
Do you realize that microwave radiation from cell phones and wireless technologies has been linked to sperm and DNA damage?

In a study published in *Fertility and Sterility* (Vol. 89) in 2008 by A. Agarwal et al of the Cleveland Clinic, laboratory values of sperm count at an infertility clinic decreased as the duration of daily exposure to cell phones increased. In the highest exposure group, 1/3 of sperm count was lost with over 4 hours of male cell phone use, and 50% of the remaining sperm showed physical abnormalities, did not swim well or were non-viable.

In a study at the University of Newcastle in Australia by John Aitken, once again, mobile phone radiation was linked to reduced vitality and motility of sperm. These effects were shown at exposures greater than 0.4 W/Kg, however the FCC limit for radiation intensity from cell phones is 4x higher at 1.6 W/Kg. From these and numerous other studies around the globe we know that the FCC exposure limit for cell phone power intensity is inadequate to protect male sperm.

The Aitken study also showed clear evidence of DNA damage at what were ‘non-heating’ levels of exposure. Heating is the erroneous physics measure used by the FCC to determine ‘safe’ exposures from microwave radiation. In fact, thousands of studies show biological effects with potentially very serious consequences from the frequencies alone without power intensities strong enough to cause any heating at all.

*We are jeopardizing our genetic material and the lives of future generations, closing our eyes to the fact that non-thermal radiation causes very serious harm from the frequencies, pulses and the modulation of signals, irrespective of ‘heating effect’, the means by which ‘safety’ is determined today.*

**Exhibit A – Research on Testicular Cancer, Damaged Sperm and Reduced Fertility (attached)** lists 16 published studies on microwave radiation’s connection with testicular cancer, damaged sperm and reduced fertility, compiled by Alasdair Philips and Graham Lamburn, leading EMF experts with Powerwatch (www.powerwatch.org.uk) in the U.K. The studies listed paint a grim picture for young men and boys who want to preserve fertility and health but also use a cell phone.
There is no research as of yet on the effects on female eggs or egg count, but scientists believe there may be greater consequences from electromagnetic field exposures for girls and young women since eggs are not replenished, as is sperm. Instead, girls have a fixed supply of eggs for a lifetime.

**More on DNA Effects**

An important European review of the science, called *The Reflex Report*, prepared by 12 scientific institutes in 7 countries, confirmed long-term genetic damage in the blood and brains of users of mobile phones and other sources of electromagnetic fields. See images below from that report showing DNA breaks in two exposure scenarios: **24 hrs of cell phone use** (considered a ‘non-heating’ exposure) and **1,600 chest X-rays** (a high intensity exposure from ionizing radiation well-known to break electrons from atoms and to cause cancer):

Notice DNA disintegration appears similar, whether one has 1,600 X-rays or uses a cell phone 24 hours. We have known since the early research of Henry Lai, PhD of University of Washington and the work of Jerry Philips, PhD at the University of Colorado (plus very early government and military research more recently made available), that microwave radiation damages DNA, and yet our government and commercial sectors have nonetheless supported and encouraged the proliferation of wireless telecommunications all around us.

Recent research conducted at Columbia University shows that the spiral shape of DNA creates, effectively, a ‘fractal antenna’, meaning that more than any other material in the body DNA is exquisitely sensitive to all sorts of electromagnetic fields. This new insight, which will be published shortly, and is in press, is very significant.
We know changes in DNA lead to cancer and can lead to mutations with irreversible consequences for future generations.

Governments, through their inaction, have supported the interests of the telecommunications industry at the expense of public health.

Ask Yourself:

Based on the fertility and DNA impacts of microwave radiation, are you comfortable that your child is being exposed to this radiation all day long in school?

Are you comfortable having a wireless router on in your home when your child returns home from school?

Are you OK with schools leasing their buildings or rooftops to the telecommunications industry for placement of cell phone antennas and towers?

School Conceals Cellular Antennas in Fake Chimney

Source: Next-Up Organisation

Is there an Autism-EMF Connection?

In a pilot study by Deitrich Klinghardt, MD, PhD of Seattle, the bedroom locations of pregnant women who had autistic children were assessed for microwave radiation. The radiation levels were significantly higher in the group of mothers whose children were autistic compared to the control group of mothers who had healthy children (20.7x higher). The higher electromagnetic environments were also reflected in ‘body voltage’ measurements in the mothers themselves. (http://snurl.com/204914) The potential connection between the exponential growth in autism spectrum disorders and wireless technologies must be rapidly explored. Until we know more, I recommend parents replace wireless baby monitors, as well.

Will you join us in encouraging grassroots research on EMF & autism? Can you put us in touch with potential funders for this research? I personally feel it is essential.
Behavior Changes

Did anyone tell you that there was a large epidemiological study conducted by UCLA and Danish researchers involving 13,000 children and the results indicate that cell phone use by a mother during pregnancy results in 54% greater chance of offspring having emotional and social problems when they reach school age? That number increases to 80% if the child is by the age of seven using a cell phone him or herself. (http://www.ph.ucla.edu/pr/newsitem052108.html)

*It is important expectant mothers learn about the effects of microwave radiation from exposures to wireless technologies, including cell phone use, wireless routers, wireless baby monitors, portable phones, and cell phone towers and antennas located within 1,500 feet (approximately 5 city blocks) of the home.*

Children Are Especially Vulnerable

There are many other reasons children should not be exposed to this new, invisible form of air pollution. It is well known that children’s bodies, and systems, are more vulnerable to radiation’s effects than adults. At critical times of development, when one wants to set the stage for optimal learning, children’s environments should be electromagnetically clean. And, that means not just free from microwave radiation from cell phones and wireless technologies, but also from the radiation emitted from Compact Fluorescent Bulbs (CFLs), ‘dirty electricity’ (high frequency transients on wiring), from wireless ‘smart’ meters, and from electronics, which can emit hazardous electric and magnetic fields when one is near them. We must become more conscious, because the total burden of exposures to electromagnetic fields has become a serious human health (and mental health) hazard.

*Why are Children More Vulnerable to Cell Phone Radiation?*

**Cell Phone Radiation Penetrating Skull**

ADULT Head  
CHILD - 10 Years Old  
CHILD - 5 Years Old

Study by Gandhi et al. University of Utah, 1996.

1. Children absorb more energy than adults from the same phone.
2. Tumors in mid brain are more deadly than those in temporal lobe.
3. Children’s cells are reproducing more quickly than adults.
4. Children’s immune system is not as well developed as adults.
5. Longer potential for life-time exposure for children than adults.

Metals Reflect

Children with metal braces, fillings or metal prostheses can be especially vulnerable near cell phones and wireless technologies, including prone to heart irregularities and seizures. Metals concentrate and re-reflect ambient microwaves.

• We discourage the placement of metal rods, or metal fillings or metal dental appliances in children’s bodies in the wireless age.

• We discourage metal furniture in any room where there is Wi-Fi or microwave radiation from any source.

• And, we discourage use of metal eyeglasses, as eyes are especially sensitive to electromagnetic radiation.

Heart Irregularities

This is an image depicting how quickly a heart can be impacted by microwave radiation. In two cases, the radiation is from a portable phone. Portable phones emit the same radiation as cell phones. Note that instantly, subject B’s heart rate almost doubled on each exposure to the portable phone radiation.

Heart Irregularities Occur from the Frequencies of Portable Phones And Wi-Fi Without Any ‘Heating’

Source: Magda Havas, PhD, www.magdahavas.com
In a recent research study published in the *European Journal of Oncology* led by Dr. Magda Havas of Trent University, Canada, forty percent (40%) of adults in the study experienced heart irregularities on exposure to portable phone radiation. *Readers should understand portable phones use the same frequency (2.4 Gigahertz) as Wi-Fi.*

*We are putting our children at cardiac risk, as well as many other risks, by exposing them to Wi-Fi in schools and homes.*

What Are Other Symptoms of Electrosensitivity?

Symptoms of electrosensitivity vary from person to person. There are many, ranging from headaches and dizziness to irritability, insomnia, fatigue and movement difficulties. Out of ignorance, many people are not associating these symptoms with exposure to electromagnetic fields, and doctors for the most part are not at all schooled in this subject.

A summary of the science on electrosensitivity by Michael Bevington, Trustee of Electrosensitivity-U.K. ([http://electromagnetichealth.org/electromagnetic-health-blog/electrosensitivity-primer/](http://electromagnetichealth.org/electromagnetic-health-blog/electrosensitivity-primer/)) is available. I highly recommend those wanting to learn about electrosensitivity read this primer and share it with your doctors. With a small donation to this British charity, they will email or mail you the report. The following chart based on research from Spain presents a range of symptoms of ‘electrosensitivity’ near cell phone towers, known for decades in the military as “radio wave sickness”.

**Frequency of Electromagnetic Sensitivity Symptoms Based on Distance to a Cell Phone Base Station**

![Chart showing frequency of symptoms based on distance to a cell phone base station.](chart.png)

*Source: Santini 2001, La Presse Medical, as graphically depicted by Dr. Magda Havas (www.magdahavas.com)*
Electrosensitivity is an emerging problem worldwide and when detected should be addressed promptly, through behavior changes related to these technologies, and shielding modalities. Symptoms can escalate to extreme levels of sensitivity, making it very difficult to cope, and cause irreversible damage. People with cancer living in cancer clusters near cell phone towers often report that symptoms of electrosensitivity preceded their diagnosis of cancer by many years. I encourage parents to seriously investigate any of the above symptoms and determine if there is an electromagnetic component.

To learn about shielding paints, fabrics, films for windows, and how to measure one’s environment to know what electromagnetic fields are present at high levels: 1) Go to www.EMFSafetyStore.com, 2) Read ElectromagneticHealth.org’s EMF Help Blog™ and 3) Listen to the series of EMF Remediation Interviews we have started (these are also posted on Campaign for Radiation Free Schools on Facebook)

Where Can Schools Get More Information on EMF Risks and Remediation?

The BRAG Antenna Ranking of Schools Report was created by Dr. Magda Havas, PhD of Trent University in Canada to sensitize schools to the presence of neighborhood cell phone towers. The report grades all schools in state capitols using a composite measure reflecting the proximity and density of neighborhood cell phone antennas.

The BRAG report also teaches schools how to calculate a radiation risk grade if they are not located within a state capitol. It contains an extensive recommendation section for schools, including how to remediate internal sources of radiation within the school, and includes an excellent summary of the scientific literature. The BRAG report suggests electromagnetic field assessments be included in every school’s annual Environmental Toxics Audit.

See BRAG Gradings for Select New York City Private & Public Schools
http://snurl.com/1z1ici

The Campaign for Radiation Free Schools on Facebook is a group for schools, teachers and parents. It offers a stream of EMF information of relevance to the safety of children, including the new audio EMF Remediation Interview series.

Finally, see the Ecolog Report (http://snurl.com/1zja0d) prepared for T-Mobile and Deutsche Telecom MobilNet GmbH a decade ago. The Ecolog Report is an 80-page summary of symptoms and illnesses, including cancers, associated with microwave radiation exposures. If you want to understand the range of associated illnesses, or dive into the large body of science, please read the Ecolog Report. The risks are presented clearly.
Conclusion

I didn't know a thing about this subject until I was personally impacted by a new neighbor's wireless router placed on the other side of the wall from my pillow while living in San Francisco. Over several months, I became physically and cognitively impaired. It took time to recover. I experienced many of the symptoms on the Santini chart on page 7. I learned later in counseling hundreds of suffering adults, as well as children, that symptoms from microwave radiation can happen to anyone.

Symptoms often start subtly, and can impair performance long before one recognizes there is a problem. Many people do not 'connect the dots', or realize that headaches, dizziness, heart irregularities, difficulty concentrating, mood imbalances, neurological problems, insomnia etc., could be related to the wireless technologies in their home, or in their neighbors homes. Densely populated areas filled with apartment buildings are of special concern. And of very great concern, of course, is the long-term cellular and DNA damage, and the consequences of these exposures for fertility and the health of future generations.

Until biologically-based exposure guidelines are established by Congress, it behooves each one of us to learn about this problem to live safely in the wireless age. Read “Public Health SOS: The Shadow Side of the Wireless Revolution” found on Amazon or at www.ElectromagneticHealth.org by Dr. Magda Havas, PhD and myself. Other books on this topic are listed at www.BestEMFBooks.com.

By all means, watch the video of Dr. Olle Johansson of the Karolinska Institute in Sweden announcing a new report last week—a warning for global governments from international scientists that exposure guidelines for electromagnetic fields must be dramatically reduced. http://vimeo.com/18018440

Most importantly, get involved and take a stand to protect public health from this insidious, invisible pollution. Advocate for safer technologies, like fiber optics and cable. Do not allow cell phone antennas on your building. Hard wire your home for internet access. Shield your home from external exposures. Learn to use a meter, and become your own best medical detective. Educate your doctors, and most importantly your children. Help your children’s schools, that unknowingly installed wireless internet and wireless smart boards without understanding the health hazards. Help raise funds to remove the wireless system and hard-wire the school.

And, please, if you represent a school, don’t be afraid to ask for help if you need it. This is one issue that deserves your full attention.

Yours in good health,

www.electromagnetichealth.org
Exhibit A - Research Studies on the EMF Connection With Human Testicular Cancer, Damaged Sperm and Reduced Fertility compiled by Powerwatch (U.K.), Leading Experts in Electromagnetic Fields.

Radiofrequency electromagnetic waves emitted from cell phones may lead to oxidative stress in human semen. We speculate that keeping the cell phone in a trouser pocket in talk mode may negatively affect spermatozoa and impair male fertility.

Agarwal A, Deepinder F, Sharma RK, Ranga G, Li J. Effect of cell phone usage on semen analysis in men attending infertility clinic: an observational study, Fertil Steril. 2008 Jan; 89(1):124-128. http://www.ncbi.nlm.nih.gov/pubmed/17482179 361 men attending an infertility clinic were divided into four groups according to their active cell phone use: no use; < 2 h/day; 2-4 h/day; > 4 h/day. The comparisons of mean sperm count, motility, viability, and normal morphology among four different cell phone user groups were statistically significant. Mean sperm motility, viability, and normal morphology were significantly different in cell phone user groups within two sperm count groups. The laboratory values of the above four sperm parameters decreased in all four cell phone user groups as the duration of daily exposure to cell phones increased. CONCLUSIONS: Use of cell phones decrease the semen quality in men by decreasing the sperm count, motility, viability, and normal morphology. The decrease in sperm parameters was dependent on the duration of daily exposure to cell phones and independent of the initial semen quality.

J.G. Yan, M. Agresti, T. Bruce, Y.H. Yan, A. Granlund, H.S. Matloub, Effects of cellular phone emissions on sperm motility in rats, Fertil. Steril. 88 (2007) 957–964. http://www.ncbi.nlm.nih.gov/pubmed/17628553 Rats exposed to 6 hours of daily cellular phone emissions for 18 weeks exhibited a significantly higher incidence of sperm cell death than control group rats. In addition, abnormal clumping of sperm cells was present in rats exposed to cellular phone emissions and was not present in control group rats. These results suggest that carrying cell phones near reproductive organs could negatively affect male fertility.

Wdowiak A, Wdowiak L, Wiktor H. Evaluation of the effect of using mobile phones on male fertility, Ann Agric Environ Med. 2007;14(1):169-72 http://www.ncbi.nlm.nih.gov/pubmed/17655195 In the analysis of the effect of GSM mobile phones on the semen of 205 male users it was noted that an increase in the percentage of sperm cells of abnormal morphology is associated with the duration of exposure to the waves emitted by the GSM phone. It was also confirmed that a decrease in the percentage of sperm cells in vital progressing motility in the semen is correlated with the frequency of using mobile phones.

Erogul, E. Oztas, I. Yildirim, T. Kir, E. Aydur, G. Komesli, H.C. Irkilata, M.K. Irmak, A.F. Peker, Effects of electromagnetic radiation from a cellular phone on human sperm motility: an in vitro study, Arch. Med. Res. 37 (2006) 840–843. http://www.ncbi.nlm.nih.gov/pubmed/16971222 EMR exposure caused a subtle statistically significant decrease in the rapid progressive and slow progressive sperm movement. It also caused an increase in the no-motility category of sperm movement. There was no statistically significant difference in the sperm concentration between two groups. In addition to these acute adverse effects of EMR on sperm motility, long-term EMR exposure may lead to behavioral or structural changes of the male germ cell. These effects may be observed later in life, and they are to be investigated more seriously.
Desai NR, Kesari KK, Agarwal A. Pathophysiology of cell phone radiation: oxidative stress and carcinogenesis with focus on male reproductive system, Reprod Biol Endocrinol. 2009 Oct 22; 7:114
The effects of RF-EMW on plasma membrane structures (i.e. NADH oxidase, phosphatidylserine, ornithine decarboxylase) and voltage-gated calcium channels are discussed. We explore the disturbance in reactive oxygen species (ROS) metabolism caused by RF-EMW and delineate NADH oxidase mediated ROS formation as playing a central role in oxidative stress (OS) due to cell phone radiation (with a focus on the male reproductive system).

RF-EMR in both the power density and frequency range of mobile phones enhances mitochondrial reactive oxygen species generation by human spermatozoa, decreasing the motility and vitality of these cells while stimulating DNA base adduct formation and, ultimately DNA fragmentation. These in-vitro findings have clear implications for the safety of extensive mobile phone use by males of reproductive age, potentially affecting both their fertility and the health and wellbeing of their offspring.

A total of 371 male fertility cases were included in the study. The duration of possession and the daily transmission time were positively correlated with the proportion of rapid progressive motile sperm and positively with the proportion of slow progressive motile sperm. The low and high exposed groups also differed in the proportion of rapid progressive motile sperm (48.7% vs. 40.6%). The prolonged use of cell phones may have negative effects on the sperm motility characteristics.

One hour of exposure to the phone did not significantly change facial temperature in either group of rats. Rats exposed to RF-EMR exhibited a significantly reduced percentage of motile sperm. Moreover, RF-EMR exposure resulted in a significant increase in lipid peroxidation and low GSH content in the testes and epididymis. We speculate that RF-EMR from mobile phones negatively affects semen quality and may impair male fertility.

Gel electrophoresis revealed no gross evidence of increased single- or double-DNA strand breakage in spermatozoa taken from treated animals. However, a detailed analysis of DNA integrity using QPCR revealed statistically significant damage to both the mitochondrial genome (p < 0.05) and the nuclear beta-globin locus (p< 0.01). This study suggests that while RFEMR does not have a dramatic impact on male germ cell development, a significant genotoxic effect on epididymal spermatozoa is evident and deserves further investigation.

http://www.ncbi.nlm.nih.gov/pubmed/17209885 Non-significant ORs of between 1.1 and 1.3 were found for seminomas but there was no dose-response effect and OR did not increase with latency time.

Research From Powerwatch U.K.: www.powerwatch.org.uk
Otitolju AA, Obe IA, Adewale OA, Otubanjo OA, Osunkalu VO. Preliminary study on the induction of sperm head abnormalities in mice, Mus musculus, exposed to radiofrequency radiations from global system for mobile communication base stations, http://www.ncbi.nlm.nih.gov/pubmed/19816647 The exposure of male mice to radiofrequency radiations from mobile phone (GSM) base stations at a workplace complex and residential quarters caused 39.78 and 46.03%, respectively, in sperm head abnormalities compared to 2.13% in control group. Statistical analysis of sperm head abnormality score showed that there was a significant (p < 0.05) difference in occurrence of sperm head abnormalities in test animals. The major abnormalities observed were knobbed hook, pin-head and banana-shaped sperm head. The occurrence of the sperm head abnormalities was also found to be dose dependent. The implications of the observed increase occurrence of sperm head abnormalities on the reproductive health of humans living in close proximity to GSM base stations were discussed.

This study concludes that although RF-EMF exposure did not adversely affect the acrosome reaction, it had a significant effect on sperm morphometry. In addition, a significant decrease in sperm binding to the hemizona was observed. These results could indicate a significant effect of RF-EMF on sperm fertilization potential.

348 infertile seamen were divided into 4 experimental groups according to their different lengths of exposure to radar radiation. Compared with the normal control, sperm concentration, sperm motility and the percentage of grade a sperm were significantly lower (P < 0.01), and the percentages of grade d and abnormal sperm significantly higher (P < 0.01) in the experimental groups. CONCLUSION: Radar radiation damages sperm quality, as shown in the reduction of sperm motility and elevation of sperm abnormality.

Exposure to mobile phone radiation for 60 minutes/day for the total period of 3 months significantly decrease the serum testosterone level [p=0.028] in Wistar Albino rats compared to their matched control. CONCLUSION: Long-term exposure to mobile phone radiation leads to reduction in serum testosterone levels. Testosterone is a primary male gender hormone and any change in the normal levels may be devastating for reproductive and general health.

The animals of the phone group were exposed to MPs (800 MHz) in a standby position for 8 h daily for 12 weeks. At the end of the study, the copulatory behavior and hormonal assays were re-evaluated. Mounts without ejaculation were the main mounts in the phone group and its duration and frequency increased significantly compared with the controls, whereas the reverse was observed in its mounts with ejaculation. Ejaculation frequency dropped significantly, biting/grasping against teasers increased notably and mounting latency in accumulated means from the first to the fourth teasers were noted in the phone group. The hormonal assays did not show any significant differences between the study groups. Therefore, the pulsed radiofrequency emitted by a conventional MP, which was kept on a standby position, could affect the sexual behavior in the rabbit.
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Please support our important work focused on EMF education, advocacy and research. Tax-deductible donations may be made to a 501 (c) (3) non-profit. Please contact Camilla Rees or Gail McDonnell to discuss funding needs.

Camilla Rees: 415-992-5093 or CRGR@aol.com

Gail McDonnell: 212-289-7824 or Gail@electromagnetichealth.org

We need everyone’s help to adequately respond to this challenge.

Thank you!
U.K. Radiation Research Trust’s “Save the Male” Ad Campaign

Ads Being Placed in Public Men’s Bathrooms in London.

All health-concerned parties are free to use these posters!

Please share this information with boys and men who wish to preserve their fertility.

Download Posters at: http://snurl.com/1zja0d