



Special Points of Interest:

- ◆ X-Rays are extremely high energy electromagnetic waves useful for medical diagnoses and treatment.
- ◆ Unnecessary exposure to radiation is due to self referrals for x-ray diagnostic procedures.

Radiation, X-Ray and Radon

Understanding the sources of radiation exposure weighs heavily on the meaning one puts behind the term. Below are the definitions of three main words that sum up typical exposure.

Radiation—energy that travels in the form of (electromagnetic) waves or high speed particles.

The shorter the wavelength, the more energy the radiation has to penetrate deeper into solid objects. The higher the energy, the more damage is caused to human tissue.

X-ray—(electromagnetic) radiation of extremely short wavelength.

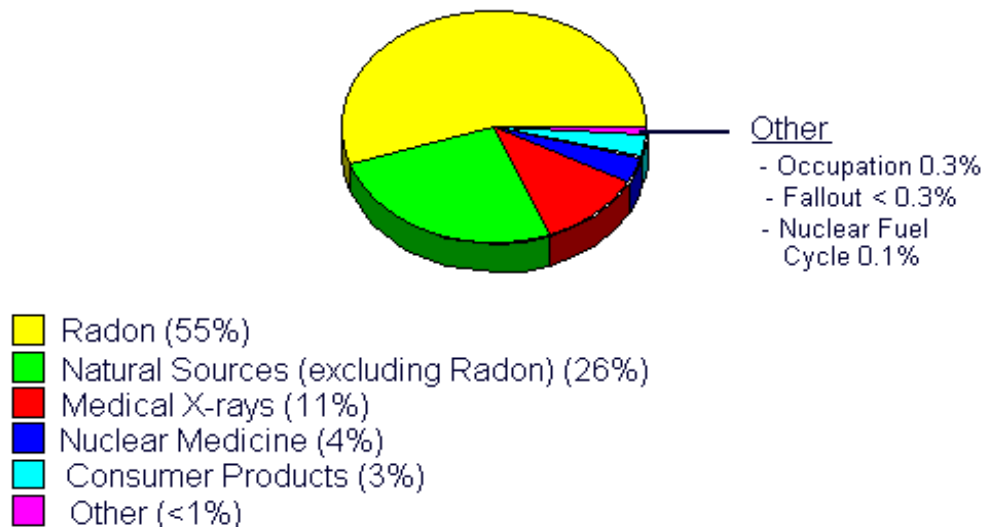
X-rays are extremely high energy radiation that can pass through moderately soft tissue, but are stopped by more dense tissue like bone. X-rays are used to “see” into the body and diagnose such things as broken bones, tooth decay, tumors, etc. Because x-rays can damage or destroy diseased tissue, they are used to treat some medical conditions; however, they can also harm nearby healthy tissue. According to the U.S. Environmental Protection Agency, 15% of radiation exposure is from x-rays and nuclear medicine.

Radon—a naturally occurring radioactive gas produced from the decay of uranium.

Radon is naturally occurring radioactive gas produced during the natural decay of uranium found in the earth’s crust. It is a colorless and odorless gas that can enter homes from below. According to the U.S. Environmental Protection Agency indoor radon is the second leading cause of lung cancer.

Sources of Radiation Exposure

From: NCRP Report No. 93



About the ACCCC:

The Alabama Comprehensive Cancer Control Coalition (ACCCC) is a diverse group of partners and organizations from across the state who is dedicated to reducing cancer incidence, morbidity, and mortality in Alabama.

A statewide approach to cancer control is the most effective way to tackle such a monumental public health concern. No single agency or organization can meet the challenge alone.

Physicians, nurses, other health care professionals, community leaders, business leaders, researchers and cancer advocates who share our mission are encouraged to join the ACCCC.

Funding for the ACCCC is provided by a grant from the Centers for Disease Control and Prevention (Grant Number U55/CCU 421939).

We're on the Web!

See us at:

www.alabamacancercontrol.org

~ ATTENTION ~
September 15th meeting
is at Montgomery County
Health Department.

COMING NEXT MONTH
📌 **HPV-The Disease**
📌 **Vaccine to help**
prevent cancer

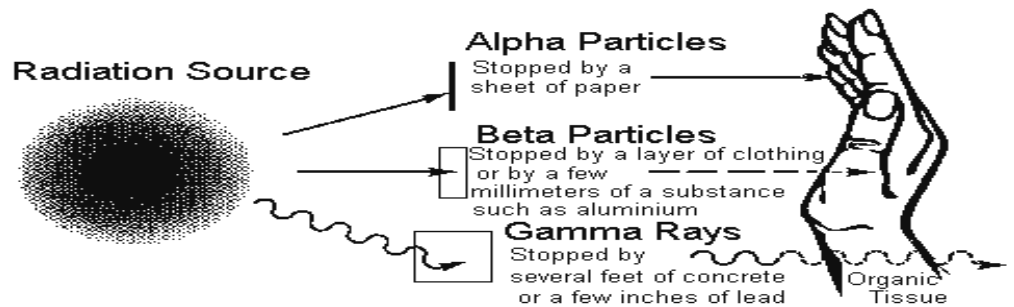
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Self Referral for Diagnostic X-Rays

The primary interaction of radiation with living tissue is to kill some of the cells. The second and far less common interaction is not to kill the cell but to damage it such that the cell survives in an abnormal state resulting in genetic mutations or precancerous cells. Every medical x-ray diagnostic procedure is a trade off between a small health risk in exchange for some diagnostic information that will assist the medical professional in prescribing a treatment that could do tremendous good. Screening guidelines are based on a balance between the risks of radiation exposure and the benefits from obtaining meaningful diagnostic information.

The amount of radiation the patient receives varies greatly with the type of procedure being performed, with the quality of the device used to perform the procedure, and with the training and skill of the individual performing the test. The more modern spiral CT imaging studies produce far more detailed diagnostic images than conventional radiographs, but at the same time, expose the patient to considerably more radiation. As a regulatory agency, the Department of Public Health inspects medical x-ray users and equipment to assure correct radiation output from the devices and to encourage best practices by the users.



The ACCCC Environmental, Medical, and Occupational Exposure Committee is concerned with patients requesting or self referring themselves for such procedures. Such requests could result in these individuals being exposed to increased radiation with little or no likelihood of meaningful diagnostic information. With the exception of approved screening procedures, there should be an indication, either symptomatic or genetic, for the need to perform an x-ray procedure prior to the patient being irradiated. Instead of requesting that they be given a spiral CT or other x-ray procedure, the citizens should always discuss their symptoms and/or conditions with their physician who can decide which procedures, if any, are indicated.

