

## Children Endangered by Cell Phone Radiation

Mobile phone firms cynically target children even though they may be most vulnerable to the effects of radiation, a leading scientist, Sir William Stewart, warned. Stewart chaired the world's largest investigation into mobile phone safety. The \$100 billion a year mobile phone industry asserts that there is no conclusive evidence of harmful effects as a result of electromagnetic radiation.

US scientists tested mobile phone-style radiation on more than 10,000 chicken embryos. Pregnant women have been warned to be wary of using mobile phones after it was found radiation produced by the devices caused defects in the chicken embryos. The cell phone industry continues to down-play the risk and defer to more research.

Children using mobile phones absorb as much as double the amount of radiation through their heads as adults. Dr Om Ghandi, a leading scientist and professor of electrical engineering at the University of Utah found that young children under 10 years of age could absorb radiation across their entire brain. He found that more radiation is able to go past the ear and into the head since a child's ear is thinner and the telephone is closer to the head. All it takes is two millimeters difference," Dr Ghandi said.

**Until proven otherwise and technology becomes safe, children including teens should not use mobile phones**, at all, because they are more at risk from the radiation, and their cell growth and brain wave activity are not yet stable. There is conclusive evidence that the phones have biological effects on humans even where the radio frequency or microwave radiation is emitted at very low levels.

Mobile phones and the new wireless technology could cause a "whole generation" of today's teenagers to go senile in the prime of their lives, research suggests. Professor Leif Salford, who headed the research at Sweden's prestigious Lund University, says "the voluntary exposure of the brain to microwaves from hand-held mobile phones" is "the largest human biological experiment ever".

Professor Salford and his team have spent 15 years investigating microwave radiation. Their studies proved radiation could open the blood-brain barrier, allowing a protein called albumin to pass into the brain. Their latest work shows the process is linked to serious brain damage. Professor Salford said neurons that would normally not become "senile" until people reached their 60s may now do so when they were in their 30s. In addition, research indicates that exposure to cell phones' radiation causes red blood cells to leak hemoglobin. Scientists exposed samples of blood to microwave radiation and found that even at lower levels than those emitted by cell phones, the blood cells leaked hemoglobin.

## **Marketing to Children**

Cell phones, which are practically standard equipment for teenagers in today's world, are finding their way into the even smaller hands of preteens. Cell phones designed for preteens have controls that allow parents to limit whom kids can talk to. Preteen cell phones are soon to be marketed nationwide with big expectations that preteen cell phone usage will become a national trend. Paul Saffo of the Institute for the Future in Menlo Park, California says, "It won't be long before no self-respecting kindergartner is going to start school without a cell phone."

The cell-phone industry has continually insisted there is no proven link between cell phones and health problems. But patents for protective devices to reduce the amount of radiation absorbed by the brain suggest that Nokia, Ericsson and Motorola believe otherwise. The big three have come up against multimillion-dollar legal actions by people claiming their health has been damaged.

The \$100 billion a year mobile phone industry asserts that there is no conclusive evidence of harmful effects as a result of electromagnetic radiation. The Cellular Telecommunications & Internet Association hired Dr. George Carlo to head up a \$28 million research program into possible health effects from cellular phones. The research showed an increased rate of brain cancer deaths, development of tumors, and genetic damage among heavy cell phone users. Dr. Carlo has since broken with the cell phone industry to become a vocal critic, and coauthored a book called *Cell Phones: Invisible Hazards in the Wireless Age*

Radiofrequency electromagnetic radiation researcher at the University of Washington, in Seattle, Dr. Henry Lai, showed microwave radiation from mobiles caused genetic damage similar to that found in Alzheimer's and Parkinson's sufferers. To quote Dr. Lai, "It is difficult to deny that RFR at low intensity can affect the nervous system."

Dr. Lai submitted his research to the Stewart committee showing that radiofrequency electromagnetic radiation (RFR) can penetrate into organic tissues and be absorbed and converted into heat. The microwave oven is a familiar use of RFR.

Another scientist, Dr. Hyland, who is based in the physics department at Warwick University and at the International Institute of Biophysics, in Neuss-Holzheim, Germany says that the body is an electro-chemical instrument with exquisite sensitivity and the kind of radiation emitted from mobile phones has an impact on the stability of cells in the body.

Children are particularly vulnerable

Referring to the effect of microwaves from a mobile phone, Dr Hyland says, "The main effects are neurological, causing headaches, lack of concentration, memory loss and sleeping disorders. It can also cause epilepsy in children. Children are particularly

vulnerable because they are still developing their immune systems and are less robust than adults.

Dr Hyland's research, published in the latest edition of the respected medical publication *The Lancet*, follows his analysis of more than 100 earlier studies involving tens of thousands of people.

### **Radio waves from mobile phones harm body cells and damage DNA**

A recent study that was conducted by 12 research groups in seven European countries found that in laboratory conditions radio waves from mobile phones harm body cells and damage DNA. The research project, called Reflex study, which took four years and which was coordinated by the German research group Verum, studied the effect of radiation on human and animal cells in a laboratory.

After being exposed to electromagnetic fields that are typical for mobile phones, the cells showed a significant increase in single and double-strand DNA breaks, with damage not always being repaired by the cell. Mutated cells are seen as a possible cause of cancer. DNA carries the genetic material of an organism and its different cells. "There was remaining damage for future generation of cells", said project leader Franz Adlkofer.

In addition, the Swedish Institute of Environmental Medicine found that ten or more years of mobile phone use almost doubles the risk of acoustic neuroma, or benign tumors on the auditory nerve. "When the side of the head on which the phone was usually held was taken into consideration, we found that the risk of acoustic neuroma was almost four times higher on the same side as the phone was held, and virtually normal on the other side," the institute added. While non-cancerous, acoustic neuroma tumors that are not removed can grow to sizes where they put pressure on the brain and become life threatening.

**The Cellular Task Force** acts as a clearinghouse for information on the health effects, including injury and death, reported world-wide as being caused by radio frequency radiation from digital cellular phones base stations and other wireless facilities. Arthur Firstenberg, president of the Cellular Phone Taskforce has published a book, *Microwaving the planet* which includes a current literature review of over 200 sources

Estimated deaths: 10,000

[The Cellular Phone Task Force](#)

### **Cell phone shields**

Dr. Neil Cherry, associate professor in environmental health at Lincoln University, Christchurch, stated " Mobile phone manufacturers should take seriously a Swedish finding that their products are dangerous for teenagers and work on developing safer

phones". According to Dr. Cherry numerous patents exist for devices or methods to make phones safer but are not being used by manufacturers.

Dr. Cherry estimates that it is practical to reduce users' exposure by 100 to 1000 times. "The primary methods are to manufacture the handset within a Faraday cage shield," he said.

Alarming claims have surfaced in a research publication in the U.K. that not only are many hands-free devices useless in protecting wireless phone users from radiation that might cause tumors, these products may actually raise the amount of radiation being directed into the head by three times. The earplugs in the hands-free kit acted as aerials and channeled more radiation into the ear model than standard cell phones did. Using a hands-free kit and making a call with a mobile phone clipped to your belt means the phone will generally be working at a higher power level. Using a mobile phone clipped to your waist results in a hotspot of radiation being pumped into the liver and kidneys.