

THE IMPORTANCE OF BIOLOGICAL, NOT HEATING, GUIDELINES

Safety guidelines lag behind new technology

Man-made electromagnetic energy was used for radio from the 1920s, radar from the 1940s, mobile phones from the 1980s and Wifi from 2000. In 2011 the World Health Organization classified non-thermal levels as a 2B possible human carcinogen and the UK chief medical officers advised children <16 to use mobiles for essential purposes only.

Delays in introducing safety are common. Cars were produced from the 1890s, but they did not have seat belts, crumple zones and airbags until 70-100 years later. Smoking was linked with cancer from the 1950s but it was banned indoors only in 2007. Asbestos, known as dangerous from ancient times, was banned in the 1980s.

Biological long-term effects established since the 1950s

Russian and Polish scientists established adverse biological effects independent of heating in the 1950s. From 1959 these countries set 'non-thermal' limits, much lower than the heating guidelines still used in the UK and USA. Biological limits prevent infertility, cardiovascular and neurological effects and cancer, not just heating effects.

Thousands of scientific studies have established the biological safety levels needed to protect the general population and people sensitive to man-made electromagnetic energy. Biological guidelines include EUROPAEM and IGNIR.

Mistaken claim of 1953 that short-term heating is the only health effect

When the USA introduced safety limits for electromagnetic energy in 1953, based on Schwan's mistaken belief that the only adverse health effect was bodily heating, the limits prevented only a temperature rise of one degree in the body, averaged over six or 30 minutes. This is invalid, since exercise can produce a similar heat rise without the cancer and neurological effects established from exposure to electromagnetic energy.

The ICNIRP 1998 guidelines, still used by the UK and USA, prevent short-term heating, but ICNIRP in 2002 stated that some people need long-term biological guidelines and the ICNIRP chair has said people are free to choose which they follow. The UK's Public Health England has members of ICNIRP who hold its minority heating hypothesis, like the wireless industry. In 2009 the European Parliament voted that these ICNIRP heating limits were obsolete. France now bans mobiles and Wifi in schools.

Schools, workplaces, homes, the IoT and 5G require long-term guidelines

Schools, workplaces and homes, where people spend over 30 minutes, require long-term biological guidelines, like EUROPAEM EMF 2016 Guidelines, or IGNIR. In contrast, ICNIRP's short-term heating limits are irrelevant to schools, workplaces and homes, where people spend over 30 minutes, since its guidelines apply only to 6 or 30 minutes. The Internet of Things and 5G also involve more than 6 or 30 minutes' exposures and therefore require long-term EUROPAEM EMF 2016 Guidelines or IGNIR, not ICNIRP.

Symptoms of long-term exposure to man-made electromagnetic energy include:

cancer, cardiovascular effects, genetic damage, neurological effects e.g. anxiety, depression, insomnia, hypersensitivity, and reduced male fertility.

Biological Guidelines:

[IGNIR, EUROPAEM EMF GUIDELINES 2016](#)

World Health Organisation:

[IARC's 2B human carcinogen classification, 2011](#)

Further information:

[ES-UK](#)