IONIZING RADIATION’S EFFECT ON THE BODY

Skin

(Radionuclide | Type | Half-Life)
--- | --- | ---
Uranium 238 | Alpha | 162,000 yrs.
Plutonium 239 | Alpha | 24,000 yrs.
Cobalt 60 | Beta/Gamma | 5 yrs.
Skin Cancer

Breasts

(Radionuclide | Type | Half-Life)
--- | --- | ---
Plutonium 239 | Alpha | 24,000 yrs.
Cesium 137 | Beta/Gamma | 30.17 yrs.
Strontium 90 | Beta | 29.1 yrs.
Breast Cancer

Liver

(Cobalt 60 | Beta/Gamma | 5 yrs.
Liver Cancer - higher death rate in women

Ovaries

- Attacked by all radioactive isotopes emitting gamma radiation.
- Plutonium 239 known to concentrate in the ovaries or testes.
Birth defects, mutations and miscarriages.

Muscle

(Potassium 42 | Beta/Gamma | 12 hrs.
Cesium 137 | Beta/Gamma | 30 yrs.
Sarcoma - cancer of muscle tissue

Whole Body

(Tritium | Beta | 12 yrs.
Breast Cancer
Intestinal Cancer
Down Syndrome

Thyroid

(Radionuclide | Type | Half-Life)
--- | --- | ---
Iodine 131 | Beta/Gamma | 8 days
Thyroid Cancer - women are three times as likely to be affected as men

Lungs

(Radionuclide | Type | Half-Life)
--- | --- | ---
Uranium 234 | Alpha | 162,000 yrs.
Plutonium 239 | Alpha | 24,000 yrs.
Krypton 85 | Beta/Gamma | 10 yrs.
Lung Cancer - much higher rate among uranium miners

Spleen

(Polonium 210 | Alpha | 138 days
Lymphoma - cancer of the blood cells

Kidneys

(Ruthenium 106 | Beta/Gamma | 1 yr.
Kidney cancer - difficult to detect, hard to stop after 5 yrs.

Bone

(Radium 226 | Alpha | 1620 yrs.
Strontium 90 | Beta | 29.1 yrs.
(crosses into the bone marrow)
Yttrium 90 | Beta | 64 hrs.
Promethium 147 | Beta | 2 yrs.
Barium 140 | Beta/Gamma | 13 days
Thorium 234 | Beta | 24 days
Carbon 14 | Beta | 5,600 yrs.
Plutonium
Leukemia - an overproduction of abnormal white blood cells which can be treated to some extent.