

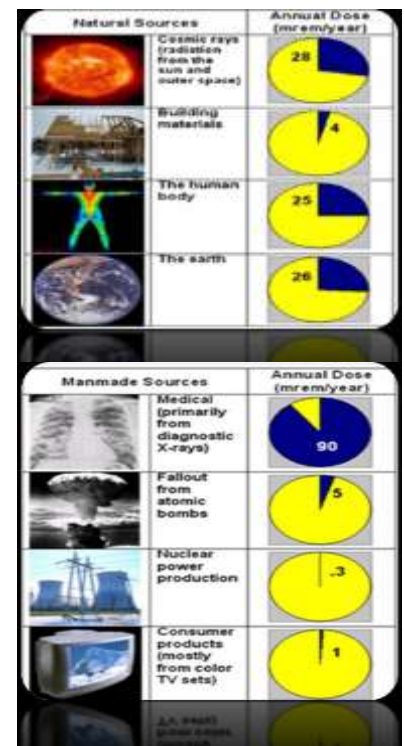


Radiation Protection

LECTURE THREE Radiation Sources

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❖ Introduction

- Radiation is around us, on earth, and in water and soil at all times.
- The human body contains some radioactive materials.
- **Cosmic radiation** from space also contributes to the background radiation around us.
- The source of **terrestrial radiation** (radiation sources in the **soil** and **water**) are uranium, potassium and thorium .
- The source of radiation is either natural or man-made.

❖ ONE : Natural Sources of Radiation

Radiation has always been present and is all around us in many forms. Life has evolved in a world with significant levels of ionizing radiation, and our bodies have adapted to it. Many natural sources produced during the formation of the solar system and through the interaction of cosmic rays with molecules in the atmosphere.

According to the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), there are four major sources of natural radiation: **(1) cosmic radiation, (2) terrestrial radiation , (3) exposure through ingestion, and (4) ingestion.**

1- Cosmic Rays

- Cosmic rays are found in **space** and created from various sources, including the **sun** and other **celestial events** in the universe.
- Cosmic rays are made up of **protons** but can be other **particles** or **wave energy**.