

No evidence children's health at risk from mobile phone signals

It is entirely understandable that some parents may be concerned about the safety of mobile phone technology and their children's use of mobile devices.

However, a number of independent reviews of all the available scientific evidence by international health authorities and governments have carefully considered this concern and found no evidence of any additional risk to children from mobile phone technologies.

Also, many parents choose to give their children mobile phones as an additional safeguard from everyday risks to personal security and safety. Access to a mobile phone also provides parents with the added reassurance that they can speak with their child quickly at any time of day or night.

Parents no doubt will be cautious about trading off an unproven possible risk against a known public health and safety benefit.

Advice for parents

The Australian Radiation Protection and Nuclear Safety Agency's (ARPANSA) February 2013 fact sheet [Mobile phones and children](#) says despite public concern there is no evidence radiofrequency (RF) electromagnetic energy (EME) emissions from mobile phones and base stations are harmful:

Currently the weight of national and international scientific opinion is that there is no substantiated evidence that the RF EME emitted by mobile phones causes harmful effects in adults or children.

However because the research relating to children is limited and the possibility of harm cannot be completely ruled out ARPANSA recommend parents encourage children to take some simple measures to reduce their exposure:

It is recommended that, due to the lack of any data relating to children and their long term use of mobile phones, parents encourage their children to limit their exposure by reducing call time, by making calls where reception is good, by using hands-free devices or speaker options, or by texting.

What do the expert reviews say?

The most recent independent review that specifically looked at children, published in October 2011, by the [Health Council of the Netherlands](#) concluded:

There is no scientific evidence for a negative influence of exposure to electromagnetic field of mobile telephones, base station antennas or Wi-Fi equipment on the development and functioning of the brain and on health in children. This is the main conclusion of an advisory report the Health Council presented today to the State Secretary of Infrastructure and the Environment.



**Australian
Mobile Telecommunications
Association**
ABN 98 065 814 315
First Floor
35 Murray Crescent
Griffith ACT 2603 Australia
PO Box 4309
Manuka ACT 2603 Australia
Ph +61 2 6239 6555
Fax +61 2 6239 6577
Web www.amta.org.au

A comprehensive review of all the scientific evidence by the UK Health Protection Agency's independent [Advisory Group on Non-ionising Radiation](#) (AGNIR) in April 2012 concluded:

Although a substantial amount of research has been conducted in this area, there is no convincing evidence that RF field exposure below guideline levels causes effects in adults or children.

A review by the [Norwegian Institute of Public Health](#) in September 2012 also found there was no scientific evidence for an association between mobile phone use and fast or slow growing brain tumours for people who had used mobile phones for up to 20 years.

The research Committee considered the implications of long-term phone use for young people and the likelihood of health hazards occurring in the future and found they were unlikely:

There is always an element of uncertainty in all risk assessments. In this case, the Committee considers the uncertainty to be small... It is unlikely that long-term use of mobile phones will cause health risks that are unknown today.

A study of almost 1000 children aged between seven and 19 in Northern Europe – published in July 2011 in the [Journal of The National Cancer Institute](#) – found mobile phone use didn't increase the risk of brain cancer because the evidence did not show a clear trend between the amount of exposure and the illness. The researchers concluded:

Because we did not find a clear exposure-response relationship in most of these analyses, the available evidence does not support a causal association between the use of mobile phones and brain tumors.

The researchers also said the link was “unlikely” because it did not show up when they looked for links with the regions of the brain most exposed to mobile phone radiation:

If there was a causal relationship, we would expect an increased risk specifically in these regions because the absorption of radio frequency energy from mobile phones is highly localized and has been shown to be considerably higher in the temporal and frontal lobes and the cerebellum compared with other parts of the brain.

An [independent review](#) conducted in 2009 by internationally recognised experts, found:

Overall, the review of the existing scientific literature does not support the assumption that children's health is affected by RF EMF exposure from mobile phones or base stations.

An [Austrian study](#), published in January 2008 investigated previous health risk assessments and established physiological knowledge regarding mobile phone use, particularly with reference to children's health. The report stated:

Based on the assessments of the international committee and established knowledge on children's development it can be concluded that existing exposure limits do in fact provide reasonable safety.



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Furthermore, the report concluded:

There are no sufficient grounds to generally condemn mobile phone use by children, in particular, nor is there an established basis for pinpointing a specific age limit (above 3 years) as has been done by some overreacting committees.

An in-depth scientific review of all the science on mobile phone use by children, published in 2007 by the [Irish Government Expert Group](#) found:

There is no data available to suggest that the use of mobile phones by children is a health hazard.

Additionally, a study conducted at the [German Academy of Pediatrics and Adolescent Medicine](#) published in October 2007, said there is no indication that children are particularly vulnerable to electromagnetic fields:

There are presently no scientific data supporting the concept of a special vulnerability of children and adolescents to high-frequency EMF, even if the usual caveats (developing organisms and structures may be more vulnerable, decades of life to come) are considered.

Furthermore, earlier advice published in 2004 by the [Health Council of the Netherlands](#) concluded:

There is no scientific data to assume a difference in the absorption levels of electromagnetic energy in heads of children and adults, nor is it likely that the electromagnetic sensitivity of children's heads changes significantly after the second year of life. Because of this, the Health Council of the Netherlands sees no reason for recommending limiting the use of mobile phones by children.

Safety standards and children

The Australian safety standard is based on the WHO recommended international safety guidelines for electromagnetic fields developed by ICNIRP, which include significant safety factors that make them applicable to all people including children. With respect to the safety standards and children the [WHO have said](#):

The ICNIRP guidelines were developed to limit human exposure to electromagnetic fields (EMF) under conditions of maximum absorption of the fields, which rarely occurs, and the limits incorporate large safety factors to protect workers and even larger safety factors to protect the general public, including children. Thus, the limits in the ICNIRP guidelines are highly protective and are based on all the available scientific evidence.

Also, the Chairman of ICNIRP has concluded:

The protection system using basic restrictions and reference levels makes the ICNIRP guidelines flexible and applicable to virtually any exposure condition, and any group of population. Therefore, there is no need, or justification, for a special approach to the protection of children¹.



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¹ Dr P Vecchia, ICNIRP Chairman, WHO Meeting, Electromagnetic Fields and Children, Istanbul 9-10 June, 2004