterone level](#) will be, and the lower his sperm count.

PCBs, once heralded for their ability to prevent electrical fires, have since become known as one of the most toxic and environmentally persistent chemicals ever created. PCBs have also been linked to fertility, reproductive and endocrine damage along with neurological effects, including damage to learning and memory.

The chemicals were used in many manufactured products, from electrical equipment and plastics to flooring and industrial products, and although they were banned in 1979, they persist in the environment today. Other environmental chemicals have also been linked to declines in fertility, including the

endocrine-disrupting chemical ethinyl estradiol, a synthetic sex hormone found in birth control pills.

When male mice were exposed to the chemical, it led to developmental problems in the reproductive tract, thereby lowering sperm counts.⁶ While men do not use birth control pills, they're exposed to them nonetheless through contaminated water and other sources.

Men are also exposed to a number of other endocrine-disrupting chemicals in their day-to-day lives, thanks to the pernicious use of endocrine disrupting chemicals in plastics, personal care products and herbicides such as [glyphosate](#).

EMFs Likely Involved in Declining Fertility

<https://youtu.be/qvw0YnLdzps>

The researchers have honed in on environmental chemicals as a leading cause of fertility decline, but there could be an even more pernicious cause – EMFs. Like environmental chemicals, exposure to EMFs is widespread, and it could affect both humans and dogs alike, just as the chemicals did.

In fact, I believe this may be the most significant factor for the observed decrease in male sperm count. Martin Pall, Ph.D., discovered a previously unknown mechanism of biological harm from microwaves emitted by cellphones and other wireless technologies via voltage gated calcium channels (VGCCs) embedded in your cell membranes.⁷

VGCCs are activated by microwaves, and when that happens, about 1 million calcium ions per second are released. This massive excess of intracellular calcium then stimulates the release of nitric oxide (NO) inside your cell and mitochondria, which combines with superoxide to form peroxynitrite.

Not only do peroxynitrites cause oxidative damage, they also

create hydroxyl free radicals – the most destructive free radicals known to man. Hydroxyl free radicals decimate mitochondrial and nuclear DNA, their membranes and proteins, resulting in [mitochondrial dysfunction](#).

During a 2013 children's health expert panel on cellphone and Wi-Fi exposures, it was noted, "The testicular barrier, that protects sperm, is the most sensitive of tissues in the body ... Besides sperm count and function, the mitochondrial DNA of sperm are damaged three times more if exposed to cellphone radiation."⁸

Exposure to Cellphone Radiation Decreases Sperm Quality

Writing in Clinical and Experimental Reproductive Medicine, researchers noted that many in vivo and in vitro studies have revealed the EMF exposure can alter reproductive function, including sperm motility, with effects varying according to the frequency, duration of exposure and strength of EMFs.⁹

"Humans in modern society cannot avoid various kinds of EMFs during household and occupational activities, but should be aware of the biological hazard of EMFs. The effort to avoid EMF exposure and techniques to protect or relieve EMF radiation are required to preserve our reproductive potential," they said.¹⁰

In a separate study, researchers collected sperm samples from 32 men and divided them in half. Both groups were placed in a thermostat for five hours, but one had a cellphone in standby/talk mode placed inside.

Both sperm motility and DNA fragmentation were influenced by the cellphone exposure, with the cellphone group having decreased sperm motility and increased DNA fragmentation.¹¹ The researchers noted:

"That is why we consider that men readying themselves for

fatherhood, as well as women wishing to conceive a child, especially when registered fertility problems are present, should be informed about the different risks and probably negative direct impact of long-term mobile phone radiation on semen quality and embryo/fetus development.

Maybe person who could be selected for assisted reproduction techniques or even sperm donors should avoid this influence during some time before semen extraction too.

Besides the semen parameters RF-EMR [radiofrequency electromagnetic radiation] probably could negatively impact on sexual communication, fertility and quality of life by reducing the erectile function. Men with erectile dysfunction (ED) use their cell phones longer those without ED. Men who have ED carry their cell phones switched on much longer than men who do not have ED.”

A systematic review and meta-analysis also looked into the impact of low-level electromagnetic radiation (EMR) – the type emitted by cellphones – on sperm quality, both in the lab and among male patients at fertility clinics. The analysis of 10 such studies showed that exposure to EMR from cellphones lowered sperm motility by 8 percent and sperm viability by 9 percent.¹²

Tips for Protecting Your Fertility

Protecting your fertility is complex, but involves leading a healthy lifestyle while minimizing your toxic exposures. Everything from antidepressants¹³ and inactivity to your dietary choices can affect your fertility. Diets high in sugar and other carbs lead to men (and women) becoming increasingly overweight, which also leads to decreased sperm counts. However, it's extremely important to try to [reduce your EMF exposure](#) using the following tips:

- Connect your desktop computer to the internet via a wired connection and be sure to put your desktop in airplane mode. Also avoid wireless keyboards, trackballs, mice, game systems, printers and house phones. Opt for the wired versions.
- If you must use Wi-Fi, shut it off when not in use, especially at night when you are sleeping. Ideally it is best to work toward hardwiring your house so you can turn off the Wi-Fi at all times. If you have a notebook without any Ethernet ports it is easy to purchase a USB Ethernet adapter that will allow you to connect to the internet without a wireless connection.
- Shut off the electricity to your bedroom at night. This typically works to reduce electrical fields from the wires in your wall unless there is an adjoining room next to your bedroom. If that is the case you will need to use a meter to determine if you also need to turn off power in the adjacent room.
- Use a battery-powered clock, ideally one without any light. I use a talking clock that I merely press a button to determine the time and never see any light at night.
- If you still use a microwave oven, consider replacing it with a steam convection oven, which will heat your food as quickly and far more safely. Next to induction stovetop burners, microwave ovens are likely the largest EMF polluters in your home.
- Avoid using “smart” appliances and thermostats that depend on wireless signaling. This would include all new “smart” TVs. They are called smart because they emit a Wi-Fi signal, and unlike your computer, you are unable to shut the Wi-Fi signal off. Consider using a large computer monitor as your TV, as they don’t emit Wi-Fi.
- Refuse smart meters as long as you can or add a shield to an existing smart meter, some of which have been shown to reduce radiation by 98 to 99 percent.¹⁴
- Considering moving your baby’s bed into your room

instead of using a baby monitor, or use a hard-wired monitor. In any case avoid any baby monitor that is wireless. There are some wired options available.

- Replace CFL bulbs with incandescent bulbs. Ideally remove all fluorescent lights from your house. Not only do they emit unhealthy light, but more importantly they will actually transfer current to your body just being close to the bulbs.
- Avoid carrying your cellphone on your body unless it is in airplane mode and never sleep with it in your bedroom unless it is in airplane mode (and especially not under your pillow). Even in airplane mode it can emit signals, which is why I put my phone in a Faraday bag.
- When using your cellphone, use the speaker phone and hold the phone at least 3 feet away from you. Seek to radically decrease your time on the cellphone. I probably am down to below 30 minutes a month on my cell, mostly when traveling. Instead use VoIP software phones that you can use while connected to the internet via a wired connection.

As for reducing exposure to toxic phthalates and other endocrine-disrupting chemicals that may decrease sperm quality, you can do this via the following:

- Avoid plastic food containers and plastic wrap. Store food and drinks in glass containers instead.
- Avoid plastic children's toys. Use toys made of natural substances, such as wood and organic materials.
- Read labels on your cosmetics and avoid those containing phthalates.
- Avoid products labeled with "fragrance" as this catch-all term may include hidden phthalates, which are commonly used to stabilize the scent and extend the life of the product. Avoid air fresheners.
- Use personal care products stored in glass containers.
- Read labels looking for PVC-free products, including

children's lunch boxes, backpacks and storage containers.

- Do not microwave food in plastic containers or covered in plastic wrap.
- Frequently vacuum and dust rooms with vinyl blinds, wallpaper, flooring and furniture that may contain phthalates, as the chemical collects in dust and is easily ingested by children.
- Ask your pharmacist if your prescription pills are coated to control when they dissolve, as the coating may contain phthalates.
- Eat mostly fresh, raw whole foods. Packaging is often a source of phthalates.
- Buy products in glass bottles instead of plastic or cans, and use glass baby bottles instead of plastic. Breastfeed exclusively for the first year if you can to avoid plastic nipples and bottles all together.
- Remove your fruit and vegetables from plastic bags immediately after coming home from the grocery store and wash them before storage.
- Cash register receipts are heat printed and often contain BPA. Handle the receipt as little as possible and ask the store to switch to BPA-free receipts.
- Use natural cleaning products or make your own.
- Replace feminine hygiene products with safer alternatives.
- Avoid fabric softeners and dryer sheets; make your own to reduce static cling.
- Check your home's tap water for contaminants and filter the water if necessary.
- Teach your children not to drink from the garden hose, as many are made from plasticizers such as phthalates.