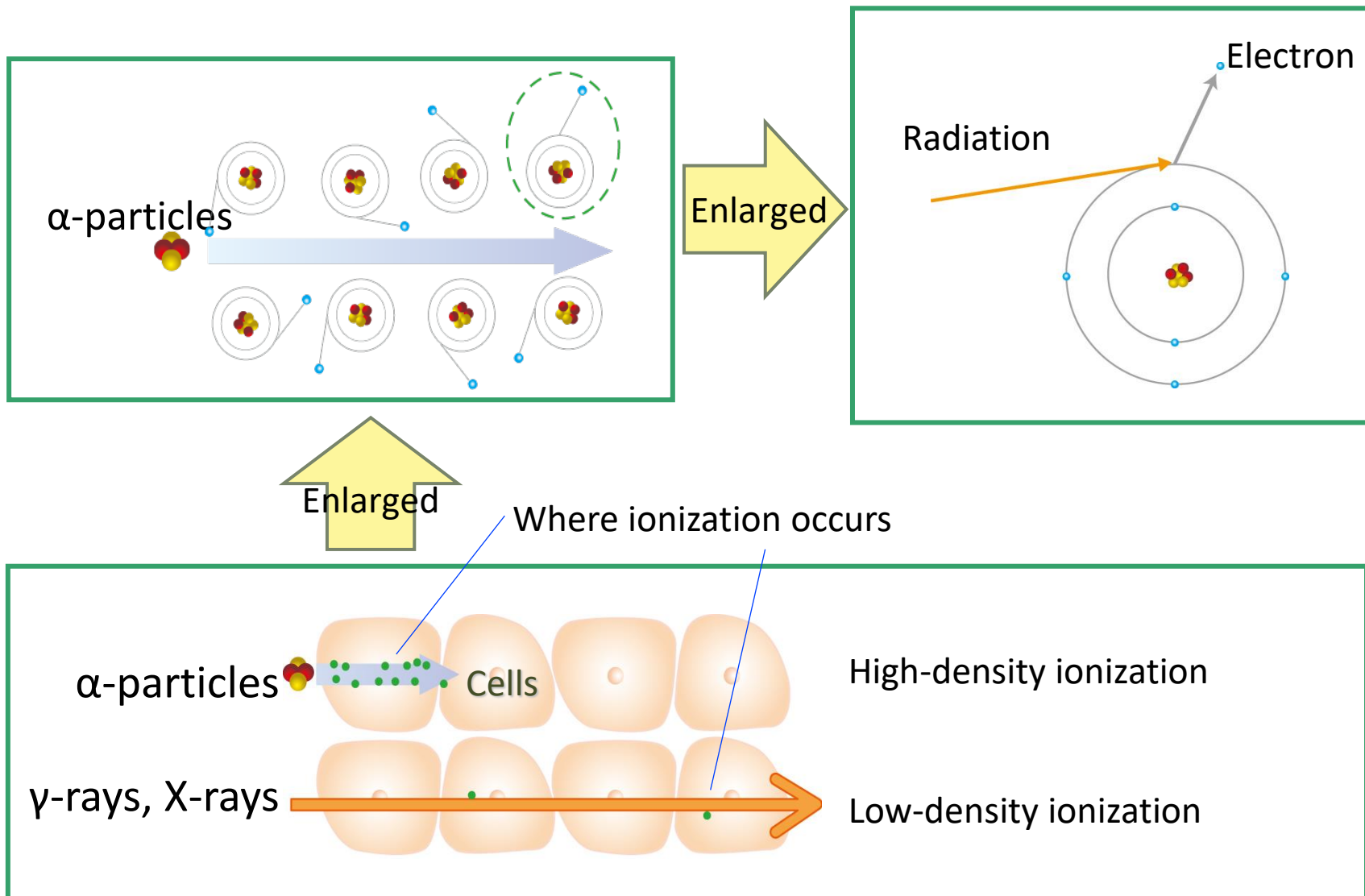
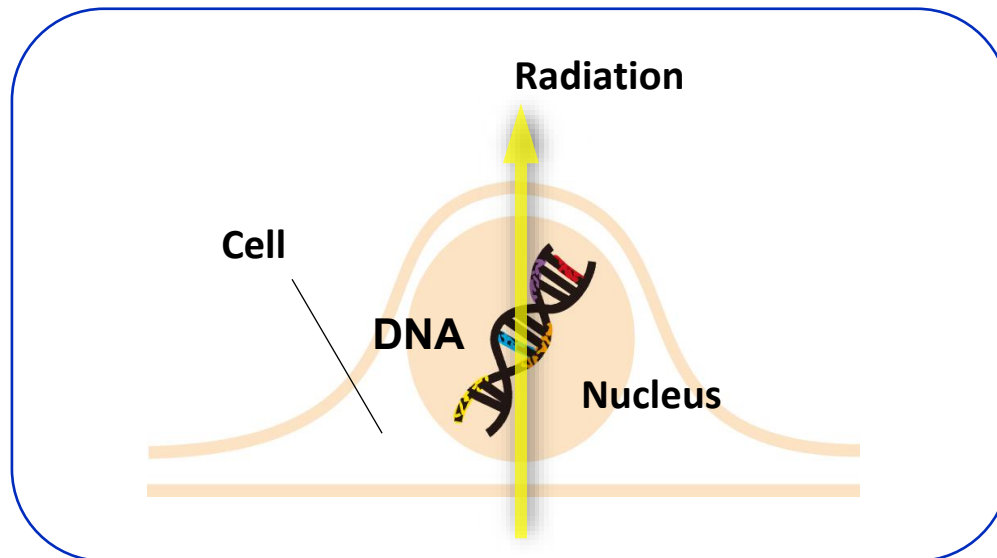


Ionization due to Radiation



Damage and Repair of DNA

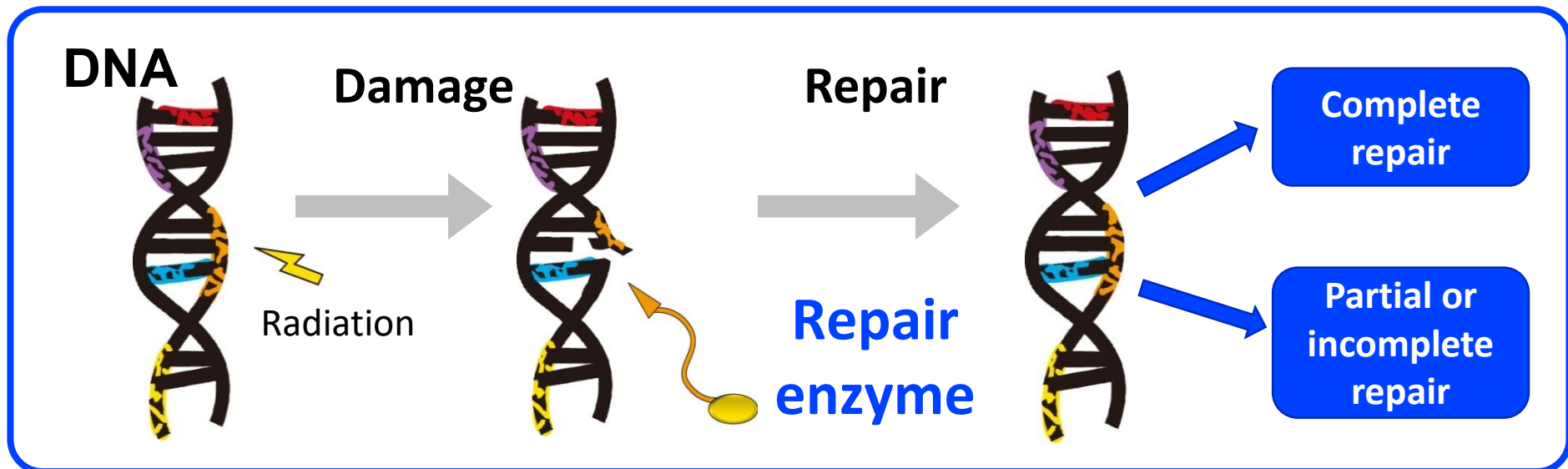


Damage per **1 mGy of X-rays**
(per cell)

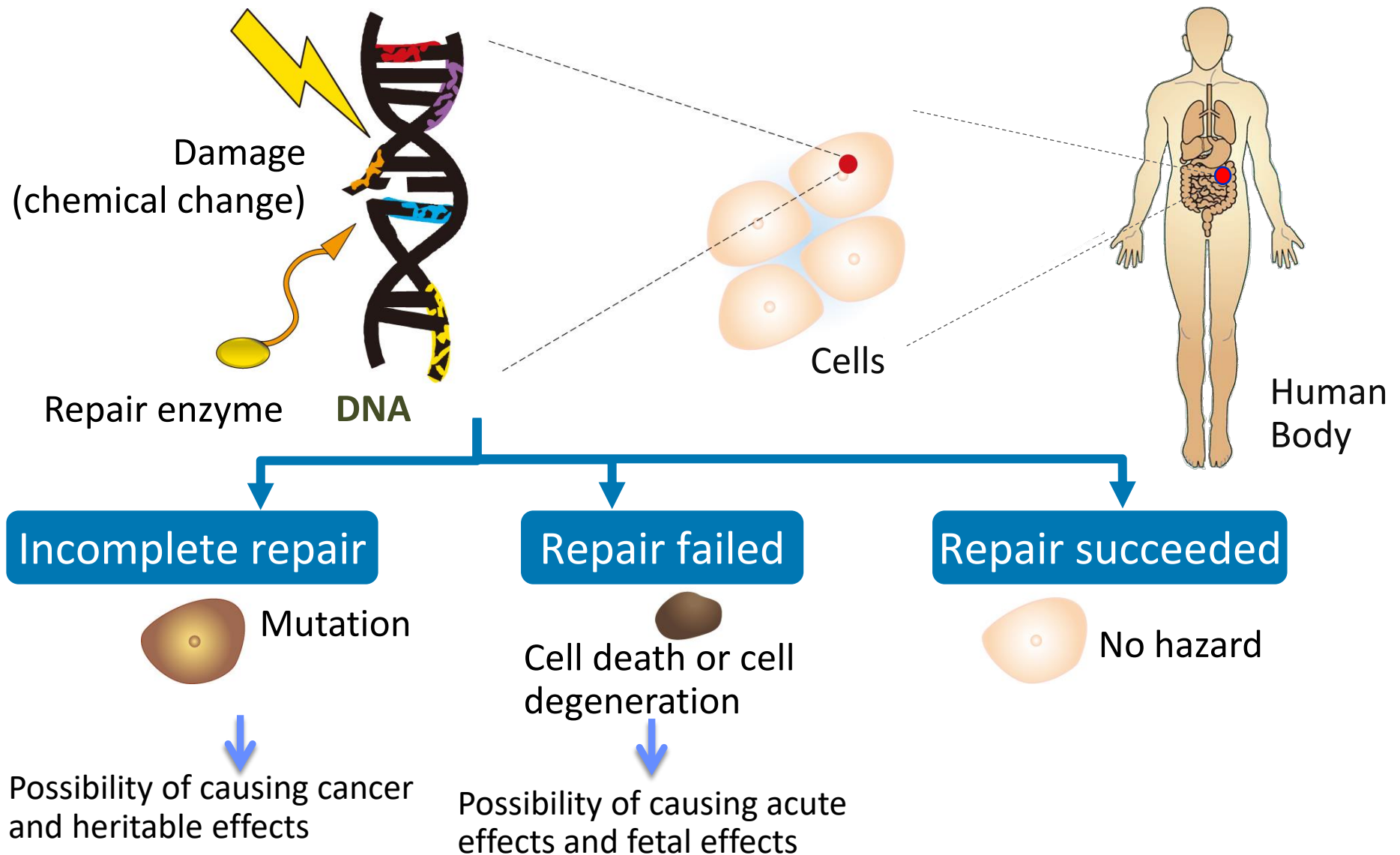
Base damage: 2.5 locations

Single-strand break: 1 location

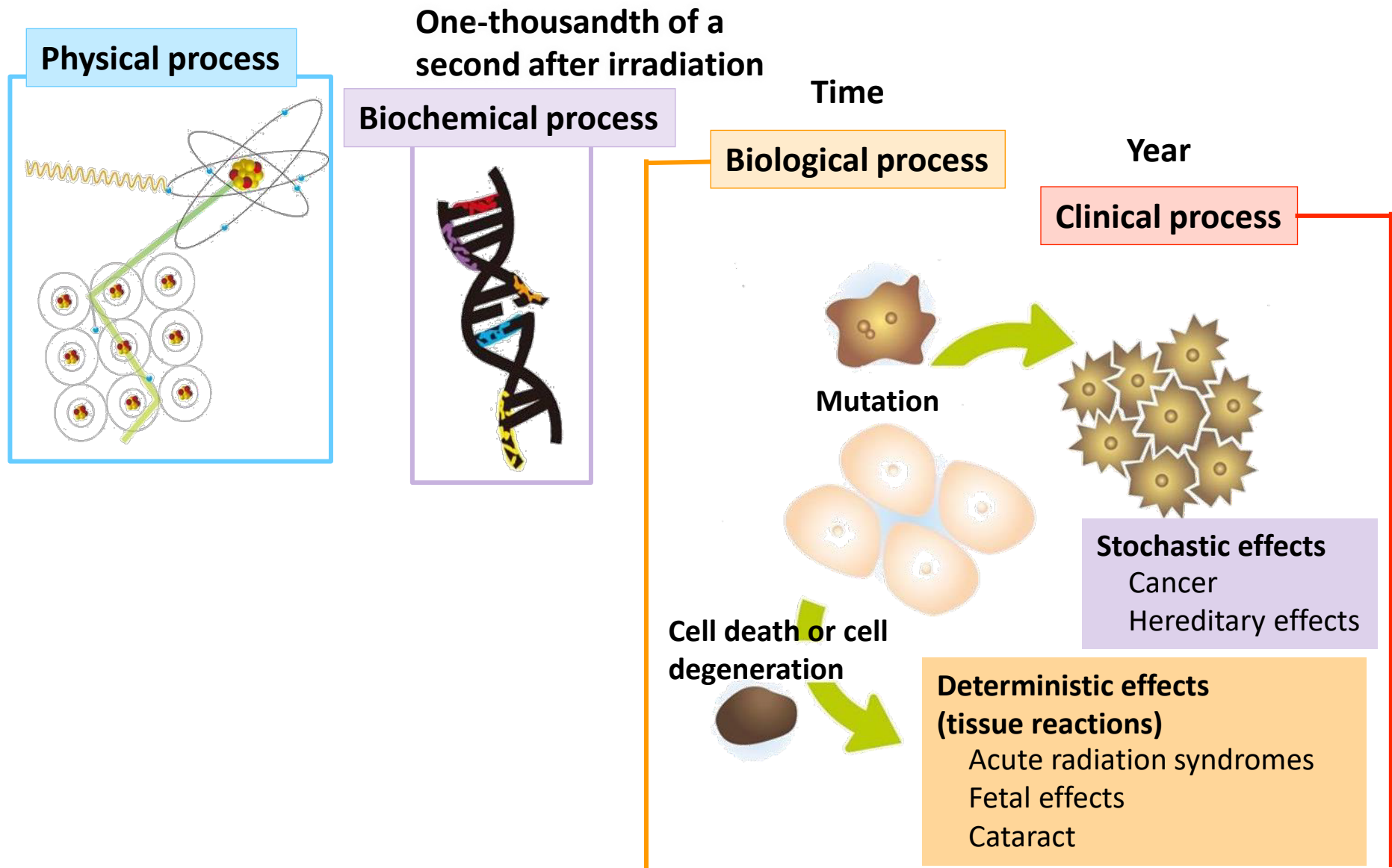
Double-strand breaks: 0.04 locations



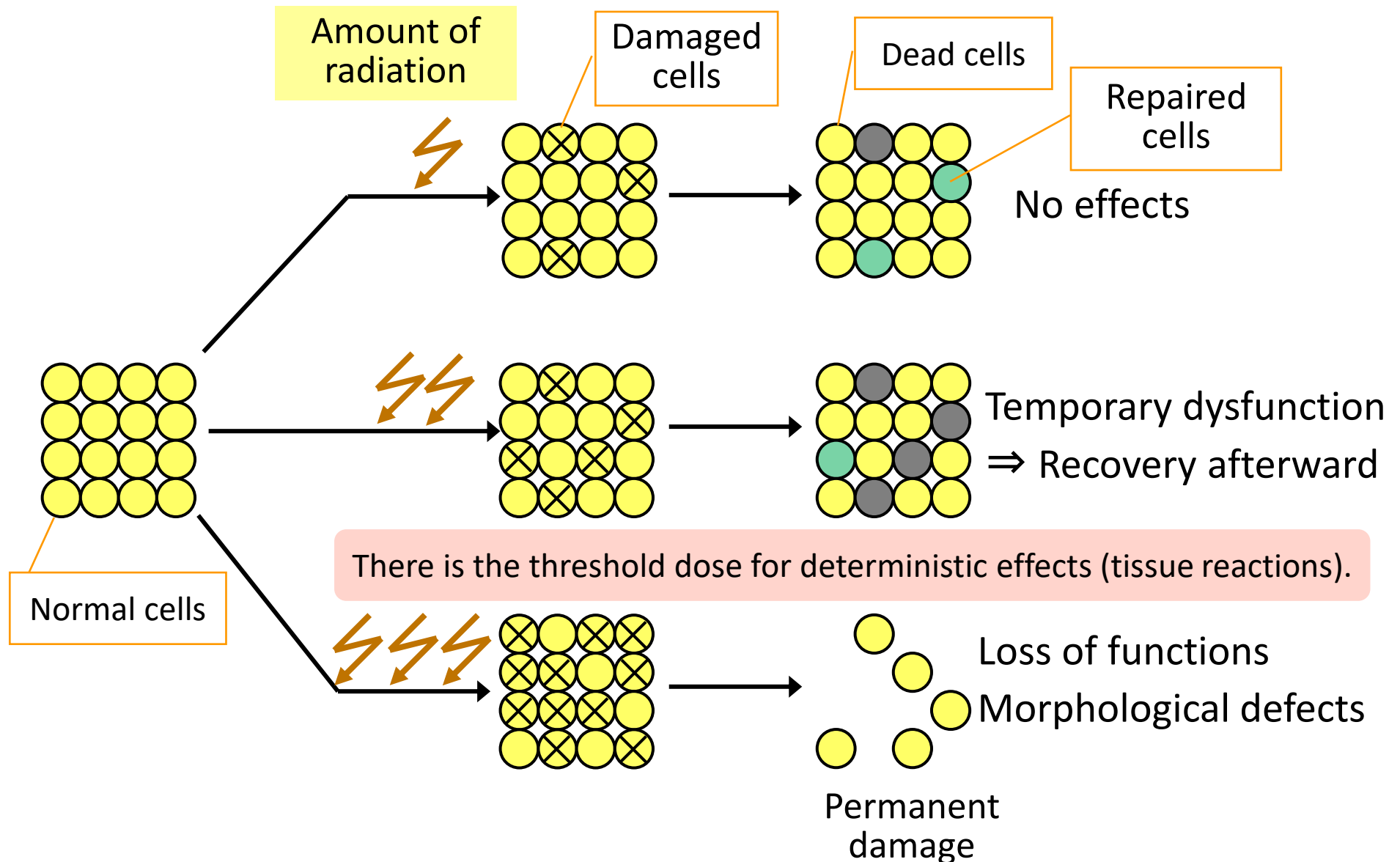
DNA → Cells → Human Body



Lapse of Time after Exposure and Effects



Cell Deaths and Deterministic Effects (Tissue Reactions)



Radiosensitivity of Organs and Tissues

Active cell division

High sensitivity

Hematopoietic system: Bone marrow and lymphatic tissues
(spleen, thymus gland, lymph node)

Reproductive system: Testis and ovary

Gastrointestinal system: Mucous membrane and small-intestinal
villus

Epidermis and eyes: Hair follicle, sweat gland, skin and lens

Other: Lung, kidney, liver and thyroid gland

Support system: Blood vessel, muscle and bone

Transmission system: Nerve

No cell division

Low sensitivity

Cellular Mutation and Stochastic Effects

