



Frequently Asked Questions about Cell Phones and Your Health

What is a cell phone? How does it work?

A cell phone is a portable phone that uses a network of “base stations” or fixed antennas, that allow users to call from almost any location. The phones send and receive radiofrequency signals to and from the base station. Base station antennas often are mounted on towers, but can also sit on rooftops, water towers, power poles, and other tall structures. All cell phones are tested according to government standards and cannot be marketed or sold unless they have passed these standards. More information about these standards and test information for specific phone models is available at the Federal Communications Commission Web site: <http://ftp.fcc.gov/marketsense/cellphone-health.html>.

What is RF?

Electromagnetic radiation consists of waves of electric and magnetic energy moving together (radiating) through space. Radio waves and microwaves released by transmitting antennas are one form of electromagnetic energy. They are called “radiofrequency” or “RF” energy or radiation. Often the term “electromagnetic field” or “radiofrequency field” is used to indicate the presence of electromagnetic or RF energy.

RF radiation should not be confused with ionizing radiation, such as x-rays or gamma rays. RF fields have lower energy and therefore cannot cause ionization (potentially resulting in chemical changes) in the body. RF fields are non ionizing radiation.

What is non ionizing radiation?

Non ionizing radiation has lower energy and longer wavelength than ionizing radiation. It is not strong enough to change the structure of atoms it contacts but may be strong enough to heat tissue. Examples include radio waves, microwaves, visible light, and infrared.

What is ELF?

Another type of non ionizing electromagnetic radiation is emitted by electric current (such as overhead power lines or anything else with electricity flowing through it). This type of electromagnetic radiation is extremely low frequency (ELF). RF radiation is much higher frequency than ELF radiation, even though they are both non ionizing.

Does using a cell phone cause health problems? Can using one cause cancer?

The possible health effects of RF radiation have been studied for many decades, mostly in laboratory research with animals or cell samples. Most of these studies did not consider the types of exposure people experience when using cell phones because that technology did not exist. In the last 10 years, hundreds of new research studies have been done to more directly study possible effects of cell phone use. Although some studies have raised concerns, the scientific research, when taken together, does not indicate a significant association between cell phone use and health effects.

Since the public continues to be concerned; there are ongoing studies being conducted by many researchers including the World Health Organization, WHO. In addition to investigating the association of cell phone use and cancer, other health effects are being studied, including effects on the eyes, sleep and memory problems, and headaches. The study results should be complete in the next 3-4 years and can be accessed at the following Web site: <http://www.who.int/peh-emf/research/rf03/en/>.

Fact Sheet

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The Food and Drug Administration (FDA) has reported one additional potential health effect. Studies have shown that when some cellular phones are placed very close to implanted cardiac pacemakers, interference with the pacemaker's normal delivery of pulses can occur. For most digital phones, and for most pacemakers now in use, this does not have an effect if the phone is more than about six inches from the implanted pacemaker. Thus the operation of these pacemakers would not be disturbed with the phone used in the normal talking position.

The Food and Drug Administration has further information on this topic with respect to RF exposure from mobile phones at the following Web site: <http://www.fda.gov/cellphones/>.

Do cordless telephones emit radiation?

Cordless telephones work the same as cell phones. The only difference is that the cordless phone is limited to being close to the single base unit to which it belongs, while a cell phone can be carried around all across the country because it can connect to the many base stations that the cell phone system has.