RF Sources - Commercial

RF SOURCES IN INDIA

- **FM TOWER** (88-108MHz) - PT=10KW - 503 TOWERS
- **TV TOWER** (180-220MHz) - PT=40KW - 1044 TOWERS
- **AM TOWER** (530-1620KHz) - PT=100KW - 197 TOWERS
- **Wi-Fi** (2.4 - 2.5 GHz) - PT=10-1000mW - Wi-Fi HOT SPOTS
- **CELL TOWER** (800, 900, 1800, 2100, 2300 MHz) - PT=20W - 5 LAKH TOWERS
- **MOBILE PHONES** - GSM900 - 2W, GSM1800, 3G - 1W - 90+ CRORES
Radar Systems – Pulsed and Continuous

High Power Microwave Sources

HF, VHF, UHF, and Microwave Transmitters

Microwave Bomb

Microwave Weapon

High Power Microwave Generation at Satellite using Solar Cells and Transmitter to Earth
Microwave radiation causes vibration in the water molecules, which leads to friction and heating. The radiation effects are classified as:

- **Non-thermal**
- **Thermal**

Current exposure safety standards are mainly based on the thermal effects, which are **inadequate**.

Non-thermal effects are several times more harmful than thermal effects.
Cell Phone - Ear Warming?

Have you ever noticed warm sensation in ear after using mobile phone for a long time?

Temp. of ear lobes increases by $10^\circ$C when cell phone is used for approx. 20 minutes.

Warm sensation -> pain -> irreversible hearing loss

All these effects lead to Ear Tumor
A cell phone transmits 1 to 2 watts of power

**SAR (Specific absorption rate)** - Rate at which radiation is absorbed by human body, measured in watts per kg (W/kg).

In USA, max. SAR limit for cell phones is **1.6W/Kg** which is for **6 minutes**. It has a safety margin of 3 to 4, so a person should not use cell phone for more than **18 to 24 minutes per day**.

This information is not given to people in India.
BlackBerry device. **Keep the BlackBerry device at least 0.98 in. (25 mm) from your body** when the BlackBerry device is transmitting. When using any data feature of the BlackBerry device, with or without a USB cable, hold the BlackBerry device at least 0.98 in. (25 mm) from your body. If you use a body-worn accessory not supplied by RIM when you carry the BlackBerry device, verify that the accessory does not contain metal and keep the BlackBerry device at least 0.98 in. (25 mm) from your body when the BlackBerry device is transmitting.

To reduce radio frequency (RF) exposure consider these safety guidelines:

- Use the BlackBerry device in areas where there is a strong wireless signal. The indicator that provides information about the strength of the wireless signal is located in the upper-right corner of the Home screen and displays five ascending bars. Three or more bars indicate a strong signal. A reduced signal display, which might occur in areas such as an underground parking structure or if you are traveling by train or car, might indicate increased power output from your BlackBerry device as it attempts to connect to a weak signal.

- Use hands-free operation if it is available and keep the BlackBerry device at least 0.98 in. (25 mm) from your body (including the abdomen of pregnant women and the lower abdomen of teenagers) when the BlackBerry device is turned on and connected to the wireless network. For more information about carrying your BlackBerry device, see the holster information in the "Additional safety guidelines" section of this document.

- Reduce the amount of time spent on calls.
Results of Re-evaluation of Interphone Study

INTERPHONE – WHO -10 years, 13 countries, largest (5,117 brain tumor cases), $25 million dollars to evaluate risk on brain tumors. Report in May 2010

Conclusion - no overall ↑ risk, but suggestions of ↑ glioma - heavy users & ipsilateral exposures

- Heavy users (1/2 hour/day) over 8 to 10 years:
  - Doubled - quadrupled brain tumor risk
- Children, young adults – excluded.
  For children, new study - Mobi-kids
International Agency for Research on Cancer (IARC), a part of WHO designates cell phones as “Possible Human Carcinogen” [Class 2B]

Found evidence of increase in glioma and acoustic neuroma brain cancer for mobile phone use.
While the cell has become an additional appendage for most of us, all this, of course, does not mean that we have to stop using cell phones. Just ensure you take precautions:

- Limit your use
- Talk for short durations
- If possible, use SMS
- Use cell phone with lower SAR value
- Use the speakerphone or wired hands free or Bluetooth, but keep the cell phone at a distance of at least 12 inches from your body
- Use the land-line, when available
- Do not keep cell phones in your hand/pocket for long.
- At home/office, keep the phone away from you
Antennas on Cell tower transmit in the frequency range of:

- **869 - 890 MHz (CDMA)**
- **935 - 960 MHz (GSM900)**
- **1805 – 1880 MHz (GSM1800)**
- **2110 – 2170 MHz (3G)**
- **2300 – 2400 MHz (4G)**
- **2400 – 2500 MHz (Wi-Fi, Bluetooth)**

http://www.wifiinschools.com/

This website is dedicated to help the public realize that wireless internet, or WiFi, emits radiation that causes a myriad of serious health effects, including damage to DNA, cancer, and infertility.
Cell Towers Installed in Mumbai
Radiation Pattern of Antenna

Horizontal plane

Beam is wide

Vertical plane

Main beam is narrow with secondary side lobes
People living within 50 to 300 meter radius are in the high radiation zone (dark blue) and are more prone to ill-effects of electromagnetic radiation.

People living at < 50m are in extremely high radiation zone.

Power varies by $1/R^2$, where $R = \text{Distance from tower}$.
Six cancer cases in consecutive floors (5th, 6th, 7th, 8th and 10th) directly facing and at similar height as the mobile phone towers of four telecom companies placed on the roof of opposite building.
According to ICNIRP, for general public exposure, safe power density = f/200 for frequency range of 400-2,000 MHz. So for GSM900, safe power density is 900/200 = 4.5W/m², which is for 6 min period as mentioned in Note no. 3.

### Table 7. Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values).a

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>E-field strength (V m⁻¹)</th>
<th>H-field strength (A m⁻¹)</th>
<th>B-field (μT)</th>
<th>Equivalent plane wave power density S_\text{eq} (W m⁻²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 1 Hz</td>
<td>—</td>
<td>3.2 \times 10⁴</td>
<td>4 \times 10⁴</td>
<td>—</td>
</tr>
<tr>
<td>1-8 Hz</td>
<td>10,000</td>
<td>3.2 \times 10⁴/f²</td>
<td>4 \times 10⁴/f²</td>
<td>—</td>
</tr>
<tr>
<td>8-25 Hz</td>
<td>10,000</td>
<td>4,000/f</td>
<td>5,000/f</td>
<td>—</td>
</tr>
<tr>
<td>0.025-0.8 kHz</td>
<td>250/f</td>
<td>4/f</td>
<td>5/f</td>
<td>—</td>
</tr>
<tr>
<td>0.8-3 kHz</td>
<td>250/f</td>
<td>5</td>
<td>6.25</td>
<td>—</td>
</tr>
<tr>
<td>3-150 kHz</td>
<td>87</td>
<td>5</td>
<td>6.25</td>
<td>—</td>
</tr>
<tr>
<td>0.15-1 MHz</td>
<td>87</td>
<td>0.73/f</td>
<td>0.92/f</td>
<td>—</td>
</tr>
<tr>
<td>1-10 MHz</td>
<td>87/f¹/₂</td>
<td>0.73/f</td>
<td>0.92/f</td>
<td>—</td>
</tr>
<tr>
<td>10-400 MHz</td>
<td>28</td>
<td>0.073</td>
<td>0.092</td>
<td>2</td>
</tr>
<tr>
<td>400-2,000 MHz</td>
<td>1.375f¹/₂</td>
<td>0.0037f¹/₂</td>
<td>0.0046f¹/₂</td>
<td>f/200</td>
</tr>
<tr>
<td>2-300 GHz</td>
<td>61</td>
<td>0.16</td>
<td>0.20</td>
<td>10</td>
</tr>
</tbody>
</table>

- **Note:**
  1. f as indicated in the frequency range column.
  2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
  3. For frequencies between 100 kHz and 10 GHz, S_\text{eq}, E², H², and B² are to averaged over any 6-min period.
# EMF Radiation Standards for GSM900

<table>
<thead>
<tr>
<th>Country</th>
<th>Milliwatt / m²</th>
<th>Watt / m²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INDIA (adopted ICNIRP)</strong></td>
<td>4500</td>
<td>4.5 (f/200)</td>
</tr>
<tr>
<td>INDIA (Adopted 1/10th of ICNIRP on Sep. 1, 2012)</td>
<td>450</td>
<td>0.45 (f/2000)</td>
</tr>
<tr>
<td>AUSTRALIA (New South Wales proposed)</td>
<td>0.01</td>
<td>0.00001</td>
</tr>
<tr>
<td>AUSTRIA (Salzburg city)</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td>BELGIUM</td>
<td>45 to 1125</td>
<td>0.045 to 1.125</td>
</tr>
<tr>
<td>BELGIUM (Luxembourg)</td>
<td>24</td>
<td>0.024</td>
</tr>
<tr>
<td>BIO-INITIATIVE REPORT (Outdoor)</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td>BIO-INITIATIVE REPORT (Indoor)</td>
<td>0.1</td>
<td>0.0001</td>
</tr>
<tr>
<td>CANADA (Toronto Board of Health - proposed)</td>
<td>100</td>
<td>0.1</td>
</tr>
<tr>
<td>CHINA</td>
<td>400</td>
<td>0.4</td>
</tr>
<tr>
<td>FRANCE (Paris)</td>
<td>100</td>
<td>0.1</td>
</tr>
<tr>
<td>GERMANY (ECOLOG 1998 - Precautionary Recommendation)</td>
<td>90</td>
<td>0.09</td>
</tr>
<tr>
<td>GERMANY (BUND 2007 - Precautionary Recommendation)</td>
<td>0.1</td>
<td>0.0001</td>
</tr>
<tr>
<td>ITALY</td>
<td>100</td>
<td>0.1</td>
</tr>
<tr>
<td>NEW ZELAND (Auckland)</td>
<td>500</td>
<td>0.5</td>
</tr>
<tr>
<td>POLAND</td>
<td>100</td>
<td>0.1</td>
</tr>
<tr>
<td>RUSSIA</td>
<td>100</td>
<td>0.1</td>
</tr>
<tr>
<td>SWITZERLAND (Apartments, Schools, Hospitals, Offices &amp; Playgrounds)</td>
<td>42</td>
<td>0.042</td>
</tr>
<tr>
<td>USA (Implementation is strict)*</td>
<td>3000</td>
<td>3 (f/300)</td>
</tr>
<tr>
<td><strong>Final Recommendations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indoor - include apartments, schools, hospitals, offices &amp; playgrounds.</td>
<td>0.1</td>
<td>0.0001</td>
</tr>
<tr>
<td>Outdoor - where people spend few minutes a day.</td>
<td>10</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*USA - FCC Guidelines OET56: Power transmitted is 0.5 to 1 W in the Urban Area
Irrespective of the ICNIRP recommendations for acute effects, the following benchmarks apply to regular exposure of more than four hours per day.

**High-frequency electromagnetic radiation (as power flow density)**

- $\geq 1000 \, \mu W/m^2 (\geq 1 \, mW/m^2)$  
  very far above normal
- $10-1000 \, \mu W/m^2 (0.01-1 \, mW/m^2)$  
  far above normal
- $1-10 \, \mu W/m^2 (0.001-0.01 \, mW/m^2)$  
  slightly above normal
- $\leq 1 \, \mu W/m^2 (\leq 0.001 \, mW/m^2)$  
  within normal limits
<table>
<thead>
<tr>
<th>Location</th>
<th>Reading in dBm</th>
<th>Readings in W/m²</th>
<th>Readings in milliW/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace, New Rajindra Nagar, Delhi</td>
<td>+09</td>
<td>0.561</td>
<td>561</td>
</tr>
<tr>
<td>Resident 1, Bedroom - Chowpatty</td>
<td>+06</td>
<td>0.281</td>
<td>281</td>
</tr>
<tr>
<td>Resident 2, Bedrooms - Opera House</td>
<td>+05</td>
<td>0.223</td>
<td>223</td>
</tr>
<tr>
<td>Resident 3, Bedroom – ML Dahanukar Marg</td>
<td>+05</td>
<td>0.223</td>
<td>223</td>
</tr>
<tr>
<td>Delhi-Gurgaon Highway - near Toll (3 towers)</td>
<td>0</td>
<td>0.0706</td>
<td>70</td>
</tr>
<tr>
<td>Vashi Bridge - after Railway Station</td>
<td>-4</td>
<td>0.0282</td>
<td>28</td>
</tr>
<tr>
<td>Resident 3, 4th Fl: Sergeant House Lady w/cancer</td>
<td>-6</td>
<td>0.0177</td>
<td>17.7</td>
</tr>
<tr>
<td>Resident 4, Dadar East, Lady w/cancer</td>
<td>-6</td>
<td>0.0177</td>
<td>17.7</td>
</tr>
<tr>
<td>Resident 5, Opposite roof, Rane Society, Powai</td>
<td>-10</td>
<td>0.007</td>
<td>7</td>
</tr>
<tr>
<td>Ustav Chowk, Kharghar</td>
<td>-12</td>
<td>0.0045</td>
<td>4.5</td>
</tr>
<tr>
<td>Govandi- Residential towers - near Indian Oil</td>
<td>-14</td>
<td>0.0028</td>
<td>2.8</td>
</tr>
<tr>
<td>Lower Parel Employees-headaches, forgetfulness</td>
<td>-16</td>
<td>0.0018</td>
<td>1.8</td>
</tr>
<tr>
<td>Vashi Highway – near Turbhe</td>
<td>-18</td>
<td>0.0011</td>
<td>1.1</td>
</tr>
<tr>
<td>Nerul Bridge</td>
<td>-20</td>
<td>0.0007</td>
<td>0.7</td>
</tr>
<tr>
<td>Vivero pre School (opposite powai lake)</td>
<td>-22</td>
<td>0.0004</td>
<td>0.4</td>
</tr>
<tr>
<td>Rajeev Gandhi nagar</td>
<td>-26</td>
<td>0.00018</td>
<td>0.18</td>
</tr>
<tr>
<td>On road near Evita (Hiranandani Building)</td>
<td>-28</td>
<td>0.00011</td>
<td>0.11</td>
</tr>
<tr>
<td>D-Mart, Hiranandani, Powai</td>
<td>-34</td>
<td>0.000028</td>
<td>0.028</td>
</tr>
<tr>
<td>IIT Bombay School of Management - Entrance</td>
<td>-46</td>
<td>0.0000018</td>
<td>0.0018</td>
</tr>
</tbody>
</table>
Health Concerns with Current Safety Guidelines

Data from Firstenberg 2001. Diagram was prepared by Dr. Magda Havas, Trent University, Canada
Most Common Complaints:

- Sleep disruption
- Headache
- Concentration
- Forgetful memory
- Depression
- Fatigue

- Dizziness
- Palpitations of the Heart
- Visual Disorders
- Cardiovascular Problems
- Buzzing in the Head
- Altered Reflexes

Many of these are related to changes in the electrical activity of the brain.
Neurodegenerative Disorders – Alzheimer, Parkinson's

Immune System Degradation

Tinnitus and Ear Damage

Irreversible Infertility

Effect on Skin

DNA Damage

Increase in Cancer Risk

BIOLOGICAL EFFECTS (contd.)

Breakdown of Blood Brain Barrier

Increased Risk of Eye Cancers

Increased Risk of Ear Tumors

Increased Risk of Other Cancers
Continuous use over a few years leads to 30% sperm decrease in intensive mobile users, in addition to damage of sperms.
Single and double strand breaks observed in DNA from microwave exposure at levels below the current FCC exposure standard. When Damage to DNA > Rate of DNA repaired, there is possibility of retaining mutations and initiating cancer.
Children are more vulnerable:

RF penetration in the skull of an adult (25%), 10 year (50%) and a 5 year old (75%).

**Fetus & Mother** - RF can pass placental barrier & continuously react with the developing embryo and increasing cells leading to miscarriages, deformity to the child, etc.
**BIO-INITIATIVE REPORT 2012**

- Prepared by 29 Researchers from 10 Countries
- Gave references of 1800 research papers
- Bio-initiative Report 2007 gave additional references of 2000 papers
- Strong evidence on health effects
Epidemiological studies - Cell Phone Antennas

Studies in France, Israel, Germany, Spain, the Netherlands, Egypt and Austria - all document adverse health effects below the FCC guideline.
8 times increased cancer risk for exposure > 1000µW / m² = 1 mW / m²

Risk is higher after 6-10 years of exposure

Women living near towers had 10 times increased cancer risk

updated on 11Sep. 2011
New study from Brazil: direct link to 4,924 cancer deaths from cellular antennas radiation

May 17, 2011

Scientists found between 1996 and 2006 died in Belo Horizonte a total of 4924 victims of cancer types that may be caused by electromagnetic radiation, such as tumors in the prostate, breast, lung, kidneys and liver.

80% of victims lived within 500 m’s away from cell phone antennas

10 Housewives in Sher-e-Punjab Colony - Andheri (E), Mumbai have been diagnosed with various forms of cancer

- 6 Breast Cancer cases, 1 Ovarian Cancer, 1 Blood Cancer, 1 Inguinal Lymph Node Cancer, 1 unknown – relapsed after chemotherapy

Increased cancer cases with proximity to Towers

<table>
<thead>
<tr>
<th>Name of deceased</th>
<th>Year of death</th>
<th>Cause of death</th>
<th>Age at time of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radhabai Sathe</td>
<td>2005</td>
<td>Breast cancer</td>
<td>66</td>
</tr>
<tr>
<td>Deshpande</td>
<td>2006</td>
<td>Oesophagus cancer</td>
<td>48</td>
</tr>
<tr>
<td>Shubhangee Deshpande</td>
<td>2007</td>
<td>Rectum cancer</td>
<td>66</td>
</tr>
<tr>
<td>Pujaree</td>
<td>2008</td>
<td>Cancer</td>
<td>46</td>
</tr>
<tr>
<td>Gawai</td>
<td>2008</td>
<td>Breast cancer</td>
<td>52</td>
</tr>
<tr>
<td>Shah</td>
<td>2009</td>
<td>Cancer</td>
<td>48</td>
</tr>
<tr>
<td>Vidyadhar Dev</td>
<td>2009</td>
<td>Liver cancer</td>
<td>52</td>
</tr>
<tr>
<td>Ransube</td>
<td>2009</td>
<td>Throat cancer</td>
<td>73</td>
</tr>
<tr>
<td>Archana Malvadkar</td>
<td>2009</td>
<td>Spinal cord cancer</td>
<td>17</td>
</tr>
</tbody>
</table>
‘Cancerous’ cell phone towers panic Parsi Colony

6 cancer cases in 3 yrs, residents call meet to devise strategy

Ashtosh Shukla @ashtosh66

Rony Kawarana, a resident of Shree Samarth building in Dadar’s Parsi Colony, says that she feels “horrible” when sitting in her room. Operated for a cancerous tumour in her stomach last year, Kawarana and three other people in her building blame cell phone tower radiation for the disease.

Despite minister of state for communications and information and technology, Milind Deora, stating that there is no proof that radiation from cell phone towers is hazardous to health, citizens continue to be apprehensive.

After six cases of cancer were reported in the past three years in the neighbourhood, the residents of the Parsi Colony are agitated. They have put up banners and distributed handbills in the area, inviting people for a meeting on April 28, protesting against the cell phone towers on buildings in the vicinity. Kawarana, who is still undergoing treatment post her surgery last year, says, “I can’t prove it, but people like me – who have suffered from cancer – have a strong suspicion that it is due to the cell phone towers that came up around here a few years ago.”

Aditya Gandhi, whose mother was detected with ovarian cancer in 2010, says, “Our window opens up to cell phone towers which are less than 35 metres away, on the third floor terrace of the adjoining building.”

Some residents have spent large amounts of money putting up radiation films to obstruct the radiation emitted from these towers. Avaana Jasawalla, who lives in Boman Lodge on Dr Ambedkar Road, spent over Rs15 lakh to put up such films two months ago. “I am unable to enjoy the view from my penthouse apartment, only because of the towers that are just 15 metres away,” she says.

Chunabhatti hsg society’s protests fall on deaf ears

Atteq Shalikha @simowntoq

Residents of a housing society in Chunabhatti, Sion, have been protesting against two mobile towers on their building, but their pleas are falling on deaf ears. They claim that their builder has been pocketing the rent paid by the service providers for the towers.

The construction of the building in question, Shree Swami Samarth, started back in 2000, and by 2005, seven floors of the building were ready. Two years later, the builder, Bhandup-based Shree Swami Samarth Developers, instructed two telecom service providers to install towers on the building.

It was only in November 2010 that we managed to form a housing society, but the developer tried stopping us by complaining to the registrar of cooperative housing societies saying that the signatures of two residents had been forged,” says Vignamna Shetty, a resident of the building.

Even applications filed under the Right to Information Act by the residents at the local Brihanmumbai Municipal Corporation office proved futile, with officials saying they were unable to trace the files of their building.

A seventh floor resident, Sarla Gagarkar, says, “The builder is not even doing anything to get the occupation certificate for the building. For over seven years now, we have been requesting him to start the process of getting the mandatory certificate issued, but he doesn’t care.”

Residents claim that the builder earns around Rs8-10 lakh annually as rent from these two cell phone towers.

Justifying their actions, Sandeep Jagtapkar of Shree Swami Samarth Developers says, “Earlier, this building did not have any floor space index, it was below 0.6, but now, we got the Transfer of Development Rights (TDR) at a cost of around 50 lakh, and now, I need to recover my expenses.”
SEVEN cancer cases in C-Scheme – Jaipur City

SIX cancer cases in Shalimar Bagh – Jaipur City

If mobile towers were safe... What is the mystery behind their illness?

Measured levels from 10 to 50 mW/m²
US Air Force RF review in 1988 acknowledges non-thermal biological effects

In the Soviet Union, permissible RF/MW radiation exposure levels for whole-body irradiation are specified for various time intervals. RF/MW radiation exposures may not exceed:

- 0.1 W/m² for 3 hours/day,
- 1 W/m² for 2 hours/day, and
- 10 W/m² for 15-20 minutes provided that safety goggles be worn.
Naval Medical Research Institute – USA Report dated 4th Oct. 1971 acknowledges biological effects and has given 2000+ references. Under categories A to Q, they have given more than 130 types of health hazards.

It includes the effects on whole body, brain, eyes, head, blood, heart, infertility, Altered Sex Ratio of Births (more girls!), Hair Loss, Mutation, and so on...
Effect on Birds and Animals

Have you ever seen any bird near cell towers? May be not, because birds have more volume and less weight, so heating effect is very fast.

**Birds and Bees**

- Interfere with navigation and reproduction

**Animals**

- Dairy cows – Decreased milk production, reproductive and developmental problems and decline in overall health.
- Sheep, dogs, cats, rabbits living near base stations affected.
Effect on Plants

4 Cell Towers near Gurgaon-Delhi Toll Naka

In the nearby Farm House, output of most of fruit bearing trees drastically reduced from 100% to < 5% after 2.5 years of cell tower installation.
Expert Group Reported Impacts of Communication Towers on Wildlife Including Birds and Bees (2011)

Out of 919 research studies collected:
- 593 - report Impact;
- 130 - No Impact;
- 196 - Inconclusive

Fig 2. Proportion of study results in various groups of organisms (n=919). The ‘Impact’ (in red) indicates percentage of studies that reported harmful effect of EMR.
Malignant Brain Tumors vs. Cumulative Use


4000 hours = approx. 1 hour use for 11 years or less than 6 months of 24 hours exposure to 100 mW/m²
Over 25,000 primary brain tumours are diagnosed every year in Andhra Pradesh and Telangana. Of these, about 7 per 1 lakh population are found to be malignant tumors, while about 13 are non-malignant ones.

Dr B.S. Shiva Reddy, neurosurgeon at Mediciti Hospital, said, “There are 120 types of brain and central nervous system tumours. The least aggressive type of tumours grow slowly while the malignant tumours, containing cancer cells, grow rapidly invading other body systems.”

Exposure to ionising radiation from therapeutic and diagnostic medical procedures, atmospheric testing of nuclear weapons, industrial accidents and heavy use of mobile phones also increases the risk of gliomas – a type of brain tumour.

Neurosurgeon Dr Rama Krishna said, “There is too much of a dispute on the claim that the use of mobile phones will cause tumours. But it is clear that excessive usage of mobile phones does lead to frequent headaches in a section of people. Children below 16 years must not be given phones for use as their body systems are still developing and it can cause early damage.”
Scientists Recommend - RF Fields should be classified as “Class 2A” or even “Class 1”

According to Dr. Anthony Miller, who was on the IARC committee, the accumulated evidence is now strong enough to suggest RF fields really should be classified as Class 2A (probable carcinogen).

In Dec. 2013, Hardell group from Sweden showed that the evidence available suggests that RF-EMF exposure from mobile (and cordless) phones should be regarded as Class 1 "human carcinogen".

Alasdair Philips of Powerwatch (U.K.) says, “The criteria on strength, consistency, specificity, temporality, and biologic gradient for evidence of increased risk for glioma and acoustic neuroma were fulfilled.”

In April 2014, it was reported that "Health risk from Wi-Fi devices rising". It stated that “Epidemiological evidence shows that radio frequency should be classified as a known human carcinogen.”
SOLUTIONS TO REDUCE EMF HAZARD

- Convince DOT to reduce the norm immediately to <10mW/m²
- Cellular Operators should reduce transmitted power from 20W/carrier to max. 1 - 2 W in densely populated area.

HOW TO IMPLEMENT?
Remove the power amplifier or reduce gain of amplifier.

ADDITIONAL BENEFITS:

- Cooling of amplifier will not be required: may not need Air conditioner
- Power requirement will reduce: may not need Diesel Generator. Solar panel can meet this requirement
- Operators can claim carbon credit. Leads to Green Telecom

You can see: TRAI-Green-Telecom-Openhouse-GK Report

DISADVANTAGES OF REDUCING POWER:

- Range will reduce
- Install more low power transmitters or low power repeaters
- Which will cost them MORE MONEY!
There is RF radiation from cell phones, cell towers, computers, laptops, AM, FM, and TV towers, leakage from microwave oven, Wi-Fi, Radars, etc., which are additive.

In addition, there is radiation from overhead high voltage transmission lines, which has been classified by WHO as Class 2B (Possible Carcinogen) in 2002.

The awareness must be created among the people. People should unite to convince Govt. of India to adopt stricter radiation norms.