

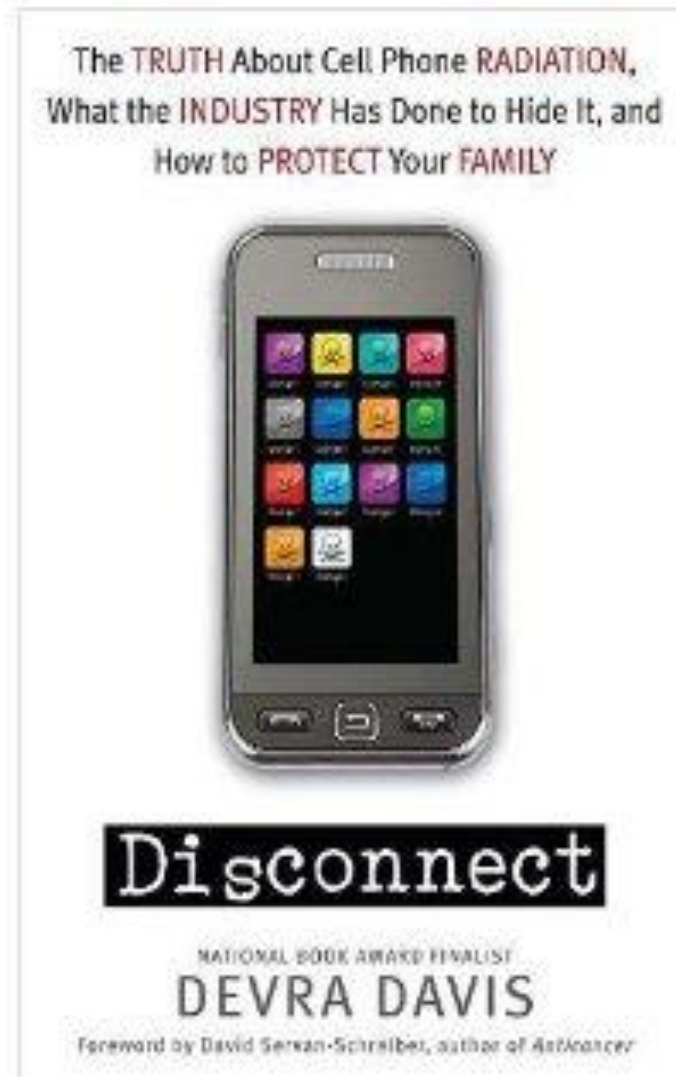
MOBILE RADIATION



By:

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Mosul College of Medicine**

Disconnect



This is the book in the bookstore. It's an argument about how cell phone radiation has led to cancer.

Dr. Davis



- This is the Author. She's not a lunatic.
B.S. in physiological psychology and a M.A. in sociology from the University of Pittsburgh, 1967.
- She completed a Ph.D. in science studies at the University of Chicago as a Danforth Foundation Graduate Fellow, 1972
- M.P.H. in epidemiology at the Johns Hopkins University as a Senior National Cancer Institute Post-Doctoral Fellow, 1982.
- She has also authored more than 190 publications in books and journals ranging from the Lancet and Journal of the American Medical Association to Scientific American and the New York Times and blogs in Freakonomics for the New York Times, Huffington Post and elsewhere.

Mobiles

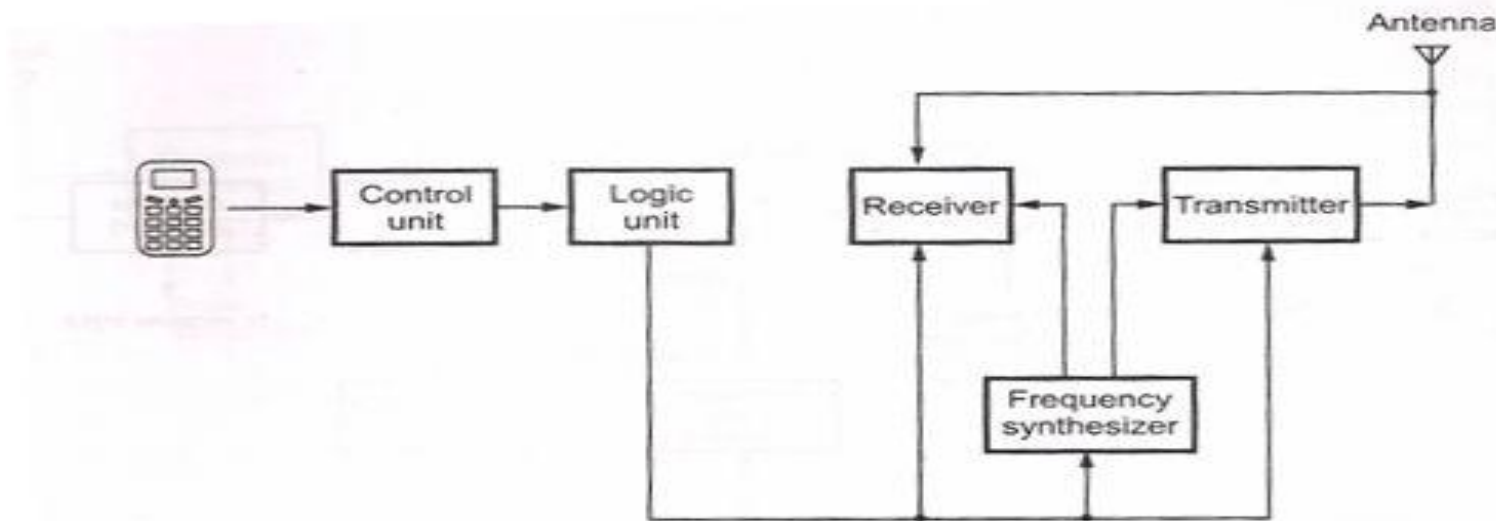


- A device that can make and receive telephone calls over a radio link.
- It does so by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network.



Functioning

- A transmitter takes the sound of your voice
- Encodes it onto a continuous sine wave.
- The encoded sound has been placed on the sine wave
- The transmitter sends the signal to the antenna
- Which then sends the signal out.



Caller (1)

Receiver (2)



Switching center figures out and keeps track of, the caller's number and the receiver's number.

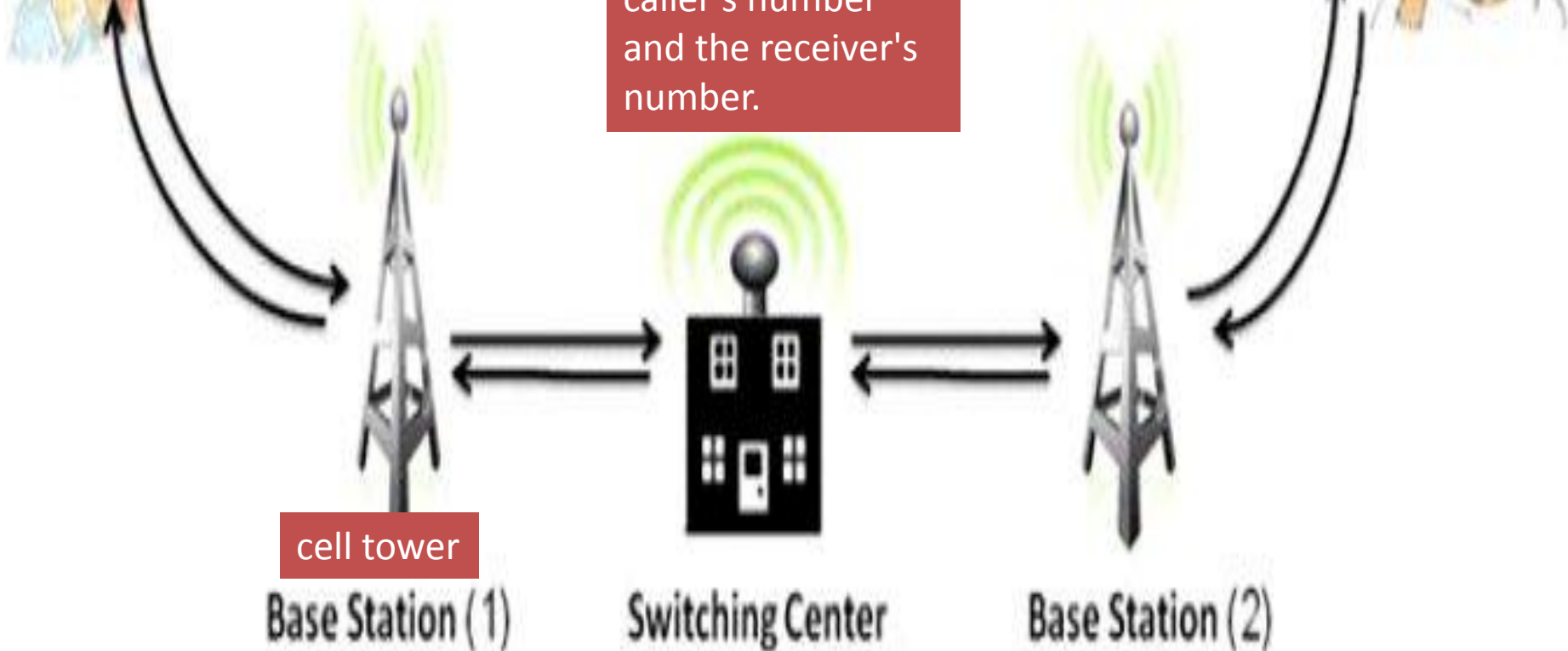


cell tower

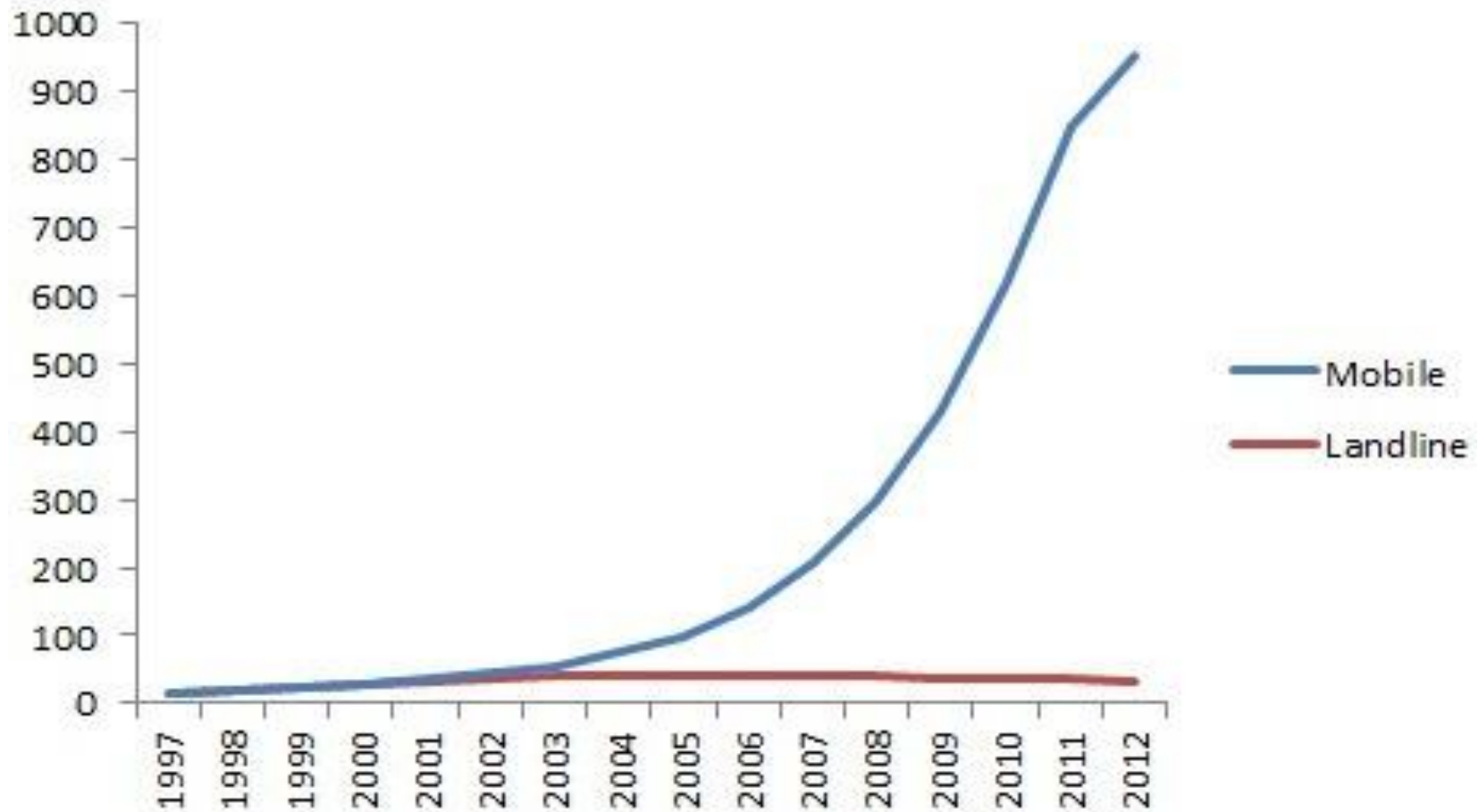
Base Station (1)

Switching Center

Base Station (2)



- It was **only 0.34 million mobiles in 1997**, which has now grown to **919.18 million by 2012**.



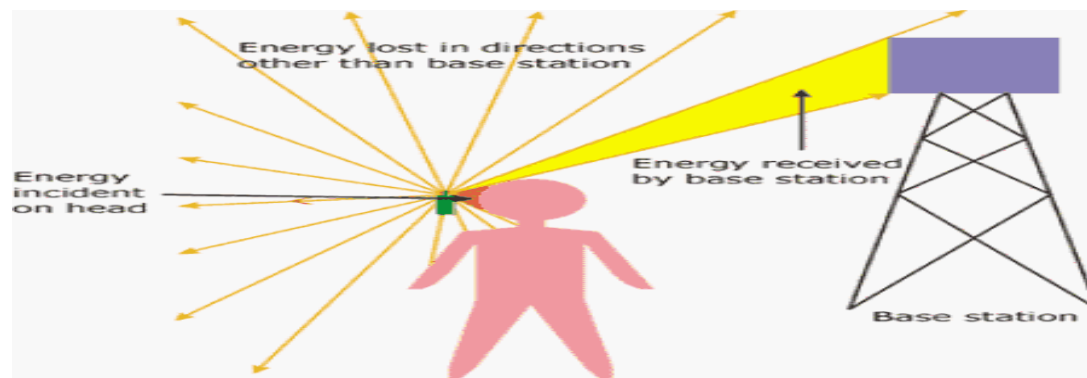
Mobile Radiation



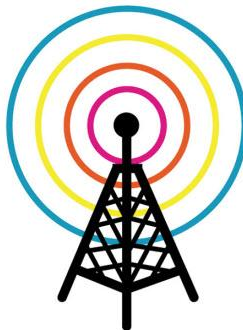
- Cell phones emit signals via radio waves
- comprised of Mobile frequency (RF) energy, a form of electromagnetic radiation.
- Electromagnetic radiation is made up of waves of electric and magnetic energy moving at the speed of light.



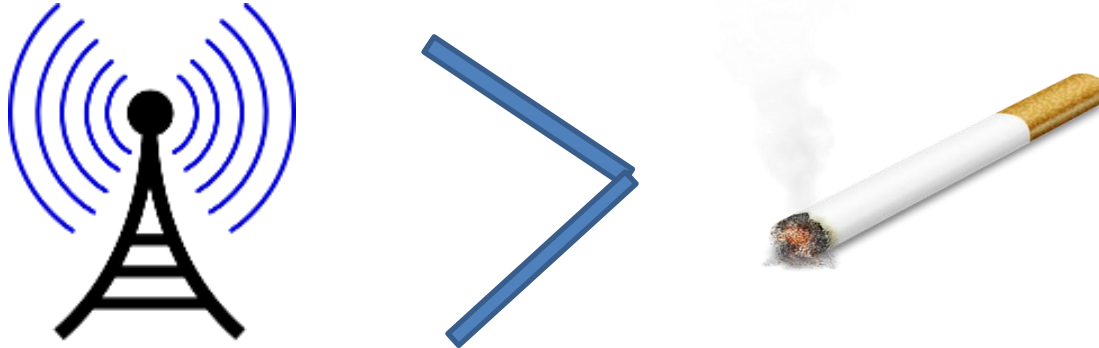
- Most of the transmission signals are lost in space, as the signals are sent out 360 degrees from the cell's antenna. Only a small percentage hit the tower.



- Having a mobile tower within 50 mts is like being in a microwave oven for 24 hours



- Those living in a 50-300m radius face a high risk-much worse than smoking as you cannot see or smell radiation.



- The WHO recently classified cell phone radiation with gasoline engine exhaust, lead and DDT.



SAR

- The Specific Absorption Rate is a measure of the amount of radio frequency (RF) energy absorbed by the body when using the handset. All cell phones emit RF energy and the SAR varies by handset model.

To sell a cell phone in the [US](#), you must be under an SAR value of:

1.6 watts/kg

In [Europe](#) it's: **2.0 watts/kg**

The point is that YOU NEED TO BE UNDER 1.6 in order to be a cell phone in the United States. Be sure to read the [highlighted](#) text in the next slides VERY carefully.

...Even More Scary

From iPhone 4 Operations and Safety Manual

entities of Japan, the European Union, and other countries. The exposure standard employs a unit of measurement known as the specific absorption rate, or SAR. The SAR limit applicable to iPhone set by the FCC is 1.6 watts per kilogram (W/kg), 1.6 W/kg by Industry Canada, and 2.0 W/kg by the Council of the European Union. Tests for SAR are conducted using standard operating positions (i.e., at the ear and worn on the body) specified by these agencies, with iPhone transmitting at its highest certified power level in all tested frequency bands.

Although SAR is determined at the highest certified power level in each

...Even More Scary

From iPhone 4 Operations and Safety Manual

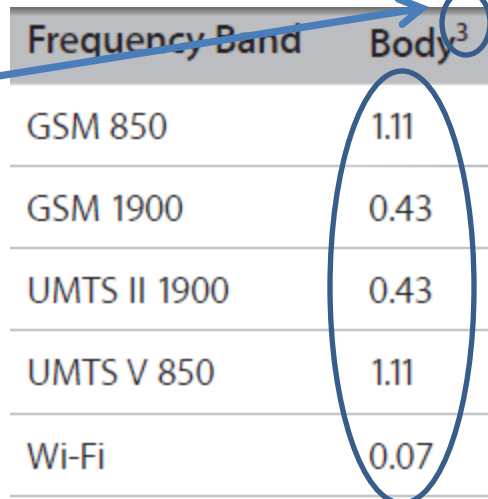
connector pointed down toward your shoulder to increase separation from the antenna. When using iPhone near your body for voice calls or for wireless data transmission over a cellular network, keep iPhone at least 15 mm (5/8 inch) away from the body, and only use carrying cases, belt clips, or holders that do not have metal parts and that maintain at least 15 mm (5/8 inch) separation between iPhone and the body.

iPhone is designed and manufactured to comply with the limits for

...Even More Scary

From iPhone 4 Operations and Safety Manual

But notice this footnote...



Frequency Band	Body ³	Head	FCC & IC 1g SAR Limit (W/kg)
GSM 850	1.11	1.00	1.6
GSM 1900	0.43	1.17	1.6
UMTS II 1900	0.43	1.17	1.6
UMTS V 850	1.11	1.00	1.6
Wi-Fi	0.07	0.88	1.6

Everything looks good, it's all under 1.6

Frequency Band	Body ³	Head	EU 10g SAR Limit (W/kg)
EGSM 900	0.74	0.66	2.0
GSM 1800	0.28	0.59	2.0
UMTS I 2100	0.36	0.93	2.0
UMTS VIII 900	0.74	0.66	2.0
Wi-Fi	0.05	0.36	2.0

...Even More Scary

From iPhone 4 Operations and Safety Manual

iPhone's SAR measurement may exceed the FCC exposure guidelines for body-worn operation if positioned less than 15 mm (5/8 inch) from the body (e.g., when carrying iPhone in your pocket).

² The device was tested by Compliance Certification Services, Fremont, CA according to measurement standards and procedures specified in FCC OET Bulletin 65, Supplement C (Edition 01-01) and IEEE P1528.1, April 21 2003, and Canada RSS 102, Issue 4, March 2010. iPhone adheres to the European Council Recommendation of 12 July 1999 on the Limitation of Exposure of the General Public to Electromagnetic Fields [1999/519/EC].

③ iPhone positioned 15 mm (5/8 inch) away from the body.
Here's the footnote to those numbers.

Which means...

- That there is a loop hole.
- All the SAR numbers were recorded AT a position OFF of the body.
- The manual explicitly states: the limit may be exceeded if it's on your body. (read the entire previous slide again.)

Effects

Human

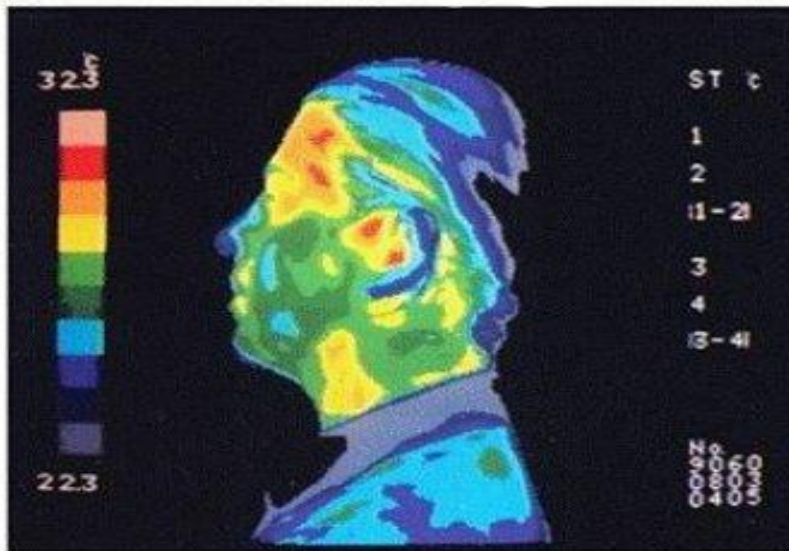
Environment



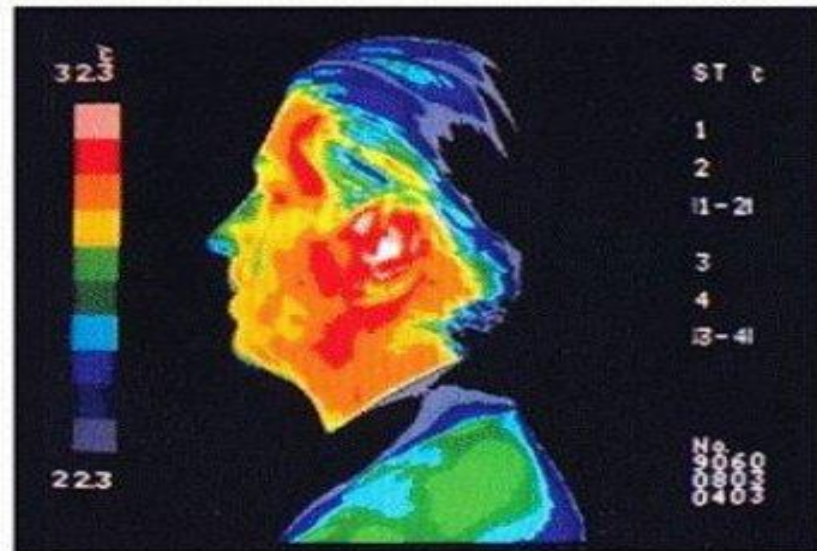
Effects on Human Health

Thermal Effects

Heat generated on the face by 15 minutes of cell phone use due to their electromagnetic radiation



Before using mobile phone



After using 15 minute mobile phone

- The case of a person using a cell phone, most of the [heating effect](#) will occur at the [surface of the head](#), causing its [temperature](#) to [increase](#) by a fraction of a degree.
- [The cornea](#) of the eye when exposed to [2-3 hours](#) can produce [cataract](#) as it does not have this [temperature regulation](#) mechanism.

1. Most common complaints:

- Memory loss, mental confusion
- Headaches
induce extreme fatigue,
sleep disorders.
- Create joint pain, muscle
spasms, tremors



Depression, discomfort,
irritation, nausea,
appetite loss.



- palpitations of the heart, visual disorders, cardiovascular problems, respiratory problems.



- More severe reactions include seizures, paralysis, psychosis and stroke.

All these are related to changes in the electrical activity of the brain



More Research

- Cell phones are proven to make sperm sluggish.



- Not recommended for Birth Control

Sailors on WWII ships used to stand in front of the radar beams on ships to stay warm. They also noticed that they became some what infertile for shore leave.

But sperm hit with normal cell phone radiation does become slow and almost defunct.

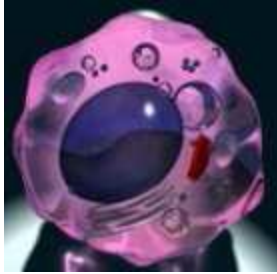
2.Cancer

Do cell phones cause brain cancer?

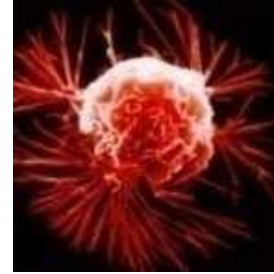


- There is an **increased** risk of tumors/cancer for long amounts of cell phone long cell phone usage (1-hr long conversations).
- Biological studies in rats. **Risk increases.**
- **Risk is tripled** in children and teenagers.
- Even a former Motorola engineer who worked on development of first portable cell phone (1983), found a brain tumor in him in 2002.

Normal cell



Cancer cell



- Mobile phone use >10 years doubles risk of brain cancer.



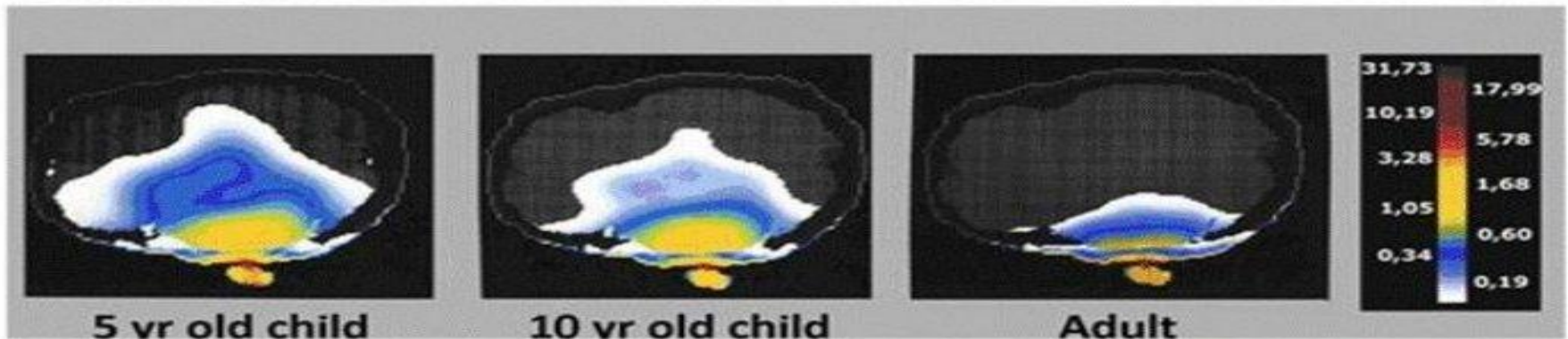
- Cell phone use also increases risk of glioma, acoustic neuroma, salivary gland tumors, uveal melanoma, facial nerve tumors, skin, blood, testicular and breast cancer.

3. Risk on Children



Children are more vulnerable as:

- Skulls are smaller & thinner - ↑'s radiation absorption
- ↑rate of Cell division - more susceptible to genetic damage
- Myelin sheath not developed – brain wave activity



Body Part	Radiation Absorbed in milli Watt/kg		
	In Adults	In 10 year old Kids	In 5 year old Kids
Head	7.84	19.77	33.12
Eye Fluid	3.30	18.38	40.18
Eye Lens	1.34	6.93	15.60
Connective Tissue	1.77	9.8	19.69

• Bone marrow in a child's skull absorbs 10 times more microwave radiation than does an adult.

• Children and teenagers, before age of 20 - five times more likely to get brain cancer if they use cell phones.



Effect on Environment



- Effect on farm animals- Dairy cows that were kept in proximity to cell phone tower for two years had a reduction in milk production along with increased health problems and behavioral abnormalities.



- EMR from cell phone towers - diseases in plants & animals and is the reason for the vanishing butterflies, some insects and birds like sparrows.



- Vanishing Bees- A study showed that bees refused to return to their beehives.
- The cause was the recent increase in atmospheric electromagnetic radiation.
- The increased radiation given off by such devices interferes with bees' ability to navigate.



Awareness Among People

'Actor's house vulnerable to radiation'

Sayji Udas Mankikar
sayji.mankikar@hindustantimes.com

MUMBAI: A day after Hindustan Times reported about Bollywood actor Juhu Chawla being worried about the mobile towers set up at Sahyadri state guesthouse located 40 meters across her house, a team from IIT Mumbai headed by professor Girish Kumar volunteered to visit his house was



at actor Juhu Chawla's residence
HEMANT PADALKAR/HT PHOTO

Prof. Arun Mehta

If the dire radiat then bi ar

Radiation and human Citizens ensure warnings on cell radiation are taken seriously

They feel govt needs to adopt more stringent factors for tower radiations and identify it as a problem



NATION TOWERS OF DEATH

Rajendra Aklkar

The department of telecom is soon planning to make more stringent measures for mobile tower installation over buildings and towers in the city, a top retired official of the telecom department said.



TELECOM PLANS: Government is trying to work out solutions to solve the problem of health hazards due to mobile towers

Girish Kumar
IT professor

Mobile phones have become the 21st century version of cigarettes. When the doctors were warning about its dangers, nobody listened

"It was only when cases peaked that it was proved. In the case of mobile phones, one can't see the smoke, can't smell it nor see the damage, but it is causing a huge amount of risk to public health," said IIT professor Girish Kumar, who has conducted research on the subject.



TRANSMISSION TRANQUILIZERS

The jury is out on radiation from cell phone towers, but devices offering to mitigate the effects of hazardous emissions seem to have found a market

PRICE OF PROTECTION

Shielding device (for mobile towers)
Rs 25,500
Rs 55,000
per tower



शालीमार बाग समिति ने कहा- तीन की मौत रेडिएशन से 6 को कैंसर का दवा

नगर शालीमार | जयपुर
मैं में भी-कॉम के बाद अकसर रोड सिग्नल के कारण कैंसर हो चुकी है। शालीमार बाग समिति ने कहा कि रेडिएशन के कारण से जो लोग कैंसर से पीड़ित हैं, हमें से कि के छत्र तहत कैंसर से निवारण करने के लिए चर्चा हो। समिति ने पंचायत समिति को पत्र लिखा है कि रेडिएशन के कारण से जो लोग कैंसर से पीड़ित हैं, हमें से कि के छत्र तहत कैंसर से निवारण करने के लिए चर्चा हो। समिति ने पंचायत समिति को पत्र लिखा है कि रेडिएशन के कारण से जो लोग कैंसर से पीड़ित हैं, हमें से कि के छत्र तहत कैंसर से निवारण करने के लिए चर्चा हो।

ing top government officials from the telecom sector, medical professionals dealing with hazards of mobile tower and radiation,

Victims speak against menace

Three victims from the Usha Kiran building at Andheri recount their stories:
We are always told to be careful because of mobile tower radiation. We ask all of you to be careful.

that would not fall ill because of mobile tower radiation
We are suffering because of ignorance of a new technology

IT professors who have researched the subject and victims led to a conclusion that the government needs to adopt more stringent factors for tower radiations and identify the problem.

medical professionals were warning cigarette manufacturers about the dangers of smoking in the early days, nobody listened

CAUTION

On this tower: Radio frequency fields near some antennas may exceed FCC rules for human exposure.

Personnel climbing this tower should be trained for working in radio frequency environments and use a personal RF monitor.

In accordance with Federal Communications Commission rules on radio frequency emissions 47 CFR 1.1307(f) ©2010 Rofcom SAR Associates, Inc.

'Mobile radiation ups cancer risk'

Solution Lies In Reducing Transmitted Power From Towers, Says Researcher

Panaji: "The 43 lakh mobile towers in India are turning the country into an open microwave," warns Girish Kumar, researcher and faculty at IIT Bombay.



Dr Girish Kumar at the GCCI hall in Panaji residents living near cell towers.

He noted that mobile companies were choosing to install higher-intensity towers to cut costs but were compromising on public safety. Citing a case study where the residents of a high-rise Mumbai building facing a mobile tower were affected by cancer, he went on to explain the link of rise in cancer cases among

longed exposure to mobile radiation increases chances of cancer by 200-400% over 30 years," Kumar stressed. It can also lead to misarrangements as it affects the amniotic fluids, he added.

Citing examples of farmhouses, Kumar also observed that mobile tower radiation was affecting the environment and fruit-bearing trees as well as birds.

Explaining further, Kumar said the Specific Absorption Rate (SAR) in India has been fixed at a much higher level than it should be to benefit telecom operators who contribute 30% of India's GDP. He felt part of the solution lay in reducing the transmitted power from towers which would necessitate setting up of additional towers at a much higher cost.

STAY SAFE

- Do not use your phone for prolonged periods
- Use a hands-free while talking on your cellphone
- Your mobile transmits one pulse per minute to the base station. Hence, avoid carrying your phone on your body as far as possible
- Switch off your WiFi router when not in use
- Avoid using cheaper Chinese phones as they may not meet the stipulated SAR levels
- Spread awareness to bring about legislative change to Indian radiation safety norms

mobiles. Neema Redkar, an aura (human energy) researcher, said, "Waves or radiations destroy vital enzymes that catalyze the electrical system which activates our nervous system."

NOTICE

Stay back!
Radio-frequency energy May exceed exposure limits
If questions, contact facility owner

ल रेडिएशन पर नजर

रखा है कि नहीं, नियमों के अनुसार इलेक्ट्रो मैग्नेटिक फिल्ड में 4500 एमएडब्ल्यू-एम तक के



UPES of India, 2012, Jan 2, 2012, 1394

Crazy?



Antonie van Leeuwenhoek 1676

Louis Pasteur 1859

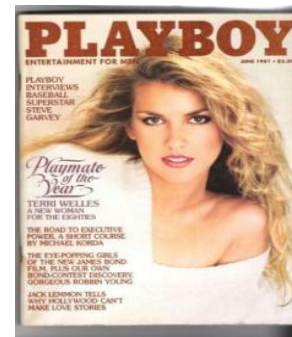
Back in their days imagine scientists running around saying: “There are thousands/millions of invisible things all over you! And they may kill you!”

Well yeah, they’re called germs. But we don’t stop going outside...

WE WASH OUR HANDS

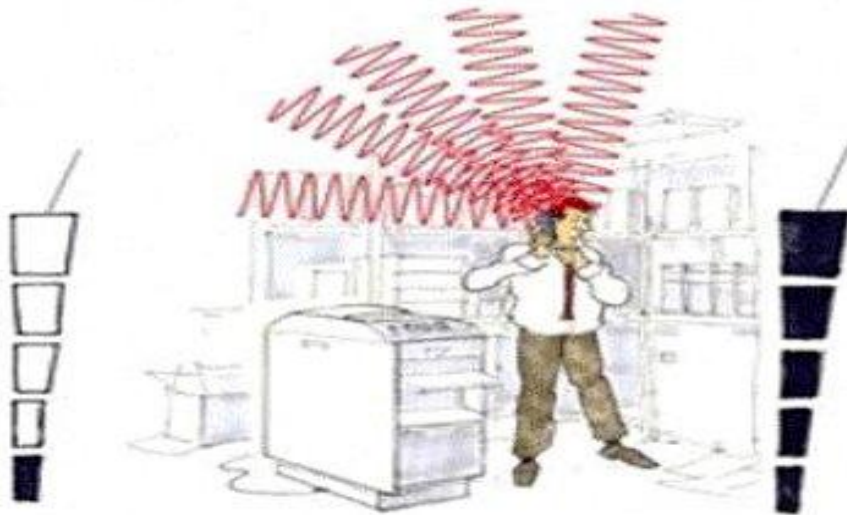
Wash Your Hands Digitally

- Don't sleep with it under your pillow.
- Keep it away from your body (book bag front pocket).
- Don't put it in your bra.
- Put keys facing you if in pocket. (antenna's on back)
- Keep conversations short.
- Text more often.
- Use wired ear piece. Or BlueTooth (but turn off when not in use).
- **DO NOT** let kids use cell phones. +18



Get in the best position

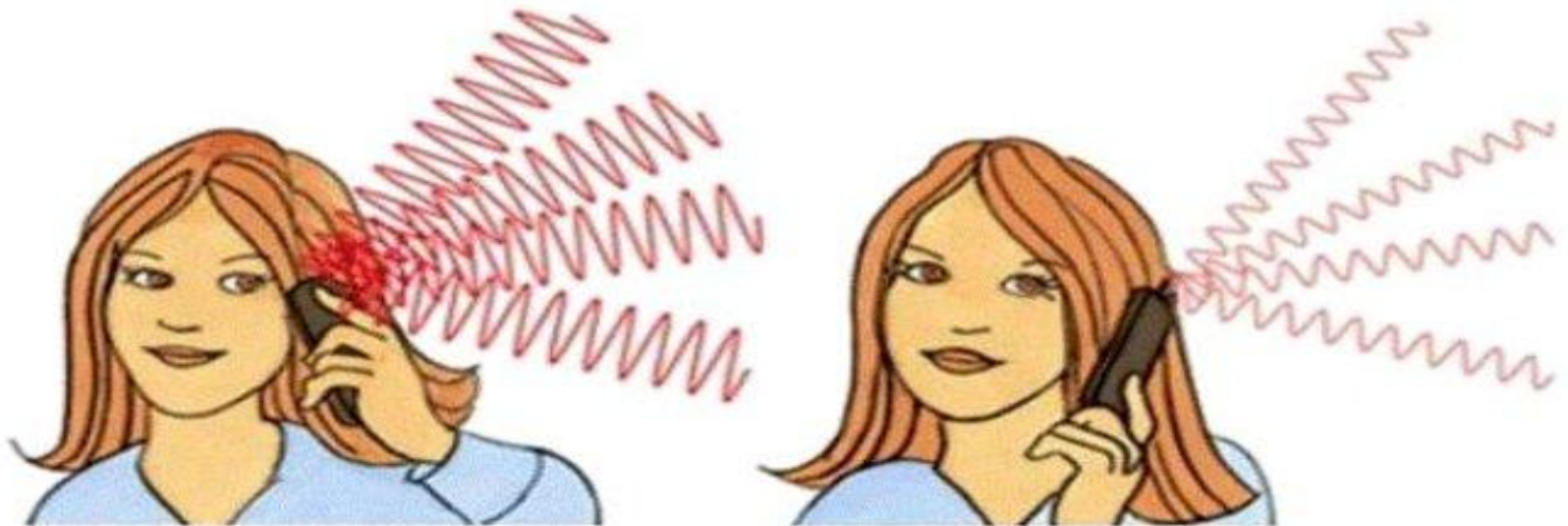
You can see the signal reception strength in the display. When reception is good, the phone reduces power and radiation. If reception is poor, the phone uses maximum power and radiation.



Radiation is strongest when the signal is very weak. In weak signal areas, the cell phone cranks up its power to connect to the base station.

Hold it at the bottom

By covering large areas of the phone with your hand, you reduce its ability to send and receive signals. The phone then increases its power and transmits stronger radiation to compensate this. So hold the phone as far down as possible, so it can operate at low power.



Tilting the phone away from your ear as you speak will help reduce radiation zapping your head when the cell is transmitting to the tower.

- Always hold the phone 2 inches from your ear and you will dramatically reduce the amount of radiation penetrating into your head.



- Keep the phone at least a foot away from your body and use the speakerphone setting.

- Use a headset. A wired headset may still transmit radiation through the wire – but it is at a reduced level.



- Best, is to purchase a ferrite bead, which is a clip you put on the wire of a headset. The bead absorbs the radiation and none reaches your head.



- Use a Bluetooth earpiece, which still emits radiation, but some models reduce the radiation by 100 times.
- Due to the constant low radiation of the blue tooth near the ear and therefore really close to your brain, one should take it out of the ear when not in use.



- Buy a low radiation phone.

OR

- Don't Talk or Text!!!!



If you are cleaver.....

Don't call the other

Thank you ...



References

- <http://www.disconnectbook.com/>
- library.gatech.edu (Research Journal Database)
- Google. Read Articles.