Frequently Asked Questions

What is microwave radiation?

What is "electrosmog"

If some studies fail to show a link between mobile phone use and cancer, doesn’t that mean the technology is safe?

Aren’t we exposed to more radiation from the sun on an airplane journey than from any of this wireless technology?

Is radiation the same as radioactivity?

Haven’t we all been exposed to radiation from radar and radio broadcasting antennae for many years without health damage?
FAQs

Why aren't our health protection agencies getting involved?

Why don't official regulations protect us?

Isn't it the government’s job to protect the public against health risks?

Why don't we hear about this risk from the media?

Why don't cancer charities warn us about this risk?

Wouldn’t doctors have stopped using mobile phones if they were dangerous?

I have read literature which says this radiation is safe and that campaign groups are scare-mongering. There seem to be scientists saying it is fine, so why should I be worried?
Other than children, which people might be more vulnerable than the general public?

What is the SAR rating of a mobile phone?

What is electro-hypersensitivity (EHS)?

Surely tiny levels of radiation from digital baby monitors, mobile and cordless phones on standby and wi-fi networks can't be a problem?

I would like to reduce exposure but I need the technology for my work.

Doesn’t the increased safety children get from having a mobile phone out-weigh their possible health risks?
Do interactive whiteboards in schools cause concern?

What about other sources of radiation from outside the home and school, such as mobile phone masts and power lines?

What is microwave radiation?

Electro-magnetic Fields (EMFs) are energy fields created by electrically charged particles. An electro-magnetic field has two parts, a magnetic part and an electric part. The electric field part is produced by stationary charges, and the magnetic field part by moving charges (i.e. currents). Electromagnetic fields are
also called Electro-magnetic Radiation (EMR). [Read more about EMF's...]

You can not see, feel or hear electro-magnetic fields, apart from visible light, which is a part of the electro-magnetic spectrum. Microwaves (microwave radiation) are also part of the electro-magnetic spectrum.

We have evolved with the natural
levels of EMFs produced by both the sun and the natural environment around us but their effects differ from EMF's on other parts of the spectrum, including microwaves.

Microwave frequency exposure is a very recent phenomenon. At the start of the 20th century the background radiation was millions of times lower than it is now, and it is as recent as the mobile phone boom of the 1990s that the modern, digitally pulsed signals have become commonplace.
With sunlight we know that our bodies have a certain amount of natural protection in our skin to minimize the damage, but with more and more exposure our skin becomes damaged and we can get skin cancer. Science is unclear whether our bodies have any natural protection against electro-magnetic radiation and at exactly what levels our bodies are vulnerable to damage, though it is probable that each of us is different.

The Bio-Initiative group of scientists have concluded that our bodies respond to electro-magnetic radiation
at extremely low levels particularly when the signals are pulsed, as is the case for mobile phones, cordless DECT phones and wi-fi:

“There is substantial scientific evidence that some modulated fields (pulsed or repeated signals) are bioactive, which increases the likelihood that they could have health impacts with chronic exposure even at very low exposure levels. Current standards have ignored modulation as a factor in human health impacts, and thus are inadequate in the
protection of the public in terms of chronic exposure to some forms of ELF modulated RF signals.” (Dr Carl Blackman, BioInitiative Report, section 14, p.16)

Children and radiation...

Read more about microwave radiation...
Read about the health effects of microwave radiation...

What is "electrosmog"?

Electrosmog is the invisible pollution or "smog" in the form of **EMFs** from the now widespread microwave-emitting devices such as mobile phones, their masts, wireless routers and DECT phones. Just as 'normal' smog is the pollution from car exhausts that
causes breathing problems and other health problems, electrosmog is the equivalent pollution from our wireless age.

If some studies fail to show a link between mobile phone use and cancer, doesn’t that mean the technology is safe?

A study with negative results (no association)
does not balance out one with positive results (showing an association). We don't have to be sure that the technology ALWAYS causes damage; we need to be concerned if it SOMETIMES causes damage. It may cause damage only after sufficient exposure, or after a latency period; it may cause damage to some
people and not others. It is only by looking at all the studies together that we can form a picture of whether health concerns have some justification. It is no consolation to a parent that their child may not be affected, if there is a chance that their child will be affected.

There is every prospect
that the studies that fail to show a link may simply be studying the particular people who are not affected, or the people who are not affected YET. Many of the negative studies didn't include long-term users so the people studied might have gone on to develop cancers. We will have a clearer picture as more
studies are carried out but, in the meantime, children need to be protected from the possible dangers.

Read more about understanding the studies... Aren’t we exposed to more radiation from the sun on an airplane journey than from any
of this wireless technology?

Microwave radiation from mobile phones and wireless products is potentially much more dangerous than sunlight, even with higher exposures.
nearer to the sun because our bodies have not evolved to cope with these unnatural exposures.  

Is radiation the same as radioactivity?
Radiation is a general term for the emission of energy. Radioactivity is a special form of radiation that is emitted when the nucleus of a
radioactive atom disintegrates. It can include sub-atomic particles such as alpha and beta particles as well as gamma rays (a form of electromagnetic radiation). It is called ionizing
radiation because it has enough energy to break chemical bonds and can damage molecules in living tissues. It can break DNA molecules and make holes in cell membranes, which
results in further DNA damage as digestive enzymes stored in lysosomes (membrane-bound particle that recycle waste) are released inside its cells.
iation is transmitted in the form of electromagnetic waves that travel at the speed of light. It includes light itself, the colour of which depends on its wavelength and
gives rise to its spectrum from violet to red (the colours of the rainbow) with the longest wavelengths at the red end. Shorter wavelengths include ultra-violet light, X-rays and gamma rays. These
shorter wavelengths are also forms of ionizing radiation that can damage living cells by breaking chemical bonds.

Longer wavelengths, which
include infra-red and radio waves, are called non-ionizing, because they do not have enough energy to break chemical bonds directly (the longer the wavelength the lower its energy).
However, they can still cause tissue damage by heating (thermal) effects as well as by non-thermal effects. The non-thermal effects can occur at levels hundreds of times lower than
current safety guidelines, which consequently do not protect us from the radiation from Wi-fi and mobile phones. There are a number of mechanisms by which non-thermal radiation can affect
living tissues, but the one that has the most supporting evidence is the electrical release of structurally-important calcium ions from cell membranes. This makes them leak, disrupts normal
metabolism and also leads to DNA damage, apparently by enzymes leaking from disrupted lysosome. Read more…

Haven’t we all been exposed to
radiation from radar and radio broadcasting antennae for many years without health damage?
Although not widely publicised, studies have been carried out in proximity to TV and Radio antennae as well as RADAR facilities with...
conclusions that leukaemia rates, cancer rates and mortality rates are significantly higher than in areas further away from these facilities. So it does seem that
some health damage is occurring with RADAR and radio antennae too.

Why aren't our health
protection agencies getting involved?

The Health Protection
Agency (HPA) says that “the balance of evidence to date suggests that exposures to radiation below …
guidelines do not cause adverse health effects to the general population”.
Scientists do not always have the answers...

In an area of uncertainty there is often a disagreement within the scientific community as scientists interpret the conflicting evidence differently. Often this is the start of a “paradigm shift” as new theories take over from old. We saw this happen when the evidence of harm from smoking was emerging. Here are some quotes from scientists which demonstrate that they sometimes get it wrong:

“"It is my conviction that nicotine is a very remarkable, beneficent drug that both helps the body to resist external stress and can as a result show a pronounced tranquilizing effect...."


“"An outstandingly safe medication."

Letter from a physician participating in the “clinical investigation” program for the new sleeping pill thalidomide [Kevadon], to the FDA, urging speedy approval of the drug. Thalidomide was chiefly sold and prescribed during the late 1950s and early 1960s to pregnant women, as an antiemetic to combat morning sickness and as an aid to help them sleep. From 1956 to 1962, approximately 10,000 children in Africa and Europe were born with severe malformations because their mothers had taken thalidomide during pregnancy.

Read about how industry can affect the results of scientific studies...
We think this fails to give any sense of the amount of evidence of adverse health effects. The research so far is
limited and many of the health problems that might be associated with this form of radiation take 10-20 years to
manifest, so scientists have not been able to properly study the long-term effects yet.

Additionally,
many scientists believe that mixing in short term and light users with the long term and heavy users has diluted the
results in some studies and gives the appearance that there is no link.

Where studies have separated
out the heavy longer term users there has been shown to be a much higher incidence of certain brain tumours in these
people. There is every chance that studies in future years will show that this correlation is much higher amongst those
who consistently use mobile phones for 20 years or more.

The HPA reference to “the general
population” points to the fact that there is no evidence that the technology is safe for children and other vulnerable
groups. There is much evidence that supports concerns over the effects on children. Read more...
The chairman of the HPA, Sir William Stewart stated in an article in The Times newspaper in 2006 that that
evidence of potentially harmful effects of microwave radiation had become more persuasive
over the past five years. So far the HPA has not revised it's advice, nor is it raising the alarm publically.
Mobile phones and wireless technology have been called "the new cigarettes".

Read more...
FAQs

Why don't official regulations protect us?

The
International Commission for Non-Ionising Radiation Protection (ICNIRP) sets exposure limits
for mobile telecommunications, which have been adopted in the UK. Read more about the
guidelines...

These values were set in
1998 well before most of the studies indicated adverse biological effects at
exposures below these levels. The limits are set to protect against the heating (thermal)
effects of the radiation but not the non-thermal (biological) effects.

Biological
effects are changes to the body other than heating up of body tissue.

Many studies have found that
the type of radiation emitted from mobile phones and wireless technologies have biological
effects and the exposure limits do not prohibit radiation emissions at such levels.
ICNIRP itself states that "...these guidelines are based on..."
short-term immediate health effects such as stimulation of peripheral nerves and
muscles, shocks and burns caused by touching conducting objects and elevated tissue
temperatures resulting from absorption of energy during exposure to EMF."
ICNIRP's guidelines have been widely criticised and the
organisation has been accused of a lack of independence from the industries it
Isn’t it the government’s job to protect the

regulates.
Read more...
public against health risks?

We saw with smoking and
asbestos that governments do not always work swiftly nor take a precautionary approach
when it comes to long-term health risks. It took about 100 years from the early signs of
smoking health effects for governments to bring in health warnings and
restrictions on purchase by children.

Governments have a
number of competing responsibilities which can conflict with their health protection
role. Mobile communications represent a huge source of economic success and tax revenue.
In 2001 the UK government made £22 billion from the sell-off of 3G mobile phone
licences alone and it continues to sell off more parts of the electromagnetic sp
ectrum; it receives annual tax revenues of approximately £15 billion from the
mobile phone industry and further amounts from wireless telecoms.
The government pays lip service to the precautionary
principle but does not appear to be giving it priority. The department of health’s leaflet
"Mobile Phones and health" states that children under 16 should only use mobile
phones for short essential calls but the leaflet has not been seen by most children or
parents.

Given the possible economic costs of raising
concerns about the safety any product, governments tend to wait until the
evidence is irrefutable. They want proof "beyond a reasonable doubt, whereas
parents concerned about children's health mostly want to know if there is a
chance of a risk even if it isn't entirely proven, especially if the risk could have a very
big impact on health.
The UK government was criticised for this
approach when it insisted that BSE was not a health risk: the then minister
responsible went on TV saying he would give his daughter a beef burger. Later it was
widely agreed that the government’s advice was precipitous and it had put its wish to
avoid the economic effects of a public panic before public protection.
about this story...

Similarly
during the World War I as evidence mounted that smoking was doing harm, the
government gave out cigarettes to soldiers in their kit bags. Even as the consensus
about the dangers of smoking became established, the Macmillan government
denied the effects.

Read more
There are many other examples where governments have delayed in raising the
alarm.

It could take another 20 years or more
to know for sure whether mobile phones and wireless technology are safe or unsafe. We
believe that where health effects could be serious, the responsible approach
where there is any material risk of damage is to warn the public so they can make
informed choices. If lives are at stake, governments should not wait until the
risk of damage has been proven beyond doubt, but should raise the alarm once all
the information available indicates that serious damage is possible so
the public can make informed choices.

Why don't
we hear about this risk from the media?
It is hard for the media to interpret the confused messages. Few
Journalists have scientific training and an impression is
easily created that the studies do not point in any clear direction. The
uncertainty discourages them from reporting the subject much and when
they do the extent of the evidence indicating a risk is obscured by
the industry-funded or short-term studies that do not show
a link. **Read more...**

Why don't cancer charities
warn us about this risk?

Some
cancer charities, for example Cancer Active, have recognised
the link between mobile phone use and cancer.
We are surprised that Cancer Research
UK has not recognised the association and we are particularly
surprised by the statement on its website that "scientific"
evidence so far shows that using mobile phones doesn't
increase your risk of any type of cancer".
Apart from the fact that many studies have shown an association
between mobile phone risk and cancer, the statement
that a study shows there is no risk is unsupportable: no evidence of
harm is not the same as evidence of no harm. At most, a study could
indicate that no risk has yet shown up. While some, mostly
industry-funded, studies have shown this, many studies have shown that
risks increase significantly after ten years or more use of
a mobile phone.

The Cancer
Research UK website refers only to one (heavily criticised)
study not to the many other studies on this subject, a number of
which are more up-to-date.
Cancer Research UK receives significant funding from corporate
sources.
Wouldn’t doctors have stopped using
mobile phones if they were dangerous
FAQs

s?

Take a look at
these adverts from the 1950’s and decide
whether you think doctors always know all
the facts about risks to health.

Doctors
are busy professionals who are dependent
on advice from government and profession
al bodies. These do not always highlight the full
range of scientific opinion or, particularly, a lack of
scientific certainty.
Some doctors are aware of the concerns...
I have read literature
which says this radiation is safe and that
campaign groups are scare-mongering.
There seem to be scientists saying it
is fine, so why should I be worried?
We have formed our
opinion based on the scientific evidence.
This website has been created entirely by
volunteers and we have no vested interests.
The same cannot be said of all commentators on
the subject, many of whom recieve
funding directly or indirectly from the telecom
unications
industry or
are
connected
in other
ways to telecoms corporate s.
Far from scare-mongering,
we hope to help the public to make informed
choices based on an full understanding of the
science.
We believe that the UK's
health protection agencies are failing in their
duty to bring the possible risks to the
public's attention to enable them to use the
technology more safely. This may save lives.
Other than
children, which people might be
more vulnerable than the
general public?
Pregnant women, the elderly,
those who are sick, convalesc
ing or have impaired immune
systems.
Read more about health
effects...

What is the SAR
rating of a mobile phone?
The SAR rating of a mobile phone is 183 / 514.
the Specific Absorption Rate
of the energy produced and is
used as a measure of the
absorption of radio waves in the head.
It is a relatively inaccurate guide
to the radiation level emitted
by a particular phone.
While using a
phone with the lowest possible
SAR value is preferable, doing
so will have little effect on exposure
compared with other strategies
because the ratings are an
inaccurate guide to relative
exposure

Measurements in
test situations do not necessar
ily accurately reflect the
differences in head tissue
type and age of the exposed
person, which can greatly
affect absorption in practice.
The SAR is affected by how
you hold your fingers on the
back of the phone in order to
press the phone to your ear
especially in phones with
internal antennas. The SAR is
measured with the handset
operating at full power, so does
not reflect how a phone
responds to low signal strength
which can significantly affect
the level of radiation emitted
by a particular phone.
Using a speaker
phone or headset
reduces exposure
to the head much more
effectively than switching to a low
SAR value phone.
A comparative guide to
radiation emitted from mobile
phones has been issued by US
watchdog the Environmental
Working Group (EWG).
What is electro-hyperhypesensitivity
(EHS)?

As with
sunlight
where
people
have
different skin types and can
tolerate more or less tanning,
so people have different
tolerance to microwaves
Some people become conscious
sly
sensitive
to
particula
electromagnetic fields
. For children this is typically
a particular symptom
m related to a particula
r source, such as a headache
e while using a mobile phone,
or
“flu-type” symptoms and
headaches a few weeks after
joining a school with WiFi
when they have not been
exposed to such radiation in their
previous school.

In 1976
the US military reported that
“Personnel exposed to micr...
owave
radiation
below
W
thermal levels experience more
neurological, cardiovascular,
and
haemodynamic
disturba
nces
than do
d their
unexpos
ed
counterparts...
The
most common subjective
complaints were headache,
fatigue, perspirin g, dizziness
FAQs

s, menstrual disorder
s, irritability, agitation
tension, drowsiness,
sleeplessness, depression,
anxiety, forgetfulness, and a
lack of concentration.” (US
Defence Intelligence Agency,
DST-1810-074-76, March 1976)
A small number
of
to
people
develop
electro-h
yper-sensitivity (EHS). Their
sensitivity to electromagnetic
fields

becomes

no longer
limited to one type of exposure
e but is Suddenly extended to a
wider range of electromagnets
In addition they

c fields.
often suffer a wider range of
symptoms. The trigger for the
stage can be sudden (such as
the installation of a wifi
router or a portable DECT
phone in the home, or the
erection of a phone mast
outside a house, or having a
MRI scan or cumulative
ve ( such as many years’
heavy use of a mobile phone).
EHS is thought
to be irreversible; the only
effective palliative measures are (a)
avoidance of electromagnetic
c
radiation
or (b)
shielding
from electromagnetic
radiation. Both of these protective
e

measures are becoming
g
increasingly
difficult
FAQs

in the growing o-smog” in
modern society. EHS is technical
ly not an illness but rather a
FAQs

function impairment or
disability
The Canadian Human Rights
Commision has recognis
ed EHS as an environmental
sensitivity which should be
accommodated. Studies have
shown
objective
physiological
changes amongst those who
report symptoms of EHS.
Read more about electro-h
ypersen...
sitivity...
&160;
What doctors
say
about
electro-hypersen
sitivity...

Are tiny
levels of radiation from
digital baby monitors,
mobile and cordless
phones
on standby and
wi-fi networks really a
problem?
This is an area where research
h is very limited. The concern
relates to the potential impact
of long-term cumulative
exposure, particularly
during children's formative
e years, while their bodies
are developing, and combine
de exposure from many
different radiation sources
Many children
are being exposed to
radiation
day and
night
from a
number of sources at once.
There may well be one or
more mobile phone masts
near their home, maybe a
digital baby monitor close to
their cot, a cordless phone
and a wi-fi enabled computer
r in the home. When they go
to
school
there
will
probably
be
another
mast
FAQs

nearby and maybe similar
cordless and wi-fi equipment at
school. They are also exposed
to radiation from mobile
and
cordless phones
being
used around them at home,
at school and in public
places.
They experience this through
out their childhood, and in their
teens
they
may
carry
and use a mobile phone themself
ves and a cordless phone
at home. Many will use
their mobile phone and
cordless phone for long periods,
sometimes 1-2 hours a day held
next to the head and
when on standby close to the
body.

Microwave

ave
radiation only occurs at
negligible levels naturally so
children’s exposure is
literally
millions
of times
higher
than their bodies have
evolved to deal with. By the time
they are in their 20’s
cumulative exposure will be
exponentially higher than we
would have experienced at
the same age.
Read more about cumulative
ve
exposure
...
I would like to reduce
exposure but I need the
technology for my work.
Each person
s
situation is different
and each of us has to work
out our own balance betwee
n the convenience of wireless
products and reducing the
risks.

Some of us at
FAQs

WiredChild
focus
primaril
y on our use of the technol
ogy around our children
removing as much
as possible of their exposure
e as possible while still
using the products
ourselves in a limited way as
suggested in the "do's and
This "don'ts" section does
not preclude using mobile
phones and handheld
devices when necessary if
the children are not nearby.
The convenience of Wi-fi
and cordless phones
can be easily replicated
using wired systems with a
little effort, and a low
radiation

cordless phone
is a good alternative for
those who really need to
use a cordless phone.
Read more about the
alternatives...

While
focusin
g on the
children
don't
ignore your own exposure
entirely. Children need e
parents!

Does
n’t the increased
safety
children
get
from having a
mobile
phone
out-wei
gh
their
possibl
ehealth risks?
from improving
safety, there is evidence
e that mobile phones
increase

e
children
's risk of being
robbed, bullied and of
being harmed in a
road accident. Read
more...

Do
interact
tive
whiteb
oards in school
s
cause
concer
n?
oards powered using
wires do not emit mi
FAQs

crowav

e
radiatio
Some system
FAQs

s use a wi-fi or Bluetoo
FAQs

connection to 443 / 514
enable the console
e on the teacher
's desk or around
the classroom to
communicate with
the whiteboard.
In most cases, member
rs of the class
are exposed to a
exposure

whilst
the
system
is
operational, whether
Are they using a
consol e or not.
As well as the long-ter
m

health effects,
some children may
suffer
immediate
symptoms like headaches
hes
and
nausea
impaired
memor y functio
n and disturbance to
concentration.

Read
more...
more
about
the
health effects of
microwave

dave

radiation
FAQs

about

other

source
Examples of radiation
FAQs

from outside the
home and school
FAQs

, such as mobile
phone
masts
and
power lines?
Wired Child is
focussed on radiati
FAQs on sources
within the home
and
school
because
within our control
There are effective
e ways of shieldi
ng
against
most
extern
al
source
FAQs of radiation
coming from outside
FAQs

. Read more at
other websites
especial Power
watch
and
Mast
Sanity.
There
are companies
that offer service
FAQs to help with
shielding and other
strategies to reduce
exposure.

Read
more...