

Sample of Statements from Official Bodies Regarding the Potential Health Risks of EMFs (Including Observations & Opinions) + Court Cases

1. European Parliament (EP) Resolution of 2 April 2009

[European Parliament resolution of 2 April 2009 on health concerns associated with electromagnetic fields](#)

contains many important **statements** and **recommendations** regarding EMFs, some of which are summarised as follows:

Taking into consideration the fact that:

- B. **wireless technology** (mobile phones, Wi-Fi/WiMAX, Bluetooth, DECT landline telephones) **emits EMFs that may have adverse effects on human health**
- C. ... young people aged from 10 to 20, use a mobile phone and there are continuing uncertainties about the possible health risks, particularly to young people whose brains are still developing
- D. the dispute within the scientific community regarding the potential health risks arising from EMFs has intensified since 1999, when exposure limits for fields in the **0 Hz to 300 GHz** range were laid down
- E. the fact that the scientific community has reached no definite conclusions has not prevented **China, Switzerland, and Russia, as well as at least nine EU Member States, from setting lower exposure limits** than those advocated by the Commission
- H. there is general agreement that reactions to microwave exposure vary from one person to another; **there is a need, as a matter of priority, to conduct exposure tests under actual conditions in order to assess the non-thermal (biological) effects associated with radio-frequency (RF) fields, and the fact that children exposed to EMFs are especially vulnerable**
- I. the EU has laid down **exposure limits to protect workers** from the effects of EMFs; on the basis of the precautionary principle **such measures should also be taken for residents and consumers**
- K. it is necessary to continue investigations into **intermediate** and **very low frequencies** so that conclusions can be drawn as to their effects on health
- 1. Urges the Commission to review the scientific basis and adequacy of the EMF limits as laid down in Recommendation 1999/519/EC...
- 2. Calls for particular consideration of **biological effects** when assessing the potential health impact of electromagnetic radiation... (i.e. not just **heating** effects which were the only basis of the existing limits)
- 9. Calls on the Member States to make available to the public, via the internet and media, maps showing exposure to high-voltage power lines, radio frequencies and microwaves, and especially those generated by telecommunications masts, radio repeaters and telephone antennas.
- 28. Calls on Member States to follow the example of Sweden and **to recognise persons that suffer from Electrohypersensitivity as being disabled** so as to grant them **adequate protection** as well as **equal opportunities**;

2. Parliamentary Assembly of the Council of Europe (PACE) Resolution 1815 (2011)

At its meeting in Kiel, the Parliamentary Assembly of the Council of Europe adopted [Parliamentary Assembly of the Council of Europe \(PACE\) Resolution 1815 \(2011\) - The potential dangers of electromagnetic fields and their effect on the environment](#) in which it considered that there was sufficient proof of the potentially harmful effects of electromagnetic fields (EMF) on the environment and human health. In this document, the Council proposed that its member states take measures concerning the use of mobile phones and Wi-Fi networks and [specifically asked for a ban on such devices in schools](#).

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The Resolution includes these **statements / recommendations**:

4. ... extremely low frequencies, power lines or certain high frequency waves used in the fields of radar, telecommunications and mobile telephony, **appear to have more or less potentially harmful, non-thermal, biological effects on** plants, insects and animals as well as **the human body, even when exposed to levels that are below the official threshold values**
5. As regards standards or threshold values for emissions of **electromagnetic fields of all types and frequencies**, the Assembly strongly recommends that the ALARA (as low as reasonably achievable) principle is applied, covering both the so-called 'thermal' effects and the **biological effects of electromagnetic emissions or radiation.....**
- 8.1.1. take all reasonable measures to reduce exposure to electromagnetic fields, especially to radio frequencies from mobile phones, and particularly the exposure to children and young people who seem to be most at risk from head tumours;
- 8.1.2. **reconsider** the scientific basis for the **present standards** on exposure to electromagnetic fields set by the International Commission on Non-Ionising Radiation Protection, **which have serious limitations**, and apply ALARA principles, covering both thermal effects and the athermic or biological effects of electromagnetic emissions or radiation;
- 8.1.4. pay particular attention to "electrosensitive" people who suffer from a syndrome of intolerance to electromagnetic fields and introduce special measures to protect them, including the **creation of wave-free areas not covered by the wireless network**;
- 8.2.4. raise awareness on **potential health risks of DECT wireless telephones, baby monitors and other domestic appliances** which emit continuous pulse waves, if all electrical equipment is left permanently on standby, and **recommend the use of wired, fixed telephones at home** or, failing that, models which do not permanently emit pulse waves;
- 8.3. concerning the protection of children:
 - 8.3.1. develop within different ministries (education, environment and health) targeted information campaigns aimed at teachers, parents and children to alert them to the specific risks of early, ill-considered and prolonged use of mobiles and other devices emitting microwaves;
 - 8.3.2. for children ... particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by schoolchildren on school premises;

3. WHO / International Agency for Research on Cancer (IARC)

In May 2011 the WHO / International Agency for Research on Cancer (IARC) reviewed all the evidence on radiofrequency electromagnetic fields, including **wireless** phones (mobiles and cordless) and upgraded the classification to **Group 2B Possibly carcinogenic to humans** – they said it is important to conduct additional research **and to take pragmatic precautions to reduce exposure**. The [IARC Press Release 208](#) announcing this change of classification also states "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)" – which shows just how out-of-date this view is both in respect of the particular study cited being only up to **2004** (different technology then) **and** the fact that a '**heavy user**' is defined as someone using a mobile phone for **only 30 minutes a day!**

In light of more recent research many experts are now calling for the WHO to upgrade the classification to **Group 2A Probably carcinogenic to humans**, while some say there is already sufficient evidence to make it **Group 1 Carcinogenic to humans**.

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The IARC is **only** concerned with the **cancer risk NOT** any possible harmful effects of disruption to the body's electrical systems and biological processes now commonly referred to as '**non-thermal or biological effects**'.

4. ICNIRP International Safety Limits are flawed and unreliable

[International Commission on Non-Ionising Radiation Protection \(ICNIRP\) RF EMF Guidelines 2020](#)

Around 1998 when the WHO / ANICR safety standards were first set (based on an invalidated hypothesis used by Schwan in 1953) they considered that the **only** cause of concern is the **heat** produced by the phone radiation and tests were based on a measure called the Specific Absorption Rate (SAR). Adverse **non-thermal** RFR effects have been known since 1893 and although **ICNIRP**, who set the safety limits, and the **World Health Organisation (WHO)** **both now acknowledge** that EMFs have detrimental effects on cells, tissues and nerves within the body they still **assert that no harm is caused at levels below the international safety limits**. The 'safety' limits are deeply flawed as the original ICNIRP tests in 1998, and the review leading to the new 2020 guidelines did not take account of the following facts which has led to **demands for a complete re-evaluation**:

- The limits were set at a level which would prevent body tissue from being damaged by the **heating effect** (only) of the microwaves **during just a 6 minute call**, whereas nowadays many people make calls or use the phone for other purposes for much longer than 6 mins
- The tests used a simulated head of a very large, 220lb male military recruit which ignored the fact that most of us have smaller heads which will heat-up more quickly (especially children)
- SAR is not an adequate approach to predict many important biological effects in studies that report increased risks for cancer, neurological diseases, impairments to immune function, fertility and reproduction, and neurological function (cognition, behaviour, performance, mood status, disruption of sleep, increased risk for auto collisions, etc.)
- SAR fails to adequately address known effects from modulation of the signal
- SAR values are not valid for organic matter as cell material conductivity is assumed to be constant when it is highly variable throughout even one cell let alone across multiple cells / structures
- the tests used simulated signals with constant regular pulses which are not at all analogous to real life waveforms (the variability of the pulses is the critical, damaging factor as the body cannot adapt to / tolerate constantly changing disruptions)
- studies with Real Exposures were not taken into account due to "unreliable dosimetry" as signal levels can't be accurately measured in the '[near field](#)'
- The tests were conducted **without** Wi-Fi or Bluetooth transmitting at the same time as the call, as these were not a common feature at the time of the original ICNIRP tests (1998)
- Even though nowadays Wi-Fi and Bluetooth are common features, their **default setting is ON** (i.e., **transmitting continuously**, whether being used or not), and they often **radiate much higher power levels than the phone call itself**, these factors were **not taken into account** in the review leading to the new 2020 guidelines
- The tests were **not repeated** as part of the review leading to the new 2020 guidelines, despite the above factors and other technology changes since the original ICNIRP tests (1998)
- All the evidence of harm from **non-thermal effects** (i.e. the disruption of the body's electrical potentials and signals) that was submitted was totally disregarded as not being relevant without any detailed evaluation at the time of setting the original limits, and was discounted as 'unproven' at the 2018 review. (See also Section 4 – Legal Challenges & Appeals)

[Aspects on the International Commission on Non-Ionizing Radiation Protection \(ICNIRP\) 2020 Guidelines on Radiofrequency Radiation](#) gives a detailed account of all the **conflicts of interest** within ICNIRP and **biased / flawed** studies which have been used to set the current **totally unfounded** international safety limits – backed-up by a multitude of specific, fully traceable and verifiable references to the sources of information.

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See also (page 6) of the open letter from Dr Andrew Tressider "[Electrosensitivity – an Environmental illness, an Authentic Diagnosis, not a Delusional Disorder](#)" which further explains why the limits set by the ICNIRP are **fundamentally flawed**.

Whereas, in contrast, [PACE Resolution 1815 \(2011\)](#) acknowledges that EMFS can cause "**potentially harmful, non-thermal, biological effects on plants, insects and animals as well as the human body, even when exposed to levels that are below the official threshold values**"

The internationally adopted ICNIRP safety limits for Radio Frequency Radiation (RFR) which are way, way above the limits set by many other countries e.g., between **25,000** $\mu\text{W}/\text{m}^2$ (Poland) - **450,000** $\mu\text{W}/\text{m}^2$ (India) versus the UK & ICNIRP limits of **4,500,000** $\mu\text{W}/\text{m}^2$ @ 900MHz and **9,200,000** $\mu\text{W}/\text{m}^2$ @ 1.8GHz - see [Radio Frequency Radiation Safety Limits](#)

ELF Magnetic Fields Safety Limits:

- the globally recognized TCO Standard for low-emission computer monitors is **200 nT**
- international studies warn of problems with Alzheimer's, brain tumours and cancer above **200 nT**
- WHO declares **300 to 400 nT** as a "possible cancer risk to humans"

But despite all the above the official, legally binding **international exposure limit is 100,000 nT** which is **333 times greater** than the **WHO lower threshold for cancer risk!**

The fact that EMFs have the potential to cause harm is **no longer disputed**, the **ONLY** arguments now are the **types of harm** they can cause and **the level** of EMFs at **which harm occurs**. Both **researchers** and **PACE** say that **EMFs cause harm at levels well below the current safety standards**, and many government bodies and regulatory authorities now say that **more research is needed** to provide the evidence required to determine if any changes to the limits are necessary, and what they should be. However there is no evidence that the research that they are calling for has been initiated or that anyone has made provision to fund it.

5. Omissions and Flaws in World Health Organisation (WHO) Advice on EMFs

The WHO web page [Radiation: Electromagnetic fields](#) has **not been updated since August 2016** and there have been very significant changes in the technology, its deployment and usage since then.

There are fundamental flaws in the views expressed in the texts under each of these headings as follows:

SEE TOPIC HEADING: "**What happens when you are exposed to electromagnetic fields?**"

It is noteworthy in this section that although they acknowledge that biological effects **are** caused by exposure to low-frequency EMFs and are not **necessarily** harmful, they assert that **only the heating effects** are harmful but this is prevented by the current safety limits. Although they do conclude with "**The heating effect of radio waves forms the underlying basis for current guidelines. Scientists are also investigating the possibility that effects below the threshold level for body heating occur as a result of long-term exposure.**" To date (2016) no adverse health effects from low level, long-term exposure to radiofrequency or power frequency fields have been **confirmed, but scientists are actively continuing to research this area.**" **There is a wealth of evidence now...**

The guidelines they reference are based on a study which was carried out in **1996** and technology has changed a lot since then – Wi-Fi only started to appear in 1997 and Bluetooth in 1999, also mobile phones have become far more advanced, more widely used and for much longer periods, and transmit Wi-Fi and Bluetooth continuously as the default, even when they are not being used.

The study did not take into account the additional microwave output from DECT Cordless phones and since it was conducted not only has there been the widespread introduction of Wi-Fi and Bluetooth but there has also been a proliferation of public Wi-Fi hotspots. Additionally DECT Cordless phones and Wi-Fi signal output power is much, much higher than from mobile phone call signals. All of these facts together with the latest home hubs having a range of 100m mean there is now the possibility that many homes and workplaces can be affected by as many as 40-120 sources simultaneously, so many people are subjected to much higher

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levels of exposure for much longer periods than was ever considered to be likely at the time of the study, therefore the relevance of that study's conclusions in today's environment is highly questionable.

SEE TOPIC HEADING: **Biological effects or health effects? What is a health hazard?**

The WHO International EMF Project (1996 to 2016) referred to in this section included a review of 25,000 scientific articles from the previous 30 years concluded there is no evidence of harm caused by EMF levels within the current guidelines. However there has been 7 years of research and evidence since then and a **Science and Technology Assessments Office (STOA)** presentation to the **European Parliament** [re 'Health impact of 5G' and 'Environmental impacts of 5G'](#) * on 31st May 2021 concluded there is clear evidence of the potential for harm from 2-5G which should invoke the **Precautionary Principle** requiring the implementation of precautionary measures whilst further urgent research by an independent task force is carried out.

SEE TOPIC HEADING: **What are typical exposure levels at home and in the environment?**

In this section the tables of typical field strengths **do not include mobiles, Wi-Fi / Bluetooth devices or cordless phones** and although they are mentioned in the text further down no figures for the levels are given. The statement that **portable phone levels are lower than mobiles** and **are negligible** is definitely **not** the case according to the tests I have conducted; they are much, much higher and very significant.

Additionally their '**Guideline Limit**' for **electric** fields of **5,000 V/m** is way in excess of the widely used maximum limits of **10 V/m** and their limit for **magnetic** fields is **100 µT** compared to the IGNIR recommended maximum of **1 µT** (1000 nT). (Note that the IGNIR recommended average level is 0.3 µT and other bodies recommend much lower levels)

SEE TOPIC HEADING: **What are the current standards?**

Here the first table '**Summary of the ICNIRP exposure guidelines**' does not include **mobiles** themselves (only base stations), **Wi-Fi** or **cordless phones** and their '**Public Exposure Limit**' for **electric fields** is again **5,000 V/m** compared with the widely used limits of **10 - 50 V/m**, and for **base station** and **microwave oven fields** is **4,500,000 - 10,000,000 µW/m²** (**4.5 - 10 W/m²**) compared with the recommended constant exposure maximum of **100 µW/m²**! (They also reference [ICNIRP EMF Guidelines](#) 1998 when the latest version is 2020)

In the second table of '**Typical maximum public exposure**' they state that **Natural fields** are **200 V/m** and **70 µT** which, although I have only tested my garden and the local area, does not compare favourably with the readings I obtained which were much lower at only **3 - 4 V/m** and **0.004 - 0.006 µT** (4 - 6 nT).

Similarly they state that for '**Mains power (in homes not close to power lines)**' it is typically a maximum of **100 V/m** when I measured up to **320 V/m** **3cm** from the mains wiring. (Up to **1200 V/m** in contact with an electric blanket) It is also very curious to note that they state a typical maximum of **10 V/m** from a computer (at operator position) when their typical maximum value in the home is **100 V/m**, so it is extremely unlikely to be much less than that in front of a computer even if it is at arm's length and you are a little further away from all the mains wiring in the walls, floors and ceilings in that position.

6. The Precautionary Principle (which is not being observed)

[Precautionary Principle \(UNESCO 2005\)](#)

The Precautionary Principle was established by the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), a section of UNESCO, in March 2005 to promote an ethical approach to risks of harm associated with scientific and technological developments in order to prevent the mistakes of the past being repeated but it is not being applied to potential risks of exposure to (increasing levels of) EMFs.

All members of the UN are supposed to observe the Precautionary Principle which states that:

- The Precautionary Principle (PP) applies when there exist considerable scientific uncertainties about causality, magnitude, probability, and nature of harm
- Because the PP deals with risks with poorly known outcomes and poorly known probability,

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- the unquantified possibility is sufficient to trigger the consideration of the PP
- **Interventions are required before possible harm occurs, or before certainty about such harm can be achieved (that is, a wait-and-see strategy is excluded)**
- Interventions should be proportional to the chosen level of protection and magnitude of possible harm

[PACE Resolution 1815 \(2011\) - The potential dangers of electromagnetic fields](#) includes the following statements:

5. As regards standards or threshold values for emissions of **electromagnetic fields of all types and frequencies**, the Assembly strongly recommends that the ALARA (as low as reasonably achievable) principle is applied, covering both the so-called thermal effects and the athermic or **biological effects** of electromagnetic emissions or radiation. Moreover, the **precautionary principle should be applied** when scientific evaluation does not allow the risk to be determined with sufficient certainty. Given the context of growing exposure of the population, in particular that of vulnerable groups such as young people and children, there could be extremely high human and economic costs if early warnings are neglected.
6. The Assembly regrets that, despite **calls for the respect of the precautionary principle** and despite all the recommendations, declarations and a number of statutory and legislative advances, there is still a lack of reaction to known or emerging environmental and health risks and virtually systematic delays in adopting and implementing effective preventive measures. Waiting for high levels of scientific and clinical proof before taking action to prevent well-known risks can lead to very high health and economic costs, as was the case with asbestos, leaded petrol and tobacco.

Therefore it is clear that although it is acknowledged that in many cases further research is required and that there is currently sufficient evidence of harm / potential harm from EMFs to determine that the PP should be applied and that safety precautions should be reviewed and the maximum permissible levels of radiation reduced. The reclassification of EMFs from mobiles by the WHO in 2011 alone should have triggered this, let alone the wealth of evidence of other forms of harm, however no action has been taken and no such review has been commissioned.

7. US Federal Communications Commission (FCC) Guidelines

According to the 2001 US FCC guidelines, testing of the device in a "body-worn" configuration should be done with the device in a belt clip or holster. If a belt clip or holster was not supplied with the phone, the FCC told testers to **assume** a **separation distance** of between **15 mm to 25 mm** from the **body** during a test – this is very rarely the case when a mobile is put in your pocket!

8. Federal Communications Commission (FCC) US Court Ruling (Aug 2021)

One of the more notable recent cases to have reached a judgement is the **failure** of the US Regulatory Authority the **FCC** to **properly evaluate the evidence of harm** caused by the existing levels of microwave radiation and **provide justification for retaining the safety limits** that they set in 1996:

On 13th August 2021 [US Court of Appeals for the District of Columbia Circuit ruled](#) in the historic case of the **Environmental Health Trust et al. v. the FCC** that the FCC **violated** the Administrative Procedure Act, **failed to respond** to comments on **environmental harm**, **failed to adequately justify** the basis for retaining its 1996 limits, and **failed to properly evaluate evidence of harm** caused by exposure to RF radiation **below the current limits**, and furthermore that the FCC's December 2019 **decision to retain** its 1996 safety limits for human exposure to wireless radiation was "**arbitrary and capricious**."

- The court held that the FCC **failed to respond to** "**recorded evidence that exposure to RF radiation at levels below the Commission's current limits may cause negative health effects unrelated to cancer.**"

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- and further, the agency demonstrated "**a complete failure to respond to comments concerning environmental harm caused by RF radiation.**"

The court highlighted that the FCC **failed to respond** to approximately 200 comments on the record by people who experienced illness or injury from electromagnetic radiation sickness.

The court **ordered** the commission to:

- **provide a reasoned explanation** for its decision to retain its testing procedures for determining whether cell phones and other portable electronic devices comply with its guidelines
- **address the impacts of RF radiation on children**, the **health implications of long-term exposure** to RF radiation, the **ubiquity of wireless devices**, and **other technological developments** that have occurred **since the Commission last updated its guidelines**
- **address the impacts of RF radiation on the environment**

These actions could take years, especially as another law suit is proposing to challenge that after cut-backs years ago the FCC no longer has the facilities, expertise or competence to carry out the task to the standard required, and possibility that they didn't at the time the limits were originally set.

[August 13, 2021 United States Court of Appeals, District of Columbia Circuit ENVIRONMENTAL HEALTH TRUST, ET AL., PETITIONERS v. FEDERAL COMMUNICATIONS COMMISSION AND UNITED STATES OF AMERICA](#)

In response to the court's historic ruling, **Environmental Health Trust** and petitioners released the additional statements which included:

"If cell phones were a drug they would have been **banned years ago**. 5G would never have been allowed to market. An ever mounting body of published studies — **ignored by the FCC** — clearly indicates that exposure to wireless radiation can lead to numerous health effects, especially for children. **Research indicates wireless radiation increases cancer risk, damages memory, alters brain development, impacts reproductive health, and much more.** Furthermore, the way the FCC measures our daily exposure to cell phone and cell tower radiation is **fatally flawed** and provides a **false sense of security.**"

"Environmental Health Trust submitted hundreds of pages of scientific evidence to the FCC over the last several years documenting the scientific data showing harm, the need for health agencies to create safety limits that protect against biological effects, and the **urgency for infrastructure policy that prioritizes wired rather wireless communications to reduce public exposure.**"

See [EHT Takes the FCC to Court](#) for further details. The Environmental Health Trust has a lot of useful information on research and science concerning wireless radiation, as well as details of examples of other [Lawsuits on 5G, Wi-Fi, Wireless Radiation and Health Effects](#) in the US, Australia and the UK.

9. Swedish Radiation Protection Foundation Appeal (Dec 2021)

[Nordic Appeal from 11 NGO's – calling for better protection against wireless technology](#) demands:

1. **New safety limits must be established** that protect against the evident health and environmental risks at levels that are far below current guidelines. This must be done **by experts who are free from any ties to the industry** concerned, and with participation by researchers within the research community, who consider the **risks to be considerable even at levels well below the current guidelines.**
2. **Before further deployment, a risk assessment of 5G systems must be carried out**, also in this instance **by experts who are free from ties to the industry** concerned, and with participation by researchers within the research community who point to evidence that the risks are considerable.

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3. To prevent injuries, **education about the risks must be carried out at all levels of society**, for example in healthcare, **schools**, and the general public.
4. The best possible technology should be used to protect human health and the environment. **Wired technology that minimizes harmful radiation must be a priority.**

The Nordic Appeal also asserts that:

The **responsible authorities** continue to **ignore** the **increasingly clear evidence of risks**, despite the research and the repeated appeals from the qualified research community, the medical profession as well as elected representatives. They even claim that the risks shown do not exist and that the current, **severely outdated** safety limits, are sufficient as protection. In support of their positions, the authorities rely on a small group of experts, **who are not representative of the scientific community at large, and the majority of whom are shown to have ties to the telecommunications companies.**

10. Legal Action Against 5G (Challenging the UK Government)

Michael Mansfield QC (who has led legal teams in high profile cases of civil liberty and miscarriages of justice, including representing the families of Grenfell Tower, Lockerbie, the Ballymurphy Massacre and Stephen Lawrence) has led a legal team challenging the UK Government over **its failure to take notice of the health risks** and public concern related to 5G. Legal Action Against 5G asserts that there is **solid evidence** of the harm caused citing:

Numerous recent scientific publications have shown that **electro-magnetic radiation affects living organisms at levels well below most international and national guidelines.**

Proven effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans.

Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plants and animals.

The **deployment on this scale** of pulsed microwave radiation **is reckless**

See [Legal Action Against 5G](#) for more details on, 'Why people are concerned', 'Why a legal case?', '**No safety testing for 5G**', and 'Consequence of 5G implementation'.

ADDITIONAL INFORMATION

11. Some countries have taken some actions

- In France, Israel, and Belgium **headsets** and **safety information** must be supplied with all mobile phones
- France have banned mobile phone advertising to children under 12
- Israel - **no Wi-Fi in kindergarten**, wired preferred over wireless in schools
- Belgium – no phones to be designed or sold for children under 7
- India have **lowered the limit** for mobile tower transmission to **one-tenth*** of the ICNIRP international short-term heating limit and **increased the safe distance of towers to people** (some towers have been torn down as a result), official guidelines also recommend **headsets** or **hands-free use**. (*this is still way above the international biological limits recommended by Bioinitiative, EUROPAEM, IGNIR, and Seletun)
- Canada – issue official advice as above

Sweden and Canada routinely recognise ES as a disability AND provide support for home and workplaces to be adapted to suit the needs of sufferers. Courts and employers in the UK, USA and many other countries recognise ES as a disability, sometimes following disability assessment and legal appeals. The support

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provided is seldom as comprehensive and extensive as in Canada and Sweden. Sweden also has '**white zones**' where **mobile masts and Wi-Fi are banned** to create safe communities for EHS sufferers. A court in the Netherlands has recognised as person with EHS as an interested party in the siting of mobile phone tower, while a court in the UK fined an employer for being too slow in providing accommodations for a person intolerant of EMFs.

12. EMFs from Mobile Phones, Wi-Fi, and Cordless Phones (all microwave devices) have been shown to affect...

Cancer

See "[The truth about mobile phone and wireless radiation](#)" – a lecture by [Dr Devra Davis](#) at Melbourne University Dec 2015. Dr Davis has an impressive record in public health, including helping to expose the dangers of tobacco, asbestos and passive smoking. Her team used computer modelling designed to ensure safety of therapeutic medical radiation treatments to determine the effects of mobile phones and found deep, high energy penetration of the brain and eye which is extremely likely to cause brain cancer. But brain cancer takes much longer to develop than other cancers – it took 40 years for an increase in brain cancer to show in survivors of Hiroshima and Nagasaki (do we want to wait that long to find out if that's the case with mobiles?) Young developing brains are widely considered to be more susceptible to harm from mobile radiation than adults – hence the EU recommendation to [ban Wi-Fi and mobiles in schools](#).

Breast tumours have been seen in the exact shape and location of the phone antennas in 38 women (by 2015) where they have kept / used mobiles tucked in their bras. This is an area of the breast where tumours do not normally form. (See above link)

Fertility

Many studies have shown lower sperm count in men who put mobiles in their trouser pockets and/or who use laptops with Wi-Fi enabled on their laps. High levels of RFR in the general environment have also been shown to lower sperm counts. See [A review on Electromagnetic fields \(EMFs\) and the reproductive system](#)
[PACE Resolution 1815 \(2011\) - The potential dangers of electromagnetic fields](#) includes the following recommendation:

8.1.3. put in place information and awareness-raising campaigns on the risks of potentially harmful long-term biological effects on the environment and on human health, **especially targeting** children, teenagers and **young people of reproductive age**

Immune System:

[Disturbance of the immune system by electromagnetic fields](#)—A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment

Antibiotic Resistance:

[Evaluation of the Effect of Radiofrequency Radiation from Wi-Fi Router and Mobile Phone Simulator on the Antibacterial Susceptibility of Pathogenic Bacteria *Listeria monocytogenes* and *Escherichia coli*](#)

Leukaemia, Brain Tumours, Alzheimer's, ALS, Sperm Damage, DNA Strand Breaks, Neurological Diseases, and Impairment of Cognition, Behaviour, Performance, Mood, and Disruption of Sleep:

[Scientific Panel on Electromagnetic Field Health Risks: Consensus Points, Recommendations, and Rationales](#)

Prolonged exposure appears to disrupt biological processes that are fundamental to plant, animal and human growth and health

+ specific references to the above conditions.

[Effects of electromagnetic fields exposure on the antioxidant defence system](#) – The Journal of Microscopy & Ultrastructure – US National Library of Medicine National Institutes of Health

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2. Electromagnetic field effects

... One study reported that **extremely low exposure to EMF from mobile phones** may cause health problems. Several studies have reported findings such as **stress, headache, tiredness, anxiety, decreased learning potential, impairment in cognitive functions** and **poor concentration** in case of exposure to microwave radiation emitted from mobile phones. EMFs influence metabolic processes in the human body and exert various biological effects on cells through a range of mechanisms. EMF disrupts the chemical structures of tissue since a high degree electromagnetic energy absorption can change the electric current in the body. **As a result of this exposure, the functions of organs are affected.** Electric fields exert an oscillatory force on every free ion on the both sides of the plasma membrane and cause them to cross it. This movement of ions causes deterioration in the ion channels on the membrane, biochemical changes in the membrane and **consequently impairment of all cellular functions.**

13. Health conditions caused, or exacerbated, by prolonged exposure to ALL types of EMFs

Potential Health Effects of EMFs

An increasing number of doctors and researchers believe that ES is a major factor in the appearance of Chronic Fatigue, ME, and Fibromyalgia (all 'modern-day' diagnoses), and also for the **increase** in Alzheimer's, Depression, Type 2 Diabetes, Restless Legs Syndrome (RLS) as well as many common everyday symptoms such as headaches, fatigue, non-specific aches & pains, anxiety, tinnitus, insomnia, confusion, difficulty talking coherently, attention deficit, low fertility etc. and **impaired** memory, coordination, and concentration which have all seen significant increases in the **developed world** in recent decades, **coinciding with the increase in prevalence of wireless technology.** A multitude of different studies have shown that modern-day prolonged exposure to high levels of man-made electromagnetic fields has disruptive effects on many of the basic biological processes of the human body.

(See [Talking To Your Doctor](#) and [ES/EHS Key Facts: Non-Thermal Science and Functional Disability](#) for all the conditions that can be caused, or made worse by, man-made EMFs and the biological effects responsible)

Some researchers have estimated that approximately 3% of the population has severe symptoms of ES, and another 35% have moderate symptoms such as an impaired immune system, chronic illness, disturbed sleep etc. although they don't associate any of their symptoms with ES as they have never heard of it being a possible cause, and neither have a majority of the health professionals they consult.

There are also indications that prolonged exposure to high levels of EMF radiation can also make you less responsive to medication and it is commonly reported that natural therapies are more effective and 'hold' for longer on people who minimise their exposure to EMF radiation.

The biological effects of EMFs which cause or exacerbate the various symptoms listed above

Naturally occurring microwave radiation and man-made microwave radiation are fundamentally different in nature. Man-made microwave radiation is polarised and the polarised waves disrupt the ion channels in cell walls impairing the intake of nutrients and expulsion of waste products, and generating free radicals which disrupt the functioning of mitochondria.

Continued exposure to EMFs has been shown to cause:

- Oxidative damage
- Abnormal influx of calcium into cells or calcium 'overload' (voltage-gated calcium channel disruption)
- Mitochondria dysfunction
- Depolarisation of the body's red blood cells
- Decrease in the numbers of Natural Killer (NK) cells
- Increase in viruses, bacteria, mould, parasites, and yeast in the blood of the human host

Sample of Statements from Official Bodies Regarding the Potential Health Risks of EMFs (Including Observations & Opinions) + Court Cases

- "Subliminal" stress (upregulation of the sympathetic nervous system)
- Decrease of 5-HT in the blood
- Decrease in levels of the brain hormones norepinephrine and dopamine
- Alterations in production of melatonin
- Abnormal drop in the levels of the neurotransmitter acetylcholine
- Restlessness (may be responsible restless leg syndrome)
- Alterations in regional cerebral blood flow
- Failure of DNA recombination due to the radical spin pair mechanism (DNA damage)
- Adverse effects on blood brain barrier permeability
- Production of heat shock proteins
- Interference with intercellular microsignalling and circadian rhythms
- Sperm / testicular damage
- Neuropsychiatric effects including EEG changes
- Apoptosis (cell death)
- Endocrines changes

Symptoms vary from patient to patient depending on their physical biology and exposure intensity and duration. Symptoms quickly improve when away from EMF sources, particularly computers, fluorescent lighting, transformers, wireless antenna, cell and cordless phones, other electrical appliances and out of proximity to cell phone towers, electrical substations and power lines. Symptoms recur on returning to the irradiated environment. **Over time, sensitivity is increased to smaller and smaller EMF exposures and lower and lower frequencies.**

See [Talking To Your Doctor](#) and [Electrosensitivity – an Environmental illness, an Authentic Diagnosis, not a Delusional Disorder](#) for more details.

14. Recommendations to reduce personal exposure

- Turn OFF mobiles and Wi-Fi devices, or switch to 'Airplane Mode' (not just standby) when not in use
- Replace cordless phones with corded ones
- Use mobiles only for emergencies, keep calls short and keep mobiles as far away as possible, preferably hands-free – use a landline whenever possible if it is a corded, NOT a cordless, phone
- Use **wired** connections instead of wireless wherever possible (**always faster, more reliable, and more secure anyway**)
- Keep your distance from ALL electrical and electronic devices and power cables / wiring – even a small increase in distance is better than nothing (as a matter of physics, the energy of radiated electromagnetic fields of all frequencies **decreases significantly** as the distance from the source is **increased**)
- Turn ALL electrical and electronic devices OFF when not in use, not just to STANDBY (also of benefit from an environmental prospective)

[Scientific Panel on Electromagnetic Field Health Risks: Consensus Points, Recommendations, and Rationales](#)

– **includes** the following **statements**:

The Seletun Scientific Panel **recommends**:

- **users keep mobile phones away from head and body**
- **users keep mobile phones and PDAs* switched off if worn or carried in a pocket or holster, or on a belt near the body.** *PDA is generic for any type of Personal Digital Assistant or hand-held computer device
- **against the use of mobile and cordless phones and PDAs by children of any age**
- **against the use of mobile and cordless phones and PDAs by pregnant women**
- **use of mobile and cordless phones and PDAs be curtailed near children or pregnant women,** in keeping with preventative and precautionary strategies. The most vulnerable members of society should have access to public places without fear of harm to health

Sample of Statements from Official Bodies Regarding the Potential Health Risks of EMFs (Including Observations & Opinions) + Court Cases

- access to public places and public transport should be available without undue risk of EMF exposure, particularly in enclosed spaces (trains, planes, buses, cars, etc.) where the exposure is involuntary
- **wired internet access in schools**, and strongly recommends that schools do not install wireless internet connections that create pervasive and prolonged EMF exposures for children
- preservation of existing land-line connections and public telephone networks
- **against the use of cordless phones (DECT phones) and other wireless devices, toys and baby monitors***, **wireless internet, wireless security systems, and wireless power transmitters** in SmartGrid-type connections that may produce unnecessary and potentially harmful EMF exposures and recognizes that wired internet access (cable modem, wired Ethernet connections, etc.) is available as a substitute
- use of **wired headsets, preferably with hollow-tube segments** (not speakers in the ear pieces)
- **avoidance of wireless (Bluetooth-type) headsets** in general
- use of telephone land-lines or fibre optic cables for SmartGrid type energy conservation infrastructure

The Panel **encourages**:

- the removal of speakers from headsets on wireless phones and PDAs (i.e. use hollow-tube type instead)
- 'auto-off switches' for mobiles and PDAs that automatically turn off the device when placed in a holster

The Panel **strongly discourages**:

- technology that allows one mobile phone to act as a repeater for other phones in the area. This increases exposure to EMF to the person whose phone is piggy-backed on without their knowledge or permission

Specific Recommendations - Extremely Low Frequency (Fields from Electrical Power)

- The Panel **recommends electric field reductions from electrical wiring in buildings** based on evidence of increased **cancer risk** from prolonged or repetitive electric field exposure. Governmental codes relating to building design and construction should be revised so **that all new electrical wiring is enclosed in a grounded metal shield**;

The above scientific panel also recommend exposure limits to be applied to new installations, power distribution, all new electrical equipment, **minimum distances** from residences, hospitals, schools, parks, and playgrounds (and similar locations occupied by children, as well as all new electronic devices, including compact fluorescent lamps (CFLs), to be constructed with filters to block high-frequency voltage transients from being conducted back onto electrical wiring systems.

* 'old style' baby monitors which connect to each other via the mains wiring use much lower frequencies and, therefore, are safer but should still be kept at a good distance (>3ft)

A study undertaken for the Swiss Federal Offices of Health and Energy reported low- and medium-frequency magnetic and electric fields can induce electric currents in the body which, above a certain frequency, can stimulate nerves and muscles and recommended that people **stay at least 30 centimetres away from energy-saving light bulbs**. See [Health effects from the electromagnetic fields of Compact Fluorescent Lights \(CFLs\)](#) for further information, including reports that migraines, epilepsy and blurred vision can be triggered by EMFs from CFLs and other sources.

15. Reference Sources

[BioInitiative Report 2012](#) - A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Fields (ELF and RF) which contains scientific evidence of the many harmful effects on the human body

Sample of Statements from Official Bodies Regarding the Potential Health Risks of EMFs (Including Observations & Opinions) + Court Cases

[Disturbance of the immune system by electromagnetic fields](#)—A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment – Prof. Olle Johansson

[Electrosensitivity – an Environmental illness, an Authentic Diagnosis, not a Delusional Disorder](#) – Written by a practising NHS GP, Dr Andrew Tresidder, it explains what Electrosensitivity is, the biological mechanisms by which it causes health problems, and why the current international safety limits are fundamentally flawed.

[European Parliament resolution of 2 April 2009 on health concerns associated with electromagnetic fields](#) (NB: EU documents use the term 'whereas' in the legal interpretation to mean "taking into consideration the fact that")

[Evaluation of the Effect of Radiofrequency Radiation from Wi-Fi Router and Mobile Phone Simulator on the Antibacterial Susceptibility of Pathogenic Bacteria *Listeria monocytogenes* and *Escherichia coli*](#) – M Taheri, Prof. SMJ Mortazavi, Dr M Moradi, Dr S Mansouri, GR Hatam, and F Nouri

[Health effects from the electromagnetic fields of Compact Fluorescent Lights \(CFLs\)](#) – M Bevington, ES-UK

[IARC Classifies Radiofrequency Electromagnetic Fields as Possibly Carcinogenic to Humans](#) – WHO / IACR Press Release 208

[ICNIRP Guidelines on Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields \(100 kHz to 300 GHz\) - DRAFT July 2018](#) (ICNIRP = International Commission on Non-Ionizing Radiation Protection)

[ICNIRP Guidelines on Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields \(100 kHz to 300 GHz\) - APPENDIX A: Review of Studies on Dosimetry – DRAFT July 2018](#)

[ICNIRP Guidelines on Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields \(100 kHz to 300 GHz\) - APPENDIX B: Health Risk Assessment Literature – DRAFT July 2018](#)

[Parliamentary Assembly of the Council of Europe \(PACE\) Resolution 1815 \(2011\) - The potential dangers of electromagnetic fields and their effect on the environment](#)

[Polarization: A Key Difference between Man-made and Natural Electromagnetic Fields, in regard to Biological Activity](#) – Dr Dimitris J Panagopoulos, Prof. Olle Johansson & George L Carlo

[Precautionary Principle \(UNESCO 2005\)](#)

[Radio Frequency Radiation Safety Limits](#) – M Bevington, ES-UK

[Scientific Panel on Electromagnetic Field Health Risks: Consensus Points, Recommendations, and Rationales](#) – Dr Adamantia Fragopoulou, Prof. Yuri A Grigoriev, Prof. Olle Johansson, Prof. Lukas H Margaritis, Lloyd Morgan, Prof. Elihu Richter and Cindy Sage

[Talking To Your Doctor](#) – WEEP Canadian Initiative to stop Wireless, Electric, and Electromagnetic Pollution

[The London Resolution](#) – Prof. Olle Johansson et al

[The truth about mobile phone and wireless radiation](#) – Dr Devra Davis Lecture at Melbourne University