

# Children, young people and Mobile Phones

This article is separated into 4 sections, each of which can be individually downloaded. It is a 'work in progress' incorporating new information whenever time permits.

## Section 2

### Official advice across the world

1. Use of mobile phones by young people; the psychology of phone use; which children have phones? How are phones used? Child safety; the phones; SARs (Specific Absorption Rate); the link between phones and masts; summary; campaigning organisations
2. Official advice across the world; the United Kingdom; America; Australia; Austria; Belarus; Belgium; Canada; European Environment Agency (EEA); Finland; France; Germany; Israel; Italy; Norway and Denmark; Russia; Thailand; technological parents
3. The research; summary; addiction; suicidal ideation and suicide attempts; behaviour; brain effects; brain tumours; acoustic neuromas; parotid (salivary) gland tumours; headaches and migraines; hearing; heart; hippocampus; learning, memory and behaviour changes; eye damage; hospital visiting; kidney; mental health problems; mouth cancer; DNA, cellular and organ damage; reproductive effects (testicular cancer, damaged sperm, reduced fertility); risk perception; sleep; official comments on the implications of the health research; the difficulties with the research
4. References – 144 references

## The United Kingdom

The Independent Expert Group on Mobile Phones (IEGMP), chaired by Sir William Stewart, set up to advise the government on the potential risks of mobile phone risks, produced two reports, one in 2000 and an update in 2005 .

Sir William Stewart said children under eight should not use mobile phones at all. He said: *"If there are risks - and we think that maybe there are - then the people who are going to be most affected are children, and the younger the children, the greater the danger."* *"Parents have a responsibility to their children not simply to throw a mobile phone to a young child, and say 'off you go'"*

The updated report, in January 2005, concluded that in the light of subsequent research, a precautionary approach to the use of mobile phone technology continues to be necessary.

Professor Lawrie Challis, who is on the Mobile Telecommunications and Health Research programme, set up to investigate the health risks of mobile phones, said "I would certainly not wish my own grandchildren to use mobile phones more than they had to." In June 2009, he was reported in the Daily Mail as saying that *"primary school pupils should not have phones at all."* Dr Michael Carr-Gregg, a leading Australian psychologist and professor of paediatrics called parents who allow young children to use mobile phones *"insane"* and said that no child under 12 should be allowed a mobile phone.

After the Stewart report, the UK Department of Health issued an advisory leaflet [www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT\\_ID=4123979&chk=d6XrFl](http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4123979&chk=d6XrFl) about mobile phone use. The advice in it was still current on 9<sup>th</sup> December 2009. The report says:-

### Children and young people under 16

The research does show that using mobile phones affects brain activity. There are significant gaps in our scientific knowledge. Because the head and nervous system are still developing into the teenage years, the expert group considered that if there are any unrecognised health risks from mobile phone use, then children and young people might be more vulnerable than adults.

The expert group has therefore recommended that in line with a precautionary approach, the widespread use of mobile phones by children (under the age of 16) should be discouraged for non-essential calls.

In the light of this recommendation the UK Chief Medical Officers strongly advise that where children and young people do use mobile phones, they should be encouraged to:

Use mobile phones for essential purposes only

Keep all calls short - talking for long periods prolongs exposure and should be discouraged

The UK CMOs recommend that if parents want to avoid their children being subject to any possible risk that might be identified in the future, the way to do so is to exercise their choice not to let their children use mobile phones.

Graham Lamburn (Powerwatch) was reported in the Daily Telegraph in January 2009, saying "It seems that most people in the UK have no idea that Government advice is that under-16s don't

use their phones. Public information is sorely lacking. It is almost as if they are saying 'We think there might be a problem but we don't want it to be public because it will upset everyone.'

Dr Mike Repacholi, who was the Coordinator of the Radiation and Environmental Health Unit of the World Health Organisation (WHO) in 2005, said that children should use hands-free headsets when using a mobile phone. This would have the effect of distancing the phone from a child's head. WHO state "*Children are different from adults. Children have a unique vulnerability. As they grow and develop there are 'windows of susceptibility': periods when their organs and systems may be particularly sensitive to the effect of certain environmental threats.*"

*"The still developing nervous system and associated brain-wave activity in a child (particularly one that is epileptic) are vulnerable to aggression by the pulses of microwaves used in GSM", states Dr Gerard Hyland in his report for the STOA Committee of the EU. "Some of the pulsing characterising the signal lie in the range of the alpha and delta brain wave activities. These two particular electrical activities are constantly changing in a child, so they may be particularly affected until the age of about 12 years when the delta-waves disappear and the alpha rhythm is finally stabilised."*

Moyse (2011) advocated that the safe use of mobile phones is part of the health promotion duty of children's nurses and those nurses working in schools. Children and young people should be encouraged to keep and use their mobiles in a safe place, avoid lengthy and incessant calls, provide their number only to those they feel they can trust and switch off the phone as soon as possible. They need to take care with the type of messages they send and to tell someone they can trust about any cyberbullying.

It is important to have a headset with air tubes from the phone to conduct the sound, as a wire from the phone can conduct the microwave emissions into the ear as if the child were holding the phone to his or her head.

## America

In 2002, the Science and Public Policy Institute stated "*Studies showed that that radiation penetrated deeper into the heads of teenagers and children resulting in more exposure to potentially harmful radio waves than adults; the type of genetic damage that was found – micronuclei in human blood – is more likely to occur in growing tissue undergoing mitosis, such as growing brain tissue in children.*"

The Annual Report of the US President's Cancer Panel, April 2010, recommends precautionary measures with respect to children's mobile phone usage, such as using handsets, text messages, etc.

Professor David Carpenter, director of the Institute of Health and Environment at the University of Albany, said "*I think evidence is certainly strong enough for warnings that children should not use mobile phones. I think failure to do that is going to lead us to an epidemic of brain cancer in the future.*"

The American Academy of Pediatrics, representing 60,000 primary care paediatricians, in a letter in December 2012 to a US congressman states: "*Children are disproportionately affected by environmental exposures, including cell phone radiation. The differences in bone density and the amount of fluid in a child's brain compared to an adult's brain could allow children to absorb greater quantities of RF energy deeper into their brains than adults. It is essential that any new standards for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded through their lifetimes.*"

The American Academy of Pediatrics (AAP) in 2017 recommended the following for families:-

- Use text messaging when possible, and use cell phones in speaker mode or with the use of hands-free kits.

- When talking on the cell phone, try holding it an inch or more away from your head.
- Make only short or essential calls on cell phones.
- Avoid carrying your phone against the body like in a pocket, sock, or bra. Cell phone manufacturers can't guarantee that the amount of radiation you're absorbing will be at a safe level.
- Exercise caution when using a phone or texting while walking or performing other activities. "Distracted walking" injuries are also on the rise.
- If you plan to watch a movie on your device, download it first, then switch to airplane mode while you watch in order to avoid unnecessary radiation exposure.
- Keep an eye on your signal strength (i.e. how many bars you have). The weaker your cell signal, the harder your phone has to work and the more radiation it gives off. It's better to wait until you have a stronger signal before using your device.
- Avoid making calls in cars, elevators, trains, and buses. The cell phone works harder to get a signal through metal, so the power level increases.
- Remember that cell phones are not toys or teething items

## Australia

In 2000, Gerry Haddad, chief of CSIRO Telecommunications and Industrial Physics, warned that the telecommunications exposure standards neglected to provide a high enough level of protection, particularly in relation to children. In 2001, he advised parents to restrict their children's use of mobile phones to essential purposes only.

## Austria

The Vienna Doctor's Chamber (Wiener Ärztekammer) warns expressly against excessive mobile phone use especially by children. The reasons for this conclusion are the results from the "Reflex Study" (see Section 3. The Research). As a consequence, the Doctor's Chamber (ärztekammer) drew up a list of guidelines, which stipulates specific rules of behaviour for the use of mobile phones, which include "A mobile phone in the trouser pocket and also the sending of SMS messages under the school desk can influence fertility and should be completely avoided." Also "Play no games on the mobile phone." (This is likely to involve long periods of time on the phone).

## Belarus

Reported in August 2009 in the Independent, Lukashenko's education authorities are considering introducing a new uniform to protect children from mobile phone radiation. It would have a special phone pocket made of absorptive material.

As early as 2003, Maisch concluded "What we have is an ideological battle between an increasing number of well-qualified experts, calling for a precautionary approach to safeguard our children's health, versus the corporate might of a billion-dollar industry with concerns based solely on maximising corporate profits at the possible expense of our children's future wellbeing. It is of concern that many national and regulatory committees, charged with the responsibility of protecting public health, take their advice on health issues from expert radiation advisers who in many cases are also in the employ of telecommunications corporations. Such an arrangement places the risk of bias high on the agenda of these committees".

## Belgium

In November 2008, Paul Magnette, the minister responsible for consumer protection refused to authorise the marketing in Belgium, proposed by Disney and Belgacom, of mobile phones intended for children. "With this type of phone children can actually be exposed to mechanical dangers or

*the risks of radiation. In fact scientists all recognise that it is necessary to limit children's exposure to cumulative amounts of radiation, even if not much is yet known about how sensitive they are to radio waves."*

In November 2012, the head of Belgacom, Belgium's largest telecom company told children that the radiation from mobile phones is dangerous.. he asks people who call him on his mobile to call back on his landline and has banned WiFi on the 27<sup>th</sup> floor of the office block where his managers work.

## Canada

Loren Vanderlinden, a Public Health supervisor, recommended in July 2008 that *"children, especially pre-adolescent children (under 8), use land lines whenever possible, keeping the use of cellphones for essential purposes only, limiting the length of cellphone calls and using headsets or hands-free options, whenever possible. Teenagers should limit calls to less than 10 minutes."* She continued *"While scientists were pretty dismissive of any risk years ago, with the accumulation of studies, it appears people who have been using their phones for a long period of time are at greater risk of certain kinds of brain tumours. There is a pattern emerging...."*

## European Environment Agency (EEA)

Professor Jacqueline McGlade, the executive director of EEA, said: *"Recent research and reviews on the long-term effects of radiations from mobile telecommunications suggest that it would be prudent for health authorities to recommend actions to reduce exposures, especially to vulnerable groups, such as children."*

## Finland

In January 2009, the Radiation and Nuclear Safety Authority (STUK) recommended restricting the use of mobile phones by children. The Authority says radiation from mobile phones could pose a health risk but that details of possible side effects remain unclear. Children should be encouraged to send SMS messages rather than make calls; parents could restrict the number and duration of calls; encourage the use of hands-free units; and avoid speaking in areas with poor reception, such as in cars or on trains.

## France

In December 2008, Lyon, in France, launched a campaign to discourage the use of mobile phones among children. The really unusual factor is that this action was promoted not by the city itself but by a political group, the Green Party, of which Mireille Roy, the council officer in charge, was a member.

She said that when a question focuses on a matter of public health, the real issue is a political one. Neither the body of law authorised by the Council of State nor any other legal or regulatory directives allow local authorities any real freedom of action in this domain.

But in the face of mounting pressure, something had to be done.



New laws cracking down on children's use of mobile phones are to be introduced in France amid growing fears that they may cause cancer and other diseases. All advertising of the devices to children under 12 is to be prohibited and the sale of phones designed to be used by those under six are to be banned. It will be compulsory for handsets to be sold with earphones and there will be limits set on the amount of radiation that a phone is allowed to emit.

In May 2009, the Secretary of State for Ecology declared that mobile phones were to be banned from primary schools and operators must offer handsets that allow only text messages. *"This is to limit the danger to the brain from EMR", the Health Minister said, "since radiation is commonly blamed for cancer, insomnia, headaches and fatigue".*

In January 2014, the French Assembly endorsed a bill to prevent the advertising of mobile phones to children under 14 and encourage the use of hands-free sets. It will also prevent the use of WiFi in facilities caring for children under the age of 3.

## Germany

In 2000 the Academy of Paediatrics advised parents to restrict their children's use of mobile phones. In 2002 the Interdisciplinary Association for Environmental Medicine (IGUMED) called for a ban on mobile phone use by small children and restrictions on use by adolescents. They advised that all mobile phone users keep conversations as brief as possible but that additional precautions are appropriate for children in view of "special health risks" associated with their growing bodies.

In 2001, the head of the federal authority for radiation protection, Wolfram Koenig, said in an interview with the Berliner Morgenpost *"Parents should take their children away from that technology (mobile phones)"*.

## Israel

Israel's Health Ministry has also advised caution. The Science and Technology Committee of the Knesset, **Israel's** parliament in January 2002, advised parents to restrict their children's use of mobile phones to essential purposes only.

## Italy

The Italian Health Ministry in November 2011, recommended that children only use their mobile phones for conversations that are truly necessary, and public information should be more widely distributed on 'appropriate usage'.

## Norway and Denmark

This was also the conclusion of the chairman of a panel of **Danish** scientists and Dr Gro Harlem Brundtland, former Prime Minister of **Norway** and Director General of the World Health Organisation.

Professor Sianette Kwee of the Department of Biochemistry at the University of Aarhus, in Denmark, commented *"Our studies showed that there was a significant change in cell growth in these (human amnion) cells after being exposed to EMF fields from both power lines and from mobile phones. These biological effects were greatest in young and vigorously growing cells, but much less in old cells. These results tell us that e.g. microwave fields from mobile phones can be expected to affect children to a much greater degree than adults."*

## Russia

As a result of the research, and an increased sensitivity of children and teenagers mobile phone radiation, the Russian scientist Yuri Grigor'ev (2005) suggested that they would be likely to suffer sleep disorders, memory impairment, fatigue, breaches of the blood-brain barrier and changes in nerve cells of the brain; even the development of brain and acoustic nerve tumours are predicted. The Russian National Committee of Non-Ionizing Radiation Protection recommended to limit the use of mobile phones by children and teenagers under 16 years old.

In April 2008, the National Committee on Non-Ionizing Radiation Protection released a statement which included *"Electromagnetic fields affect not just human health in general, but also the processes of the higher nervous system, including behaviour and thinking"*. Their Ministry of Health insist that people under the age of 18 should not use mobile phones. They believe that young mobile phone users are likely to suffer from memory disturbance, attention problems, reduced learning and cognitive abilities, increased irritability, sleep problems, a greater incidence of epilepsy and general stress. They believe the risks of developing these health problems are *"not much lower than the risk to children's health from tobacco or alcohol."*

They also commented that future health risks are likely to include brain tumours, tumours of the acoustic and vestibular nerves (aged 25-30), Alzheimer's disease, dementia, depression, and other degenerative disorders (aged 50-60).

## Thailand

In April 2002, **Thailand's** interior minister was seriously considering banning the use of cellphones by teenagers, to prevent harm to their brains.

## Technological parents

Nick Bilton in September 2014, interviewed various parents employed in, or running, high-tech firms. Contrary to his expectations, most of these parents had strict controls over their children's use of high-tech products. They strictly limit their children's screen time, often banning all gadgets on school nights and allocating strict time limits on weekends.

Steve Jobs, of Apple said *"We limit how much technology our kids use at home."*

Chris Anderson, the former editor of Wired and chief executive of 3D Robotics has instituted time limits and parental controls on every device in his home. *"My kids accuse me and my wife of being fascists and overly concerned about tech, and they say that none of their friends have the same rules,"* he said of his five children aged 6 to 17. *"That's because we have seen the dangers of technology firsthand. I don't want to see that happen to my kids."* The dangers he is referring to include exposure to pornography, bullying and becoming addicted to their devices.

Alex Constantinople, the chief executive of the OutCast Agency, a tech-focused communications and marketing firm, said her youngest son, who is 5, is never allowed to use gadgets during the week, and her older children, 10 to 13, are allowed only 30 minutes a day on school nights.

Lesley Gold, founder and chief executive of the SutherlandGold Group, a tech media relations and analytics company said *"We have a strict no screen time during the week rule for our kids; but you have to make allowances as they get older and need a computer for school."*

There is one rule that is universal among the tech parents I polled **"There are no screens in the bedroom. Ever."**