

## **Electromagnetic Radiation**

### **Insidious effects on fertility, in pregnancy, babies and children.**

Global electromagnetic toxicity is being viewed by many scientists and doctors worldwide as a significant reason and contributing factor, for the increases that are being seen in diseases such as cancer, diabetes, Alzheimer's, Parkinson's, multiple sclerosis, autism and epilepsy, in addition to other health impacts such as ADD/ADHD, chronic fatigue, skin disorders, reduced melatonin reduction, thyroid, kidney, pancreas and liver dysfunction, infertility, central nervous system disorders, birth defects, increase in allergies and electrosensitivity.

We need to recognize that our bodies are fundamentally electromagnetic and therefore susceptible to outside sources of artificial fields.

The World Health Organisation with IARC ( International Agency for Research on Cancer) issued its overdue decision to classify radiofrequency electromagnetic fields as a group 2B carcinogen in May 2011.

The classification includes all electromagnetic fields such as those from cell phones, cell masts and antennae, Wi-Fi, Wi-Max, LTE/ 4G - any frequency transmitting in the non-ionising frequency range.

The Parliamentary Assembly of the Council of Europe in May 2011 adopted the report "The potential dangers of electromagnetic fields and their effect on the environment." It advised the following :

Put in place information and awareness-raising campaigns on the risks of potentially harmful long-term biological effects on the environment and on human health, especially targeting children, teenagers and young people of reproductive age.

Set preventive thresholds for levels of long-term exposure to microwaves in all indoor areas, in accordance with the precautionary principle, not exceeding 0.6 volts per metre, and in the medium term to reduce it to 0.2 volts per metre.

For children in general, and particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by schoolchildren on school premises.

Russia has studied the non-thermal ( biological impacts) of microwave radiation for over 50 years. Papers in the 60's and 70's showed changes in pituitary and pancreatic function, increased hormone production in the adrenal cortex, thyroid dysfunction, effects on sex glands, disruption to cardiovascular and endocrine systems, central nervous system

disorders, loss of hair/balding, rapid fatigue, blood changes, loss of concentration and miscarriages.

Recent studies such as the Bioinitiative Report 2007, reviewed 2000 medical and scientific papers. The findings showed evidence for effects on gene and protein expression, DNA breaks, genotoxic effects, stress response, neurology and behaviour impacts, brain and acoustic neuromas, childhood cancers such as leukaemia, reduced melatonin production, Alzheimers, skin disorders, strokes, weakened immune system, breasts and other cancers.

Other studies have found thyroid, pancreas and liver disruption, change in brain proteins affecting memory , especially specific to GSM and Wi-Fi frequencies.

Studies are increasingly also showing the impacts of EMR/non-ionising radiation on fertility. DNA integrity is essential for normal conception. Sperm DNA fragmentation can result in impaired fertilisation, high rates of miscarriage, childhood cancer, poor embryonic development, and increased morbidity in offspring.

De Lullis and colleagues 2009 found RF/Microwave exposure from cell phones enhanced mitochondrial reactive oxygen species around spermatozoa, decreasing both their motility and vitality.

Animal studies have also found a significantly reduced number of ovarian follicles in female offspring when mothers were exposed to phone radiation during pregnancy.

Scientific research is raising the alarm even more about the impacts on the foetus with exposure during pregnancy.

The Centre of Disease Control has stated that 1 in 100 children has Autism in South Africa

Dr. Dietrich Klinghart, MD, PhD of the Institute of Neurobiology in Seattle recently conducted a pilot study to assess the potential role of electromagnetic frequencies in the dramatic rise in autism and other neurological impairments over the past decade.

The study strongly suggested that electromagnetic radiation in the sleeping environment of mothers during pregnancy, in addition to electromagnetic radiation in the sleeping environment of children, may be a key link to autism and other neurological disorders.

Another recent important paper from Yale University ( Tamir S.Aldad et al 2011) addressing the key concerns about the increasing neurobehavioural disorders such as ADHD used a mouse model to demonstrate that in utero radiofrequency exposure does affect child/adult behaviour.

**A team from the Department of Obstetrics and Gynaecology at the Zagazig University in Egypt 2008 ( Rezk AY et al) studied foetal and neo-natal HR responses following maternal exposure to mobile phones .**

**The results showed a statistical significant increase in foetal and neonatal HR, and statistical significant decrease in stroke volume and COP before and after use of mobile phone were noted. All these changes were attenuated with increase in gestational age.**

**Wireless technology has exploded in South Africa, resulting in a mass infrastructure of towers and antennae sites that now proliferate our landscape and buildings. This has been compounded by the fact that there are so many service providers, thus exposing the public, yet more especially our babies and children 24/7, to levels of electromagnetic radiation that have never been proven safe. Cell phones, Wi-Fi and wireless laptops or I-Pads are increasing the health impacts of exposure.**

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