

CENTRAL INFORMATION COMMISSION

(Room No.315, B-Wing, August Kranti Bhawan, Bhikaji Cama Place, New Delhi 110 066)

Prof. M. Sridhar Acharyulu (Madabhushi Sridhar)

Information Commissioner

CIC/SA/A/2014/901119

Suresh Chander Gupta vs. Ministry of Environment & Forests

Important Dates and time taken:

RTI: 28.08.2013	Reply: 11.09.2013	Time: ---
FAA: NIL	FAO: 11.12.2013	Time:
SA: 21.03.2014	Hearing: 06.02.2015	Decision: 20-02-2015
Result: Appeal disposed off		
Observation:		

Parties Present: The appellant is present. The Public Authority is represented by Dr. (Ms)Rubab Jaffer.

Information sought:

1. Appellant through his RTI application had sought for information in relation to World Health Organization (WHO) press release –“ Radiofrequency Electro-Magnetic Fields (EMF) as possible carcinogenic” to humans based on increased risks for glioma, a malignant type brain cancer namely; Is MoEF aware that during May 2011, International Agency for Research on Cancer part of WHO has classified radio frequency electromagnetic carcinogenic to humans based on an increased risk for glioma, a malignant type brain cancer? If yes, has any action be taken in this regard? Has MoEF declared radio frequency electromagnetic fields as a source of Air pollution? If Yes, what action was taken by MoEF to reduce the effects? Has MoEF conducted any study to gather data of Electro

Magnetic Fields to measure the harmful biological effects of EMF on human beings from cell phones installed in the residential areas or near schools? etc

CPIO reply:

2. PIO stated that the information sought by the appellant did not fall into the ambit of Sec 2 (f) of the RTI Act. He further clarified that the Ministry had not undertaken or sponsored any study to gather data to measure the alleged harmful biological effects of EMF on human beings from Cell phone tower.

Ground for First Appeal :

3. That the information provided by the PIO with respect to Point No. 1 is misleading and on other points no information has been provided.

First Appellate Authority(FAA) :

4. FAA during the hearing informed the appellant that the Ministry had not undertaken or sponsored any study to gather data to measure the alleged harmful biological effects of EMF on human beings from Cell phone tower. The Ministry had constituted an Expert Group to study the possible impacts of communication towers on wildlife including the birds and bees (Link provided). FAA further stated that the appellant had requested the Ministry to contact the CPIO, DoT & I.T as the subject matter concerning the cell phone tower was being dealt by them, the MoEF has not issued any standards with respect to EMF. The ministry has issued an advisory regarding use of cell phone towers to minimize their impact on birds and bees. The advisory had been circulated by the Ministry of the concerned organizations including the Forest and wildlife departments of the State

Governments and local bodies, Ministry of Panchayati Raj and the department of telecommunications, for their information and requisite action.

Ground For Second Appeal:

5. That the advisor and the FAA have only provided some advisory information regarding the possible impacts on wildlife including bird and bees and some advisory issued to minimize the impact on wildlife. But there was no information as to the harmful effects on human beings. However, information on Point NO. 1,2 & 5 had not been provided to the appellant.

Proceedings Before the Commission:

6. Both the parties made their submissions. The appellant submitted that the government is bothered only about the adverse effect EMF radiation on birds but ignoring its serious impact on human beings.
7. Appellant explained that the EMF has harmful effects on patients especially those with pacemakers as it would alter the pace of the pacemaker. The effects of EMF are further harmful in pregnant ladies and children whose growth could be affected and lead to other health complications. As the school/hospital/ residential areas will suffer the most there should be prohibition on installation of mobile towers in those areas, the appellant sought.
8. The appellant prayed that EMF should be declared as air pollutant and that necessary steps should be taken to avoid their installation in the residential/hospital areas. He further stated that Ministry of Health and Social Welfare have given in their reply that they were also **not aware of the study.**
9. Respondent authority submitted that there has been **no study on the effect of EMF on the human beings** and that they have furnished the information of the study which was available with them. Although, the respondent submitted that an Inter-Ministerial Group

had been constituted for studying the effect of it on human beings. She further stated that they had contacted the Central Pollution Board, who also stated the same while replying that **EMF radiation does not come under the category of air pollution.**

10. Commission surprised that the respondent authority knew that report was submitted by the Inter-Ministerial Group, but officers neither cared to submit the copy of the report nor read it. The Commission could trace the report from the websites of Department of Telecommunications and DDA. (Annexure)
11. The Report, in fact, highlighted the adverse effects of the EMF on human beings and made a very specific recommendation not to permit cell towers near schools, residential colonies and hospitals. It is astonishing and pathetic that the Ministry of Environment and Forests is inclined to discuss whether this falls under the definition of 'air pollution' or not. It has not only ignored the WHO report cautioning the ill-effects on humans but did not care the report of its own Government Inter-Ministerial committee on EMF Radiation. The Commission would like to bring it to the notice of the ministry the following aspects of the report, because it did not see the report.
12. The Ministry of Information Technology & Communications, and Departments of Telecommunication constituted an Inter Ministerial Committee on EMF radiation headed by Mr. Ram Kumar, Advisor (Technology), (DoT, Chairman) with Member Secretary, P.K. Panigrahi, Sr. DDG (BW), DoT consisting of Members: Dr. R S Sharma, Scientist, ICMR, Arvind Duggal Advisor, Deptt. Of Bio-Technology, R N Jindal, Scientist 'E' MOEF, U K Srivastava, DDG (R), TEC, T K Vardakrishnan, Jt. WA, WPC, DoT, G P Srivastava, DDG(CS), DoT. It has submitted Report after 2010 (Date was not visible anywhere in the Report), with following observations:

Studies have shown that human beings are bio electrical systems. The heart and the brain are regulated by internal bioelectrical signals. Environmental exposures to EMF can interact with fundamental biological processes in the human body and in some cases this may cause discomfort as reported in literature.

2.2 In a human body due to the proximity of a mobile phone to the head, the head is the targeted recipient of the electro-magnetic energy from many wireless systems whose impulses are transmitted to other organs and parts. A high frequency signal modulated at certain low frequency or a signal i.e. pulsed may have harmful effects than an un-modulated study carrier, as reported in literature.

2.3 Modulation signals are one important component in the delivery of EMF signals to which cells, tissues, organs and individuals can respond biologically. Modulating signals have a specific beat defined by how the signal varies periodically over time. Modulation signals may interfere with normal, nonlinear biological functions, as reported.

2.4 There have been growing public concern of possible adverse health effects due to EMF Radiation. The area of concern is the radiation emitted by the fixed infrastructure used in mobile telephony such as base stations and their antennas, which provide the link to and from mobile phones. This is because, in contrast to mobile handsets, it is emitted continuously and is more powerful at close quarters. The field intensities drop rapidly with distance away from the base of the antenna because of the attenuation of power with the square of distance. Following the enormous increase in the use of wireless telephony, mobile phone radiation and health concerns are being raised from time to time.

In the case of a person using a cell phone, most of the heating effect occurs at the surface of the head, causing its temperature to increase by a fraction of a degree. The brain blood circulation is capable of disposing the excess heat by increasing the local blood flow. However, the cornea of the eye does not have this temperature regulation mechanism. The Thermal effect leads to increase in body temperature.

People who are chronically exposed to low level wireless antenna emissions and users of mobile handsets have reported feeling several unspecific symptoms during and after its use, ranging from burning and tingling sensation in the skin of the head, fatigue, sleep disturbance, dizziness, lack of concentration, ringing in the ears, reaction time, loss of memory, headache, disturbance in digestive system and heart palpitation etc. There are reports indicating adverse health effects of cell phones which emit electro-magnetic radiation, with a maximum value of 50% of their energy being deposited when held close to the head.

2.6 The effects of long term exposure to wireless technology including emissions from cell phones and whole body exposure to RF transmission from cell tower antenna is simply not known yet with certainty. Scientific studies as yet have not been able to confirm a cause-and-effect relationship. The research has not so far separated these symptoms from electromagnetic radiation hence all the above symptoms can also be attributed to stress.

2.7 Member Scientist, ICMR has indicated that the hot tropical climate of the country, low body mass index (BMI), low fat content of an average Indian as compared to European countries and high environmental

concentration of radio frequency radiation may place Indians under risk of radio frequency radiation adverse effect.

13. The Inter-Ministerial Group made several recommendations and suggestions, some of them are:

5.6 The hot tropical climate of the country, low body mass index (BMI), low fat content of an average Indian as compared to European countries

and high environmental concentration of radio frequency radiation may place Indians under high risk of radio frequency radiation adverse effect and the level of susceptibility of an average Indian may be different. Hence revision of radiation norms may be considered for adoption in India keeping in view the possible health concern.

5.7 The field measurement under taken by the Cellular Operator Association of India in Metro cities like Delhi, Chennai and Mumbai have shown that the measured values are hundreds of time lower than that of the prescribe reference level. It is important that safety standards be rational and avoid excessive safety margins. To establish rational standards that will make future safer, the RF exposure limits in India may be lowered to 1/10th of the existing reference level.

5.8 There is a need to evolve the alternative means to deploy mobile telecom network based on best International practices. Low power cellular base station would require much smaller exclusion zone than existing cells and Use of such transmitters inside cities will decrease the amount of radiated power.

6.11 Awareness of exposure can be accomplished by the use of warning levels or by education through appropriate means. The mobile handset booklet should contain the following for safe use :

- a. Use a wireless hands-free system (headphone, headset) with a low power Bluetooth emitter to reduce radiation to the head.
- b. When buying a cell phone, make sure it has a low SAR.
- c. Either keep your calls short or send a text message (SMS) instead. This advice applies especially to children and adolescents.
- d. Whenever possible, only use your cell phone when the signal quality is good.
- e. People having active medical implants should keep their cell phone at least 30 cm away from the implant at times.
- f. Using a mobile phone in a open area, not inside a vehicle so that the phone receives a good signal and transmits at lower level.
- g. Not using a mobile phone when a normal wired phone is available.

6.12 The SAR value information should be made available on the government website and the concerned regulatory agency with the list of SAR values of different mobile handsets.

Build Confidence

There is a growing public concern of adverse effect of EMF radiation on health. Certain measures may have to be initiated for building confidence of general public as underlined below :

- a. To provide static continuous testing / measuring centers for online monitoring of radiation level on 24X7 basis at prominent places in metro / cities and the data sent to the central server for further processing as is being done by the Ministry of Environment and Forest through Central pollution Control Board in case of Pollution level measurement i.e. noise and air quality to enhance the confidence of general public.
- b. Apart from self certification for compliance of radiation norms on EMF exposure by the mobile service providers they may be asked to measure the radiation level of certain prominent places and display it for information of the general public.
- c. The service providers should also have mobile unit for its measurement wherever necessary.
- d. Creation of national data base with the information of all the base station, their emission levels and display on public domain for public information.
- e. The information of the SAR value for mobile phone should be readily available to consumer at the point of sale.
- f. The Information should be made available on Government website with list of SAR values of different mobile phones.
- g. Use of low power transmitters inside cities decrease the amount of radiated power hence Use of low power transmitter with in-building solutions as provided in western countries may be considered in place of present trend of using high powered transmitters over high rise towers,
- h. Public education programme needs to be undertaken.

7.1 Steps may be taken to conduct the long term scientific research related to health aspect of EMF radiation exposure and associated technologies in the following areas :

- Health effect of RF exposure in children.
- Health effect of RF exposure in Foetus, mothers and elderly person.
- Combined electromagnetic field radiation effect exposure from multiple antennas of a shared infrastructure sites

7.2 Due to the wide spread use and economic importance of wireless communication system in modern civilization, there is increase in popularity of such wireless communication measures mentioned in earlier paras in general public, it is recommended for minimization of cell phone uses, limitation of use by children, adoption of cell phone and micro cell with ALARA (as low as reasonably achievable) levels of radiation, use of hands free and ear phone technologies such as blue tooth handsets, adoption of maximal standards of exposure, RF field intensity and distance of base stations antennas from human habitation and so forth.

7.3 Many countries have adopted the best practice in form of a document created by the ministry used for education of customers, duly highlighting the domain of radio wave protection. Department of Telecom may create a document "Radio waves and safety in our daily life" indicating various Dos and Don'ts related to mobile users clarifying various myths regarding deployment and use of radio waves and mandate each operator to print and issue the same to their customer at the point of sale for enhanced customer awareness. This will help in facilitating the right inputs and creating an environment where everyone can use the radio waves safely.

Mobile Handsets : -

1. Adoption of SAR level for mobile handsets limited to 1.6 Watt/Kg, averaged over a 6 minutes period and taken over a volume containing a mass of 1 gram of human tissue as per the FCC norms of United States.
2. SAR value information is to be embossed and displayed in the handset.
3. Information on SAR values for mobile handsets should be readily available to the consumer at the point of sale so that one can make sure of the SAR value of the handset while buying a cell phone.
4. Government may consider amendments in the **Indian Telegraph Act, 1885 & rules notified there under** and necessary legislations if any so that only mobile handset satisfying radiation standards should be permitted for import / manufacture or sold in the country.
5. Mobile hand set manufactured and sold in India or Imported from other countries should be checked for compliance of SAR limit and no hand sets of SAR value above the prescribed standard adopted in India should be manufactured or sold in the country.
6. SAR data information of the mobile handsets should be available on the manufacturer's web site and in the manufacturer's handset's manual.
7. To bring awareness, the manufacturer's mobile handset booklet should contain the following for safe use :
 - a. Use a wireless hands-free system (headphone, headset) with a low power Bluetooth emitter to reduce radiation to the head.
 - b. When buying a cell phone, make sure it has a low SAR.
 - c. Either keep your calls short or send a text message (SMS) instead. This advice applies especially to children, adolescents and pregnant women.
 - d. Whenever possible, use cell phone when the signal quality is good.
 - e. People having active medical implants should keep their cell phone at least 30 cm away from the implant.
8. The Information is made available on Government website with list of SAR values of different mobile phones.

Mobile Base Stations : -

9. The RF exposure limits in India may be lowered to 1/10th of the existing level keeping in view the data submitted by COAI/ AUSPI during presentation made to the committee and trend adopted by other developed countries.
10. To provide static continuous testing / measuring centers for online monitoring of radiation level at prominent places in metro/cities and the data to be sent to the central server for information.
11. *Apart from self certification for compliance of radiation norms on EMF exposure as is presently being done, the mobile service providers should also measure the radiation level of certain prominent places and display it for information of the general public. They should also have mobile unit for its measurement wherever necessary.*

12. DOT should create a national data base with the information of all the base station, their emission levels and display on public domain for public information.

13. Impose restrictions on installation of mobile towers near high density residential areas, schools, playgrounds and hospitals.

14. For the future expansion of telecom network in the country **use low power micro cell transmitters with in-building solutions in place of the present trend of using high power transmission over mobile towers / high rise buildings.**

15. To conduct the long term scientific research related to health aspect of EMF radiation exposure and associated technologies in India in the following areas :

- Health effect of RF exposure in children.
- Health effect of RF exposure in Foetus, mothers and elderly persons.
- Combined electromagnetic field radiation effect exposure from multiple antennas of a shared infrastructure sites

16. It is recommended for use of hands free and ear phone technologies such as blue tooth handsets and ear phone so as to minimize the contact of head with cell phone.

17. Department of Telecom may create a document “**Radio waves and safety in our daily life**” indicating **various Dos and Don'ts** related to mobile users clarifying various myths regarding deployment and use of radio waves and mandate each operator to print and issue the same to their customer at the point of sale for enhanced customer awareness. This will help in facilitating the right inputs and creating an environment where everyone can use the radio waves safely.

14. The Commission would also like to draw the attention of the respondent to the report of WHO/International Agency for Research on Cancer (IARC) who have classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), based on an increased risk for glioma, a malignant type of brain cancer¹, associated with wireless phone use.

The IARC Monograph Working Group discussed the possibility that these exposures might induce long-term health effects, in particular an increased risk for cancer. This has relevance for public health, particularly for users of mobile phones, as the number of users is large and growing, particularly among young adults and children.

The IARC Monograph Working Group discussed and evaluated the available literature on the following exposure categories involving radiofrequency electromagnetic fields:

- **Occupational exposures to radar and to microwaves;**

- **Environmental exposures associated with transmission of signals for radio, television and wireless telecommunication; and**
- **Personal exposures associated with the use of wireless telephones**

Results-

The evidence was reviewed critically, and overall evaluated as being limited² among users of wireless telephones for glioma and acoustic neuroma, and inadequate³ to draw conclusions for other types of cancers. The evidence from the occupational and environmental exposures mentioned above was similarly judged inadequate. The Working Group did not quantitate the risk; however, one study of past cell phone use (up to the year 2004), showed a 40% increased risk for gliomas in the highest category of heavy users (reported average: 30 minutes per day over a 10-year period).

Conclusions –

Dr Jonathan Samet (University of Southern California, USA), overall Chairman of the Working Group, indicated that "the evidence, while still accumulating, is strong enough to support a conclusion and the 2B classification [Possibly carcinogenic to humans (<http://monographs.iarc.fr/ENG/Classification/index.php>)]. The conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk." (For detailed report about impact of cell phones on human beings, see the annexure to this order)

15. To our surprise, one officer of Commission brought to our notice the public notification published by DDA regarding installation of mobile towers on DDA lands, which referred to representations of people on harmful effect of radiation from mobile towers and said:

Radio Frequency (RF) exposures from Mobile Base Stations are much less than from radio, FM Radio and television transmissions and its far too low to produce health hazards. ...From all evidence accumulated so far, there are no adverse short or long term health effects. No restriction has been imposed on installation of tower on specific buildings such as schools/hospitals/play grounds etc.

16. The DDA also claimed that a comprehensive report regarding EMF radiation on health, EMF safe exposure limit, court case of the issue, EMF safe exposure limit from Mobile Towers adopted in India is available on the website of DDA 'www.dda.org.in' and

also on the website of DoT.
(http://dda.org.in/tendernotices_docs/feb15/947_DDA_English_Col_12x14cm_12.02.2015.pdf)

17. The Commission found that the answer of the CPIO in response to this RTI request is **false and misleading. They said a) there is no study, but there is study, b) there is no adverse impact on human beings, but the report confirmed adverse impact of EMF, c) were not aware of, but they knew or presumed to have known the contents of both reports by WHO and Inter-Ministerial Group, as those reports were placed on their official website.**
18. On the same grounds the Commission found the notification of DDA contains false information.
19. Hence, the Commission directs the CPIO of Ministry of Environment and Forests to show cause why maximum penalty cannot be imposed for false and misleading information on such a vital issue of public importance, within 21 days from the date of receipt of this order.
20. The Commission directs the CPIO of MoEF to perform their obligation under Section 4(1)(c) and 4(1)(d) of RTI Act, 2005, within 21 days from the date of receipt of this order.
- a) to furnish the reasons for formulating the policy of not imposing any restrictions and instead permitting the DDA to go ahead with unrestricted installation of Mobile Towers in the lands of DDA, in spite of recommendations against; and
- b) to furnish whether they declared EMF as no air pollutant, if not, the reasons for not considering the EMF as air pollutant.

c) to furnish the policy including response of the MoEF with reference to recommendations of WHO and Inter-Ministerial Group.

21. The Commission directs the CPIO of DDA

a) to explain why they ignored Report of WHO and Recommendations of Inter-Ministerial Group and

b) why openly propagating false information that there are no adverse effects of EMF on the human beings and auctioning sites for installation of Mobile Towers, within 21 days from the date of receipt of this order.

22. The Commission recommends the Chief Ministers Office and office of Lieutenant Governor to probe into the reasons for ignoring these vital reports and their recommendations about the adverse effects of EMF from Mobile Towers and also to inform the people as to what measures they would initiate in response to the recommendations of the Inter Ministerial Group or if they have rejected the recommendation, the reasons and grounds for the same, within one month from the date of receipt of this order.

23. The second appeal is **disposed** off with above observations and case is posted for compliance, explanation and penal proceedings on 25th March 2015.

(M.Sridhar Acharyulu)
Information Commissioner

Authenticated true copy

(Babu Lal)
Deputy Registrar

Electromagnetic fields and public health: mobile phones

Fact sheet N°193

Reviewed October 2014

Key facts

- **Mobile phone use is ubiquitous with an estimated 6.9 billion subscriptions globally.**
- **The electromagnetic fields produced by mobile phones are classified by the International Agency for Research on Cancer as possibly carcinogenic to humans.**
- **Studies are ongoing to more fully assess potential long-term effects of mobile phone use.**
- **WHO will conduct a formal risk assessment of all studied health outcomes from radiofrequency fields exposure by 2016.**

Mobile or cellular phones are now an integral part of modern telecommunications. In many countries, over half the population use mobile phones and the market is growing rapidly. In 2014, there is an estimated 6.9 billion subscriptions globally. In some parts of the world, mobile phones are the most reliable or the only phones available. Given the large number of mobile phone users, it is important to investigate, understand and monitor any potential public health impact. Mobile phones communicate by transmitting radio waves through a network of fixed antennas called base stations. Radiofrequency waves are electromagnetic fields, and unlike ionizing radiation such as X-rays or gamma rays, can neither break chemical bonds nor cause ionization in the human body.

Exposure levels

Mobile phones are low-powered radiofrequency transmitters, operating at frequencies between 450 and 2700 MHz with peak powers in the range of 0.1 to 2 watts. The handset only transmits power when it is turned on. The power (and hence the radiofrequency exposure to a user) falls off rapidly with increasing distance from the handset. A person using a mobile phone 30–40 cm away from their body – for example when text messaging, accessing the Internet, or using a “hands free” device – will therefore have a much lower exposure to radiofrequency fields than someone holding the handset against their head.

In addition to using “hands-free” devices, which keep mobile phones away from the head and body during phone calls, exposure is also reduced by limiting the number and length of calls. Using the phone in areas of good

reception also decreases exposure as it allows the phone to transmit at reduced power. The use of commercial devices for reducing radiofrequency field exposure has not been shown to be effective.

Mobile phones are often prohibited in hospitals and on airplanes, as the radiofrequency signals may interfere with certain electro-medical devices and navigation systems.

Are there any health effects?

A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phone use.

Short-term effects

Tissue heating is the principal mechanism of interaction between radiofrequency energy and the human body. At the frequencies used by mobile phones, most of the energy is absorbed by the skin and other superficial tissues, resulting in negligible temperature rise in the brain or any other organs of the body.

A number of studies have investigated the effects of radiofrequency fields on brain electrical activity, cognitive function, sleep, heart rate and blood pressure in volunteers. To date, research does not suggest any consistent evidence of adverse health effects from exposure to radiofrequency fields at levels below those that cause tissue heating. Further, research has not been able to provide support for a causal relationship between exposure to electromagnetic fields and self-reported symptoms, or "electromagnetic hypersensitivity".

Long-term effects

Epidemiological research examining potential long-term risks from radiofrequency exposure has mostly looked for an association between brain tumours and mobile phone use. However, because many cancers are not detectable until many years after the interactions that led to the tumour, and since mobile phones were not widely used until the early 1990s, epidemiological studies at present can only assess those cancers that become evident within shorter time periods. However, results of animal studies consistently show no increased cancer risk for long-term exposure to radiofrequency fields.

Several large multinational epidemiological studies have been completed or are ongoing, including case-control studies and prospective cohort studies examining a number of health endpoints in adults. The largest retrospective case-control study to date on adults, Interphone, coordinated by the International Agency for Research on Cancer (IARC), was designed to determine whether there are links between use of mobile phones and head and neck cancers in adults.

The international pooled analysis of data gathered from 13 participating countries found no increased risk of glioma or meningioma with mobile phone use of more than 10 years. There are some indications of an increased risk

of glioma for those who reported the highest 10% of cumulative hours of cell phone use, although there was no consistent trend of increasing risk with greater duration of use. The researchers concluded that biases and errors limit the strength of these conclusions and prevent a causal interpretation.

Based largely on these data, IARC has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), a category used when a causal association is considered credible, but when chance, bias or confounding cannot be ruled out with reasonable confidence. While an increased risk of brain tumors is not established, the increasing use of mobile phones and the lack of data for mobile phone use over time periods longer than 15 years warrant further research of mobile phone use and brain cancer risk. In particular, with the recent popularity of mobile phone use among younger people, and therefore a potentially longer lifetime of exposure, WHO has promoted further research on this group. Several studies investigating potential health effects in children and adolescents are underway.

Exposure limit guidelines

Radiofrequency exposure limits for mobile phone users are given in terms of Specific Absorption Rate (SAR) – the rate of radiofrequency energy absorption per unit mass of the body. Currently, two international bodies¹ ² have developed exposure guidelines for workers and for the general public, except patients undergoing medical diagnosis or treatment. These guidelines are based on a detailed assessment of the available scientific evidence.

WHO'S response

In response to public and governmental concern, WHO established the International Electromagnetic Fields (EMF) Project in 1996 to assess the scientific evidence of possible adverse health effects from electromagnetic fields. WHO will conduct a formal risk assessment of all studied health outcomes from radiofrequency fields exposure by 2016. In addition, and as noted above, the International Agency for Research on Cancer (IARC), a WHO specialized agency, has reviewed the carcinogenic potential of radiofrequency fields, as from mobile phones in May 2011.

WHO also identifies and promotes research priorities for radiofrequency fields and health to fill gaps in knowledge through its research agendas.

WHO develops public information materials and promotes dialogue among scientists, governments, industry and the public to raise the level of understanding about potential adverse health risks of mobile phones. <http://www.who.int/mediacentre/factsheets/fs193/en/> accessed by IC(SA) at 13.20 on 20.2.2015.

¹ International Commission on Non-Ionizing Radiation Protection (ICNIRP). *Statement on the "Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz)", 2009.*

² Institute of Electrical and Electronics Engineers (IEEE). *IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz, IEEE Std C95.1, 2005.*

1. The CPIO under the RTI Act Government of India

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