



Television and Computer Screens

Televisions and computers are used daily to bring us news from around the world, show us images from the deep ocean to outer space, help us do our holiday shopping, and provide entertainment. Whether at home, school or in the office, many people spend hours at a time staring at these screens. What they might not know is, depending on the type of television or computer screen, they may be getting exposed to low levels of x-ray radiation.



When you think of x-rays, you probably think of dental or medical x-rays. While the concept is the same, the x-rays that come from computer screens and televisions are at much lower levels and are not produced on purpose.

Like microwaves, radio waves and visible light, the x-rays produced by an x-ray machine are a form of [electromagnetic radiation](#). Unlike microwaves, radio waves, and visible light, x-rays are a form of ionizing radiation, which is capable of removing electrons from atoms and damaging living cells and the DNA of those cells. It should be emphasized that there is no evidence that radiation from televisions or computers has resulted in human injury.

Some television sets and computer screens contain a cathode ray tube (CRT), which bounces electrons off the screen to create an image. The interaction between the electrons and the screen can potentially create low-level x-rays. CRT displays using vacuum tube high voltage rectifiers or regulators also generate x-rays. Because flat screen televisions and computer screens do not use CRTs, they do not produce x-rays.

Scientists work from the premise that no amount of radiation is safe. Even though most TV sets and computer screens have not been found to give off any measurable level of radiation, the U.S. Food and Drug Administration's Center for Devices and Radiological Health carefully sets radiation emission standards for electronic products with CRT tubes.

Who is protecting you

Food and Drug Administration (FDA)

The Food and Drug Administration (FDA) has the responsibility for carrying out an electronic product radiation control program, mandated by the Electronic Product Radiation Control provisions of the Food, Drug and Cosmetic Act. Through its Center for Devices and Radiological Health, FDA sets and enforces standards of performance for electronic products to ensure that radiation emissions do not pose a hazard to public health.

Manufacturers of television receivers and computer monitors containing CRTs must regularly certify that their products meet certain performance standards. All TV manufacturers must submit written radiation safety reports to FDA outlining how they assure that each unit coming off the assembly line complies with the federal x-ray radiation limit. These reports contain a description of the manufacturer's quality control and testing program and the television's radiation safety design. Manufacturers also must maintain records of test

data and prepare an annual report to FDA summarizing these records. The FDA has the authority to ask for radiation safety data including results of x-ray leakage tests from selected sets to determine compliance with the standard.

Television receivers imported into the United States that do not meet the standard are not allowed into the country and are exported or destroyed. Importers, however, may petition FDA for permission to correct the violations.

What you can do to protect yourself

There is no evidence that radiation from televisions or computers has resulted in human injury. The radiation safety standards for TVs, computers and other consumer products set and enforced by FDA also work to keep you safe. Keep in mind that television and computer screens have not been found to give off any measurable level of radiation.

There are two simple steps you can take if you are concerned about being exposed to radiation from television or computer screens.

- **Time:** Limit the time spent around your TV or computer screen;
- **Distance:** Increase the distance between you and the radiation source. FDA advises sitting a distance of at least two to three feet from the screen to limit exposure.

Resources

You can explore this radiation source further through the resources at the following URL:
http://www.epa.gov/radtown/tv_computer.html#resources

We link to these resources to maintain up-to-date information