

## *Executive summary*

**W**hilst the increase in certain illnesses has been steady for about four decades – most figures indicate that for the last 15 years there has been a steep increase worldwide in illnesses such as cancers, cardiac illness, diabetes, asthma, allergies in children, and neurological conditions such as short term memory problems, Alzheimer’s disease and sleeplessness.

The currently acknowledged causes of these illnesses are chemical pollution, artificial environmental hormones and the pace of modern living, however a marked spike suggest a major new environmental factor is involved. Arguably, the only new factor is the sudden explosion in wireless communications technology, which began in Australia approximately 15 years ago.

This report, for the first time, matches these illnesses to the published research into the effects of low level microwave radiation on human health, and many scientists agree that such illnesses are a likely outcome of exposure.

Indeed, an increase in these illnesses was predicted as the infrastructure was being rolled out in the early 90s.

In 1994 Australia’s CSIRO produced a 150 page literature review on the status of health effects from EMR. The report’s author, Dr Stan Barnett said that while researching the scientific database in preparation it has become evident that subtle changes in cell structure and biochemistry were frequently reported at exposure levels where gross thermal change – the current measure on which exposure standards are set - could not be attributed as a cause.

From 1996 until he died in 2003, the late New Zealand physicist and meta-analyst Dr Neil Cherry, studied the work of over 600 researchers worldwide. He found that EMR caused DNA breakages, chromosome aberrations, increased oncogene activity in cells, altered brain activity, altered blood pressure and increased brain cancer at very low levels – much lower than those allowed by the Australian standard. He also found that it impacts on the pineal gland in the brain, resulting in a reduction of melatonin. Melatonin is vital to the body's biochemical systems, including the mediation of many hormone functions (including the control of weight) and is a major scavenger of damaging free radicals, leading to increased DNA strand breaks and chromosome aberrations. These observed biological changes can in turn lead to cancer and reproductive damage.

He was surprised to discover how much published research there was to show that - across the entire EMR spectrum - damage was done to cellular DNA, rendering it genotoxic and therefore likely to be implicated in the formation of tumours and other illnesses.

The rise in high blood pressure is also linked to melatonin production. In Australia in 2007 the Baker Heart Research Institute found that 42 per cent of Australians now have high blood pressure, which is reflected in the research of Dr Stephan Braune of the University of Freiberg in Germany, who found in 1998 that raised blood pressure occurred as a result of exposure to electromagnetic radiation. Other studies have produced similar results.

A study published in New Scientist in August 2007 by scientists at the Weizmann Institute of Science in Israel found that after only 5 minutes of exposure to radiation one tenth of the power of a mobile phone, rat and human cell chemicals undergo changes.

Asthma and allergies – especially in children, have also skyrocketed. In 1997 microbiologist Dr Peter French of St Vincent's Hospital in Sydney was conducting experiments on mast cells. He discovered that the production of

histamine – the chemical responsible for allergic reactions, and which is involved in bronchial spasm - is nearly doubled after exposure to mobile phone frequencies. He speculated at the time that this could result in an increase in illnesses such as asthma and allergies in the years to come.

This paper reports that all around the world cancer clusters and other illnesses have been reported in the vicinity of mobile phone towers and on top floors of buildings that have antennas on their rooves, such as hospitals and universities. During 2007 more research and evidence of cancer clusters has emerged. A cancer cluster in a hospital in Israel has been found, with 10 people on the top floor contracting cancer.

Inquiries into these clusters typically do not consider the possibility that EMR is a cause because emission levels are “within current standards”.

Brain and other tumours, as predicted by independent researchers, are all rising rapidly. In November 2007 new research has been published claiming that autism in children has been accelerated by exposure to wireless communications – with now one in 150 children with this condition compared to one in 10,000 children twenty years ago.

It is also possible that that exposure to radiation emitted from a computer for several hours a day could be a contributor to the overall EMR load but this too is rarely studied and, like smoking, it is theoretically a choice that informed individuals can make. With wireless communications there is no choice – everyone is exposed, whether they choose to be or not.

Under Federal law, telecommunications companies are exempt from state and local government planning approval, and are still allowed to install mobile phone antennas and base stations wherever they like, in spite of opposition by many communities.

Ambient EMR is the only environmental pollutant that is not subject to regulation of any sort and this situation is urgently in need of review.