

# Policies on children's radio frequency exposure confusing

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New research suggests guidelines on children's exposure to radio frequency waves from technology are confusing for parents.

The review into the policies of 34 countries, carried out by Dr Mary Redmayne, from the Department of Epidemiology and Preventive Medicine at Monash University, found varying degrees of advice about children's exposure to radio frequency electromagnetic fields (RF-EMF).

RF-EMFs are emitted from technology including WiFi, tablets and mobile phones. Associated with an increased risk of some brain tumours in heavy and long-term phone users, RF-EMFs have also been linked to biological changes including increased production of free radicals in the body. Dr Redmayne said that whilst this, and other observed effects, were not in themselves 'health effects' if the body did not have the chance to repair the related damage and restore balance it could eventually lead to a variety of health effects.

"Where RF-EMF is responsible for this imbalance, then the chance to repair is most likely to come with periods of minimal RF-EMF exposure such as at night time, when WiFi can be turned off and devices can be put in flight mode or switched off. Such steps to minimise children's exposure are recommended in many countries including Denmark, Finland, France, Germany, India, Israel, and Switzerland," she said.

Dr Redmayne said there was continuing concern among researchers and the public about the possible detrimental effects for young people from their exposure to RF-EMFs.

"In recent years there has been an amazingly rapid uptake in the use of mobile phones and other wireless devices. Increasingly younger children are using these devices, and we know they are more vulnerable to environmental harm than adults," she said.

"However safety regulations and guidelines in most parts of the world only consider short-term heat and shock effects, and have not traditionally considered chronic or very low exposure," Dr Redmayne said.

The review found a wide variety of different protocols and guidelines in the 34 countries. Australia's legislation is based on scientific research, but limited to acute heating effects, such as heat-damage, shocks and

burns. It does not consider effects from long-term or low exposures because the science for how these occur is not understood. However, the Australian Radiation Protection and Nuclear Safety Agency does suggest reducing children's exposure.

Russia and China's regulations went further by advising that exposures are low enough so that they do not prompt the body's processes to take protective action, both in the short and long term. Exposure levels in Russia and China were based on scientific research done in each respective country.

Some countries set lower, but manageable maximum exposure levels, as a precautionary approach.

The review also found some official bodies, including the European Parliament and the European Environment Agency, now recommend those aged under 18 to increase the distance of the head and body from devices including using a headset or speaker phone, use a wired landline, and sending text messages rather than calling. Several countries advised schools and pre-schools to prefer wired over WiFi/WLAN (such as Austria, France, Israel, Germany, Russia) and to offer education in schools on RF-EMF exposure issues (Russia, Tunisia, Turkey).

Dr Redmayne said the wide range of policy approaches can be confusing to parents and educational facilities wanting to know what is the best thing to do for their children.

"The message on RF-EMFs is really in the same category as health advice around diet and exercise: it's important to be aware and take steps to minimise [exposure](#) to radiofrequencies as part of daily life."

Dr Redmayne recommended using and storing a device at least 20cm away from the body, and when using devices offline then to put them in

flight mode, turn WiFi off at night, and to avoid keeping devices in the bedroom.

The review was published in *Electromagnetic Biology and Medicine*.

Provided by Monash University

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