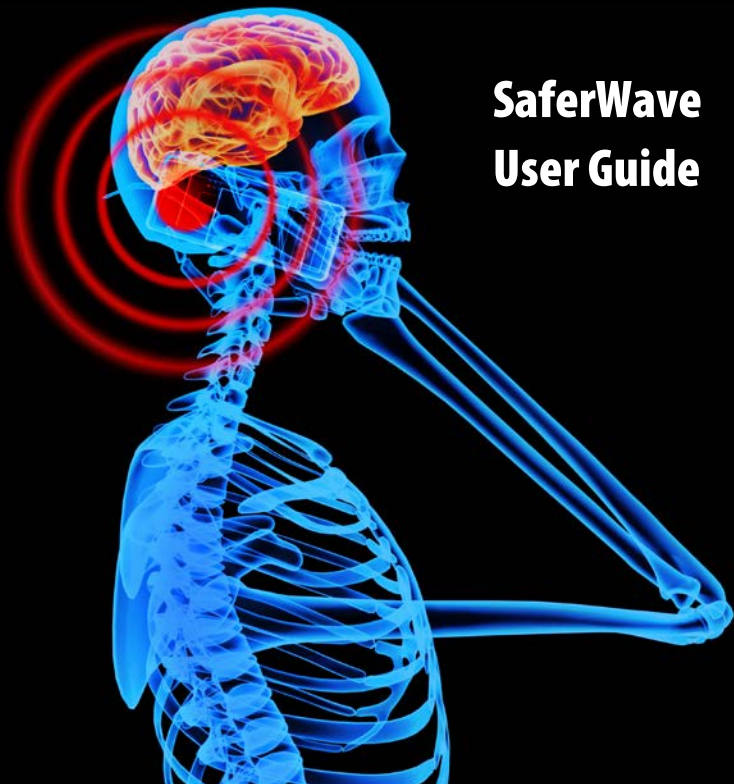


Welcome to state of the art radiation protection

SaferWave User Guide



SAFERWAVE

- your protection from radiation waves

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Product references

Pictures and diagrams are intended to demonstrate the principles and application of principles behind the SaferWave concept and associated products. All pictures and diagrams are typical only and no intention or inference should be made that these represent particular products. No statements either refer to or infer that any device is more or less harmful or more or less safe than other device or system. Information is provided to provide the opportunity to provide information for due diligence by purchasers or prospective purchasers.

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Contents

Introduction	4
Summary of health effects	5
Why be concerned?	5
EMF and your health.....	7
What are the known health risks?	8
Views from authorities.....	9
The precautionary principle	11
What are suspected mobile phone health risks?	12
What creates the health risks?	13
Mobile phones and health risks.....	14
DECT (home wireless) phones and health risks.....	17
PCs and health risks.....	18
About SaferWave.....	19
The <i>SaferWave</i> safety support 1 - changing waveforms	19
The <i>SaferWave</i> process in outline	20
The <i>SaferWave</i> process in detail	21
The <i>SaferWave</i> safety support 2 - <i>SaferWave</i> headset ferrite	24
The <i>SaferWave</i> safety support 3 - <i>Your safe use practice of separation</i>	26
How was <i>SaferWave</i> protection tested?.....	27
Summary of safe use approaches	29
Safer use of mobile phones - together with <i>SaferWave</i>	30
Safer use of DECT phones - together with <i>SaferWave</i>	31
Safer use of PCs - together with <i>SaferWave</i>	32
The <i>SaferWave</i> safe (and unsafe) use photo gallery.....	33
Supportive approaches for mobile phones	33
Being practical - what you can do:.....	36
Where really special and extra care is needed	37
Mobile phones when travelling	40
Supportive approaches for PCs	40
Installation instructions.....	43
Mobile phones	45
DECT phones	49
PCs - laptops and desktops.....	50
Further information	51
Glossary	52

Introduction

This document validates your very smart choice of *SaferWave* approaches to help protect you against the harm of radiation from phones and PCs. This is a shortened version of a full technical presentation on why phones and PCs can cause harm to your health, how they do this, how to protect yourself.

This document has been written with the intention of being as easy to understand as possible. However, because of the nature of the subject, it is inevitable that some terms of a technical and scientific nature are used. You will find explanations of these in the *Glossary* on page 52.

Summary of health effects

Why be concerned?

Science sometimes takes years to connect the dots. Remember when cigarettes were good for you and doctors recommended them to help people 'relax'? Even the late President Ronald Reagan hawked for cigarette makers, as did Fred and Wilma Flintstone.

Now it's common knowledge that cigarettes cause lung cancer, emphysema and heart disease.

"Only Ten Minutes on a Mobile Could Trigger Cancer, Scientists Believe,"

D. Derbyshire, Daily Mail, UK, 08-30-2007.

and the Independent Sunday, 30 March 2008:

"It is anticipated that this danger has far broader public health ramifications than asbestos and smoking," says Professor Khurana, who told the IoS his assessment is partly based on the fact that three billion people now use the phones worldwide, three times as many as smoke. Smoking kills some five million worldwide each year; exposure to asbestos is responsible for as many deaths in Britain as road accidents.

Professor Khurana is a top neurosurgeon who has received 14 awards over the past 16 years, has published more than three dozen scientific papers and reviewed more than 100 studies on the effects of mobile phones. He has put the results on a brain surgery website, and a paper based on the research is currently being peer-reviewed for publication in a scientific journal. He admits that mobile phones can save lives in emergencies but concludes that, "there is a significant and increasing body of evidence for a link between mobile phone usage and certain brain tumours". He believes this will be "definitively proven" in the next decade.

This research was done at Weizmann Institute of Science in Israel and published in the Biochemical Journal, August 1, 2007, 9405 (Pt3) 559-568.

There is strong body of evidence: so much so that WHO classifies mobile phones as a possible carcinogen.

In summary:

- ✗ We can't see Electro Magnetic Fields (EMF) or radiation fields.
- ✗ We often can't feel the effects (unless our health is compromised or exposure levels are high).
- ✗ There are solid studies on those with compromised health, including those who are classed as electro-sensitive, who suffer from EMF exposure. These demonstrate that there is an effect.
- ✗ There is a lot of debate about whether EMF is harmful and to whom. Healthy people have a good ability to withstand the harmful effects and given exposure free intervals, can recover from the stress of radiation exposure.
- ✗ Many robust organisations refer to the "Precautionary Principle". The basis of this is "if we don't know the effects adopt a cautionary approach". This is a really smart approach assuming that there may be a health danger and taking proactive measures enables us to protect ourselves.
- ✗ Manufacturer's, service providers and governments all have an extremely significant commercial investment in Mobile phones. This means that they do not want to admit that there are problems, for preserving product viability, technical credibility, and because if there is a problem the lawsuit potential for damages is enormous.

EMF and your health

You may be one of the people who believe that radiation is a very small problem, or you may be one of those who believe it is a significant problem. Most probably you are somewhere in between, in common with most of the population. Many people are confused that something so popular could be a danger and also perplexed by the conflict in information available.

How do people think that their health is affected by EMF?

Item	Concern Level			
	To a large extent	To some extent	Not at all	Don't know
Mobile Phones	28%	45%	22%	5%
EMF in General	46%	40%	18%	6%
High Voltage Power Lines	37%	38%	21%	4%
Mobile Phone Masts	36%	40%	18%	6%
Computers	18%	47%	29%	6%

For full details see http://ec.europa.eu/public_opinion/archives/ebs/ebs_347_en.pdf

Regardless of whether you think there is a problem or not, the sensible thing to do is to take precautions, especially when the precautions are as good and affordable as the *Safer Wave* solution.

Even the governmental agencies around the world who claim that this type of radiation is safe, still advise to take precautions; including not speaking in mobile phones more than necessary, using hands free equipment, etc. Those precautions are however not good enough to soundly protect your health, and should be used combined with *SaferWave* approaches. Be sensible, be smart, do what you can for yourself and your loved ones.

- ✓ The strongest recommendation from all statutory bodies is to adopt sensible precautions. From history of X rays from smokers for example, the real effects seem not to be well understood for decades- by which time there is often an established problem.
- ✓ Like many events in life the solution is in your hands and it will be 10-20 years before any aware government makes any sound safety regulations!

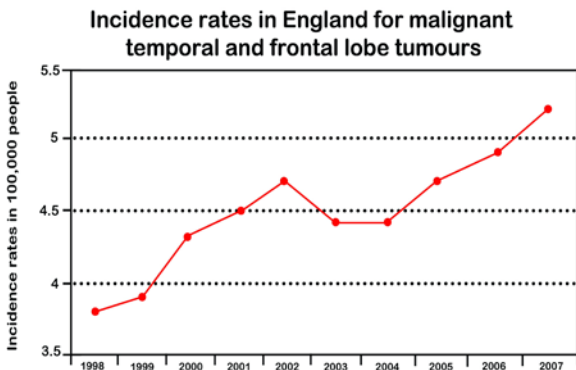
Be aware
Make sensible choices
Take precautions

What are the known health risks?

Demonstrated brain tumour trends

Research carried out by Camilla Rees of ElectromagneticHealth.org identified:

- ▶ A rise in brain tumours in the regions of the brain closest to where you hold a cell phone. This is detailed in the graph below, created from research by de Vocht et al.
- ▶ In contrast, tumours in other areas of the brain are actually decreasing.



Data extracted from Table 1 in de Vocht F, Burstyn I, Cherrie JW. Time trends in brain cancer incidence rates in relation to mobile phone use in England. PMID:21280060. Bioelectromagnetics 2011 Jul;32(5):334-9.

Many other countries have not separated out their overall brain tumour incidence data by type and location so insights like this, indicates that brain tumours are actually on the rise.

Cancer represents the 'ultimate' effect of on-going use, but be aware that:

- ▶ it is certainly not the only serious issue, and
- ▶ there can be many 'secondary' issues before this appears.

Views from authorities

The WHO - one of the most relevant statements in 2011

In May 2011 the International Agency for Research into Cancer (IARC), part of the World Health Organisation (WHO) *declared RF frequency radiation as a possible human carcinogen*. Radio Frequency (RF) radiation is what your mobile phone emits when you use it. Because of the possible risk of brain tumours, acknowledged by WHO, it is a good idea not to hold your phone to your head without protecting your brain.

The BioInitiative report

Leading experts from the relevant scientific fields, including three past presidents of the world-renowned Bioelectromagnetics Society, prepared the BioInitiative Report: "A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields, both ELF (Electromagnetic Low Frequency) and RF (Radio Frequency)".

This is a fantastically well-sourced work encompassing much of the key literature over the last few decades on findings regarding both ELF and RF electromagnetic radiation. We highly recommend that anyone interested in the subject reads the Summary for the Public (316 KB .pdf, 28 pages) or the full document (3.09 MB .pdf, 610 pages) (available from the BioInitiative website).

Some key scientific conclusions:

- ▶ **The induced DNA damage was not based on thermal effects and arouses consideration about the environmental safety limits for ELF-EMF exposure.** "Cells responded to RF exposure between SAR levels of 0.3 W/Kg and 2W/Kg with a significant increase in single- and double-strand DNA breaks and in micronuclei frequency."
- ▶ "The effects were clearly more pronounced in cells from older donors (which could point to an age-related decrease of **DNA repair efficiency** of ELF-EMF induced DNA strand breaks)."
- ▶ "In HL-60 cells an increase in intracellular generation of **free radicals** accompanying RF-EMF exposure could clearly be demonstrated."
- ▶ "**Gene mutations**, cell proliferation and apoptosis are caused by or result in altered gene and protein expression profiles. The convergence of these events is required for the development of all chronic diseases." Genotoxic effects and a modified expression of numerous genes and proteins after EMF exposure could be demonstrated with great certainty.
- ▶ "RF-EMF produced genotoxic effects in fibroblasts, HL-60 cells, granulosa cells of rats and neural progenitor cells derived from mouse embryonic stem cells."

The Stewart report

In 1999 the UK Government responded to public concern regarding the rapid development of mobile telecommunications by establishing the Independent Expert Group on Mobile Phones (IEGMP), chaired by Sir William Stewart. The far-reaching inquiry took evidence from experts across the country and its panel included experts in physics, telecommunications, engineering, and neuroscience.



Sir William Stewart headed the investigation

The 10-month Stewart inquiry report recommends a “precautionary approach”.

The use of mobile phones is not totally “without potential adverse health effects”.

“A substantial research programme should operate under the aegis of a demonstrably independent panel”.

The Stewart report stated: “There's some preliminary evidence that emissions from mobile phones may cause in some cases subtle biological changes. This does not mean the effects led to disease, but stressed it was a ‘new technology’ and recommended precautions until more information became available”.

Sir William said if any unknown harmful effects emerged, they were likely to be seen in children because their bodies were still developing. Sir William Stewart told the BBC he would stop his own grandchildren using them.

The Second Stewart report

Sir William stated that he believed that the evidence for possible harm has become stronger since the publication of his original IEGMP report in 2000. He recommended that young people should be encouraged to minimise their use of a mobile phone, and that children under about 10 years old should not have one. Recently the EU REFLEX project confirmed DNA and protein changes in repeated laboratory experiments that pointed towards the likelihood that mobile phone use and maybe base station microwave emissions may both be a cause of increased numbers of cancers.

Not only has the acoustic neuroma link with brain tumours been confirmed recently, but the incidence of other tumours also seem to sharply rise after 5 years of using a mobile phone only once per day.

Other effects reported include headaches, chronic fatigue and early onset dementia when people get to middle age. Leif Salford's work with rats shows good reason for young people not to hold a mobile phone to their head.

The precautionary principle

"Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

(1992 Rio Declaration on the Environment)

The European Commission suggests the precautionary principle may apply when:

"preliminary objective scientific evaluation indicates that there are reasonable grounds for concern"

The WHO is moving away from the idea of 'triggering' or 'invoking' precaution at all, rather seeing it as an approach that should underpin all risk assessment.

Some individual countries have adopted precautionary measures: Switzerland and Italy have precautionary exposure limits, and some of the Scandinavian countries have general precautionary policies. In parts of America and Australia, 'prudent avoidance' measures are sometimes taken.

The bottom line to optimise protection at this time is:

- ▶ adopt the precautionary principle, and
- ▶ use all sensible safety approaches.

The *SaferWave* approach is consistent with this principle.

What are suspected mobile phone health risks?

Phones emit a radio frequency field in the microwave band that interacts with your own bio signalling system, which can, over time, cause a variety of health problems and raise your risk of cancer. Cancers associated with this radiation include brain tumours (gliomas), acoustic neuromas, meningiomas, salivary gland tumors, eye cancers, testicular cancers and leukaemia. In 2008, the year for which we have the most recent statistics, there were 237,913 new cases of brain cancers and about two-thirds of these were gliomas. There is a very strong link between these events and the increasing use of mobile phones.

Short term effects

In some people, acute symptoms from mobile phone radiation can also be debilitating, greatly impairing cognitive function, even for long periods after cell phone use. Symptoms experienced include:

- | | |
|----------------------------|----------------------------|
| ✗ Memory Loss | ✗ Poor sleep |
| ✗ Depression | ✗ Tiredness |
| ✗ Loss of Energy | ✗ Headaches, migraines |
| ✗ Irritability | ✗ Disturbed vision |
| ✗ Inability To Concentrate | ✗ Diminished capacity for: |
| ✗ Weakened Immune System | - Thinking |
| ✗ Chronic Fatigue | - Judgment |
| | - Memory |
| | - Learning |

Long term dangers

- | | |
|---|-------------------------------|
| ✗ Brain Cancer | ✗ DNA Damage |
| ✗ Reduced immunity to illness | ✗ Loss of brain cell activity |
| ✗ Nervous System and Brain Function - Alzheimer's, dementia | ✗ Muscle weakness |

Is technology an extra stress load that is helping to make us stupid?



How much more technology do you use now compared to 10 years ago?

How much of this has radiation patterns that are new to our biology, that we have not evolved with?

How many times have you been exposed to new technology (e.g. X-rays, asbestos, mercury). It has often taken decades for the problems associated with new technology to be acknowledged.

We are exposed to far more radiation than ever before in our history and this is rapidly increasing. The health effects build up, just like any other continued stress in daily life. Even low intensity Wi-Fi hotspots in the numbers we now see make exposure pervasive and inescapable. It is highly probable that issues like a loss of concentration in children, more behavioural problems, earlier onset of Alzheimer's and other forms of mental deterioration are one result.

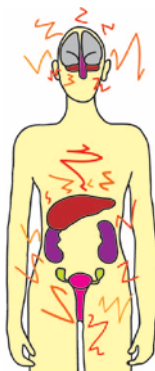
It's not about how bad each individual technology is, except from mobile phones and microwaves, but about how the sum can create an overload.

What creates the health risks?

There are several aspects to radiation signals, plus how and where they affect us.

There are high frequencies (as in the radio frequencies (RF) in phones) and low frequencies (as in the 50/60Hz in our household power supply). There are analogue signals (like the old style TV /radio signals) and digital signals (trains of 1's and 0's, pulsed). There are waveforms that the body works with and waveforms that are disruptive. There are signals that we have adapted to and others that are very foreign to us.

All these factors have different effects. Many EMF signals are a complex picture of several elements: hence the effects are rarely singular but can affect several body processes. Whilst the focus is often on the brain other organs and functions are also affected, sometimes more deeply than the brain.



The brain operates at frequencies of 0.1 to 40Hz. The body is made up from trillions of cells and each cell has over 1000 simultaneous processes. Cell processes are affected by frequencies up to at least 1000Hz. Organs have an overall resonant frequency of up to 10Hz. Cells communicate by membrane vibration at very high frequencies: 30-80GHz. Extra validation for EMF effects come from therapeutic devices that are health supportive: these use the correct waveform to assist the body processes and need an appropriate exposure time (often 8-15 minutes).

The following comments are written with respect to mobile phones. Similar principles apply to DECT phones, baby alarms and PCs.

Mobile phones and health risks

Mobile phone operation is a good example of the complexity of signals and thus the spread of effects on the body.

This is not due to the carrier frequencies or sound frequencies, which make the mobile phone work. It is due to the inherent design of mobile phone digital conversations. The mobile signals are being sent in small pulses, not as a continuing frequency. These pulses are put together rapidly so it appears to be a continuous sound, just like a movie becomes alive when a lot of still pictures are put together. These pulses give high peaks and high frequency harmonics that damage your cells.

The origin of lesser effects

- ▶ Mobile phones use a carrier wave for the “conversation” parts of a call. For a quality call the mobile phone needs to have a good signal for the carrier wave part. (This is the 900/1800/1900/2250MHz for mobile phones). If the reception is poor, the amplifier in the phone will just increase to compensate. Even though this carrier wave is the strongest field, it is not what creates a measurable health effect.
- ▶ There is a pulsed frequency from the gap between signals. This is low frequency at 217Hz, meaning 217 pulse trains per second. Simulated tests with this frequency using a frequency modulator show no cell functionality harm at mobile phone frequencies. This frequency alone is not an issue but the resulting electrical noise, the consequences from the waveform, is hypothesised as the main aspects causing health effects. This is explained below.
- ▶ There are signals from the phone circuitry, often at 2, 4 and 8Hz. These can create effects but they are unlikely to be the major factor for health effects.

The presence of electrical 'noise' is fundamental to health effects. (Noise is an undesired random disturbance of a useful information signal.) This is similar to the disturbance noise, like static, you hear from radio or TV transmissions. This 'noise' comes from transients and harmonics.

Harmonics are frequencies that are integer multiples of the fundamental frequency. If the fundamental frequency is 25Hz, the frequencies of the harmonics are: 50Hz, 75Hz, 100Hz etc. For a 1.8Ghz phone this is 3.6GHz, 5.4GHz, 7.2GHz, 9.0GHz and upwards. This is not peculiar to phone signals, it is totally common in our world. The human voice and a bowed violin string produce noise harmonics. A Cepheid variable star, which is very luminous, produces harmonics in its light patterns. The harmonics (higher octaves) from phones are generated by the sharp peaks in the waveforms. This is a known characteristic of square and triangle waves: the peaks of mobile phone pulses are sharp triangular.

A *transient* is an event that lasts only for a short time. Electrically it happens when something is switched on, a spike. When you switch a light on or off there is a spike, a noise signal on an oscilloscope. Transients appear every time an electromagnetic phone pulse is started. For mobile phones start this is 217 times per second. These transients have a very high frequency, 30-80GHz, compared to the phone signal of 1.8GHz. These frequencies are in the vibration range of your trillions of cell membranes, can interfere with their functional and communication aspects and thus create problems.

It is the transients and harmonics that create the major effects. When present they lead to functional impairment of cell and organ operation. When removed cell functionality is substantially protected. This demonstration of effects validates the importance of transients and harmonics as primary harmful elements.

The *SaferWave* phone unit reduces the dangerous noise signals as much as possible with a passive system. The main carrier wave is not changed, meaning the phone will work as before and that operation is not impaired.

The lower frequencies have effects in different ways and this forms the basis for separation, especially when talking (when the signal is strongest). It is hypothesised that these lower frequencies have more effect on the brain than organs. Thus separating the phone from the brain makes sense, using distance or a protected ferrite. The *SaferWave* ferrite enables safe use of a headset, enabling the phone to be kept away

from the body in use. According to university studies only 2 minutes use alters the blood brain barrier allowing toxic elements to penetrate the brain. Brain cell function decreases with mobile telephone exposure and sensitive organs, like the pituitary gland, fail to function properly. This effect gradually decreases after exposure, but there is also cumulative damage to the cells. This increases the risk of brain tumours and other progressive dysfunctions.

Interestingly some “simulation” experiments show no harm at mobile phone frequencies, because they are performed with frequency modulators. These create frequencies with a harmonious waveform. Most studies done with actual mobile telephones demonstrate damage to the cells. EIS/Es-Teck tests (used for validation of the *SaferWave* approach) with simulated and real phone signals also showed this difference.

No matter where you keep your phone, you will be much better off with the *SaferWave*. If you want to be as safe as possible, you should also keep some distance between the phone and your body (nominally 20 cm).

Comparison of mobile phones with and without SaferWave protection at high and low SAR

SAR, specific absorption rate, is an indication of the amount of radiation that is absorbed into the head/body whilst using a mobile phone. SAR values are usually expressed in units of power as watts per kilogram (W/kg) in either 1g or 10g of body tissue, over a period of time. The higher the SAR rating, the more radiation is absorbed into the head.

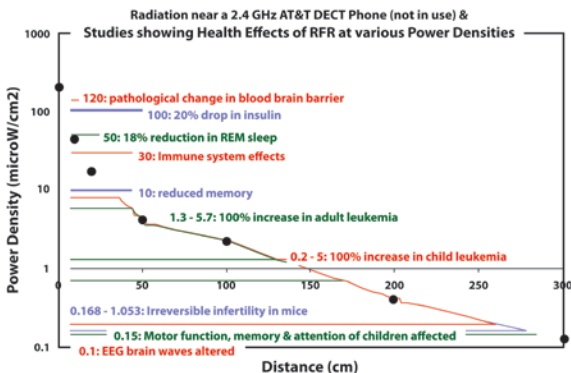
Mobile Phone	Comparative Danger Level (When talking).										Notes
High SAR - No SaferWave	1	2	3	4	5	6	7	8	9	10	
Low SAR - No SaferWave	1	2	3	4	5	6	7	8			
High SAR - with SaferWave	1										Nearly the best> it is not zero as we just do not know all effects.
Low SAR - with SaferWave	0.2										A very sensible solution—especially for children!

DECT (home wireless) phones and health risks

Digital phones may seem to be convenient and whilst they operate slightly differently from mobile phones the signals have the same damaging characteristics. Keeping yourself away from the base transmitting station is very important as there is a high emission from this. Safe use of the phone follows the similar rules as for mobile phones. *Importantly* most DECT phones emit continuously. Mobile phones are intermittent.

DECT phone with and without SaferWave protection

DECT Phone	Comparative Danger Level	Notes
No safety measures	1 2 3 4 5 6 7 8 9 10	When using the phone.
With SaferWave on phone; on speaker phone; +3 m from base station;	1	



Studies showing health effects of radio frequency (RFR) at various power densities superimposed on radiation from a DECT phone

PCs and health risks

PCs have both high and low frequency emissions. High frequency is from the CPU at 1.2-3.6GHz. Lower frequencies originate from: the rotating hard drive at 5800 or 7200 rpm, ~100Hz. The transformer (AC to DC power converter) which produces a magnetic field from transforming the low frequency (50-60Hz) AC (alternating current) (230/120-1-50) to DC (direct current) that electronics work with. There can be a significant magnetic emission from some of these. Thus there are two aspects that need attention: high and low frequency.

Desktop computer with and without SaferWave protection

Desktop	Comparative Danger Level	Notes
20 cm away from your body	1 2 3 4 5 6	More distance reduces the danger, less separation increases it.
With SaferWave, 20 cm away from your body	1	Nearly the best> it is not zero as it is possible all effects are not yet known.

Laptop computer with and without SaferWave protection

Laptop	Comparative Danger Level	Notes
On knee	1 2 3 4 5 6 7 8	Can damage genitals.
On knee- with SaferWave, power supply unit > 1 m away	1 2 3 4	The emission strength still has an effect.
On desk- with SaferWave, 20 cm away, power supply unit > 1 m away, wired keyboard and mouse	1	Nearly the best> it is not zero as it is possible all effects are not yet known.

About SaferWave

There are three aspects to the *SaferWave* approach:

- ▶ *SaferWave* phone protector
- ▶ *SaferWave* headset ferrite

PLUS

- ▶ *Your safe practice of separation*

That is the 'Protection Trio' to optimize safer use

- ✓ *Without SaferWave* protection: keep phone usage to below 3 minutes per call with a 30 minute gap between calls (and that is for healthy people). Note that 30 minutes per day usage is designated as 'heavy phone use'.
- ✓ *With SaferWave* protection you can talk for many hours per day if you also maintain a good separation when talking (e.g. phone on the table whenever possible or in your hand when walking)

Please read about the meaning of transients and harmonics in the section *Mobile phones and health risks*, page 14, and the *Glossary* at the end of this guide.

The *SaferWave* safety support 1 - changing waveforms

The '***SaferWave***' protector has solid proof of reducing the effects on cell functionality, thus helping to preserve a healthy cell future.

The *SaferWave* protector has a holographic matrix that *resonates* with the phone radiation. Resonance is a reinforcement of oscillations between two elements of the same frequency: a frequency matching. This creates an amplification of the 'stored' signal. One familiar example is a playground swing, which acts as a pendulum. Pushing a person in a swing in time with the natural interval of the swing (its resonant frequency) will make the swing go higher and higher (maximum amplitude), while attempts to push the swing at a faster or slower tempo will result in smaller arcs. Resonance occurs widely in nature, and is exploited in many man-made devices. It is the mechanism by which virtually all sinusoidal waves and vibrations are generated. Many sounds we hear, such as when hard objects of metal, glass, or wood are struck, are caused by brief resonant vibrations in the object. Light and other

short wavelength electromagnetic radiation is produced by resonance on an atomic scale, such as electrons in atoms.

When some of the radiation resonates with the *SaferWave* stored protection pattern a field is created with the same frequency but with a gentle, soft sine wave curve. According to the laws of physics this field synchronises with the original and damaging radiation to become one harmonised waveform. It becomes the dominant field and thus has the ability to modify the phones field. The soft sine waves, generated at the same frequency as the phone signals, modify the peaks and waveform of the phone signal. This results in dampening of the dangerous transients and high peaks, rounding of the waveform peaks and almost complete removal of the high frequency harmonics (since rounded waveforms do not generate the same level of harmonics).

There is still the same frequency and field strength in the phone signal, and therefore the mobile phone function is unchanged. But with the altered waves, the negative influence on the cells is decreased by 98% (according to cell functionality tests).

The *SaferWave* process in outline

Basic principles of EMF protective *SaferWave* units



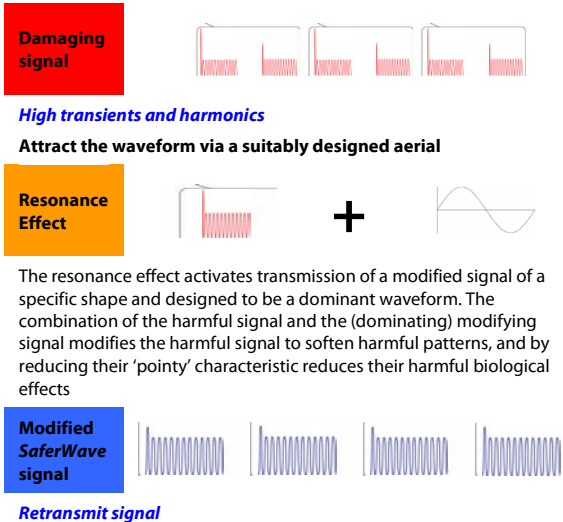
Step 1: Attract the waveform via a suitably designed aerial.

Step 2: The phone signal activates transmission of a modified signal of a specific shape designed to be a dominant waveform. This creates a “resonance” effect with a programmed specific pattern. Electromagnetic fields synchronize with similar fields and become one field, reducing transients and harmonics as well as softening the waveform.

Step 3: Modification of the harmful signal by the (dominating) modifying signal softens harmful patterns, and by reducing their “pointy” characteristic reduces their harmful biological effects.

Step 4: The safer signal is transmitted.

An overview of SaferWave operation



The SaferWave process in detail

Illustrating the problem

Illustration of the mobile phone signal

Mobile phone technology is time multiplexed.

This means that each user gets a 'time slot' - like holiday apartment time sharing. In the gap (t_1) between the sequences of five signals there is no communication with the phone. This happens so rapidly that the speech is perceived as continuous speech. This is like a TV where still pictures are put together so quickly they are perceived as continuous movement.

t_1 is the gap and is 0.0046 seconds (corresponding to a frequency of pulses of 217 per second)

There are seven frequencies:

- ▶ Two are used for internal data control
- ▶ Five are used for speech transmission (the frequency burst sequence)

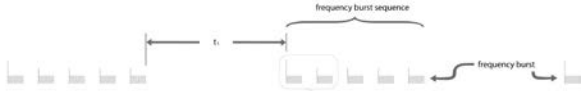


Illustration of the high peaks (transients)

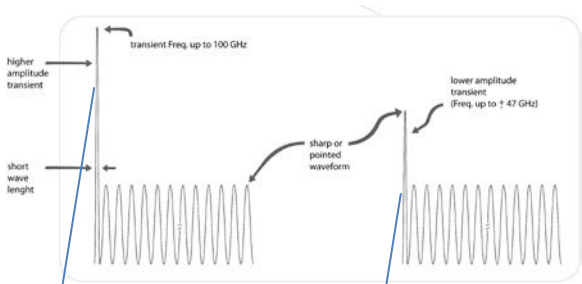
There are two transients, 1 and 2.

Transient 1 is at the start of each sequence of the five pulses:

- ▶ The waveform is sharp, pointy. This type of waveform is more disruptive to body processes and generates harmonics, over-tunes.
- ▶ It can have a frequency up to 100GHz (compared to the normal phone frequency of 0.9/1.8/2.25GHz).
- ▶ It has high amplitude- this means that it could penetrate deeper than the lower intensity waveform.

Transient 2 characterises the remaining four frequencies. These are similar to the initial frequency issues but less intense:

- ▶ The frequency is up to ~47GHz.
- ▶ The waveform is again sharp, pointy. This type of waveform is more disruptive to body processes and generates harmonics, over-tunes.



Transient 1: up to 100GHz

Transient 2: up to 47GHz

Illustrating the SaferWave solution

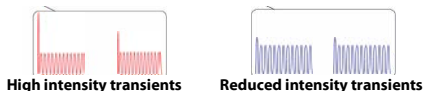
Unprotected system:



Change 1- with SaferWave



High frequency transients reduced to a minimum (refer to the reduced height of the incoming waves):



Waveform peak is softened from sharp (triangle) to softer curve (sine)

Change 2 - With SaferWave



Change 3- harmonics

Triangular waveform peaks generate harmonics- extra frequencies.

The change to rounded waveform tops virtually eliminates these.

The SaferWave safety support 2 - SaferWave headset ferrite

The primary focus of most research has been on the effects on the head and this is a key area to protect. In both the UK and France there are studies that have shown the benefit of the separation of the phone from the head. The most frequently proposed approach by many authorities (e.g. WHO, UK Stewart report) is to use a headset.

Depending on how close the mobile phone antenna is to your head, between 20% and 60% of the radiation emitted is transferred into your head. The radiation actually penetrates the area around your head and is absorbed, with some radiation reaching an inch to an inch and a half into your brain.

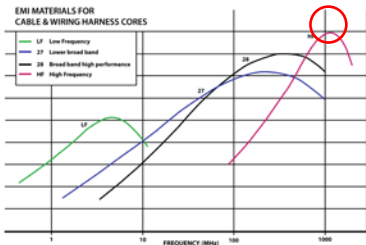


Mobile phones are designed to transmit radio waves in all directions because base stations can be located in any direction with respect to phone users. The signal is most harmful when talking: when the phone is sending to the mast. This can mean that portions of the radio waves are directed towards your body.

If you have a mobile phone that can work on speakerphone then you already have one solution: simply use your speakerphone. This will greatly decrease your exposure to phone EMF's.

However, using a speaker phone can present a problem if you are in a noisy environment, walking along or it isn't convenient. As an alternative you can use a headset. All phones have a connection for a headset and there are many styles available.

While they do not block EMF's, ferrite beads will stop the earphone cable operating as an antenna. Without these there is the possibility that the cable will actually increase the head exposure. The MTHR (Mobile



Telephony Health Research) group recommends that all hands-free kits should be fitted with a ferrite core to make it difficult for microwaves to travel past it and up the cable.

The SaferWave ferrite has been carefully selected to be effective against the specific frequency range of all current phones.

Ferrite beads are common in the electronics and computer industry. For example, look at the cable which connects your computer monitor to your computer and it has a ferrite moulded into the cable near one or both ends.

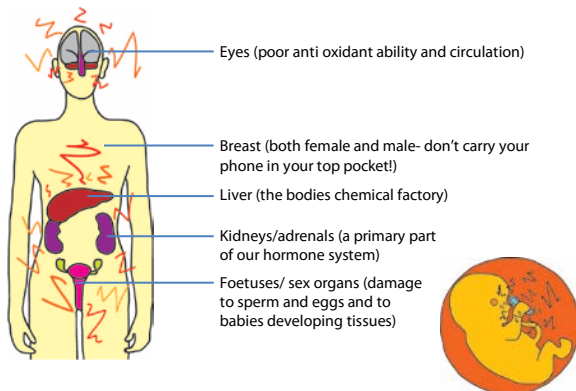
Dr George Carlo, who led the \$25 million WTR research project into mobile phone safety for the telecommunications industry, maintains that if there is a safe way to use a mobile phone at all, it will be using a hands-free kit and holding the phone handset at least 8" away from the body just before, just after and during use.

The SaferWave safety support 3 - Your safe use practice of separation

A headset does not reduce the radiation exposure from the phone: it moves the exposure area away from the head. The RF EMFs come mainly from the antennae. The sound from a phone when listening is the same whether you are on hands-free, using the car stereo or a separate speaker, or using a hands-free headset. Some manufacturers hide, in the small print, that you should hold the phone a considerable distance away from you, recognition that there is a problem.

The existence of SAR values for brain and for body exposure indicates that it is not just the brain that is affected and studies support this.

So after achieving separation from the brain (with headset/speaker phone) consider minimizing potential harm to others sensitive organs as below:



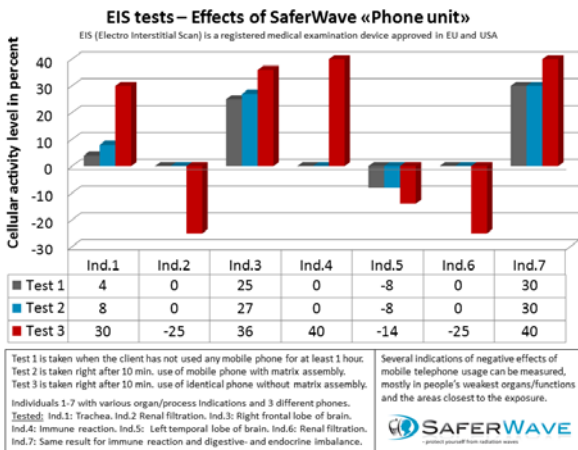
If carrying in standby mode consider having the back facing out (that is the aerial/transmitting area on some phones- you can check this with an E'smog meter).

When talking, if you can't put the phone on a table create separation by holding the phone away from you and ensure that it has a clear 'view' of the sky (maximum number of signal bars) so that it can send and receive easily.

How was SaferWave protection tested?

Mobile signals affect cells and thus organ function: this is the real place to test actual biological effects. This is the basis for SaferWave phone and PC tests, using the EIS (a CE Medically Certified device). These tests showed a benefit of between 98% and 100%, compared to 5-30% for other general stress protective products.

The following bar graph indicates the EIS test results on seven individuals: some have weakened organs that show an effect from phone signals, others have strong cells and currently resist the stress effects of the phones.



The key element is the extent of change rather than the direction of change. Higher scores mean increased activity. Lower scores mean reduced activity.

Where there is an increase in activity the following is indicated:

- ▶ the stress is recognised;
- ▶ the organ makes a normal stress response by increasing activity;
- ▶ the client has some health in that area to produce a response.

Where there is a decrease in activity the following is indicated:

- ▶ the stress is recognised;
- ▶ the organ tries to make a normal stress response by increasing activity;
- ▶ this response consumes resource that is not there;
- ▶ hence the functional ability of the organ decreases.

Client no.	Item monitored	Interpretation
1	Trachea	Increased activity- immediate stress response results in higher activity for protection.
2	Renal filtration	Activity reduced: the kidneys have low reserves and cannot increase activity to counter the stress load. The drop indicates a significant weakness.
3	Right frontal lobe of brain	Increased activity- immediate stress response results in higher activity for protection.
4	Immune reaction	Increased activity- immediate stress response results in higher activity for protection.
5	Left temporal lobe of brain.	Activity slightly reduced: the kidneys have low reserves and cannot increase activity to counter the stress load. The drop indicates some weakness.
6	Renal filtration.	Activity reduced: the kidneys have low reserves and cannot increase activity to counter the stress load. The drop indicates a significant weakness.
7	Immune reaction, digestive, endocrine imbalance.	Increased activity- immediate stress response results in higher activity for protection.

Summary of safe use approaches

These are all supplementary to using *SaferWave* protection; they will help but are not the solution.

So use *SaferWave* AND these suggestions. Remember, *SaferWave* provides high protection but there are probably still undiscovered danger factors.

Explaining the comparative graphs

To help understand the different situations when using mobile phones, DECT phones and computers, we have included some comparative tables. We have used both colours and numbers.

On the top chart we show an unprotected device.

On the lower chart we show the benefit of *SaferWave*.

10 represents a probable significant danger to health. 0 (as in the case of landline phones) means no or minimal health risk. Other figures are comparative and not absolute. These scales are for the normal range of health. It can not be assumed that they apply to seriously ill or electro-sensitive people.

The following colours are used:

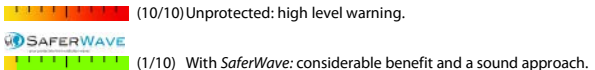
Green - estimated safe for health.

Yellow - some health danger.

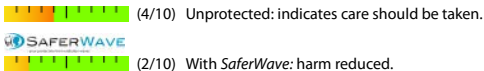
Orange - more significant health danger.

Red - significant health danger.

Example 1:



Example 2:



Note that due to health factors that are probably unknown, in some circumstances even with *SaferWave* phones and computers should not be used close to a person (e.g. in utero, babies. Children, electro sensitives).

Safer use of mobile phones - together with SaferWave

- ✓ *Without SaferWave protection, keep phone usage to < 10 minutes per day. 30 minutes per day is designated as "heavy use".*
- ✓ *With SaferWave protection you can talk for many hours per day if you also maintain a good separation when talking (e.g. phone on the table whenever possible or in your hand when walking).*

Using technology	Personal use	Out and about
<ul style="list-style-type: none"> ✓ Use a SaferWave Protection system. ✓ Use a hands free kit- with a SaferWave ferrite core. ✓ In car use an external aerial. ✓ Select a low SAR phone. ✓ Select GSM mode). 	<ul style="list-style-type: none"> ✓ Put on table away from you when not in use - or switch off. ✓ Get a high signal. ✓ In buildings go to the window or outside. ✓ Use it less. ✓ Use the speaker phone when possible. ✓ Text rather than call. ✓ Keep it out of bedroom (don't use as an alarm!) ✓ Keep it away from sensitive organs: head, breast, liver, kidneys, sex organs. ✓ Avoid energy intensive activities- sending pictures, videos, internet. 	<ul style="list-style-type: none"> ✓ Don't use on trains! ✓ Don't use on buses! ✓ Don't use in cars - or use an external aerial . ✓ Hold it away from you when talking and walking. <p>Restrict use</p> <ul style="list-style-type: none"> ✓ Restrict who uses it or is exposed to it: <ul style="list-style-type: none"> - Babies - Children - Teens



Signal strength: A higher signal reduces the amplification and the strength of the radiation that you experience. Ironically, the closer you are to the aerial, the less harmful the signal will be. You can optimize signal strength by looking at the signal bar and checking direction for the best signal.

Safer use of DECT phones - together with SaferWave

DECT phones are almost the standard in some countries (e.g. in UK there may be 48 DECT phones in the shop and 2 landline phones). The majority of baby monitors are DECT based: this can be even more dangerous as babies are very susceptible to EMF effects.

In general

FIRST- use a landline or VOIP whenever possible.
SECOND - if in the garden call back on the landline.
If you need to use DECT:

- ▶ Use a **SaferWave**.
- ▶ Minimise kids use. (Mobiles hands-free may be safer!)
- ▶ Use version that only signals when there is a call (many are transmitting full time).
- ▶ Use a low radiation version.

Standard landline




Consider alternatives

Consider carefully:

- ▶ normal landline;
- ▶ VOIP;

and just use DECT when necessary, e.g. in garden.
At home use a landline.

Harm factor

Unprotected:  (0/10)

 **SAFERWAVE** not needed.

The base station

- ▶ Place in a non occupied area and well away from where people sit.
- ▶ Check for safest areas (with a detector).
- ▶ Switch off at night or use a timer.

Consider extra protection

- ▶ **SaferWave** protector on the phone (this will help but the DECT signal is too strong for a total solution).

Base station with speakerphone



Harm factor

Unprotected:  (10/10)

 **SAFERWAVE**:  (4/10)

The user is irradiated by the base station – even though she is on speaker phone.


The handset

- ▶ Use a **SaferWave** protector on the handset(s)
- ▶ Use hands-free
- ▶ Take calls well away from base station
- ▶ Call back on a landline

Just handset close to head is still dangerous



Harm factor

Unprotected:  (10/10)

 **SAFERWAVE**:  (4/10)

This may be as bad as a mobile phone! The phone should be at least 20 cm away and even then the call should be returned on a landline.

Safer use of PCs - together with SaferWave

Separation solves many PC problems. This is not practicable in many desktop work situations or when working with laptops. The use of *SaferWave* protectors enables PCs to be used closer to you generally 20cm instead of 1-2 metres. It still does not enable laptops to be used safely on the lap!

All PCs



- ✓ Use **SaferWave** protectors.
- ✓ Separate PCs as far as possible from you.

Your contribution

- ✓ Take a break very hour.
- ✓ Burn in new items in another room.
- ✓ Keep the room dust free.
- ✓ Clean screens/items with an anti-static cloth.
- ✓ Use an earthing mat for cable/plug board EMF.

Desktops



- ✓ Use **SaferWave** protectors.
- ✓ Change any VDU (CRT) to a TFT monitor.
- ✓ Separate desktop as far as possible from you.
- ✓ Keep any power cables/plug boards 1-2m way.
- ✓ Use a hardwired mouse/keyboard (not wireless).
- ✓ Disable Wi-Fi and Bluetooth when not in use - preferably use hardwired internet.

Laptops



- ✓ Use **SaferWave** protectors.
- ✓ We suggest keeping over 20cm away from body.
- ✓ Use on a table.
- ✓ Use a hardwired mouse/keyboard or IR (not wireless).
- ✓ Use a remote hardwired keyboard.
- ✓ Check power supply earthing.
- ✓ Disable Wi-Fi and Bluetooth when not in use - preferably use hardwired internet.

How to be unsafe: this just about says it all!



The SaferWave safe (and unsafe) use photo gallery

Here we have set put some situations and given qualitative indicators about safer use- however we should adopt all safety measures. We know that technology has dangers, we know quite a bit about some of these, but it is unlikely that we know all the issues and dangers.

Supportive approaches for mobile phones

It is not easy to make the phone 100% safe - it is possible to minimize danger

The best

Even with good protection (*SaferWave*) there may be other elements that have an effect: these are hypothesized to be the low frequency fields and these fall off rapidly with distance.

- ▶ *SaferWave* (protector and headset with ferrite).
- ▶ Distance from the phone (separation).
- ▶ When not out and about put the phone on a table away from you.

Mobile phones – methods of separation when talking (more signal)



Harm factor

Unprotected:
 (7/10)

 **SAFERWAVE:**
 (1/10)

When talking hold the phone in your hand away from you - even with a ferrite.



Harm factor

Unprotected:
 (7/10)

 **SAFERWAVE:**
 (1/10)

On the table on speaker phone is good too!



Harm factor

Unprotected:
 (6/10)

 **SAFERWAVE:**
 (1/10)

If you keep your phone in a handbag, preferably switch the phone off and keep the handbag away from you.

Texting

Texting is a bit safer...



Harm factor

Unprotected:



SAFERWAVE:



Texting is generally a bit safer- but keep away from your body (and be aware that fingers are also pick up points. There are still the signals that check for contact and the signal when you send the text.

But NOT when pregnant!



Harm factor

Unprotected:



SAFERWAVE:

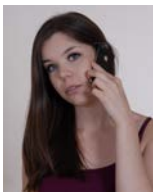


No tests have been made or are possible for babies. Thus as a most sensible precaution mobiles should not be used anywhere near a baby in any mode of working.

Poor separation: some not so good options

Bad places > the worst ? Note that even with headset these are not good places. They are too close to organs.

Harm the brain mode!



Harm factor

Unprotected:



SAFERWAVE:



For all ages, all sexes.

Harm the genitals!



Harm factor

Unprotected:



SAFERWAVE:



From either direction.

Harm the breasts and heart!



Harm factor

Unprotected:



SAFERWAVE:



For all ages, all sexes.

Men are affected just as much



Harm factor

Unprotected: (10/10)



From here you can affect the kidneys, adrenals, liver, pancreas, spleen, genitals.



Harm factor

Unprotected: (10/10)



Even if you are wearing it in a pouch.



Harm factor

Unprotected: (10/10)



Men have hearts too- and they also get damaged- even with a ferrite.

The bedroom is really a no-no place for mobiles: don't use as an alarm clock

Bad place for mobile phones



Harm factor

Unprotected: (8/10)



Bad place for DECT phones



Harm factor

Unprotected: (10/10)



OK for landline phones



Harm factor

Unprotected: (0/10)

SaferWave not needed.

Bluetooth mode- personally and in car

Bluetooth does not show such rapid health disturbances as the phone. HOWEVER: continued exposure provides a lower level disturbance and this is expected to have a significant effect over the long term. It does not make phone use in car safer - the signal bounces around and can be more harmful than in open spaces.



Harm factor

Unprotected: (9/10)



Harm factor

Unprotected: (10/10)



Being practical - what you can do:

- ▶ Use SaferWave:
 - SaferWave protector;
 - headset with ferrite.
- ▶ Keep phone as far away from all your body as possible: not just the brain.
- ▶ Check where the signal is strongest: if on the back keep this pointing outwards in use and when carrying.

Mobile phones - hands free



Harm factor

Unprotected:



(10/10)



(1/10)

Brain is protected - ferrite on head set;
SaferWave on Phone. However we suggest
the phone is better kept elsewhere.



Harm factor

Unprotected:



(6/10)



(1/10)

Handbag Mode - a bit better

These options may be OK for carrying (airplane mode) or listening but not for talking. There is also a strong pulse after you hang up! If you keep your phone in a handbag- keep the handbag away from you. If you are pushing a child then have the handbag well away from him/her.



Harm factor

Unprotected:



(10/10)



(1/10)

Poor babies - and stunted testosterone!



Harm factor

Unprotected:



(10/10)



(1/10)

Where really special and extra care is needed

Mobile phones: fertility, pregnancy: a do not use situation.

Becoming pregnant - with a healthy baby

Female



Harm factor

Unprotected:

 (10/10)

 **SAFERWAVE:**
your guide to safer mobile phone use

 (8/10)

Male



Harm factor

Unprotected:

 (10/10)

 **SAFERWAVE:**
your guide to safer mobile phone use

 (8/10)

You should really do everything to minimize phone use, like everything else you do to have a healthy strong child.

This includes computer and DECT phone use- not just mobiles.

When you are pregnant

Unsafe



Harm factor

Unprotected:

 (10/10)

 **SAFERWAVE:**
your guide to safer mobile phone use

 (8/10)

Very Unsafe



Harm factor

Unprotected:

 (10/10)

 **SAFERWAVE:**
your guide to safer mobile phone use

 (8/10)

Not even with texting!



Harm factor

Unprotected:

 (10/10)

 **SAFERWAVE:**
your guide to safer mobile phone use

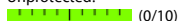
 (8/10)

Landlines are safer!



Harm factor

Unprotected:



SAFERWAVE: not needed.

This is great way for daddy to listen to baby talk!

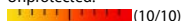
With your baby

Babies are vulnerable



Harm factor

Unprotected:



SAFERWAVE:



Danger level for baby

Double whammy!



Harm factor

Unprotected:



SAFERWAVE:



Danger level for baby

Keep your phone away from me!



Harm factor

Unprotected:



SAFERWAVE:



Danger level for baby

Kids are very vulnerable

They should not use phones at all!



Harm factor

Unprotected:



SAFERWAVE:



Harm factor

Unprotected:



SAFERWAVE:



Kids brains are rapidly developing- cells are multiplying, relying on quality DNA for good cells. DNA acts like an aerial and if it receives bad signals its information can become corrupted. Children should only have phones for emergency use and then with the lowest possible SAR value.

Teens are also vulnerable

Do you want smart or dumb adults? Teens brains are still developing- and they seem to spend a lot of time on the phone.

This is not safe! - no separation



Harm factor

Unprotected:



SAFERWAVE:



Holding away helps - but ferrite would help



Harm factor

Unprotected:



SAFERWAVE:



Texting is a bit better



Harm factor

Unprotected:



SAFERWAVE:



Spreading the harm

The signal from phones spreads to around a metre: so please take care of your friends out and about and in the office! Sharing some things is OK - but not phone signals - there is no separation here!

Dumbheads?



Harm factor

Unprotected:



SAFERWAVE:



Don't harm your friends



Harm factor

Unprotected:



SAFERWAVE:



This is not good sharing!



Harm factor

Unprotected:



SAFERWAVE:



Mobile phones when travelling

In any metal enclosure the signal is amplified and bounces around.

Cars - use external aerial only



Harm factor

Unprotected:



SAFERWAVE:



Trains - avoid



Harm factor

Unprotected:



SAFERWAVE:



Buses - avoid



Harm factor

Unprotected:



SAFERWAVE:



Supportive approaches for PCs

Laptops

No SaferWave: keep the desktop 1-2 metres away.

With SaferWave: you can have the desktop 20 cm. away (but as far as practicable is good).

Normal use - too close even with SaferWave protection



Harm factor

Unprotected:



SAFERWAVE:



Laptop contraception?



Harm factor

Unprotected:



SAFERWAVE:



*1-2 metres is Ideal separation -
without SaferWave*



Harm factor

Unprotected:



(4/10)

 **SAFERWAVE:**



(1/10)

*Remote keyboard, wired mouse enables
20cm gap - needed even with SaferWave*



Harm factor

Unprotected:



(4/10)

 **SAFERWAVE:**



(1/10)

The best way to use is:

- ▶ on a table;
- ▶ with a plug-in keyboard and mouse;
- ▶ with an IR (infra-red - not wireless) mouse.

NOT on your lap!

Desktops

Separation is a big element to reduce effects.

No SaferWave: keep the desktop 1-2 metres away.

With SaferWave: you can have the desktop 20cm away (but as far as practicable is good).

*Unusual placement -
desktop too close -
especially to brain/heart*



Harm factor

Unprotected:



SAFERWAVE:



Desktop just too close



Harm factor

Unprotected:



SAFERWAVE:



This is fine with SaferWave



Harm factor

Unprotected:



SAFERWAVE:



Please also be aware of the cabling and transformers- keep these as far away as possible. They also emit a magnetic field that affects body operation.

Installation instructions

Common installation instructions

1. Identify where to locate the *SaferWave* foil.
2. Clean the receiving surface.
3. Carefully place the item, pressing from the inside out to ensure good contact.

Please read the full instructions first!

Cleaning the receiving surface

Please make sure that the surface is clean. Generally the inside of phones is reasonably clean. However when adhering to the outside of a phone or computer there will be dust and possibly contaminants from touch (skin oils). Please refer to the device cleaning instructions. Many housings are plastic and may not like solvents. It is important that the surface is clean to ensure good adhesion.

Supplied components

The *SaferWave* system is supplied in an outer postal box with the main components in a slide-in package.

For mobile phones the components are: the passive *SaferWave* holographic foil, a protective oversticker, a ferrite for the handset.

For computers the components are: two passive *SaferWave* holographic foils, one protective oversticker.

The oversticker is separate from the *SaferWave* active foil. The protection oversticker is below the *SaferWave* foil carrier and this must be removed to access it. The *SaferWave* holographic foil is placed first followed by the protective layer.

The protective foil

The small foil is accompanied with a protective oversticker. This is for use in areas where there may be damage to the *SaferWave* foil which can reduce its effectiveness. The extra dimension is +5mm on each side. For some phones this may compromise the positioning, which should be as close to the aerial (near the phone top) as possible. If necessary the top part of the sticker can be cut back with scissors, being careful not to cut the *SaferWave* active foil. If there are space constraints for computers please do not trim to less than 3 mm round the *SaferWave* element.

The protection is not needed when the *SaferWave* foil is used:

- ▶ inside a phone;
- ▶ on a mobile, where it can not be placed inside, and there is a protective over cover to the phone.

It is recommended wherever there may be wear such as:

- ▶ On a laptop;
- ▶ On portable devices like an iPad, Android;
- ▶ On a phone where it can not be placed inside, and there is not a protective over cover.

Mobile phones

Most phones- where the battery is removable

To install the *SaferWave Protector*, simply take out the battery and stick it onto the telephone body. Place it as close as possible to the antenna on top, leaving the SIM card uncovered. If you can't access the battery/internals then stick near the aerial (top of the phone) at the back



Phones where battery is not removable

If the battery is not removable, position the *SaferWave Protector* near the top of the phone.

Note- an Apple phone is displayed for information only about positioning. The information is for any phone that cannot be opened to place the SaferWave foil inside). There is no implication about relative safety implied.



Phone settings

It is important to have a basic understanding of phone settings. This can have a significant effect on the harm and protection level efficiency. Different terms are used in different countries.

Originally mobile phones were for voice only. Texting was added and the ability to capture and send still pictures. These all use technology that *SaferWave* protects extremely well against. The key factor is that providers have provided extra facilities as the technology has developed. These extra facilities are designed for *extensive* internet usage or watching movies. The problem is that this mode of use is more dangerous to health and their usage should be minimized. Phones have facility to select the most appropriate and safest operating mode. *HOWEVER this is not automatic and the user needs to be very aware of making the safest selection.*

- 1G** First generation, analogue (not digital) cellular networks.
- GSM** Global System for Mobile Communications. A standard set developed by the European Telecommunications Standards Institute (ETSI) to describe technologies for second generation (or "2G") digital. GSM networks operate in a number of different carrier frequency ranges (separated into GSM frequency ranges for 2G and UMTS frequency bands for 3G), with most 2G GSM networks operating in the 900MHz or 1800MHz bands.
- 2G (GSM)** Second generation, digital networks (800 MHz, 1.8-1.9 GHz).
Edge: a technology used to increase packet data transmission speeds, by about fourfold. This is available on European phones. The signal is digitally optimized for data transfer. Edge is the mode to select for internet usage.
- 3G (UMTS)** Third generation (2.2GHz). The GSM standard is succeeded by the third generation (or "3G") UMTS standard developed by the 3GPP. Third generation phones appear to have the most dangerous health potential. The technology described in UMTS is sometimes also referred to as Freedom of Mobile Multimedia Access (FOMA) or 3GSM. Unlike EDGE, UMTS requires new base stations and new frequency allocations. New facilities are being built in cities first. Where available the phone will default to UMTS. Originally this did not service voice but now does. However the quality is poor. It also consumes battery much faster than GSM mode. Its primary use is for extensive internet use and watching videos.

It now becomes important to understand the interaction between *SaferWave* protection and the operating mode. This is in addition to the standard recommendations made earlier.

SaferWave protector works with all mobile and wireless phones and is designed for a phone frequency of up to 2.8GHz. It has been refined to optimize protection for the increased technology.

- ▶ Choose only the phone that you need- if you only need it as a phone do not go for any extra facilities.
- ▶ If you go for extra facilities discriminate their use- use only when needed.
- ▶ When you switch on your phone make sure you select the GSM mode.
- ▶ When you use UMTS remember to disable after the internet/movie use.

Operation	2G (GSM)		
	2G (GSM)	EDGE	UMTS (3G)
Selection	Use whenever possible		Use only when essential, disable after use.
Voice	Best, safest		Poor quality
Text	Best, safest		
Still pictures	Best, safest		
Internet- low/medium use	Best, safest	OK, safe	
Internet- high usage		OK, safe	Best quality, lowest safety
Movie viewing			Best quality, lowest safety
Safety- comparative	Best	Safe	
SaferWave Protection	10	10	7.5

In summary

We recommend that you set the phone to GSM mode when using the phone because 3G/UMTS/Auto has frequencies which are damaging, even with *SaferWave*. This will also drain less battery enabling longer use between recharge. 3G/UMTS/ Auto should only be enabled when you are using high speed internet or video conversations. (Note that if switched to auto the phone takes the highest speed, which is usually 3G/UMTS.)

Please be aware that with a 98% effect from *SaferWave* on GSM phones, you still have 2% of the problem left, plus any effects that are not measurable with the cell assessment devices. Therefore mobile phone usage should still be limited, and for children totally avoided. All users should keep the phone as far away from their body as possible at all times but especially when talking (over 20cm) and also use a headset with ferrite bead whenever appropriate.

SaferWave is undoubtedly the best protective device available today: in EIS tests it is over 3 times more effective than other technology. The 98% reduction in negative effect is determined by cell functionality measurements with the medical device EIS. Many people who used to have symptoms from mobile telephone usage report no symptoms when using the *SaferWave* approach.

Installing ferrite beads

Step 1



Open Ferrite Bead and disconnect your headset wire from your cell phone as shown in the figure to the left: connect as close as possible to the phone but allowing space for the phone to fit in your pouch.

Step 2



Loop the headset wire around itself one time, creating a loop large enough to fit over the length of the Ferrite Bead.

Be sure to make the loop close to the end of the wire that plugs into your cell phone.

Step 3



Place looped section of headset wire over one side of the Ferrite Bead.

Be sure to have the section where the looped wire crosses itself against the inside surface of the Ferrite Bead.

Lengthen this crossed section so that each side of the loop, touching the inside of the Ferrite Bead, spans the entire length of the Ferrite Bead.

Step 4



Once the headset wire is properly in place, pull either end so the wire fits snugly around the Ferrite Bead.

Step 5



Close the Ferrite Bead securely and plug the headset wire back into your phone.

DECT phones

There are three elements:

- ▶ A phone unit for the base station radiation.
- ▶ A power unit for the transformer EMF pattern. (This is as the PC SaferWave set.)
- ▶ An extra phone unit for each handset radiation. (This is as the SaferWave mobile phone kit.)

Handsets

To install the *SaferWave phone protector*, simply take out the battery and stick it inside, if possible, or on the telephone body (just as on mobile phone). Place it as close as possible to the antenna at the top of the handset. If you can't access the battery/internals then stick near the aerial (top of the phone) at the back.

Base station

The Base Station Harmonizer kit contains one holographic matrix sticker that resonates with the signals radiation and one that resonates with the transformer EMF pattern. A phone unit is placed on the base station where the phone sits and a power unit on the power adapter.

PCs - laptops and desktops

The PC *SaferWave* kit contains one holographic matrix sticker that resonates with the radiation of the computer's microprocessor, and one that resonates with the transformer EMF. The damaging high peaks are dampened and this decreases the radiation's negative influence on the cells by 95-98% (as per EIS/Es-Teck tests), *as long as you keep the computer at 20 cm distance or more from your body.*

The matrix stickers are self-adhesive. The smallest one must be placed somewhere beside the touchpad on a laptop, and at the front on the upper part of a desktop unit. The largest sticker must be placed on the power adapter for a laptop, and next to the electrical input for a desktop computer.

Please clean where you are going to place the stickers, (laptop surfaces in particular have skin oil). Also review where you place your hands and place the stickers away from common contact areas. Cover with the protective sticker.

The smaller sticker goes at the front of a desktop unit.

For a desk top look for the mains power entry point. That is where the transformer is and the bigger sticker goes there.





All in one PC's

The principles are the same as for a standard desktop. Place the larger *SaferWave* unit near where the power supply enters. Place the other item as for a normal PC.

Androids, iPads, tablet style devices

These have a processor unit and the facility to connect to the internet by either WiFi or 3G. There is a detectable signal close to the unit during normal operation. This is important as fingers are used to work the device and can provide a route into the body. Fingers are very sensitive with many nerve endings. Meridians also terminate near the end of fingers and these provide a pathway to all organs. It would be sensible to use a mobile phone protector, especially if you use the device frequently and more importantly if you use 3G. If you use the unit powered up then also consider the Power Supply Unit SaferWave foil.

LCD screens with integrated power supply

This is a recent development against the previous use of a transformer on the cable, which can be placed at a distance. It is suggested that you test where the low frequency signal is and especially how much it penetrates where you sit. An option is to use the larger PC harmoniser near where the power supply enters.

Further information

Please visit www.SaferWave.com for contact details and for any questions and clarifications. Updates to operating instructions will also be available on the website.

Glossary

EMF- electromagnetic field: a general description of emissions from an electrical device (radio, phone, PC, etc.)

E'smog: refers to EMF generated from man-made technology.

Radiation: that which radiates, or spreads outwards. There is ionising radiation e.g. from nuclear fission, X rays and non-ionizing (from phones, electrical devices). Ionizing radiation is strong and harmful. Non ionizing radiation is subtle and progressive. It is non-ionizing radiation that is referred to in these instructions.

SAR: specific absorption rate is an indication of the amount of radiation that is absorbed into the head/body whilst using a mobile phone. SAR values are usually expressed in units of watts (power) per kilogram (W/kg) in either 1g or 10g of body tissue, over a period of time (usually 10 minutes). The higher the SAR rating, the more radiation is absorbed.

Hz/MHz/GHz: the frequency, the number of cycles per second. Your power supply is 50/60Hz. Mobile phones operate at 900/1800/1900MHz. MHz is megahertz: millions of cycles per second, GHz is gigahertz. 1GHz is 1000MHz. (1.8GHz is 1800MHz)

Harmonics are frequencies that are integer multiples of the fundamental frequency. If the fundamental frequency is 25Hz, the frequencies of the harmonics are: 50Hz, 75Hz, 100Hz, etc. For a 1.8Ghz phone this is 3.6GHz, 5.4GHz, 7.2GHz, 9.0GHz and upwards. This is not peculiar to phone signals, it is totally common in our world. The human voice, a bowed violin string produces noise harmonics. A Cepheid variable star, which is very luminous, produces harmonics in it light patterns. The harmonics (higher octaves) from phones are generated by the sharp peaks in the waveforms. This is a known characteristic of square and triangle waves: the peaks of mobile phone pluses are sharp triangular.

A *transient* is an event that lasts only for a short time. Electrically it happens when something is switched on, a spike. When you switch a light on or off there is a spike, a noise signal on an oscilloscope. Transients appear every time an electromagnetic phone pulse is started. For mobile phones start this is 217 times per second. These transients have a very high frequency, 30-80GHz, compared to the phone signal of 1.8GHz. These frequencies are in the vibration range of your trillions of cell membranes, can interfere with their functional and communication aspects and thus create problems.