

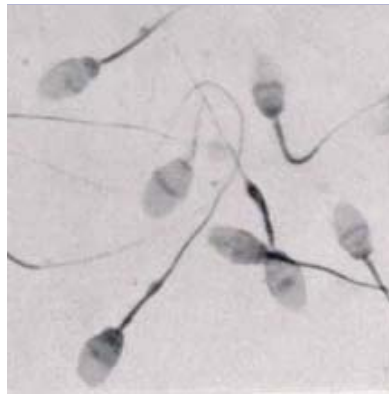


## Part 2: Growing Concern about Electromagnetic Pollution and Cell Phones

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*“Cell phones could cause harmful effects due to the proximity of the phones and the exposure that they are causing to the gonads (affecting sperm).”*

- Ashok Agarwal, M. D., Cleveland Clinic



Sperm cells under microscope.

Source [Thphys.physics](http://Thphys.physics).



Earthfiles, news category.

## Cell Phone Use Linked to Male Infertility

### Hands-Free Calls May Expose Sperm to Radiation

By Denise Mann

“Sept. 19, 2008 -- Men, beware: Using a hands-free device with a cell phone may affect your fertility if you keep your phone close to your testicles, Cleveland Clinic researchers warn in the journal *Fertility and Sterility*.

Men who use these hands-free devices tend to carry their cell phones in their pants pocket or clipped to their belts at the waist while in talk mode. As a result, they may be exposing their testicles to damaging radio frequency electromagnetic waves, explains Ashok Agarwal, Ph.D., head of the Andrology Laboratory and the Director of the Center for Reproductive Medicine at the Glickman Urological and Kidney Institute at the Cleveland Clinic in Ohio.

‘The Bluetooth devices, which many people are using these days because of health or safety concerns, may not be always so safe. There is a downside,’ he says.

**Cell Phone Radiation Affects Sperm Quality**

To arrive at their findings, researchers collected semen samples from 32 men and divided each man's sample into two parts. They placed half of the semen samples 2.5 centimeters away from a 850 MHz frequency cell phone in talk mode for one hour. Most cell phones used in the U.S. are 850-900 MHz. They chose this distance because it is the typical distance between the testes and the trouser pockets.”

## Return to **Part 1**

**September 25, 2008 Washington, D. C.** - On September 19, 2008, the published research of Ashok Agarwal, Ph.D., Director of the Center for Reproductive Medicine at the Cleveland Clinic in Ohio made national and international headlines. This was Dr. Agarwal's second study of cell phone radiation on sperm and he reported: “On average, there was an 85% increase in the amount of free radicals for all the subjects in the study. Free radicals have been linked to decreased sperm quality in previous studies.” In another study, Dr. Agarwal found that 361 men who used their cell phones more than four hours a day had significantly lower sperm quality than those who used their cell phones for less time.

Joining a chorus of medical warnings about electromagnetic pollution and the dangers of too much cell phone use is Devra Davis, Ph.D. Since 2004, she has been the Director of the University of Pittsburgh Cancer Institute's Center for Environmental Oncology and Prof. of Epidemiology in the Graduate School of Public Health. Dr. Davis is also author of the 2007 acclaimed book, *The Secret History of the War On Cancer*.

In the 1990s, Dr. Davis was Director of the Board on Environmental Studies and Toxicology at the National Academy of Sciences and was a Clinton Administration appointee to the National Chemical Safety and Hazard Investigation Board. Recently I talked with Dr. Davis about Dr. Ronald Herberman's cell phone warning memo distributed in July 2008 to the Cancer Institute's faculty and staff.

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### Interview:



Devra Davis, Ph.D., Director,  
Center for Environmental Oncology,  
University of Pittsburgh Cancer Institute,  
Pittsburgh, Pennsylvania

**Devra Davis, Ph.D., Prof. of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pennsylvania; former Director of the Board on Environmental Studies and Toxicology, National Academy of Sciences; Clinton Administration appointee to National Chemical Safety and Hazard Investigation Board; and author of the 2007 book, *The Secret History of the War On Cancer*:** “The focus of our effort has been to advise our staff to take precautions so they can reduce their direct exposure to their brains.

IT IS SOBERING TO READ YOUR WARNING MEMO OF PRECAUTIONS THAT YOU ALL, WHO ARE EXPERTS IN THE FIELD OF ONCOLOGY, ARE PUTTING OUT TO YOUR OWN COLLEAGUES. [ See list at end of this report.]

Yes. Yes. And let me say that Dr. Herberman and I never imagined that an internal advisory memo to our staff would get this global attention that it has received. We were doing this simply because we spent about 8 months reviewing the literature on a number of environmental hazards, where we concluded there needed to be advice given to the scientific staff so people could take appropriate precautions. It's important to realize that the cell phone industry itself has reported that the cell signal reaches through the brain of children.

And I'm very concerned about the current attempt to market cell phones to toddlers, to young children, as something they should wear around their neck. Living tissue is vulnerable to electromagnetic fields. (Within the frequency bands typically used by cell phones, which are 800 to 2200 megahertz.) There is some evidence of an increase in brain tumors in studies done in countries like Sweden where cell phones have been used long enough to see an effect.



Cell phone next to right ear is focusing microwaves on man's head. Image © 2006 by AP.

Our concern is not just with cancer. We know the brains of children continue to develop and mature in various ways throughout the teenage years. Dr. Leonard Hardell is a distinguished oncologist and epidemiologist in Sweden at University Hospital and he has published a series of important papers in which he found that when you look at people who have used cell phones for ten years or more, they have a substantial increase – a doubled increase or more of a tumor of the hearing nerve called an ‘acoustical neuroma.’ That is generally a benign tumor that can be surgically removed. And they also have an increase in a type of brain tumor – unfortunately, a glioma. That shows up particularly on the same side of the head where people report using their cell phones.

[ Editor's Note: *Wikipedia* – “A glioma is a type of cancer that starts in the brain or spine. It is called a glioma because it arises from glial cells. The most common site of gliomas is the brain. Gliomas cannot be cured. The prognosis for patients with high-grade gliomas is generally poor, and is especially so for older patients. Of 10,000 Americans diagnosed each year with malignant gliomas, about half are alive 1 year after diagnosis, and 25% after two years. Those with anaplastic astrocytoma survive about three years. Glioblastoma multiform has a worse prognosis.]

WHEN YOU REALIZE THAT THE PUBLIC IS CONSTANTLY BEING TOLD BY PEOPLE IN POLITICAL AUTHORITY THAT THERE IS NO RISK FROM CELL PHONES AND MICROWAVE TOWERS TO HUMAN HEALTH, YOU CAN UNDERSTAND THE CONFUSION THAT THE PUBLIC HAS ABOUT WHETHER CELL PHONES AND MICROWAVE TOWERS ARE SAFE OR NOT.

I do. And I think it is very important to take a step back and recognize something. Human evidence should not be the requirement for action to prevent further human harm.

If we say that we have to have proof that people are already sick or dead because of long-term exposure to radio frequency signals, we are basically dooming our children and

grandchildren, treating them like laboratory rats in an experiment where we don't really have controls. I think we need to make more reliance on experimental studies, which scientists have done in culture dishes where we take cultures of cells from the brain – which has been done – cultures of breast and prostate cells and expose them to electromagnetic radio frequencies in the lab under controlled conditions to these signals and see what happens to the sampled cells.

Those studies have been done and in 2007, an excellent analysis of that work was reported in the Bioinitiative Report prepared and edited by Dr. David Carpenter, the former Dean of the University of Albany's School of Public Health, along with Cindy Sage, who is an expert in this field as well. That Bioinitiative Report was put together by 15 internationally renowned scientists. It reported on the negative and positive studies and concluded there was sufficient evidence for concern and for precautionary actions to be taken.

At this point, we are not calling for people to stop using cell phones. We are calling on them to use cell phones more safely.

Many professionals are literally tied to their cell phones at their hip. And we advise against that. We think it is important for peoples' mental and physical health to actually turn your cell phone off sometimes. Dinnertime, it's a good idea. And at night. Some people were actually sleeping with their cell phone under their pillow. That is not a good idea!

#### DR. ASHOK AGARWAL'S RESEARCH REINFORCES WHAT YOU HAVE BEEN TELLING ME?

Absolutely. In fact, here is what we understand. Dr. Ashok Agarwal's work is brilliant and very important. We have to be concerned because there are growing numbers of young people with cancer. There is clear evidence that we have more survivors of cancer because we have succeeded in treating cancers of childhood, but we're seeing more cancer in young people under the age of 40 – more than a million cancer survivors today. One of the most common malignancies in young people is testicular cancer. It is well known that anything that can cause deformities of the sperm might also cause testicular cancer.

We're flying blind in respect to a lot of these questions because we don't have access to data from the cell phone industry. Because of national security, cell phone companies now have to turn over records to the government about cell phone use for anyone suspected of being involved with issues endangering the United States. We think our security is at risk if we face hazards from cell phone use. We are calling on the cell phone industries in the testimony that Dr. Herberman will issue on Friday, Sept. 26, in Washington, D. C., to cooperate with independent researchers at M. D. Anderson (Houston, Texas), the Univ. of Pittsburgh Cancer Institute, and the Univ. of California – San Francisco. We want billing records released so we can tie those to detailed information that we need about cell phone use patterns in order to do a prospective study.

If there is a risk that appears to be evolving here of brain tumors, we now have the following situation: more than 90% of people in most industrial countries are currently using cell phones. Ten years ago, it was less than 30%, except in Scandinavia where we have some studies that have been positive. So if we wait until we have human evidence, we're going to be in big trouble.

## Epidemic of Brain Tumors and Sperm Problems by 2030?

#### AN EPIDEMIC POSSIBLY OF BRAIN TUMORS AND PROBLEMS WITH SPERM INCREASING OVER THE NEXT TEN TO TWENTY YEARS.

Yes. Frankly, this is a real dilemma for public health. We think there is enough cause for concern right now that we advised taking precaution and we think that everybody should change their use of cell phones now.

- We think it is a good idea not to keep cell phones 'ON' on their body all the time.
- We think it's a good idea if you use a cell phone, try to shorten the amount of time you use it.
- Do not have it directly at your head.
- If at all possible, use a wired headpiece or for short periods of time, a blue tooth headset. But do NOT keep a blue tooth head set ON all the time because even though it's transmission is lower, if it's on all the time then you are getting more exposure.
- Do not put a cell phone under your pillow.
- AND APPARENTLY, DON'T CARRY IT IN YOUR POCKET.
- And don't carry it in your pocket or put it on your hip when it's on.

The thing that's amazing is that you can actually turn cell phones off! (laugh) It's really interesting – we've become so addicted to using them that people don't realize they can actually turn their cell phone off."

## Microwave Cell Tower Sites

The telecommunications industry is trying to stop all citizen influence on restricting microwave cell tower sites. On July 11, 2008, the Cellular Telephone Industries Association (CTIA), petitioned the FCC to declare new limitations on local zoning authority as it affects cell tower sites. A deadline for public comments was extended to the end of September 2008 by the **FCC, so click here for Public Notice for Comments.**

Specifically, CTIA requests the Federal Communications Commission to:

1. Force municipalities to act on wireless antenna or tower zoning applications within 45 or 75 days.
2. Rule that applications are automatically "deemed granted" if a local government misses the FCC's deadline.
3. Prevent municipalities from considering the presence of service by other carriers in evaluating an additional carrier's application for an antenna site.
4. Pre-empt any local ordinance that would automatically require a variance for cell tower applications.

### **What You Can Do:**

Send a letter to the FCC by September 29, 2008 requesting that they do not further preempt local zoning, stating that since 1996 municipalities have spent many hours creating legitimate bylaws unique to those areas, reflecting the will of citizens where they live, work and create community. Tell the FCC that the CTIA's requests do not reflect the will of the people; rather this is an attempt to expedite the process for telecommunication carriers to place more antennas to service new wireless products – and undo the hard work of local boards and citizens.

### **Mail to:**

Federal Communications Commission  
445 12th St, S.W.  
Washington, DC 20554

Send this Alert to your local Planning and Zoning Boards, Selectmen, City Council Representatives, with a copy of your letter, and urge them to request that the FCC, on behalf of their local citizens, deny the CTIA's requests.



**Legal Actions Taken To Date:**

On August 22, Montgomery County, Maryland, and NATOA et al. filed motions to extend these deadlines. **[Click here to read their Motion for Extension of Time.](#)**

## Stealthy Cell Phone Towers

See: **Weird Cell Phone Towers**



Camouflaged cell phone towers, such as this flagpole, are used by the cellular industry to conceal microwave towers in school yards and community spaces in the United States.



Grain silos - Carriers add onto existing silos or build fake ones from the ground up to conceal offensive microwave tower equipment.

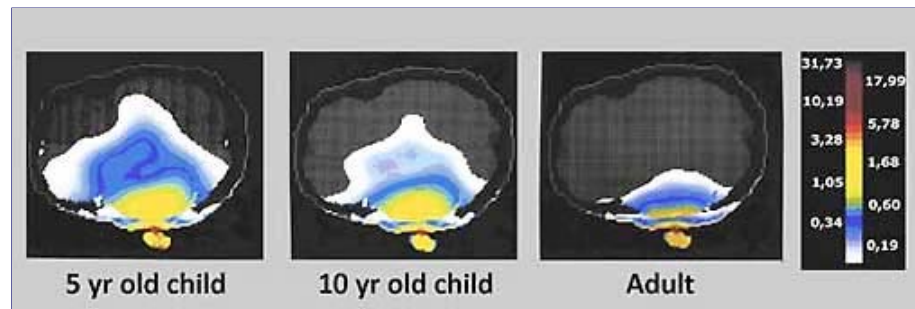


Palm, cactus and various tree shapes are used to disguise microwave tower equipment.

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### Dr. Herberman's Eleven Precautions:

“1. Do not allow children to use a cell phone except for emergencies. The developing organs of a fetus or child are the most likely to be sensitive to any possible effects of exposure to electromagnetic fields.



Estimation of the penetration of electromagnetic radiation from a cell phone based on age (Frequency GSM 900 Mhz). On the right, a scale showing the Specific Absorption Rate at different depths, in W/kg. Source: *Electromagnetic Absorption in the Human Head and Neck for Cell Telephones at 835 and 1900 MHz*.

2. While communicating using your cell phone, try to keep the cell phone away from the body as much as possible. The amplitude of the electromagnetic field is one fourth the strength at a distance of two inches and fifty times lower at three feet.

3. Whenever possible, use the speaker-phone mode or a wireless Bluetooth headset, which has less than 1/100th of the electromagnetic emission of a normal cell phone. Use of a hands-free ear piece attachment may also reduce exposures.

4. Avoid using your cell phone in places, like a bus, where you can passively expose others to your phone's electromagnetic fields.

5. Avoid carrying your cell phone on your body at all times. Do not keep it near your body at night such as under the pillow or on a bedside table, particularly if pregnant. You can also put it on 'flight' or 'off-line' mode, which stops electromagnetic emissions.

6. If you must carry your cell phone on you, make sure that the keypad is positioned toward your body and the back is positioned toward the outside so that the transmitted electromagnetic fields move away from your rather than through you.

7. Only use your cell phone to establish contact or for conversations lasting a few minutes as the biological effects are directly related to the duration of exposure. For longer conversations, use a land line with a corded phone, not a cordless phone, which uses electromagnetic emitting technology similar to that of cell phones.

8. Switch sides regularly while communicating on your cell phone to spread out your exposure. Before putting your cell phone to the ear, wait until your correspondent has picked up. This limits the power of the electromagnetic field emitted near your ear and the duration of your exposure.

9. Avoid using your cell phone when the signal is weak or when moving at high speed, such as in a car or train, as this automatically increases power to a maximum as the phone repeatedly attempts to connect to a new relay antenna.

10. When possible, communicate via text messaging rather than making a call, limiting the duration of exposure and the proximity to the body.

11. Choose a device with the lowest SAR possible (SAR = Specific Absorption Rate, which is a measure of the strength of the magnetic field absorbed by the body). SAR ratings of contemporary phones by different manufacturers are available by searching for SAR ratings cell phones on the internet.”

## Return to **Part 1**

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For further information about electromagnetic pollution and cell phone dangers, please see reports below in the **Earthfiles Archive**:

- 09/05/2008 — Growing Concern about Electromagnetic Pollution and Cell Phones
  - 05/25/2001 — Federal GAO Report Does Not Rule Out Cell Phone Dangers
  - 05/14/2000 — British Cell Phone Safety Alert and Interview with Robert O. Becker, M. D.
  - 02/05/2000 — Microwaves and Cell Phones - An Update
  - 01/30/2000 — More Bans on Cell Phone Use by Drivers
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## Websites:

**How Cell Phone Radiation Works:** <http://electronics.howstuffworks.com/cell-phone-radiation1.htm>

**Univ. of Pittsburgh Cancer Institute's Center for Environmental Oncology:**  
[http://www.environmentaloncology.org/staff\\_davis.htm](http://www.environmentaloncology.org/staff_davis.htm)

**Ronald Herberman, M. D., “Case for Precaution in the Use of Cell Phones”:**  
<http://www.mindfully.org/Technology/2008/Cell-Phone-Precaution23jul08.htm>

**Ashok Agarwal, Ph.D., HCLD:** <http://www.asiaandro.com/journal/board/plus/036.htm>

**Cell Phone Use Linked to Male Infertility:** <http://www.webmd.com/infertility-and-reproduction/news/20080919/cell-phone-use-linked-male-infertility?>

**Journal Fertility and Sterility:** <http://www.asrm.org/Professionals/Fertility&Sterility/fspage.html>

**FCC Public Notice for Comment on CTIA Petition:** [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-08-1913A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-08-1913A1.pdf)

**August 2007 BioInitiative Report:** <http://www.bioinitiative.org/report/index.htm>

**EMR Network:** [http://www.emrnetwork.org/actionalert\\_aug08.htm](http://www.emrnetwork.org/actionalert_aug08.htm)

**Libby Kelley, ICES:** <http://www.icems.eu/>

**Microwave Cell Towers:** [http://en.wikipedia.org/wiki/Cell\\_site](http://en.wikipedia.org/wiki/Cell_site)

**Cell Phones:** <http://www.laleva.cc/environment/cellphones.html>

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