

Before You Give Your Child A Phone Think How It May Effect Your Child's Health

1. Mobile phones operate at GSM/analogue at 900MHz (0.9GHz)
2. Digital phones operate at (GSM/PCN/DECT) at 1800MHz (1.8GHz)
3. G3 mobile phones are assigned to operate at 2200MHz (2.2GHz)
4. **Microwave ovens operate at 915MHz and 2450MHz (0.915GHz - 2.45GHz)**

It is not difficult to see and appreciate that the same frequencies and higher than those used to cook our food and boil our water are being used in mobile phone technology. A technology that is held directly against our head, placed on our rooftops, in our gardens, by our schools, etc.

- "The largest biological experiment in history" is how one researcher describes mobile phone use. And those who make numerous calls every day from their mobiles are the guinea pigs
- **Lloyds underwriters and leading insurance groups have refused to offer 'Product Liability Cover' to mobile phone manufacturer's for damage to users health**
- **UK government report says that it is now clear that mobile phone radiation can affect brain function.** Now that 20,000 radio masts in the UK are active it means that everyone is being subjected to constant low level electromagnetic radiation. Sunday Times 12 March 2000
- **Sir William Stewart, chairman of the Health Protection Agency, has called on parents to ban under-eights from using mobile phones**
- **Handsets expose users to between 1,000 and 10,000 times more radiation than mobile phone masts.** Dr. Clarke: "We feel we should discourage prolonged use of mobile phones."
- The UK's first mobile phone specially designed for children was withdrawn from sale by distributor Communic8 after a **Government report raised health concerns about youngsters using handsets**
- **Leading scientists have cut down or modified their personal use of mobile phones as fears mount that they can damage health**
- The use of mobile phones has already been linked to headaches, fatigue, **damage to the immune system and cancer**
- Professor Colin Blakemore, Waynflete professor of physiology at Oxford University and a member of the official body that regulates the use of mobile phones in the UK, is one of those who have cut back their use of mobile phones. Professor Blakemore said there was growing evidence that **mobile phones could affect the functioning of the brain.** Professor Blakemore said **nerve cells were influenced by electromagnetic radiation of the type produced by mobile phones.** He said the **phones were also placed close to areas in the brain that regulated short-term memory, as well as areas that controlled heart function and blood pressure.**
- Mobile phone users may be placing their health at risk from electromagnetic radiation – according to Dr. Kjell Hansson Mild in Sweden who studied 11,000 mobile phone users. He reported in May 1998 that symptoms such as **fatigue, headaches, burning sensations on the skin are more common among those who make longer mobile phone calls.** At the same time there are a growing number of unconfirmed reports of individuals whose health has been affected after chronic, frequent use of mobile phones, presumably from radiation effects on cells.

- **In June 1998 the Lancet reported that radiation from mobile phones causes an increase of blood pressure.** Dr. Braune and colleagues in Freiburg, Germany, attached mobile phones to the right side of the heads of ten volunteers. The phones were switched on and off by remote control without the volunteers knowing. **Their blood pressure rose each time by between 5-10mm Hg,** probably from a constrictive effect on blood vessels. This level of increase would be more than enough to trigger a stroke or heart attack in someone at severe risk. This was the first firm evidence that mobile phone radiation could directly alter cell function in the human body.
- Currently The National Radiation Protection Board (NRPB) produce guidelines (set in 1993) which provide us with supposedly safe levels of radiation – levels, however, which **are considerably higher** than other countries where research into this subject has led to a number of scientists and scientific bodies significantly reducing their exposure levels. **The magnitude of the gulf in thinking between the NRPB and other scientific bodies/governments is alarming.** It is difficult to imagine how the NRPB can continue to maintain that an investigative exposure level of 100W/m² is safe when in 1995 the New Zealand Environment Court (as the Planning Tribunal) in the case of MacIntyre vs. BellSouth set a level of 0.002W/m² as a precautionary approach – **a level 5000 times less than that set by the NRPB.**
- Evidence has started to emerge suggesting there could be some very serious health implications, most notably an **increased incidence of cancer for people working or residing in the vicinity of mobile phone base station transmitter masts.** In other countries, most notably the US, Australia and New Zealand, the governments have all taken this issue sufficiently seriously, at both national and local level, to adopt the precautionary principle and introduce policies of prudent avoidance which have effectively banned the erection of these masts from school buildings and residential areas and in other densely populated locations.
- A symposium in Vienna attended by many of the world's foremost independent scientists looking into the mobile phone health debate, signed a resolution in January 1999, to the effect that biological effects caused by low level exposure to radio wave/microwave EMR, particularly those emitted by mobile phones and their base transmitting stations, were now contrary to the views expressed by government protection bodies such as the UK's National Radiological Protection Board (NRPB). Scientifically established, the Group (of scientists), which included the likes of Carl Blackman of the USA's Environment Protection Agency, voted overwhelmingly in favour of the above resolution.
- “It is not a question of whether these EMF fields cause health problems or not, that is not in doubt. What is uncertain is just how this ill-health will manifest in an individual. What is certain, through even the most basic understanding of physics is that EMFs do weaken our energy fields and this will lead to some form of illness and disease in humans. **Children, in particular, with their developing immune systems and ill or sick people are more prone to the effects of EM Radiation, and are, therefore, at risk the most.** I am now convinced that EMFs pose a health hazard. There is statistical association between magnetic fields and cancer that goes beyond the shadow of reasonable doubt. I think there is clear evidence that exposure to EMFs increases the risk of cancer. This is most clear with leukaemia and brain tumours, but in residential studies statistical significance increased for all kinds of cancers. And we are just beginning to have a whole body of evidence that reproductive cancers are increased by exposure”. Dr. David Carpenter, Dean of the State of New York School of Public Health.
- “... **Sweden has concluded that EMFs do lead to higher rates of cancer** ...I, frankly was somewhat impressed by the arguments made by the Swedes.” President (ex) Bill Clinton. In the

USA, President Clinton issued a formal memorandum in 1995, stating that **Transmitter Masts should not be sited on schools or near residential areas.**

- Microwave Radiation is not restricted to Mobile Phones, their Transmission Towers and microwave ovens. Cordless telephones emit this dangerous microwave radiation, especially the new era of **Digital Cordless Telephones (DECT), whose base/charging units are constantly emitting microwave radiation into our homes and workplaces, even when the phone is not in use. This is like having a mobile phone mast installed inside your house, constantly emitting microwave radiation into your immediate environment.** In this respect, this represents an even greater threat to your health and wellbeing than that posed by the occasional use of a mobile phone. People naturally spend more time using this type of phone than they do a mobile phone – not because of any perceived health risk – but simply because the telephone charges are much less expensive, so we and our children spend more time 'on air' so to speak, and as a result, we are being slowly and consistently microwaved towards ill health and the possibility of premature death. **Yet nobody is warning us about the potential dangers of using Digital Cordless Telephones.** Analogue Cordless Telephones are not as safe as we are led to believe either, though they are not as potentially dangerous as their digital equivalent. However, whilst the base unit/charger on analogue cordless phones does not appear to emit detectable microwave radiation when the phone is not in use, both the handset and the base unit do emit detectable high levels of microwave radiation when making or receiving calls.

- **Digital Cordless Telephones (DECT) operate at a frequency range of around 1880MHz to 1900MHz (1.88GHz - 1.9GHz), slightly above the frequencies used by mobile phones, and, therefore, when used, are potentially more dangerous to our health. Especially if they are constantly emitting microwave radiation into our homes and workplace even when the phones are not in use.**

- June 2001 the International Agency for Research on Cancer (IARC), a specialized agency of WHO on cancer, classified low frequency (frequencies of 50 or 60 Hz) magnetic fields as a "possible human carcinogen".

- Professor Lawrie Challis, who was vice chairman of the Stewart Inquiry and is now chairman of the Mobile Telecommunications and Health Research programme, set up to investigate the health risks of mobile phones, told BBC News: **"I would certainly not wish my own grandchildren to use mobile phones more than they had to."**

- Last year a 750-people study by Sweden's Karolinska Institute suggested using a mobile phone for 10 years or more **increases the risk of ear tumours by four times.**

- A Dutch study has suggested mobile phone use **can affect brain function**, and further research from Europe indicated radiation from the phones **can cause DNA damage.**

- October 2004, scientists at the Karolinska Institute in Stockholm gave a new warning about mobile phone radiation and brain tumours – acoustic neuromas (published in the journal Epidemiology). They found that long term users of mobile phones **were four times as likely to develop growths on the side they held the phone, and twice as likely as non-users to develop these benign non-cancerous growths.** They saw no increased risk from mobile phone radiation in those who had used mobile phones for less than 10 years. The study was of 150 mobile phone users, compared to 60 in a control group.

- **March 2003 another study in the International Journal of Oncology suggested that mobile**

phone users had a 30% increased risk of brain tumours – mainly acoustic neuromas – which occurred close to the ear used for mobile phone listening. Previous studies had shown that growth of **leukaemia cells could be increased dramatically after exposure to mobile phone radiation.** Although acoustic neuromas do not metastasise (jump to invade other parts of the body) they can create serious problems if untreated. The early **symptoms can be hearing loss, loss of balance or noises in one ear** – but all these are very common for many other reasons. Advanced growths can invade other nearby areas, causing pressure on the brain. What makes these studies difficult to evaluate is that a number of other research studies into mobile phone radiation have not shown the same findings. And the effects may be very different depending on the type of electromagnetic radiation. GSM and GPRS (2.5G) phones use what is known as pulsed radiation. The levels rise and fall very rapidly. 3G phones on the other hand use continuous levels. Some research suggests that pulsed radiation may have a greater effect on cells than constant exposure, which is important because different studies have used different types of radiation – perhaps an explanation for some of the more confusing results.

- Short exposure to mobile phone radiation – two hours – has been reported in 2003 **to destroy cells in parts of the brain important for memory, movement and learning**, and could possibly conceivably cause premature onset of illnesses such as Alzheimer's – although we have no evidence of a similar effect in humans. Lund University Hospital Professor Leif Salford says mobile radiation allows harmful proteins and toxins through the brain barrier in rats. He also has found a significant degree of damage to brain neurons in adolescent rats. He said: "If this effect was to transfer to young mobile users, the effects could be terrifying. We can see reduced brain reserve capacity, meaning those who might normally have got Alzheimer's or dementia in old age could get it much earlier." He used rats aged 12-26 weeks because their brain cells were still developing in a similar way to teenagers and younger children. They were exposed for just 120 minutes to radiation equivalent to typical intensive mobile phone use. Sections of rat brains were examined 50 days after exposure. Animals exposed to medium and high level radiation had many dead neurons in their brains – totally different from rats which were not exposed to radiation. (published February 2003). The trouble is that similar studies cannot be carried out in humans because mobile phone radiation exposure would have to be followed by brain biopsy which can cause epilepsy later, permanent brain damage, stroke or even death. **We can only get the answer in humans by doing studies on brain tissue of teenagers killed in accidents, and comparing brain tissue of heavy, medium, light and non-users of mobile phones.** In addition, we have yet to see other centres replicate his work.

- Dr. Kjell Hansson Mild in Sweden studied radiation risk in 11,000 mobile telephone users. Symptoms such as **fatigue, headaches, burning sensations on the skin** were more common among those who made longer mobile phone calls. At the same time there are a growing number of unconfirmed reports of individuals whose health has been affected after chronic, frequent use of mobile phones, presumably from radiation effects on cells. Once again, for every study with a positive finding of effect on cells, there is another that has found nothing.

- As long ago as June 1998 the Lancet reported that radiation from mobiles caused an increase of blood pressure. Dr. Braune and colleagues in Freiburg, Germany, attached mobiles to the right side of the heads of ten volunteers. The phones were switched on and off by remote control without the volunteers knowing – so that any radiation effect could be separated from the psychological effect of holding a mobile phone. **Their blood pressure rose each time by between 5-10mm Hg, probably from an electromagnetic radiation-induced constrictive effect on blood vessels from the mobile phones.**

[See article A105 concerning effects on the red blood cells. Possibly the increase blood pressure is caused by the fact that the red blood cells have depolarized and are clumping together.]

- An Australian study found that mice exposed to pulsed digital mobile phone radiation over 18 months had twice the risk of developing cancers. An American study found that learning and short term memory were impaired after 45 minutes exposure to electromagnetic radiation from mobile phones in rats. And other studies of electromagnetic radiation on pregnant mice suggest that high exposure to mobile phones can affect intra-uterine development, confirmed recently in chicks (double birth defects, see below). The effects of mobile phone radiation in human embryo development are unknown.
- **Recent claim of 30% increase in brain tumours found in regular mobile phone users.** Brain cancers were most frequently developed on side of head to which the person held their phone. Biggest increase in cancerous growths was in acoustic neuromas which form behind the ear and are usually treated quite easily. Incidence of these types of growths is increasing in the UK. Analysis of 1,600 people with growths who had used mobile phones for up to ten years before diagnosis. Risk increased with frequency and duration of exposure to mobile phone radiation. Scientists compared tumour victims with those who led similar lives but did not use mobile phones, and also with another group who had tumours but did not use mobile phones. Analogue, digital and "cordless" DECT phones all seem to carry risk. Study by Professor Kjell Mild, Orebro University in Sweden – published in the International Journal of Oncology March 2003.
- **Suggestion that mobile phone radiation can destroy brain cells and may lead to the early Alzheimer's disease.** Long exposure said to destroy cells in parts of the rat brain important for memory, movement and learning and could possibly cause premature onset of illnesses such as Alzheimer's if the same effect was found in humans. Lund University Hospital did not look at cancer risk but at direct damage to brain cells. Professor Leif Salford said mobile radiation was already known to allow harmful proteins and toxins through the brain barrier in rats. Now, he detected significant degree of damage to brain neurons in adolescent rats. "If this effect was to transfer to young mobile users, the effects could be terrifying. We can see reduced brain reserve capacity, meaning **those who might normally have got Alzheimer's or dementia in old age could get it much earlier.**" He used rats aged 12-26 weeks because their brain cells were still developing in a similar way to teenagers and younger children. They were exposed for just two hours to radiation equivalent to mobile phone use. Sections of rat brains were examined 50 days after exposure. Animals exposed to medium and high level radiation had many dead neurons. Environmental Health Perspectives, the journal of the US Government's National Institute of Environmental Health Sciences February 2003
- **Worms raise safety concerns over mobile phone radiation.** Nottingham University UK found that female nematode worms exposed to mobile phone radiation produced stress hormones, grew 10% larger, and produced more eggs. New Scientist 7 Feb 2002
- **Mobile phones may make cancer cells grow faster.** Dr. Fiorenzo Marinelli of National Research Council in Bologna found that **leukaemia cells divide much more rapidly after exposure to mobile phone radiation.** They used 1 milliwatt (many phones can produce up to 2 milliwatts) at 900 megahertz (a European frequency). After 24 hours of continuous exposure many cancer cells died, but the effect was reversed after 48 hours, with activation of genes leading to very rapid multiplication. Other scientists dismissed the findings as odd. New Scientist Mail 24 October 2002
- **Mobile phone radiation disturbs sleep patterns.** Electromagnetic fields from mobile phone use in bed significantly increases brain activity during early, non-rapid-eye-movement sleep. Alexander Borbely and Peter Ackerman at the University of Zurich subjected 16 people to electromagnetic radiation similar to mobile phone use for 30 minutes before they went to sleep. Increased brain activity lasted up to 50 minutes. Senior Department of Health source says: "This effectively means

that people will soon have to accept that mobile phones do have a biological effect. This is a far cry from 10 years ago." Scotsman 16 October 2000, also Sunday Mirror 15 October 2000

- **Mobile phones may cause damage to nerves around ears** – Former chief medical officer for Telstra (Dr. Hocking) claims in evidence to Australia Senate enquiry that he had clear evidence of altered nerve function in the skin of a mobile phone user, around the ear area. Readings of nerves were taken 1cm in front of and 1cm behind the ear – both showed altered responses in a man complaining of strange feelings in his head after using a mobile phone. He had many other cases but had investigated only one. He also gave his analysis of leukaemia in children living within 4km of television towers on Sydney's lower north shore. **10 years after diagnosis with leukaemia, those closest to the TV towers had half the survival rates expected.** His previous studies suggested a 50% increase in child leukaemia in areas close to the towers. Sun Herald 8 October 2000
- **Mobile phones and brain cancer** – George Carlo reviews 75 studies. Concludes there are now "**legitimate questions about safety**", making claims of absolute safety no longer supportable. Medscape 31 July 2000
- Ministry says mobiles are safe – and then buys protectors. Sunday Telegraph reports that Ministry of Defence's Defence Evaluation and Research Agency has ordered Microshield cases for staff users. Microshield says they've sold over 150,000 cases in the last few weeks. It was DERA's own research, at Porton Down, last year, which suggested that mobile phones could cause short-term memory loss and sudden confusion, after scientists found microwave radiation emissions from mobile phones altered the nerve cell behaviour in rats' brains. **The World Health Organisation is now conducting a \$4 million study on 3,000 victims of brain tumours, looking for possible links with mobile phone use.** A separate four-year study, Project Cephos, is being carried out at Bradford University. Sunday Telegraph 30 May 1999
- **Brain cancer tumours 2.5 times more likely in heavy mobile phone users** – according to two new unpublished reports. Dr. Lennart Hardell, Swedish cancer specialist says: "There is a biological indication that there is a problem which should be studied much more. I think that until we have a definite conclusion, the definitive results of much larger studies, we need to minimise exposure to human beings." Dr. George Carlo, head of an American research body funded by the mobile phone industry, also found an **increased risk of rare brain tumours.** Daily Telegraph and Panorama BBC TV 24 May 1999
- **Radio waves from mobile phones have been found to make cancerous cells spread more aggressively**, raising new concerns about the safety of using cellphone handsets. Italian government researchers at the National Research Council in Bologna found that **radio waves of the type emitted by mobile phones initially killed cancer cells, then after 48 hours, made them proliferate more rapidly.** The research does not suggest that mobile phone radiation triggers cancer, but that it could play an important role in helping cancerous cells that have already formed to thrive. Fiorenzo Marinelli, a cell biologist, exposed leukaemia cells to 900 megahertz radio waves, as used by many mobile phone networks, at a power level of 1 milliwatt, which is between one half and 10 times the power emitted by mobile phones. Initially, the radiation suppressed the formation of tumours. After 24 hours of continuous exposure, suicide genes that prevent cancer spreading were turned on in far more leukaemia cells than in cells not exposed. But after 48 hours' exposure, Prof Marinelli found that a survival mechanism kicked in and the cancer, briefly beaten back, became more aggressive. Three genes that trigger cells to multiply were turned on in a high proportion of the surviving cells, making them replicate ferociously, New Scientist reports. Prof Marinelli said: "We don't know what the effects would be on healthy human cells. But in leukaemia cells the response is always the same."

- Research by the Radiation and Nuclear Safety Authority in Finland found that **microwaves from cellphone handsets damaged the blood-brain barrier, which prevents materials from the blood entering the brain.** It warned that this might have implications for human health. Prof William Stewart, who chairs the British Government's expert group on mobile phone radiation, said the Finnish research should be taken seriously because it came from "a well-respected team at a well-respected institution". He said: "Because it found **changes to the blood-brain barrier it is an important finding, particularly bearing in mind that it involved a short period of exposure.**"
- Cells from blood vessel walls in the brain were placed in culture dishes and subjected in the laboratory to mobile phone radiation of two watts per kilogram, the maximum allowed internationally for mobile phones. After an hour's exposure biochemical changes were seen in the cells that could alter the activity of about 400 proteins. In particular, one enzyme, called HSP 27, which helps to regulate blood-brain barrier permeability, was affected. Prof Leszczynski said HSP 27 affected structures in the cells called stress fibres. The distribution of stress fibres in turn affected leakage of the blood-brain barrier. Prof Leszczynski said: "If the same thing happened in real life, in people, then it could affect blood-brain barrier permeability by increasing it." As a result, molecules that caused damage to neurons might be allowed to invade brain tissue. He added that a French team also presenting findings at the conference had shown that blood-brain barrier leakage increased in rats exposed to mobile phone radiation.
- Dr. Cornelia Waldmann Selsam represents a group of German doctors who are combining together to put forward their observations of adverse health effects from pulsed high-frequency EMFs (microwave) to the Prime Minister, Dr. Edmund Stoiber. **Their reports show that the people for years have been ill due to pulsed high frequency electromagnetic fields,** without the treating doctors recognising the cause. For that reason, people who are receiving the high frequency at home or at work have suffered and are suffering and they receive no therapy. The deciding [effective] therapy is to end the exposure. The continually repeated assertion in the media by the Radiological Protection Commission (Strahlenschutzkommission), that there is no proof for health risks under the present valid limits, has had the consequence that most doctors, (including myself until a year ago) have not drawn a relationship between the many unexplained illness patterns and high frequency radiation. The doctors do not know that at not one single mobile phone base station have investigations into the health-state of the people been carried out. Thus, the evaluation of the Strahlenschutzkommission in 2001 has no scientific basis. In Oberfranken, we have just evaluated the medical complaints of 356 people who have had long-term [radiation] exposure in their homes. **The pulsed high frequency electro magnetic fields (from mobile phone base stations, from cable-less DECT telephones, amongst others), led to a new, previously unknown pattern of illnesses with a characteristic symptom complex.** People suffer from one, several or many of the following symptoms: **Sleep disturbances, tiredness, disturbance in concentration, forgetfulness, problem with finding words, depressive mood, ear noises, sudden loss of hearing, hearing loss, giddiness, nose bleeds, visual disturbances, frequent infections, sinusitis, joint and limb pains, nerve and soft tissue pains, feeling of numbness, heart rhythm disturbances, increased blood pressure episodes, hormonal disturbances, night-time sweats, nausea.** Even at $10\mu\text{W}/\text{m}^2$ (only 0.06 V/m average) many people are becoming ill. The symptoms occur in temporal and spatial relationship to exposure. It is no way only a subjective sensitivity disturbance. **Disturbances of rhythm, hearing problems, sudden deafness, hearing loss, loss of vision, increased blood pressure, hormonal disturbances, concentration impairments, and others can be proved** using scientific objective measures. Some of the health disturbance disappears immediately after the exposure ceases (removal of DECT telephone, temporary moving away from home, permanently moving away, using shielding). Therefore, the expansion must be stopped immediately. Mobile phone base stations, in whose fields people are exposed to more than $10\mu\text{W}/\text{m}^2$

must be turned off. DECT telephones must be changed. Affected people, relatives and doctors must jointly commit themselves and work together with all their energy [to this end]. Evaluation of symptoms of 356 people under long time home exposure to high frequency pulsed electromagnetic fields (DECT, telephones, mobile phone base stations) versus the level of the power flux density in microwatts per square metre. Dr. Cornelia Waldmann Selsam, Karl-May-Str.48, 96049 Bamberg

- A study encouraged by the German Federal Agency for Radiation Protection by Eger, Hagen, Lucas, Vogel & Voit, examined whether people living within 400 metres of a mobile phone mast were more at risk of developing cancer than those who lived further away. Case histories of 1,000 patients between 1994 and 2004 were evaluated for the study. **Newly diagnosed cancers were significantly higher among those who had lived for 10 years within 400 metres of the mast**, in operation since 1993, compared with those living further away, and the patients had fallen ill on average 8 years earlier. **People living within 400 metres of the mast in Naila had three times the risk of developing cancer than those living further away. This seems to be an undeniable clustering of cancer cases.**

- Leif G. Salford, Arne E. Brun, Jacob L. Eberhardt, Lars Malmgren, Bertil R.R. Persson, Lund University, the Rausing Laboratory and Lund University Hospital, S-22185, Lund, Sweden. "This is dramatic confirmation of our worst fears. Over 5 years ago we were writing that heavy mobile phone use caused people to have short term memory problems – indeed it was a joke among some service and installation engineers that they would forget to turn off at the right road and end up in the next village (etc.). Then a senior BT engineer developed severe dementia aged only 38 and was eventually retired due to ill health – though BT deny any possibility that it was work related. He had been using an early GSM phone for typically 6 hours per day – sometimes even using two phones, one to each ear, when trying to debug faulty exchanges and data-comms centres. Then **we discovered that there was apparently a general increase in early-onset dementias (before the age of 55) in many areas of the UK such that some hospitals were setting up new treatment/management units to help these people cope.** Now we have both a possible mechanism (leakage of large molecules such as albumin through the blood-brain barrier) and direct evidence of neuronal death in rats. This occurred at 2 mW/kg SAR level ... mobile phones are allowed (ICNIRP) to put up to 1000 times this SAR (2000 mW/kg or 2 W/kg) into the user's head! **Extensive brain cell death was seen** by an exposure level of 20 mW/kg for just one two hour period. All mobile phone use with the phone held next to your ear will cause at least this level of microwave exposure to your brain cells – most phones can put more than 200 mW/kg into your brain cells when they are working. 12 to 26 weeks old rats were chosen for these tests (as it is unacceptable to sacrifice children and slice up their brains) because they are comparable to human mobile phone addicted teen-agers with respect to their relative development age. 50 days later they were sacrificed and their brains sectioned and stained. The authors write: "The situation of the growing brain might deserve special concern from the society since biological and maturational processes are particularly vulnerable. The intense use of mobile phones by youngsters is a serious memento. A neuronal damage of the kind, here described, may not have immediately demonstrable consequences, even if repeated. It may, however, in the long run, result in reduced brain reserve capacity that might be unveiled by other later neuronal disease or even the wear and tear of ageing. We can not exclude that **after some decades of (often), daily use, a whole generation of users, may suffer negative effects maybe already in their middle age.**" Leif Salford said on UK BBC Radio4 "You and Yours" programme on 5th February 2003 that he would not allow his children to use a mobile phone other than in a real emergency and he chooses not to use one other than when he really has to. He said **he rated the reality of brain damage as a "probability rather than a possibility"**. When neurons die, they are dead. They do not get resurrected. To start with effects are not likely to show up at all, but then 'forgetfulness' is likely to increase so that you need to look

more things up again and again so that other neuronal pathways can be created in your brain to remember the information. You will probably have to start to write lists of tasks that you need to do. Eventually a point is reached where catastrophic failure occurs with the rapid onset of significant dementia. There has been some recent brain research that shows that "keeping an active brain" can generate some new brain tissue even into old age. However if you have already developed early brain death it is unlikely that you would be able to be mentally active enough for this to happen.

- Twelve institutes in seven countries have found genotoxic effects and modified expressions on numerous genes and proteins after Radio frequency and extremely low frequency EMF exposure at low levels, below current international safety guidance, to living cells in-vitro. These results confirm the likelihood of long-term genetic damage in the blood and brains of users of mobile phones and other sources of electromagnetic fields. The idea behind the REFLEX study was to attempt to replicate damage already reported to see if the effects were real and whether, or not, more money should be spent on research into the possible adverse health effects of EMF exposure. They concluded that in-vitro damage is real and that it is important to carry out much more research, especially monitoring the long-term health of people. **"Project Leader Franz Adlkofer advised against the use of a mobile phone** when an alternative fixed-line phone was available and recommended using a headset whenever possible."

- **The UK government received 22.5 billion pounds from selling the 3rd generation licenses, and the tax from phone companies is now worth over a billion pounds per year. They are promoting mobile communications and have made it very difficult for local planning authorities to refuse mast applications.**

<http://www.childrensfurniture.co.uk/phones.html>