

By Dr. Mercola

Cell phones have been used widely for only about a decade, and unfortunately their use became commonplace *before* their true health effects were revealed.

As a result, we are only now beginning to see the potential repercussions, which include a number of potential health concerns for adults, including brain tumors, cognitive impairment, DNA damage, fertility risks and more.

Children, due to their thinner skulls, smaller brains, softer brain tissue and far more rapidly dividing cells, are even more susceptible to damage from cell phone use than adults, which suggests that babies in the womb, who are perhaps the most vulnerable population of all, may be at similar or greater at risk.

In fact, new research sheds light on the impacts of chronic cell phone use on the fetal brain in animals, and the effects are clearly detrimental.

Cell Phone Use During Pregnancy Shown to Cause "Certain Harm" to Fetal Rat Brains

A new study in *Electromagnetic Biology and Medicine* by Jing et al sought to evaluate the intensity of oxidative stress and the levels of neurotransmitters in the brains of fetal rats chronically exposed to radiation from cell phones.

Four groups of pregnant rats were exposed to different intensities of cell phone microwave radiation -- one group that was left unexposed, and three groups that were irradiated three times daily for either 10, 30, or 60 minutes at a time.

After three weeks, the fetal rats were examined for changes in their brains.

All of the irradiated groups exhibited significant neurological differences, with researchers noting:

"Through this study, we concluded that receiving a certain period of microwave radiation from cellular phones during pregnancy has certain harm on fetal rat brains."

Should Pregnant Women Avoid Cell Phones?

It will be a long time before these findings are thoroughly explored or publicized, but in the meantime there is reason to believe that cell phones could have a negative impact on a developing fetus, just as they may have a negative impact on you and your children. In 2008, researchers analyzed data from nearly 13,000 children and found that exposure to cell phones while in the womb, and also as children, was linked to more behavioral difficulties.

Pregnant women using handsets just two or three times a day was enough to raise the risk of their babies developing hyperactivity and difficulties with conduct, emotions and relationships by the time they reached school age -- and the risk became even greater if the children also used the phones themselves before age 7.

The 2008 study revealed that mothers who used mobile phones were in fact 54 percent more likely to have children with behavioral problems. When the children also later used the phones themselves, they were:

- 80 percent more likely to suffer from difficulties with behavior
- 25 percent more at risk from emotional problems
- 34 percent more likely to suffer from difficulties relating to their peers
- 35 percent more likely to be hyperactive
- 49 percent more prone to problems with conduct

Behavioral Problems in Children Exposed to Cell Phones in Utero Confirmed

In 2010, the researchers then looked at a larger group of children -- nearly 29,000 -- and also considered additional variables that could be swaying the results, and the association was found once again.

In that study, children whose mothers used cell phones while pregnant were 40 percent more likely to have behavioral problems, and this rose to 50 percent when the children also used cell phones themselves. The researchers even accounted for family history of behavioral problems, inattention of the mother, breastfeeding and time spent with the child -- and the association remained.

Autonomic nervous system expert [Dr. Dietrich Klinghardt](#) has noted this radiation may easily flip certain genes in the mitochondria. If this gene sequence is altered in a pregnant woman, she can pass her damaged mitochondria on to her child. The child can then develop a mitochondrial disorder, which can include muscular atrophy and severe developmental problems.

UK Experts Call for Health Warnings for Cell Phones and Children

In a report published by Mobilewise, a UK charity, medical experts and Mobilewise call on government and industry to provide warnings and advice on ways to reduce the risk of health damage when using mobile phones, especially in order to protect children.

The report, "Mobile Phone Health Risks: the case for action to protect children," warns that children's health is being put at risk by the failure of government and phone companies to respond to the growing body of evidence linking mobile phone use with health hazards. It includes a chart of more than 200 peer-reviewed studies from numerous research institutions that link mobiles to serious health problems.

These include brain tumors and impact on fertility, genes, the blood-brain barrier and melatonin production, as well as other biological effects thought to have a role in the development of cancer. Endorsed by a number of prominent doctors and scientists, the Mobilewise report on the public health issue related to the impact on children highlights the body of evidence that has been "obscured in the debate over these risks," according to Vicky Fobel, director of Mobilewise.

I encourage you to read this report, and to print the list of studies with summaries and links to the cited research, and to share these with your communities.

- " ... develop within different ministries (education, environment and health) targeted information campaigns aimed at teachers, parents and children to alert them to the specific risks of early, ill-considered and prolonged use of mobiles and other devices emitting microwaves
- " ...ban all mobile phones, DECT phones or WiFi or WLAN systems from classrooms and schools, as advocated by some regional authorities, medical associations and civil society organizations"

The European Parliament has also called for schools to be wireless free, in addition to hospitals, day care and retirement living facilities.

And most recently, Russian researchers led by Yury Grigoriev, PhD of the Russian National Committee on Non-Ionizing Radiation Protection have demonstrated significant cognitive impairment in children after four years of exposure to wireless devices. Dr. Grigoriev says:

"The short-term and long-term potential consequences for society from exposing children to microwave radiation from cellular communication devices must be immediately acknowledged, globally, and responsibly addressed."

My Top Tips for Cell Phone Safety

It's worth remembering that the telecommunication industry is much larger than the medical industrial complex, and they have far more influence than the drug companies. They're also mirroring many of the same tactics as the tobacco industry to pedal their wares. This includes attempting to discredit researchers who publish unfavorable cell phone studies.

According to Camilla Rees, MBA of ElectromagneticHealth.org:

"We have seen a recent steep increase in disparagement of scientific research where the research demonstrates risks to public health from telecommunications technologies. It is very clear that in the name of "debate" certain parties are aggressively creating confusion and doubt about the biological and health risks, shamefully supporting the interests of the telecommunications industry."

There is already robust scientific evidence that cell phones and other wireless devices pose significant health risks to all of us, and especially to children and pregnant women. So while these findings are not being widely publicized as of yet, it makes sense to take action now to protect yourself and your children. You can help to minimize your exposure to electromagnetic radiation from cell phones and other wireless devices by heeding the following advice:

- **Children Should Always Avoid Using Cell Phones:** Barring a life-threatening emergency, children should not use a cell phone, or a wireless device of any type. Children are far more vulnerable to cell phone radiation than adults, because of their thinner skull bones.
- **Reduce Your Cell Phone Use:** Turn your cell phone off more often. Reserve it for emergencies or important matters. As long as your cell phone is on, it emits radiation intermittently, even when you are not actually making a call. If you're pregnant, avoiding or reducing your cell phone use may be especially important.
- **Use a Land Line at Home and at Work:** Although more and more people are switching to using cell phones as their exclusive phone contact, it is a dangerous trend and you can choose to opt out of the madness. SKYPE offers a portable number via your computer that can plug into any Ethernet port while traveling.
- **Reduce or Eliminate Your Use of Other Wireless Devices:** You would be wise to cut down your use of these devices. Just as with cell phones, it is important to ask yourself whether or not you really need to use them as often as you do. And most importantly, do not even consider having any electronic or wireless devices in the bedroom that will interfere with the quality of your sleep.

If you must use a portable home phone, use the older kind that operates at 900 MHz. They are not safer during calls, but at least many of them do not broadcast constantly even when no call is being made.

Note the only way to truly be sure if there is an exposure from your cordless phone is to measure with an electrosmog meter, and it must be one that goes up to the frequency of your portable phone (so old meters won't help much). As many portable phones are 5.8 Gigahertz, we

recommend you look for RF meters that go up to 8 Gigahertz, the highest range now available in a meter suitable for consumers.

Alternatively you can be very careful with the base station placement as that causes the bulk of the problem since it transmits signals 24/7, even when you aren't talking. So if you can keep the base station at least three rooms away from where you spend most of your time, and especially your bedroom, they may not be as damaging to your health. Another option is to just simply turn the portable phone off, only using it when you specifically need the convenience of moving about while on a call.

Ideally it would be helpful to turn off your base station every night before you go to bed.

- **Use Your Cell Phone Only Where Reception is Good:** The weaker the reception, the more power your phone must use to transmit, and the more power it uses, the more radiation it emits, and the deeper the dangerous radio waves penetrate into your body. Ideally, you should only use your phone with full bars and good reception.
- **Also Seek to Avoid Carrying Your Phone on Your Body** as that merely maximizes any potential exposure. Ideally put it in your purse or carrying bag. Placing a cell phone in a shirt pocket over the heart is asking for trouble, as is placing it in a man's pocket if he seeks to preserve his fertility.
- **Don't Assume One Cell Phone is Safer Than Another:** There's no such thing as a "safe" cell phone.
- **Keep Your Cell Phone Away From Your Body When it is On:** The most dangerous place to be, in terms of radiation exposure, is within about six inches of the emitting antenna. You do not want any part of your body within that area.
- **Respect Others Who are More Sensitive:** Some people who have become sensitive can feel the effects of others' cell phones in the same room, even when it is on but not being used. If you are in a meeting, on public transportation, in a courtroom or other public places, such as a doctor's office, keep your cell phone turned off out of consideration for the 'second hand radiation' effects. Children are also more vulnerable, so please avoid using your cell phone near children.
- If you are using the Pong case, which redirects the cell phone radiation away from the head and successfully lowers the SAR effect, realize that in redirecting the radiation away from your head this may be intensifying the radiation in another direction, perhaps toward the person next to you, or, if in your pocket, increasing radiation intensity toward your body. Caution is always advised in dealing with any radiation-emitting device. We recommend cell phones be kept 'Off' except for emergencies.
- **Use Safer Headset Technology:** Wired headsets will certainly allow you to keep the cell phone farther away from your body. However, if a wired headset is not well-shielded -- and most of them are not -- the wire itself acts as an antenna attracting ambient radio waves and transmitting radiation directly to your brain.

Make sure that the wire used to transmit the signal to your ear is shielded.

The best kind of headset to use is a combination shielded wire and air-tube headset. These operate like a stethoscope, transmitting the information to your head as an actual sound wave; although there are wires that still must be shielded, there is no wire that goes all the way up to your head.