SONY

Safety Guidelines

Important information about hearing aid compatibility

FCC Statement

Safety Guidelines

Before a device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations (i.e., at the ear and worn on the body) as required by the FCC for each model. Body worn measurements are made while the device is in use and worn on the body with a Sony Mobile accessory.
The design and composition of an accessory can affect the body worn Specific Absorption Rate (SAR) levels for the device. Sony Mobile has not measured, and makes no representation about, the body worn SAR levels when the device is used with non-Sony Mobile accessories.

Consumer Update on Wireless Devices Supplied by the U.S. Food and Drug Administration (FDA) - Center for Devices and Radiological Health

Do wireless devices pose a health hazard?
The available scientific evidence does not show that any health problems are associated with using wireless devices. There is no proof, however, that wireless devices are absolutely safe. Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. They also emit very low levels of RF when in the stand-by mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the reasons for inconsistent results.

What is FDA's role concerning the safety of wireless devices?
Under the law, FDA does not review the safety of radiation-emitting consumer products such as wireless devices before they can be sold, as it does with new drugs or medical devices. However, the agency has authority to take action if wireless devices are shown to emit radio frequency energy (RF) at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of wireless devices to notify users of the health hazard and to repair, replace or recall the devices so that the hazard no longer exists.
Although the existing scientific data do not justify FDA regulatory actions, FDA has urged the wireless device industry to take a number of steps, including the following:
- Support needed research into possible biological effects of RF of the type emitted by wireless devices;
- Design wireless devices in a way that minimizes any RF exposure to the user that is not necessary for device function; and
- Cooperate in providing users of wireless devices with the best possible information on possible effects of wireless device use on human health.

FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of RF safety to ensure coordinated efforts at the federal level. The following agencies belong to this working group:
- National Institute for Occupational Safety and Health
- Environmental Protection Agency
- Federal Communications Commission
- Occupational Safety and Health Administration
- National Telecommunications and Information Administration

The National Institutes of Health participates in some interagency working group activities, as well.
FDA shares regulatory responsibilities for wireless devices with the Federal Communications Commission (FCC).
All devices that are sold in the United States must comply with FCC safety guidelines that limit RF exposure. FCC relies on FDA and other health agencies for safety questions about wireless devices.
FCC also regulates the base stations that the wireless device networks rely upon. While these base stations operate at higher power than do the wireless devices themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those they can get from wireless devices. Base stations are thus not the subject of the safety questions discussed in this document.

What kinds of devices are the subject of this update?
The term wireless device refers here to hand-held wireless devices with built-in antennas, often called "cell," "mobile," or "PCS" devices. These types of wireless devices can expose the user to measurable radio frequency energy (RF) because of the short distance between the device and the user's head. These RF exposures are limited by Federal Communications Commission safety guidelines that were developed with the advice of FDA and other federal health and safety agencies. When the device is located at greater distances from the user, the exposure to RF is drastically lower because a person's RF exposure decreases rapidly with increasing distance from the source. The so-called "cordless devices," which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures far below the FCC safety limits.

What are the results of the research done already?
The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radio frequency energy (RF) exposures characteristic of wireless devices have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer-causing chemicals so as to be pre-disposed to develop cancer in the absence of RF exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless devices, so we don't know with certainty what the results of such studies mean for human health.
Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless devices and primary brain cancer, glioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful health effects from wireless device RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of device use in these studies was around three years.

What research is needed to decide whether RF exposure from wireless devices poses a health risk?
A combination of laboratory studies and epidemiological studies of people actually using wireless devices would provide some of the data that are needed. Lifetime animal exposure studies could be completed in a few years. However, very large numbers of animals would be needed to provide reliable proof of a cancer promoting effect if one exists. Epidemiological studies can provide data that is directly applicable to human populations, but 10 or more years' follow-up may be needed to provide answers about some health effects, such as cancer. This is because the interval between the time of exposure to a cancer-causing agent and the time tumors develop - if they do - may be many, many years. The interpretation of epidemiological studies is hampered by difficulties in measuring actual RF exposure during day-to-day use of wireless devices. Many factors affect this measurement, such as the angle at which the device is held, or which model of device is used.

What is FDA doing to find out more about the possible health effects of wireless device RF?
FDA is working with the U.S. National Toxicology Program and with groups of investigators around the world to ensure that high priority animal studies are conducted to address important questions about the effects of exposure to radio frequency energy (RF).
FDA has been a leading participant in the World Health Organization International Electromagnetic Fields (EMF) Project since its inception in 1996. An influential result of this work has been the development of a detailed agenda of research needs that has driven the establishment of new research programs around the world. The Project has also helped develop a series of public information documents on EMF issues.
FDA and the Cellular Telecommunications & Internet Association (CTIA) have a formal Cooperative Research and Development Agreement (CRADA) to do research on wireless device safety. FDA provides the scientific oversight, obtaining input from experts in government, industry, and academic organizations. CTIA-funded research is conducted through contracts to independent investigators. The initial research will include both laboratory studies and studies of wireless device users.
The CRADA will also include a broad assessment of additional research needs in the context of the latest research developments around the world.

How can I find out how much radio frequency energy exposure I can get by using my wireless device?
All devices sold in the United States must comply with Federal Communications Commission (FCC) guidelines that limit radio frequency energy (RF) exposures. FCC established these guidelines in consultation with FDA and the other federal health and safety agencies. The FCC limit for RF exposure from wireless telephones is set at a Specific Absorption Rate (SAR) of 1.6 watts per kilogram (1.6 W/kg). The FCC limit is consistent with the safety standards developed by the Institute of Electrical and Electronic Engineering (IEEE) and the National Council on Radiation Protection and Measurement. The exposure limit takes into consideration the body's ability to remove heat from the tissues that absorb energy from the wireless device and is set well below levels known to have effects.
Manufacturers of wireless devices must report the RF exposure level for each model of device to the FCC. The FCC website (http://www.fcc.gov/oet/rfsafety) gives directions for locating the FCC identification number on your device so you can find your device's RF exposure level in the online listing.

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What has FDA done to measure the radio frequency energy coming from wireless devices?
The Institute of Electrical and Electronic Engineers (IEEE) is developing a technical standard for measuring the radio frequency energy (RF) exposure from wireless devices and other wireless handsets with the participation and leadership of FDA scientists and engineers. The standard, "Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques," sets forth the first consistent test methodology for measuring the rate at which RF is deposited in the heads of wireless device users. The test method uses a tissue-simulating model of the human head. Standardized SAR test methodology is expected to greatly improve the consistency of measurements made at different laboratories on the same device. SAR is the measurement of the amount of energy absorbed in tissue, either by the whole body or a small part of the body. It is measured in watts/kg (or milliwatts/g) of matter. This measurement is used to determine whether a wireless device complies with safety guidelines.

What steps can I take to reduce my exposure to radio frequency energy from my wireless device?
If there is a risk from these products--and at this point we do not know that there is--it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to radio frequency energy (RF). Since time is a key factor in how much exposure a person receives, reducing the amount of time spent using a wireless device will reduce RF exposure.

- If you must conduct extended conversations by wireless device every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless device away from your body or use a wireless device connected to a remote antenna.

Again, the scientific data do not demonstrate that wireless devices are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless device use.

What about children using wireless devices?
The scientific evidence does not show a danger to users of wireless devices, including children and teenagers. If you want to take steps to lower exposure to radio frequency energy (RF) , the measures described above would apply to children and teenagers using wireless devices. Reducing the time of wireless device use and increasing the distance between the user and the RF source will reduce RF exposure.
Some groups sponsored by other national governments have advised that children be discouraged from using wireless devices at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December 2000. They noted that no evidence exists that using a wireless device causes brain tumors or other ill effects. Their recommendation to limit wireless device use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists.

What about wireless device interference with medical equipment?
Radio Frequency energy (RF) from wireless devices can interact with some electronic devices. For this reason, FDA helped develop a detailed test method to measure electromagnetic interference (EMI) of implanted cardiac pacemakers and defibrillators from wireless telephones. This test method is now part of a standard sponsored by the Association for the Advancement of Medical instrumentation (AAMI). The final draft, a joint effort by FDA, medical device manufacturers, and many other groups, was completed in late 2000. This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from wireless device EMI.
FDA has tested hearing aids for interference from handheld wireless devices and helped develop a voluntary standard sponsored by the Institute of Electrical and Electronic Engineers (IEEE). This standard specifies test methods and performance requirements for hearing aids and wireless devices so that no interference occurs when a person uses a "compatible" device and a "compatible" hearing aid at the same time. This standard was approved by the IEEE in 2000. FDA continues to monitor the use of wireless devices for possible interactions with other medical devices. Should harmful interference be found to occur, FDA will conduct testing to assess the interference and work to resolve the problem.

Where can I find additional information?
For additional information, please refer to the following resources:

- FDA web page for Radiation-Emitting Products (https://www.fda.gov/Radiation-EmittingProducts/RadiationSafety/default.htm)
- Federal Communications Commission (FCC) RFSafety Program (http://www.fcc.gov/oet/rfsafety)
- International Commission on Non-Ionizing Radiation Protection (https://www.icnirp.org/)
- World Health Organization (WHO) International EMF Project (http://www.who.int/emf)
- National Radiological Protection Board (UK) (http://www.nrpb.org.uk/)

Hearing Aid Compatibility

Hearing Aid Compatibility
Your phone is designed for Hearing Aid Compatibility (HAC) and can be used with hearing aids.

Hearing Aid Settings
You can choose the setting in the phone to match the setting in your hearing aid before making or receiving calls.

To Select a Phone Setting for HAC

1. From the Home screen, tap .
2. Tap an option menu > Settings > Accessibility.
3. Tap the on/off switch to turn on hearing aid compatibility.

Hearing Aid Compatibility Information
This phone has been tested and rated for use with hearing aids for some of the wireless technologies it uses.
This phone complies with HAC requirements for pre-installed Google applications. However, there may be some newer wireless technologies used in this phone that have not been tested yet for use with hearing aids. It is important to try the different features of this phone thoroughly and in different locations, using your hearing aid or cochlear implant, to determine if you hear any interfering noise. Consult your service provider or the manufacturer of this phone for information on hearing aid compatibility. If you have questions about return or exchange policies, consult your service provider or phone retailer.

Hearing Aid Compatibility Rating
This model handset was designed to comply with the requirements set forth in Section 20.19 of the Federal Communication Commission's (FCC) rules governing hearing aid compatibility (HAC), for the reduction of RF interference and magnetic coupling (T-coil) to hearing aids. The Microphone (M) rating and T-coil (T) rating is defined and labeled on the handset box. Devices meeting HAC compliance must have a minimum M3 and/or T3 rating or above as defined by the FCC in accordance with the latest ANSI Standard C63.19. The (M) rating refers to lower RF emission levels of the handset. The (T) rating refers to the magnetic coupling between the handset and the T-coil compatible hearing aid. Some hearing aids are also provided an (M) rating, and are more immune than others to interference. To determine the (M) rating of your hearing aid, please contact your hearing health professional. More information about digital wireless devices and hearing aid compatibility can be found at **http://blogs.sonymobile.com/about-us/sustainability/accessibility/overview/hearing-aid-compatibility/**.

FCC Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Any change or modification not expressly approved by Sony may void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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