

# HOLD — THE — PHONE

THE DEFINITIVE GUIDE TO  
HOW TO PROTECT YOUR HEALTH  
FROM PHONES AND WIRELESS

ALISON WILSON

AVONSIDE  
PRESS



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# FOREWORD

It was December 1992, some twenty years ago, when the first public questions about a possible link between mobile phones and brain cancer were raised. On the United States syndicated television show *Larry King Live*, neurologist Dr David Perlmutter stunned the world with an X-ray showing a brain tumor in his patient, Susan Reynard, juxtaposed to the area where she held her mobile phone close to her head.

In those days, mobile phones were the size of bricks, very expensive, and used primarily by early technology adopters and those with above-average financial means. Her husband, David, who was in the telecommunications business and wanted to provide a convenience for her during a difficult pregnancy, gave Susan Reynard the phone. The tumor was fatal and the family brought suit against the phone industry for negligence.

The Reynard family claimed that the industry knew of the dangers from wireless radiation and did not warn consumers. Above the mobile phone industry's adamant claims that there was no danger - the industry's mantra was "thousands of studies prove cell phones are safe" - telecommunications stocks tumbled, congressional hearings were held, and a decades-long search for scientific answers ensued.

My job was to run what remains the world's largest research effort into mobile phone dangers: seven years, fifty-six separate studies, US government oversight, and \$28.5 million in funding from the mobile phone industry itself.

At the conclusion of that program in June 1999, we recommended to the government in the US and the global telecommunications industry that, given surprising evidence that mobile phones caused genetic damage in human blood, disruptions of brain physiology, and increases in the risk of rare brain tumors, warnings to consumers were warranted.

Those warnings, which would have empowered consumers to make their own informed safety choices while the health risk questions were sorted out with necessary follow-up science, never came.

A decade later, the majority of mobile phone users around the world remain unaware of the inherent dangers they subject themselves and their families to every day through their mobile phone use - dangers elucidated by serious and well-conducted scientific studies.

Today, my personal library contains more than seventeen thousand scientific papers relevant to the question of mobile phone health effects. It is now evident that even in the early 1990s, there was science - though not all in the public domain - that was indicative of impending health risks from mobile phone-like radiation.

The science today is quite clear. There are real dangers. The good news is that these dangers are manageable in most cases - wired-headsets remain the best protection tool.

Wireless technology is one of the most rapidly evolving and changing technologies in history. The cell phones of the 80s and 90s were very different from the smartphones of today. And, that means that over time the exposures to people have changed, the biological effects have changed, and the scientific tools to assess what those changes in exposure and effect mean to public health are necessarily changing as well.

This presents a significant challenge to government, industry and the scientific community who are doing their best to figure it all out. It is important to keep that in mind when reading this book. Pay close attention to the dates affixed to specific quotes cited. What we know today is much more complete than what we knew in 2001 or 2007 or 2010. And, we will know more next year and the year after.

It is this dynamic that underscores an important message:

*While the science is being sorted, precaution makes sense.*

The axiom “knowledge is power” has particular relevance here. And this is precisely why this knowledge-conveyance book by Alison Wilson should be read by, and remain on the bookshelf of, every parent, spouse, and friend of every person who uses mobile communication devices.

As a concerned and energetic parent, spouse, and friend, Alison has done what governments, scientists, and industry have so far failed to do: empower consumers to make their own informed safety choices about wireless communication devices.

She has done a rigorous job sorting through the volumes of science, the quotes of countless experts, and the sometimes-diversionary paths offered by vested industry, scientific, and government groups. The result is an easy-to-understand fact book that allows you, the reader, to draw your own conclusions about what this science means, how best to manage the risks, and thereby take steps to protect those closest to you.

Sometimes it is simply best to take matters into your own hands. Alison Wilson has done just that, and this book allows you to do the same. Well done, Alison . . .

**G L Carlo**  
*August 2013*

# INTRODUCTION

*“There is nothing to fear  
except the persistent refusal to find out the truth.”*

***Dorothy Thompson***

# THE BASICS

## HOW THIS BOOK WORKS

This book is half of a companion set of books: '**Hold The Phone**' and '**Hold The Phone: Here's Why**'. Read together they will:

- allow you to make an informed choice about your future
- give you everything you need to know to help yourself

Both books are based on the words and work of credible, experienced, and independent experts in the fields of science, public health, and mobile telecommunications technology.

Why's it a good idea to have both books? Because together they will give you the complete picture - everything you need to know about *what* to do, and *why*.

**This book - Hold The Phone** - will give you quick and easy tips on *how* to protect your health. This is the 'good news' book. Packed full of simple solutions, it will show you:

- *who* the experts are,
- the message they have been trying to get to you,
- the steps they're advising you to take, and, most importantly,
- ***how just a few little changes can make a big difference***

**The second book - Hold The Phone: Here's Why** - will let you in on *why* that's a good idea. This is the 'reference' book. It will lay the facts and the evidence out for you so that you can clearly see:

- what the concerns are about using mobile phones (and cordless phones and wireless appliances too),
- how phone use can affect your health, and what the real-life symptoms look like,
- the basics of how this technology works,
- what the science has found,
- what the experts are saying,



- and the many public warnings that have already been issued around the globe.

**The reference and resources section** at the back of both books will let you know:

- the reliable sources that you can trust for accurate information,
- the references and websites that will help you to do your own research,
- where to go if you want to learn more about radiation and health issues, and
- who to call if you want someone to assess your exposure to radiation at home or in the office.

**Clear and simple:** Both books have been clearly and simply laid out so that you can cut to the chase, get to the facts, and find out exactly what to do: *quickly and easily*.

*“Our lives begin to end the day we become silent about things that matter.”*

***Martin Luther King Jr***

## THE BOTTOM LINE WHY READ A BOOK LIKE THIS?

**We've all heard the health concerns raised about mobile phones.**

**Reading this book will show you the best ways of preventing them from compromising *your* health.**

Does that mean that you'll be asked to stop using your phones? No, because realistically, that's probably not going to happen. Instead, by finding out how to use them more *wisely*, you'll learn how to minimize their effect on you.

A friend told me that when the 'Pill' first became available in the '70s, she went to ask her doctor for a script. She'd already set her course of action into place; all she wanted was help with protection. His answer, because she was young and unmarried, was that "the best contraceptive is the word 'No!'". His refusal to accept the reality of the situation, or offer her practical advice, left her exposed and vulnerable.

The parallel is obvious. We have to accept what is. There is little point in attempting to tell anyone, especially teenagers, "just say no to mobile phones". It's not going to happen. What is likely to happen is that they'll quietly slope off and do it anyway - without protection. We need to show them what to do to protect themselves.

What the world does not need now is another stern, fear-based book that waves its finger at you and tells you what's terrible about the way in which you live. Chances are you probably have enough on your plate already.

What *is* needed now is pragmatism and acceptance, followed up with practical advice. A solution-focussed approach, with good health as its main goal.

**This book is not attempting to convince anyone of anything. Rather, it's there for those who are already aware of concerns about phones and wireless - *and just want to know what to do about it.***

Following the tips given in this book may well help if you feel any of the following:

- difficulty in focussing, concentrating, and remembering
- anxiety, irritability, or nervousness
- restlessness and the inability to relax
- palpitations or arrhythmia
- headaches
- dizziness and nausea
- sick and tired of feeling sick and tired
- at the end of your tether because you can't get a good night's sleep

The effects can be cumulative, so every time you follow these tips it will make a difference. Each and every little step truly does help.

Even if you're lucky enough not to feel any of these symptoms yet, following these simple steps will help to *prevent* you from experiencing them in the months and years to come.

This book will present material that enables you to make an educated decision about your own future. Not everyone's decision will be the same, but it will allow you to find out the truth about the issues and make an informed choice. *Your* choice.

*"There is inadequate warning and notice to the public about possible risks from wireless technologies in the marketplace, which is resulting in adoption and use of technologies that may have adverse health consequences which are still unknown to the public.*

*There is no 'informed consent'."*

***The BioInitiative Report (2007) (1)***

# **PART 1**

## **PHONES AND WIRELESS**

### ***HOW YOU CAN PROTECT YOUR HEALTH***

# PHONES AND WIRELESS 101

## THE BASICS

*“Men occasionally stumble over the truth,  
but most of them pick themselves up and hurry off  
as if nothing ever happened.”*

**Winston Churchill**

## **SOME FACTS ABOUT CELL PHONES, CORDLESS PHONES, AND WIRELESS**

We have never witnessed anything quite as phenomenal as the uptake of wireless technology. Its growth has been truly exponential.

In only six years, the number of cell phone accounts in the market increased from two billion in 2006 to a staggering six billion in 2012. Some predict that to reach 7 billion in 2013.

From Asia to America, and everywhere in between, it's safe to say that only a tiny percentage of individuals are free from exposure to communications technology networks. In fact, some countries are now opting to phase out landline phones completely and will offer only mobile phone connectivity.

This is a situation that, whether we've chosen to opt in or not, now affects us all.

### ***Here are the priorities about mobiles phones and wireless:***

- Mobile phones, cordless phones, and 'wireless' devices *all* work using microwave radiation (which lies within the broader range of radiofrequency radiation, or RFR).
- They all also *emit* microwave radiation. (That is the same microwave radiation that's used in microwave ovens.)
- In 2011 the WHO officially declared this radiation "a possible human carcinogen".
- There are many, many, *many* research studies that show that microwave radiation and RFR can alter biology, and have the potential to significantly affect health.

- Some of this research evidence links exposure to microwave radiation/RFR with:
  - alterations to both brain function and heart function
  - changes in behaviour
  - impairment of immune system function
  - changes in biological and genetic structure, and damage to DNA
  - inhibition of the body's ability to *repair* damaged DNA
  - interference with the quality and quantity of sperm, reducing fertility
  - alterations to the brain, including pathological leakage of the blood brain barrier
  - disruption of fetal brain development
  - reduced quality of sleep, impaired melatonin production
  - a wide range of health disorders, from headaches to brain cancer
  
- Children are especially vulnerable to, and affected by, exposure to microwave radiation. (It is linked to learning difficulties, hyperactivity, behavioural issues, ADD, autism, and childhood leukaemia.)
  
- The radiation from phones and wireless appliances affects more than just the people using them. They, and the antennae and routers that power them, emit high levels of radiation: *passive* radiation that envelops everyone around them.
  
- Passive smoking can be avoided by closing a door, but passive radiation from phones and wireless can't. It passes right through doors, windows, walls, and ceilings.
  
- Because microwave radiation is invisible, and most can't feel it, people are generally unaware that they're exposed to it.

- Based on current research, many governments and health experts around the world have issued official warnings to the public, advising them to reduce their exposure to mobile phones, cordless phones, and Wi-Fi.
- The media reports saying the “jury is still out” on the safety of cell phones can give a false sense of security. There are *thousands* of studies that have found evidence of the potential to affect both biology and health. Then there are studies that have failed to find an effect.
- Despite what you may hear or read, remember: Research that fails to *find* an effect is **not** the same thing as research that proves there is *no* effect! Absence of proof is not proof of absence. Because of this, no one can tell you that it’s safe to use a mobile phone.

**The Good News: There *are* ways you can help to protect your health by reducing your exposure to microwave radiation.**

**This book will show you *how* to do just that.**

*All great truths begin as blasphemies.”*

***George Bernard Shaw***



*"The world's largest biological experiment ever, takes place since few years . . .*

*and now one third of the world's population is included in the experiment as test persons, voluntarily exposing their brains to electromagnetic fields produced by their mobile phones.*

*The other two thirds constitute a control group, however not ideal, as many of the non-users are exposed to 'passive mobile phoning' and other types of radio frequency radiation."*

***Leif Salford (2006) (3)***

*(Said in 2006: There are now over 6 billion mobile phone subscribers)*

*"There are only two mistakes one can make along the road to truth: not going all the way - and not starting."*

***Buddha***

## **RECENT DISCOVERIES**

### **WHO declares Radiofrequency Radiation as a Class 2B "Possible Human Carcinogen"**

*Lyon, France, May 31, 2011 – The WHO/International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), based on an increased risk for glioma, a malignant type of brain cancer associated with wireless phone use.*

*From May 24-31 2011, a Working Group of 31 scientists from 14 countries has been meeting at IARC in Lyon, France, to assess the potential carcinogenic hazards from exposure to radiofrequency electromagnetic fields.*

*Conclusions: Dr Jonathan Samet (University of Southern California, USA), overall Chairman of the Working Group, indicated that "the evidence, while still accumulating, is strong enough to support a conclusion and the 2B classification. The conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk."*

*"Given the potential consequences for public health of this classification and findings," said IARC Director Christopher Wild, "it is important that additional research be conducted into the long-term, heavy use of mobile phones. Pending the availability of such information, it is important to take pragmatic measures to reduce exposure such as hands-free devices or texting."*

**WHO/IARC, May 2011 (4)**

## **Comments on the IARC Class 2B Rating: "Possible Human Carcinogen"**

*"In the end of May 2011 . . . IARC of the WHO in Lyon classified RF electromagnetic fields, to which wireless radiation belongs, as "possibly carcinogenic".*

*Results from basic research with proven changes in structure and functions of genes after the exposure of isolated human and animal cells, but also from exposed animals itself, that would have lent weight to the epidemiological observations were, however, not all considered.*

*Had these results been taken into account according to their significance, the classification would not have been "possibly carcinogenic" but rather "probably carcinogenic".*

***Franz Adlkofer (2011) (5)***

*"The existing science is very clear there is risk of cancer from cell phone use.*

*The warning might have been 2A (**probable** human carcinogen) if there were a larger number of animal studies showing this, or if there were a larger number of up-to-date human studies.*

*It's important to recognize the Interphone study on which the classification to a large extent relied was completed in 2004, and current studies reflecting usage patterns today would be far more damning, possibly earning a Class 1 "Human Carcinogen".*

***Alasdair Philips (2011) (6)***

*"The US government now has a scientific basis to issue precautionary health warnings, revise existing cell phone regulations and fund research on radio frequency electromagnetic field radiation.*

*A \$1 per year fee on each cell phone would generate \$300 million annually for research and education."*

***Joel Moskowitz (7)***

*"We know the truth, not only by the reason,  
but also by the heart."*

***Blaise Pascal***

# CELL AND MOBILE PHONES

## QUICK TIPS

*What are the issues, and what to do?*

*“Every convenience brings its own inconveniences  
along with it.”*

*Proverb*

# CELL PHONES AT A GLANCE: THE ISSUES

Cell phones and mobile phones emit microwave radiation.

Mobile phone use is linked to brain tumours, and a variety of chronic health conditions.

Mobile phone use can also affect your:

- sleep,
- memory,
- brain function,
- moods and behaviour,
- immune system,
- fertility, and
- ability to feel well, healthy, and full of vitality.

Children are especially vulnerable to radiation during mobile phone calls. Radiation from a phone can penetrate through almost the entire brain of a young child.

Pregnant women using mobile phones risk affecting their unborn child. Research has shown behavioural and learning difficulties later in life for these children.

*"People who sell mobile phones are making a positive assertion of safety: there is no risk.*

*That just cannot be done."*

***Cindy Sage (2000) (8)***

***Please Note:***

*The terms ‘radiofrequency radiation’, ‘microwave radiation’ and ‘information carrying radio waves’ will all be used throughout the book - often interchangeably.*

*All technical terms within this book have been deliberately generalised to keep the information as simple and accessible as possible, and to prevent it from getting bogged down by technicality and detail.*

*For those who do wish to have more precise information on each term and frequency range, please search the plethora of information on the Internet for “radiofrequency radiation” and the other terms used.*

*Please also remember that the research quoted and highlighted here is providing us with a link to **potential** effects. It is not a foregone conclusion that these effects will happen.*

*We are all individuals, and because we’re not all the same our responses vary quite markedly. It appears that we differ in:*

- *whether we’re affected*
- *what affects us*
- *how much we’re affected, and*
- *the ways in which we’re affected*

# CELL PHONE SAFETY TIPS

## *WHAT TO DO THEN? HOW TO PROTECT YOUR HEALTH?*

*The following are the priorities you need to know  
about mobile phones  
and what you can do to minimise  
your exposure to their radiation.*

*“The saddest aspect of life right now  
is that science gathers knowledge  
faster than society gathers wisdom.”*

***Isaac Asimov***



## CELL PHONES - SAFETY TIP # 1

### 1 ***The absolute priority*** ***Keep the phone away from your head***

In order for mobile phones to work, mobile telecommunications technology 'sprays' microwave radiation into the air so that you can pick up a signal wherever you go. As soon as your mobile phone is in use, it too starts 'spraying' radiation. If you're in contact with it, the radiation goes into you.

The sphere of the most intense radiation around a phone is called a 'near-field plume'. During an 'average' phone call, this is estimated to be roughly eight to twelve inches (20–30 cm) in diameter. When the phone is next to your ear, that plume of intense radiation penetrates right through your skull, and goes directly 4 in/10 cm deep into your brain's soft tissue.

- This microwave radiation can change the cellular structure of our brains.
- It can also change the electrical activity of our brains: the way in which they work and communicate with the rest of our body.
- Holding a mobile phone next to your head for long periods of time is linked through significant research with the occurrence and growth of brain tumours.

*"Mobile companies hide the figures on how much radiation they give off in the back of manuals . . . But modern phones give out 217 electromagnetic pulses every second into your head."*

*Alasdair Philips (2009) (9)*

*"Recent epidemiologic studies of adults from those few nations where cell phone use has been extensive for a decade or longer indicate significantly increased risk of a variety of brain tumors."*

**Guiliani L, Soffritti M (2010) (10)**

*Research study: Guiliani L, Soffritti M. Non-Thermal effects and mechanisms of interaction between electromagnetic fields and living matter*

## **CELL PHONES - SAFETY TIPS # 2**

### **2 Use an earpiece, headset, or handset**

The whole idea of using these is to try to get the radiation that's coming out of the phone as far away from your brain as possible.

Using an earpiece (wired or airtube ones are preferable) *while holding the phone away from you* also prevents the radiation from being absorbed into your body.

*"The headset is the best interim remedy, because it gives you the opportunity - it empowers you - to take the radiation away from your body, and still use the phone."*

**George Carlo (2005) (11)**

Plug-in handsets are a great idea. Looking like the handle of a retro phone, they plug into most cell phones. They enable you to keep the radiation well away from your head - and if the phone is kept at a distance, away from your body too.

Leaving one of these on your desk, or wherever else you make most of your calls, will mean it's immediately to hand whenever you need to use the phone.

Once you've made a habit of keeping it plugged in, you won't even need to think about it. Just this one small change in behaviour will prevent a tremendous amount of radiation entering into the soft tissue of your brain.

Whatever new devices come onto the market – however enticing the appeal of their marketing - **avoid putting *anything* that uses wireless technology anywhere near your head.**

## **CELL PHONES - SAFETY TIPS # 3**

### **3 *Use Bluetooth earpieces and headsets with caution***

During a call a Bluetooth headset emits less radiation than a phone, so using one is preferable to putting the phone right next to your ear. However, it still exposes the cells of your head and brain to radiation.

When a Bluetooth headset is switched on, it is continually in communication with your phone (and other Bluetooth devices): they stay in touch with each other by constantly 'pinging' or signalling back and forth. When this happens, it's not only the phone but also the headset that is emitting microwave radiation.

If you 'wear' the earpiece all day, then your entire bioelectrical system faces the challenge of constant interference from the radiation. As the earpiece is on your head, there is the risk that this can affect your brain.

Because of this, if for some reason you *have* to use one, they are best used only while you're actually making the call, and only for short periods. Take it off as soon as you've finished. (Airtube or wired earpieces are a safer option.)

*Last week, three prominent neurosurgeons told the CNN interviewer Larry King that they did not hold cell phones next to their ears.*

*"I think the safe practice," said Dr Keith Black, a surgeon at Cedars-Sinai Medical Center in Los Angeles, "is to use an earpiece so you keep the microwave antenna away from your brain . . ."*

*And CNN's chief medical correspondent, Dr Sanjay Gupta, a neurosurgeon at Emory University Hospital, said that like Dr Black he used an earpiece.*

*The New York Times, June 3, 2008 (12)*

## **CELL PHONES - SAFETY TIP # 4**

### **4 Use the loudspeaker**

Using the phone's loudspeaker, or speakerphone function, is another excellent option. It's cheaper than an earpiece and doesn't take as much fiddling around when a call comes in.

Using the loudspeaker, *whilst holding the phone away from you* (or putting it on a desk), presents the smallest chance possible of any radiation crossing into your head or body.

However, If you are going to use the loudspeaker, please think of those around you: find a quiet spot where you're not going to disturb anyone.

*"The study strongly suggests that mobile phone use is associated with specific changes in the areas of the brain responsible for activating and coordinating the stress system."*

*Bengt Arnetz (2008) (13)*

## CELL PHONES - SAFETY TIP # 5

### **5 Use an online phone service to make calls**

Using your computer - as long as it's a cable-connected computer - to make calls via an online phone service such as Skype can dramatically cut down your exposure to radiation.

*"And if I hold it to my head like this, there is no way that I can avoid getting a sizeable amount of that energy in my head and my hand.*

*This is the first generation that has put relatively high-powered transmitters against the head day after day after day.*

*The picture that's emerging is that, over the lifetime of the individual, you may see changes that could be considered health effects or potential health risks."*

*Ross Adey (2000) (14)*

## CELL PHONES - SAFETY TIP # 6

### **6 Keep changing sides**

If you have to place the phone next to your ear, then make absolutely sure that it's not kept next to the same ear all the time.

Research, especially the long-term studies, point to a clear link between the amount of time a phone has been used and brain cancer. The longer a phone has been held against the ear, the greater the risk. It also shows that the more the phone is used **on one side of the head**, the greater the risk of cancer occurring within *that side* of the brain.

There is good news. Alternating the side of the head to which you hold the phone has been shown to *significantly* reduce this risk.

*"The uncertainty about the relationship between the use of mobile phones (MPs) and the increase of head tumour risk can be solved by a critical analysis of the methodological elements of both the positive and the negative studies.*

*Results by Hardell indicate a cause/effect relationship: exposures for or latencies from  $\geq 10$  years to MPs increase by up to 100% the risk of tumour on the same side of the head preferred for phone use (ipsilateral tumours) - which is the only one significantly irradiated. . ."*

*"However, also in the Interphone studies a clear and statistically significant increase of ipsilateral head tumours (gliomas, neuromas and parotid gland tumours) is quite common in people having used MPs since or for  $\geq 10$  years."*

**Levis AG et al (2011) (15)**

*Research Study: Levis AG et al. Mobile phones and head tumours: it is time to read and highlight data in a proper way.*

## **CELL PHONES - SAFETY TIP # 7**

### **7 Keep it brief**

For the radiation from a mobile phone to have an effect on your biology, there needs to be a *sustained* exposure to the signal.

Unfortunately, 'sustained' is not as long as you may think. According to Dr George Carlo, that is anything over *twenty seconds*. What that means is that any call lasting more than twenty seconds may cause biological disruption to your body.

A recent Japanese study found significant risk for those who used mobile phones for more than twenty minutes a day for at least five years: three times more acoustic neuromas than could be expected. (*See below*). Tumour location was linked to the side of phone use.

*"A significantly increased risk was identified for mobile phone use for >20 min/day on average."*

**Sato Y et al (2010) (16)**

*Research Study: Sato Y et al. A case-case study of mobile phone use and acoustic neuroma risk in Japan*

Because of this, keep all your calls as brief as you can. If someone calls you, say that you'll call back on a landline (a *corded* one.)

*"Remember, you have perhaps 2,000 minutes (cumulative lifetime) before you are in the heavy user category and at statistically significantly increased risk for glioma."*

**Cindy Sage (2009) (17)**

## **CELL PHONES - SAFETY TIP # 8**

### **8 Practice 'safe text' Text instead of calling**

Texting helps you to keep the phone, and its radiation, away from your head.

A text (because it's sent using only a short burst of power) also involves far less radiation than a call.

Make sure you hold the phone away from you when you're texting.

*(Re: children using mobile phones)*

*"The Stewart report recommended that they should not use them to any extent.*

*I think the advice to secondary school children is to use them sparingly, to text rather than phone, given the uncertainty."*

***Lawrence Challis (2009) (18)***

7.8 trillion SMS messages were sent in 2011.

This is expected to reach 9.6 trillion in 2015.

## **CELL PHONES - SAFETY TIP # 9**

### **9 *When your phone is connecting to another phone - Keep it well away from you***

When your phone is trying to make a connection with another phone, it uses far more power than it does once the connection is established. This need for more power results in your phone emitting far more radiation.

If you are holding the phone next to your ear whilst the connection is being made, then these higher levels of radiation are going straight into your brain.

While making a connection, the phone emits not only far *higher levels* of radiation, but the cloud of radiation that surrounds the phone extends over a *much larger area*, which also goes on to affect those around you.



## CELL PHONES - SAFETY TIP # 10

### **10 When there's a weak signal (low signal bars) - Keep it away from you**

A 'low' signal indicates that there is limited reception in the area you're in, and your phone will have to work much harder to make contact with the base station.

This also means that it will require more power, which will increase the amount of radiation that's emitted from it.

*"The higher the tower strength - the more signal bars you have - the less energy your cell phone must generate to maintain communication."*

***Vicki Warren (2010) (19)***

This is particularly relevant in sparsely populated areas, such as country regions, where signal strength is frequently weak.

*"Mobile phones can use up to 1,000 times more power when they are far away from a base station."*

*Those using cell phones in rural areas at a distance from the transmitter absorb far more energy from the handset."*

***Kjell Hansson Mild (2009) (20)***

*"According to my own studies, there is a clear trend of increasing brain cancer rates, hearing problems, increasing incidence of acoustic neuroma and also increasing mortality among people having Alzheimer's disease in more sparsely populated areas in Sweden.*

*This fits well with the higher average output power from mobile phones in sparsely populated areas, and should be taken seriously by responsible authorities."*

*Örjan Hallberg (21)*

## **CELL PHONES - SAFETY TIP # 11**

### **11 When you're inside a metal structure - Avoid using your phone**

When mobile phones are used inside a metal structure, such as planes, trains, and cars, they usually have to work harder to make a connection.

As we've seen, this extra 'work' means that you're exposed to more radiation than usual if you're using the phone inside one of these.

**ALSO**, microwave radiation is reflected by metal. This means that the metal walls of the car, plane, or train make it harder for the radiation to escape. Instead, it can keep bouncing around inside (which is the principle behind the microwave oven).

Whether you're the one using the phone, or you're just sitting close to someone else who is, you're being caught up in a cloud of microwave radiation that's making your transport act like your oven.

This information is really important for anyone whose work means that they constantly have to use their phones while they're on the road.

*"It varies from model to model, but in general when a cell phone is being used in a full-strength signal area, the signal from the cell phone can have a potential impact on anyone within approximately 6 feet (2 meters) of the cell phone.*

*As the signal strength decreases, and therefore the cell phone strength increases, this distance increases proportionally.*

*The actual distance of effect depends entirely on the direction and magnitude of the signal and whether the signal transmission is occurring within an enclosed area where there is significant reflection, such as an airplane, car or train."*

*Vicki Warren (2010) (22)*

## **CELL PHONES - SAFETY TIP # 12**

### **12    *When you're travelling at speed* - *Avoid using your phone***

When you're moving at high speed in a car or train, your phone has to struggle hard to locate the nearest antenna and then connect to it.

This creates electrical 'surging' as the phone regularly 'pulses' while it tries to make contact with the nearest antenna.

Because you're constantly changing position, it has to do this repeatedly, and often. All this hard work increases the power levels of the phone, often to its maximum, increasing the radiation levels.

This increases in high-use areas (like cities) as your connection is moved from antenna to antenna according to the available capacity.

This is especially true when you're in a car, moving quickly from one area to another.

The other reason not to use mobile phones in cars is that it dramatically increases the chances of having an accident.

Much of the research has made the observation that crashes are due to distraction, and drivers' lack of concentration when using phones.

Given what we know about microwave radiation exposure and its effect on the brain's ability to function properly, perhaps we should also be looking at whether it is the radiation emitted by the phones that is affecting the brain's inability to concentrate.

Is it possible that the accidents are a consequence, not just of inattention, but also of the mobile phone's interference with brain function?

*"If you put a 20-year-old driver behind the wheel with a cell phone, his reaction times are the same as a 70-year-old driver.*

*It's like instantly ageing a large number of drivers."*

*David Strayer (2005) (23)*

## **CELL PHONES - SAFETY TIP # 13**

### **13 Have a car kit fitted**

If you do need to make calls in your car, have a special external car aerial fitted, along with a hands-free kit. This will prevent you from needing to hold the phone, and also minimises the amount of radiation inside your car.

Be aware that Bluetooth uses wireless, which still relies on filling the air inside your car with radiation.

If you have a Bluetooth feature in your car, you can reduce your exposure by turning it off when you're not actually on the phone.

*"Due to the available health effects research results of low level long-term nonionizing radiation exposure, and since more than four billion people now are using mobile phones, the Precautionary Principle should be adopted promptly for these issues. . . .*

*People should be advised to reduce RF/MW exposure, for example using head phones and hands-free kits until new technologies or new health effect research results are available."*

*Alvaro Augusto A de Salles (24)*

## **CELL PHONES - SAFETY TIP # 14**

### **14    *Avoid using your phone - when it is damaged***

Mobile phones that have been damaged can have problems picking up a signal, or connecting to other phones.

This leads to more power being used, again meaning that more radiation is emitted.

*"Damaged cell phones and PDA's (dropped, banged around) often have much higher emissions. Make sure if one is issued to you, it is in good condition.*

*Cindy Sage (2009) (25)*

## CELL PHONES - SAFETY TIP # 15

### **15    *Avoid 'wearing' your phone***

If you have a phone that's capable of downloading data, such as emails, web pages, music or videos, be aware that this can create dramatic surges of very powerful radiation.

If you're 'wearing' your phone by carrying it around on your body, then very high levels of radiation are going into your body each time these surges or downloads happen. Frequent downloads mean that you can face the risk of being constantly irradiated, potentially leading to chronic exposure levels.

Even when your phone isn't in use, it has to intermittently signal back and forth to the antenna to let it know that it's there, ready and waiting for the next call.

This signalling appears as 'noise', which can disrupt the body's bioelectric system, especially communication between the brain and body, pulsing of the heart, and functioning of cells.

Studies have found biological effects even when the phone is in 'stand-by' mode.

*"The electromagnetic radiation causes cells to change in a way that makes them cancer forming."*

*"It can increase the risk of cancer two to five times."*

***Neil Cherry (26)***

Mobile phone companies are well aware of this and cover themselves by giving a warning, usually somewhere towards the back of the phone instruction books.

Be aware that phones are often carried next to important organs, such as the:

- liver (on the belt),
- kidneys (back of the belt)
- reproductive organs, (jean pockets) and
- heart (shirt pocket).

*"When you have the phone in your pocket, or if you have it on your belt, you're exposing other important areas.*

*Now you know, 80% of our red blood cells are formed in the flat bones of the hip. So that, when you have your phone on your belt, you're exposing the bone that makes your blood. That's not good."*

***George Carlo (2005) (27)***

There has been a disturbing increase in the incidence of young women carrying their mobile phones around tucked inside their bra.

Apart from the danger of disruption to the electrical system of the heart, there is also the potential for harm to those other delicate areas that the phone is close to: the lungs, the lymph system, and particularly the soft tissue of the breast itself.

*"Cells in the body react to EMFs as potentially harmful, just like to other environmental toxins, including heavy metals and toxic chemicals. The DNA in living cells recognizes electromagnetic fields at very low levels of exposure; and produces a biochemical stress response."*

***Martin Blank (2007) (28)***

There are a few 'wearable' communication accessories being marketed at the moment. And there will be more in the future. For the sake of your health please think really, really carefully about their implications.

## CELL PHONES - SAFETY TIP # 16

### **16** *Boys, keep your phone out of your pockets*

Infertility in men has been linked to their use of mobile phones, particularly if they carry them on their body. It's very common for phones to be carried in the front pockets of jeans.

The phone is then resting next to their groin, allowing the radiation to permeate into their testicles.

*“. . . Australia's John Aitken is saying the issue "deserves our immediate attention". In a new study, Aitken has reported that cell phone radiation damages human sperm - as well as DNA.*

*Cell phone use and radiation has now been shown to harm sperm in five different countries, including by two different groups in the United States, one of which is at the Cleveland Clinic.*

*Aitken's message is simple: "Men who want to have children should not keep active mobile phones in their trouser pocket."*

*Microwave News (2009) (29)*

There are many studies showing how exposure to electromagnetic and microwave radiation reduces sperm count and sperm quality, which poses risks to both the chances of getting pregnant, and the health of the future child.

Studies also link RFR to testicular cancer. There has apparently been an 'epidemic increase in the US' in the cases of very young men developing testicular cancer.



*"Mobile companies hide the figures on how much radiation they give off in the back of manuals . . . Males should not keep them in a pocket because they drastically affect fertility."*

*Alasdair Philips (2009) (30)*

There is even a study showing that this radiation is magnified by metal objects such as coins, rings, and zips.

There is no doubt that it's best for men, and even young boys, to avoid putting the phones into their pockets.

## **CELL PHONES - SAFETY TIP # 17**

### **17 *Girls, keep your phones away from your pelvis***

Not much research regarding female fertility has been released so far. However, the latest studies do indicate an effect on the ovaries.

An important factor to remember is that unlike sperm production, which is a continual process, women's eggs are formed whilst they are in utero and then carried inside them from birth.

Women constantly carrying phones close to their ovaries are likely to be running the risk of exposing their eggs to chronic levels of radiation.

Early indications from research on animals show that there is the potential for an inhibiting effect on females' ability to reproduce. Unfortunately, it's also possible that these reproductive deficiencies can be passed on to their daughters.

Exposure to cell phone/radiofrequency radiation has also been linked to increased incidence of miscarriage.

It's fair to say that the picture painted by research already indicates that close exposure is best avoided for women. As a precaution, they are particularly advised not to carry phones anywhere near their reproductive organs.

### ***Effects on Fertility***

*"There have been several studies showing that mobile phone use reduces male fertility. One of the more recent (1) showed that using a mobile phone for more than four hours a day caused a reduction in sperm numbers, motility and viability, each of around 25 percent.*

*Effects on female fertility have not yet been studied but, since all the eggs that a woman will ever have were already in her ovaries before she was born, the cumulative effect could be considerable."*

***Andrew Goldsworthy (2009) (31)***

## **CELL PHONES - SAFETY TIP # 18**

### ***18 If you have to keep your phone on your body - Make sure it's 'back to front'***

It's important to remember that with some phones, more radiation comes *out of the back* of the phone than the front.

So, if for some reason you do have to carry a phone on you, make sure that you place the back of the phone *facing away* from your body.

## CELL PHONES - SAFETY TIP # 19

### **19 *Minimise downloading onto your phone***

Downloading data takes power. Every time you download data onto your phone, it causes high levels of radiation to be emitted.

What are some of the main types of data that are downloaded onto phones? Emails, photos, videos, music and MMS (multimedia messages).

They are all data, yet they can vary enormously in size. As an example, a video clip will be far larger than a simple written email, and so will use more power.

Downloading big chunks of information causes the phone to emit far more power and radiation than it does when making a phone call.

*" . . . 207 billion MMS messages were sent in 2011."*

*"In 2016, 387.5 billion MMS will be sent."*

***mobiThinking "Global Mobile Statistics" (2012) (32)***

Whenever you can, wait till you return to your home, office, or school computer before you attempt to download any material. If you can't wait, then make sure the phone is well away from you.

## CELL PHONES - SAFETY TIP # 20

### **20 *Minimise web browsing and using apps***

Browsing the web and using apps to access information takes far more power than making a phone call.

The longer you spend connected to the Internet, the more power your phone uses, the more radiation it emits, the higher your exposure levels become. Preferably, wait until you're in front of a computer to connect to the net.

Unsurprisingly, app downloads are increasing exponentially. In 2010 the available apps were downloaded 10.9 billion times. In 2014, total downloads are predicted to reach 76.9 billion.

Once again, this is particularly important information for parents.

Because they have no idea of the consequences, young children are often given phones or tablets to play with, so that they can use apps as a distraction or entertainment.

*"According to the Cellular Telecommunications and Internet Association, Americans spent a total of 2.2 trillion minutes on their mobile phones in 2008 - up 100 billion minutes from the previous year.*

*Usage is expected to continue to rise, along with the use of other wireless devices and networks."*

***Michael Lerner (2009) (33)***

## CELL PHONES - SAFETY TIP # 21

### **21 *Avoid listening to music on a phone***

We've seen how your phone emits extra radiation whilst it's downloading music. Research is also telling us that phones can even affect us when they're in 'standby' mode.

For all the reasons given before, if you listen to music on your phone, you're also exposing yourself to far more radiation than if you were listening to music that's been stored on a standard Mp3 (preferably a non-wireless one).

## CELL PHONES - SAFETY TIP # 22

### **22 *Avoid passive radiation from phones***

Like passive smoking, the effects of mobile phone radiation aren't limited to just the person using the phone. Passive radiation is being emitted from these phones - second-hand radiation that envelops everyone around the person while the phone is in use.

To help protect other people, keep at least three to six feet (1-2 m) away from them when you're using your phone - especially babies, children, and pregnant women - preferably more.

To protect yourself, keep the same distance from others when they're using theirs.

*"We all wish we'd heeded the early warnings about cigarettes. We think cell phones are similar."*

*Olga Naidenko (2009) (34)*

## CELL PHONES - SAFETY TIP # 23

### **23    *Avoid the most intense radiation by keeping a distance away from phones***

As we've seen, the field of the most intense radiation around a phone extends directly around the phone in a sphere.

Whether you're texting, using the phone with an earpiece or loudspeaker, or carrying it in a bag, try to keep it at least a couple of feet (approx. 60 cm) away from you.

The further away from phones you are, the more the risks are minimised.

1.    When you can, put the phone in a bag rather than carrying it in your hand.
2.    When you're in a car, put the phone away from you in the passenger seat, rather than resting it in your lap.
3.    When you're at home or at work, place it away from you on the desk, or the other side of the room if you can.

*"Because mobile phones and other wireless gadgets are held close to the body and are used frequently, these devices are potentially the most dangerous sources of electromagnetic radiation that the average person possesses."*

***Olle Johansson (2009) (35)***

## CELL PHONES - SAFETY TIP # 24

### **24** *Keep the antenna away from you*

The antenna is the main source of radiation from your phone.

In older models, the antenna used to be visible, but in most standard phones today it is usually hidden in the *top*. Many people mistakenly hold the *mouthpiece* away from them. This won't help. You need to keep the *antenna* away, especially from your head.

In some smartphones the antenna has been incorporated into the exterior or rim of the phone, making it harder to avoid.

If your fingers make contact with this, then the radiation will be conducted straight into your body. (One of the signs that this may be happening is reduced connectivity. The radiation is going into *you* instead of facilitating the connection.)

*"What we have now are about 15 years of data that show that when you have the cell phone antenna close to your body, close to your head, close to your brain tissue - that it causes*

- *a disruption in DNA repair, which is genetic damage.*
- *It causes leakage in the blood brain barrier, which is a special type of membrane in the blood vessels in your brain to protect brain tissue from toxic substances that circulate in your blood.*

*And we now have about 14 epidemiological studies, studies of people who use cell phones, and the majority of those studies of people who use cell phones indicate an increase in the risk of developing both benign and malignant tumours."*

***George Carlo (2005) (36)***

## CELL PHONES - SAFETY TIP # 25

### **25 Turn your Bluetooth capability off**

Just this one simple action can significantly reduce your exposure to radiation from not only your phone, but others' as well.

One thing you really should know about Bluetooth: all Bluetooth-capable devices within range (about 10 metres) automatically enter into a 'conversation' with each other, and they then form a 'personal area network'.

If one Bluetooth phone responds to a call, every other Bluetooth phone around will also react and try to transmit to the device, meaning that there is extra radiation emitted by all of them, filling the surrounded area with elevated levels of microwave radiation.

Turning the Bluetooth capability to 'Off' will stop your phone from responding to other phones and devices. This is especially important at night, when you're trying to sleep.

*" . . . We are constantly being bathed in an increasing sea of radiation from exposure to the above, as well as*

- *electrical appliances,*
- *computers,*
- *Bluetooth devices,*
- *Wi-Fi installations, and*
- *over 2,000 communications satellites in outer space that shower us with signals to GPS receivers."*

***Paul J Rosch (37)***



## CELL PHONES - SAFETY TIP # 26

### **26    *Be aware that not all phones are equal*** ***Simpler = Safer***

Smartphones, superphones, Androids, BlackBerries, and PDAs can emit far more radiation than simpler standard phones because they are able to download large chunks of data.

This downloading of data uses high levels of power and increases radiation exposure. But more than this, it is the data being carried on the radio waves that is believed to be particularly harmful to health.

It's important to know this because if you're using this type of phone, you are potentially receiving more radiation than you would from a simple phone. As smartphones and superphones have become increasingly popular, this information has become relevant to more and more people.

The simpler and less sophisticated your phone - and the less capacity it has to download large chunks of data - the less radiation it will emit, the safer it is likely to be.

*"Epidemiological studies show significant increased risk of benign and malignant brain tumors, acoustic neuroma, and melanoma of the eye and salivary gland tumors after ten years of cell phone use. Some studies suggest that even short-term use statistically increases cancer risk.*

*Neurological disease and autism have also been linked to wireless radiation exposure."*

***George Carlo (2008) (38)***

## CELL PHONES - SAFETY TIP # 27

### 27 Choose a 'low SAR' phone

Low SAR phones can help to reduce your overall exposure to radiation. (SAR stands for 'Specific Absorption Rate'.) When a phone has a low SAR rating, it means that the phone has lower emissions, and in theory you'll be exposed to less radiation.

However, while it helps, a low SAR rating for your phone is not a magic remedy. There are three things you should know about them.

- SAR ratings are an indicator only of how much *thermal* radiation is emitted by the phone, and how much will therefore be absorbed by your brain.
- That won't tell you anything about the *non-thermal* emissions that are now being connected with a variety of health issues.
- SAR ratings only apply when the phone is in a *full* signal area and are redundant when you're downloading any data, or websurfing.

*"No cell phones are 'safe' - even if the SAR output is minimal. It's like the diet drink company telling you zero calories means 'healthy.'*

*I, and others, are concerned that this effort will actually be damaging to our question of fighting the implementation - because the focus will be on SAR, or calories - and not on whether the product is really healthy."*

**Vicki Warren (2010) (39)**

You can find out the SAR rating of many phone models on:  
"CNET: Cell phone radiation levels", and "EWG: Best and Worst Phones"

*(There's more info on SAR in Hold The Phone: Here's Why pages 103-106.)*

## CELL PHONES - SAFETY TIP # 28

### **28 Beware trends and fashion marketing**

It's important to remember that a mobile phone is not a fashion accessory or talking point. The bald truth is that it is a handheld radiation-emitting device. It exposes you to microwave radiation.

Mobile phone manufacturers and marketers are in business. They are not there to look after your wellbeing - they are there to make money.

One way of making sure that you keep sending your money their way is by linking phones to fashion trends. As long as you fall into line by buying multiple phones, or at least updating to the latest model, they know you'll play your part in the money chain.

However you choose to spend your money is your concern - as long as you're also aware of one important fact. Generally speaking, each new generation of phones features increased capability, and with that comes a potential increase in radiation exposure.

If you dare, flaunt your individuality, avoid following the pack and keep your old phone for as long as possible.

*"It is not a good thing to proceed toward a world of ubiquitous wireless communication in a totally uncontrolled fashion."*

**Ross Adey (2000) (40)**

## CELL PHONES - SAFETY TIP # 29

### **29 To get a good night's sleep Avoid making calls late in the day**

Research has shown us that there is a direct link between exposure to electromagnetic radiation in general - and microwave radiation in particular - and disrupted sleep, shortened sleep, impaired quality of sleep, and also insomnia.

The timing is also interesting: As we continue to increase the amount of radiation in our air, more and more people complain of not being able to sleep properly.

According to *Sleep America* in the US, there has been a significant increase in sleeping problems since 2001.

- In 2001 the number of people getting eight+ hours sleep a night was 38%  
*In 2009, it was down to 28%*
- In 2001 13% people slept less than six hours a night on average.  
*In 2009 that increased significantly to 20% - one in 5 people.*
- In 2001 51% reported problems sleeping problems at least a few nights a week  
*In 2009 that figure rose to 64% - **two out of every three people***
- 43% say they rarely or never get a good night's sleep on weeknights.
- 95% say they use some type of electronics, such as cell phones, within the hour before bed.

It seems more than possible that there's a direct link between the rate at which we are increasing our output of RFR, and the increased incidence of insomnia.

*"The ones who were exposed reported headaches, it took longer for them to fall asleep and they did not sleep as well through the night . . .*

*"If you have trouble sleeping, you should think about not talking on a mobile phone right before you go to bed."*

***Bengt Arnetz (2008) (41)***

Babies and children are particularly vulnerable to external influences impacting on their sleep; and as many of us know, sleepless children almost always lead to sleepless parents.

**Nearly *half* of all Americans have problems  
sleeping every night**

**and *two thirds* have problems  
sleeping some nights of the week.**

## **Mobile Phone Radiation Wrecks Your Sleep**

**Phone makers' own scientists  
discover that bedtime use can lead to  
headaches, confusion and depression**

*"Radiation from mobile phones delays and reduces sleep, and causes headaches and confusion, according to a new study.*

*The research, sponsored by the mobile phone companies themselves, shows that using the handsets before bed causes people to take longer to reach the deeper stages of sleep and to spend less time in them, interfering with the body's ability to repair damage suffered during the day.*

*The findings are especially alarming for children and teenagers, most of whom - surveys suggest - use their phones late at night and who especially need sleep.*

*Their failure to get enough can lead to mood and personality changes, ADHD-like symptoms, depression, lack of concentration and poor academic performance.*

*The study - carried out by scientists from the blue-chip Karolinska Institute and Uppsala University in Sweden and from Wayne State University in Michigan, USA - is thought to be the most comprehensive of its kind."*

***The Independent, January 20, 2008 (42)***

## CELL PHONES - SAFETY TIP # 30

### **30 To get a good night's sleep - Cut down on the number of calls you make**

Getting a good night's sleep is vital to your health. It's during deep sleep that your body is able to produce melatonin – which is a cornerstone of your immune function and hormonal system, and helps to maintain circadian rhythm,

There is a direct link between poor quality sleep, reduced melatonin levels, impaired immune function, reduced emotional wellbeing, and a variety of health conditions up to and including cancer. Even to weight gain. (Is this yet another way in which we are contributing to our rising obesity rates?)

*"The prominent influence of the circadian clock on human physiology is demonstrated by the temporal activity of a plethora of systems, such as sleep-wake cycles, feeding behavior, metabolism, physiological and endocrine activity, and even the rhythmic function of the heart, the brain and every single cell of a living body.*

*Disrupted circadian rhythms will lead to attenuated feeding rhythms, unwellness, disrupted metabolism, and eventually to disrupted health."*

***Dimitris Panagopoulos (2013) (43)***

The microwave radiation that emanates from mobile phones - whether they're used for making calls, accessing the web, or downloading - is directly linked through research to reduced quantity and quality of sleep.

Exposure to microwave and electromagnetic radiation is known to impair melatonin production, which leads to disruption of the circadian 'clock'.

The more you use your phone, the more radiation you're exposed to (especially towards the end of the day), the more you risk your sleep being affected.

*"Scientific studies at the cellular level, whole animal level, and involving human populations, show compelling evidence of microwave radiation exposure down to levels a minute fraction of current safety standards resulting in:*

*altered brain function, sleep disruption, depression, chronic fatigue, leukemia, brain cancer, and breast cancer."*

*Neil Cherry (1998) (44)*

## **CELL PHONES - SAFETY TIP # 31**

### **31 To get a good night's sleep - Keep your phone away from you**

Being near your mobile phone can disrupt not only how *much* you sleep, but also how *well* you sleep. In addition - the radiation from your phone can disrupt not only your sleep but also your production of melatonin, which goes on to affect your whole state of wellbeing.

This is really important, as so many people sleep with their phones right next to them. Many have their mobile on their bedside table and use it as an alarm clock.

Some children and teenagers even sleep holding onto their phones, or put them under the pillow so that they don't miss out on any contact with their friends during the night.

Disable your phone's capacity to transmit by switching it into 'airplane mode' and turning Bluetooth 'off' – and then keep it on the other side of the room.



*"When cells of the brain and nervous system leak, free calcium ions can enter the neurons from outside.*

*Unscheduled steady calcium inflow due to electromagnetic radiation makes them more likely to release neurotransmitters, some of which will send false messages.*

*This in turn can trigger brain hyperactivity leading, amongst other things, to sleep disturbances, loss of concentration (giving rise to ADHD) and stress headaches."*

**Andrew Goldsworthy (2009) (45)**

## **CELL PHONES - SAFETY TIP # 32**

### **32 Especially - when it's recharging**

The plug of mobile phone rechargers typically includes a transformer. Transformers often emit strong *magnetic* fields, which are high levels of low-frequency electromagnetic radiation. If your phone is on and recharging, you're then exposed to a *double* layer of radiation: microwave radiation coming from your phone, *and* magnetic fields from its recharger.

Make sure that your phone and recharger are either in another room, or on the other side of the room from you - especially while you're sleeping. If you have a couple of phones, and your partner does too, your bedside tables can start to resemble the flight deck in an airplane. For a good night's sleep, do what you can to keep your bedroom, and especially your bedside tables, free of technology.

*"According to a 2011 study of more than 3,500 people from 1,100 large corporations worldwide, 61 percent of those surveyed keep their cell phone in the bedroom, and more than four in ten have it within arm's reach while they sleep."*

**Larry Rosen (2012) (46)**

## CELL PHONES - SAFETY TIP # 33

### **33 *Be cautious about using protection devices***

Why the caution around products that are designed to protect you from the radiation coming from your phone? Because some of them don't work. And some of them may end up making you feel worse.

There are a variety of these on the market. They usually either claim to:

- *reduce* the amount of radiation that you're exposed to,
- *protect* you from the radiation that is being emitted, or
- *harmonize* the effects of the radiation.

Some you put on your phone, others you carry with you or wear. These are usually called personal protection devices.

A word or two of warning: At the time of writing it's very hard to substantiate any claims that these products will protect you from the effects of exposure to radiation. It's possible that some *may* help, but some definitely don't.

Protection devices that do work will potentially play a large part in the minimisation of our exposure one day. New devices are being worked on, but at the moment it's difficult to recommend current ones with any degree of confidence. However, as with all research in this field, things are constantly evolving. Keep your eyes open, and watch for new developments in this area.

Some people can feel better when they start using the devices. Many have seen their symptoms alleviated, only to watch them return over time. Sometimes this has happened after only a few weeks; for others it's taken months.

Unfortunately, some have experienced returning symptoms that were far worse than before they started using the devices.

Why do people stop feeling better? It's believed that this is due to the fact that even though a protection mechanism has been introduced, *the exposure has continued*. The cause - the source of radiation - hasn't been removed. This continual exposure leads to degeneration of health.

The symptoms that would normally indicate that this degeneration is happening are masked by the devices. In short, the damage is still occurring; but the early warning system has been disabled.

Over time, the damage increases until symptoms are again felt. By then, because the damage is worse, sometimes so are the symptoms.

This is such an issue that Dr George Carlo's *Safe Wireless Initiative* issued a general warning on the subject, which is available on: [www.etudesetvie.be/files/images/EMR-IP/Medicalalert-En.pdf](http://www.etudesetvie.be/files/images/EMR-IP/Medicalalert-En.pdf)

*"An alarmingly high number of patients with electro-hypersensitivity, and other related conditions, are reporting serious symptom relapses after periods of time when symptoms were apparently mitigated by use of products that claim to be protective against electro-magnetic radiation (EMR) related disease.*

*Several patients . . . are reporting symptom relapses that are believed to be more severe than the symptoms that led to their original diagnosis."*

*Safe Wireless Initiative (2008) (47)*

There are two main reasons that protection devices are considered a problem.

1. **Due to the false sense of security they generate.** Some people feel that, as long as they have their device, they're protected. Instead of minimizing their use of phones, they keep on using them as much as they ever did; sometimes more.

The end result? Their levels of accumulated radiation exposure continue to rise until eventually their health may start to erode.

2. **They can create more radiation.** Some accessories that are designed to reduce the radiation can actually reduce the connection quality.

As we've seen earlier, a reduced connection or signal results in the phone being forced to transmit at higher power. The end result: radiation levels actually *increase*.

Be cautious about using radiation protection devices either on your phone or yourself.

- If you do choose to use them, then be sure to research your chosen product very well.
- Look at the research behind any claims. If there are any studies, do their results match the marketing.
- Be aware that your phone will still be radiating and so you'll still be exposed. Continue to reduce your exposure by minimising your phone use.
- Limit their use. Use them only when you have to so that you don't override or disable your body's own protective capacity.

## CELL PHONES - SAFETY TIP # 34

### **34** *Keep cell phones for 'have to' calls only*

While mobile phones emit microwave radiation, **corded** landline phones do not.

Each time you make a call on a landline phone, where the handset is connected to the phone via a cord, you're reducing your exposure to microwave radiation.

*"Our results show that microwaves can cause irreparable damage. Our advice to people with mobile phones is not to use them if they have the option of using a land line."*

**Levi Schachter (2005) (48)**

As your exposure to radiation is believed to be cumulative, every little counts.

*Whenever you can, put your mobile to one side and make your calls on a **corded** landline.*

*"It is not generally appreciated that there is a cumulative effect and that talking on a cell phone for just an hour a day for ten years can add up to 10,000 watts of radiation.*

*That's ten times more than from putting your head in a microwave oven."*

**Paul J Rosch (49)**

## CELL PHONES - SAFETY TIP # 35

### **35** *Try to avoid becoming dependent on your phone*

Research is showing us that there does appear to be a range of addictive behaviours displayed by many mobile phone users. They become especially distressed when separated from their phones (and/or computers).

*"So 200 University of Maryland students agreed to go without social media for 24 hours - no cell phones or computers - and their reaction was akin to drug withdrawal.*

*Blogs written by students sounded desperate:*

*"In withdrawal. Frantically craving. Very anxious . . ."*

*"I am constantly on my phone. On average I probably send a text message every minute or so. I am ashamed that I couldn't go without my phone for 24 hours, but communicating with people is one of the most prominent things in my life."*

*"Texting and IM-ing my friends gives me a constant feeling of comfort," wrote one student. "When I did not have those two luxuries, I felt quite alone and secluded from my life."*

*The Washington Post, April, 28, 2010 (50)*

*"The Nielsen Research Company found that during the final quarter of 2010 teens sent and received 3,705 texts each per month, which equals approximately six per hour."*

*Larry Rosen (2012) (51)*

## CELL PHONES - SAFETY TIP # 36

### **36** *When it's not in use, turn your phone off*

Depending upon the model of your phone, most signal transmission capability is disabled by either:

- switching to airplane mode, and
- disabling Bluetooth, or
- turning it 'off'

Even in 'airplane mode' with some devices you can also turn Bluetooth and Wi-Fi mode back on – so double-check that everything is off.

This is most effective way of avoiding exposure, so whenever you can, turn to 'off' or 'airplane'.

*"A scientist who maintains that mobile phones are safe to use is either corrupt or seriously incompetent."*

***PSRAST (52)***

*Physicians and Scientists for Responsible Application of Science and Technology*

## CELL PHONES - SAFETY TIP # 37

### **37 *Be aware that every little step you take does count***

It's believed that your exposure to radiation is cumulative - it all adds up. So each little step you take to reduce your exposure *does* count. It will help reduce your overall exposure load, especially in the long term.

And it's long-term use that scientists are particularly concerned about. The longer phones are used, the more radiation the user absorbs into their body.

The more radiation that's absorbed into the body, the higher the cumulative amount of radiation becomes: stepping ever closer to chronic exposure levels.

Research is showing us that chronic, long-term exposure levels are linked to a very wide range of health complaints - up to and including several cancers.

Studies link ten years phone use and over with increased risk of brain tumours.



*"Studies led by Professor Lennart Hardell in Sweden found significantly increased risk of brain tumors from 10 or more years of cell phone or cordless phone use. Among their many significant findings are the following:*

- For every 100 hours of cell phone use, the risk of brain cancer increases by 5%.
- For every year of cell phone use, the risk of brain cancer increases by 8%.
- After 10 or more years of digital cell phone use, there was a 280% increased risk of brain cancer.
- For digital cell phone users who were teenagers or younger when they first starting using a cell phone, there was a 420% increased risk of brain cancer."

***L Lloyd Morgan (2009) (53)***

*"Cell Studies independent of industry funding show what would be expected if wireless phones cause brain tumors.*

*We would expect:*

- *The higher the cumulative hours of wireless phone use, the higher the risk*
- *The higher the number of years since first wireless phone use, the higher the risk;*
- *The higher the radiated power from cellphone use, the higher the risk;*
- *The higher the exposure (use on the same side of head as the brain tumor), the higher the risk] and;*
- *The younger the user, the higher the risk.*

***L Lloyd Morgan (2009) (54)***

## **RECENT DISCOVERIES**

### ***Children and small adults absorb significantly more cell phone radiation than had been previously understood***

*"A new paper published online today in Electromagnetic Biology and Medicine demonstrates children and small adults absorb significantly more cell phone radiation than had been previously understood by using the conventional and widely used assessment methodology, the Specific Anthropomorphic Mannequin (i.e., plastic model of a brain, or SAM), to assess the "Specific Absorption Rate," known as the SAR.*

*Computer simulation of radiation penetration, in contrast to estimating radiation exposure using the fluid-filled plastic mannequin, demonstrates much greater radiation exposures, particularly for children and small adults, than previously understood.*

*The study shows that when phones are placed in the pocket or against the body the current FCC guidelines for radiation heating effects are presently being violated, and suggests that different SAR exposure guidelines should be established for people who are smaller than the mannequin, including children and smaller adults.*

*Experts say it is unlikely many cell phones on the market today would pass the FCC certification process with the amount of radiation now being demonstrated with this methodology."*

***Camilla Rees (October 2011) (55)***

**An Extract from the Warning by  
Barrack Obama's 'President's Cancer Panel'**

*"Cell phone users can reduce their exposure to radiofrequency energy by:*

- *making fewer calls,*
- *reducing the length of calls,*
- *sending text messages instead of calling,*
- *using cell phones only when landline phones are unavailable,*
- *using a wired "hands-free" device so that the phone need not be held against the head, and*
- *refraining from keeping an active phone clipped to the belt or in a pocket."*

*"Unlike adults - even longer-term cell phone users - children have ahead of them a lifetime of RF and other radiation exposures and, therefore, special caution is prudent."*

***The President's Cancer Panel, April 2010 (56)***

***"...there is no absolutely safe level of exposure"***

*"Every cell phone must be connected to a base-station antenna to be functional.*

*Each connection results in a biologically active electromagnetic directional wave, which combines with the waves from other cell phones and wireless devices to form a mesh of information carrying radio waves (ICRW) from which there is little escape for most people.*

*The mechanism of harm perpetrated by ICRWs is biological and therefore carries no threshold for effects - in other words, there is no absolutely safe level of exposure.*

*All cells, tissues and organs in the range of exposure are therefore triggered, and the difference between people who develop symptoms and those who do not is related to factors such as age, state of wellness, gender and genetics."*

***George Carlo (2008) (57)***

*More information, and updates, can be found at*

**[www.holdthephone.co](http://www.holdthephone.co)**

*"I am a firm believer in the people.*

*If given the truth, they can be depended upon  
to meet any national crisis.*

*The great point is to bring them the real facts."*

***Abraham Lincoln***