



COMMUNICATIONS TOWERS, RADIO TRANSMITTERS AND SAFETY

Information for schools, teachers, students, and parents

Radio transmitters—Are they safe?

Some parents, teachers, and students may have concerns about possible health effects from exposure to electromagnetic energy (EME) coming from radiocommunications transmitters on towers near schools as well as from WiFi routers and mobile phones. This factsheet outlines the steps the Australian Government takes to keep Australians safe.

Exposure to radiofrequency (RF) EME has been the subject of detailed research by experts. Exposure limits are set well below the level at which adverse health effects are known to occur and include a wide safety margin to protect the public.

What is EME?

RF EME is the energy in radio waves, and is used for wireless communication. It has been in use for over 100 years. It is used to send and receive signals between communications equipment such as broadcast towers, radios and televisions, mobile phone towers and phones, radar facilities, and electrical and electronic equipment. It is also part of our natural environment.

How is EME regulated?

Two Australian Government agencies, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and the Australian Communications and Media Authority (ACMA), are responsible for regulating RF EME exposure.

ARPANSA is an independent Australian Government agency charged with protecting Australians from

exposure to EME. ARPANSA is responsible for advising what safe levels of EME exposure are. ARPANSA has developed a public health standard which sets limits for human exposure to RF EME. The limits are set well below the level at which adverse health effects are known to occur and include a wide safety margin to protect the public. The exposure standards take into account the many sources of RF EME present in the modern environment.

The ACMA licenses the operation of radiocommunications transmitters. Licences require transmitters to comply with the exposure limits set out in the ARPANSA standard.

How much EME comes from radio transmitters?

All transmitters must operate below ARPANSA's public exposure standard. Typically transmitters operate at a tiny percentage of the ARPANSA standard.

Should mobile phone transmitters be located a specified number of metres from schools?

Because transmitters must operate below the ARPANSA standard, there is no particular advantage locating these away from schools. In fact, poor location of the transmitters can affect the performance of mobile handsets, requiring more power to be emitted from the handset to connect with nearby transmitters. This is potentially of greater concern as handsets are used near the body.

Is the scientific information on EME up to date?

ARPANSA maintains continual oversight of emerging research into the potential health effects of EME exposure in order to provide accurate and up-to-date advice to the Government. ARPANSA works with the World Health Organisation in researching the health effects of human exposure to EME. Should scientific evidence indicate that the current ARPANSA standard does not adequately protect the health of Australians, the Government would take immediate action to rectify the situation.

Is EME from mobile phone handsets safe?

There is no clear evidence in the existing scientific literature that the use of mobile phones poses a long-term public health hazard (although the possibility of a small risk cannot be ruled out).

For those who are concerned, ARPANSA provides advice on strategies, particularly for children, to reduce EME exposure from handsets. ARPANSA advises that people who are concerned about the possibility of health effects can minimise their exposure to RF EME emissions by reducing call time, making calls where reception is good, using hands-free devices or speaker options, or by texting. People could also pay attention to the manufacturer's advice regarding spacing from the body if phones are to be attached to belts or placed in pockets.

What about WiFi and laptops?

ARPANSA, as well as the World Health Organisation, have advised that there is no established scientific evidence showing that the low exposure to RF EME from WiFi adversely affects the health of children or the general population. On the basis of current scientific information ARPANSA sees no reason why WiFi should not continue to be used in schools and other places.

Where can I find out more information?

Further information is available from the following expert bodies:

Australian Radiation Protection and Nuclear Safety Agency

www.arpansa.gov.au/Science/rf

www.arpansa.gov.au/pubs/eme/fact11.pdf

www.arpansa.gov.au/pubs/factsheets/018is_Wi-Fi.pdf

Australian Communications and Media Authority

www.acma.gov.au/Citizen/Consumer-info/

[Rights-and-safeguards/EME-hub](http://www.acma.gov.au/Citizen/Consumer-info/Rights-and-safeguards/EME-hub)

World Health Organisation

www.who.int/topics/electromagnetic_fields

www.who.int/mediacentre/factsheets/fs193/en/index.html

International Commission on Non-Ionising Radiation Protection (ICNIRP)

www.icnirp.org

You can also find out more about transmitters in your community, including EME reports and community consultation information, from the Radio Frequency National Site Archive www.rfnsa.com.au