The radiation dose quantity effective dose is the tissue-weighted sum of the equivalent doses in all specified tissues and organs of the body and represents the stochastic health risk, which the probability of cancer induction and genetic effects of ionizing radiation delivered to those body parts.

It takes into account the type of radiation and the nature of each organ or tissue being irradiated.

It is the central quantity for dose limitation in radiological protection in the international system of radiological protection devised by the International Commission on Radiological Protection (ICRP).

The effective dose is not intended as a measure of deterministic health effect, which is the severity of acute tissue damage that is certain to happen.

The SI unit for effective dose is the sievert (Sv) which is one joule/kilogram (J/kg). The effective dose replaced the former “effective dose equivalent” in 1991 in the ICRP system of dose quantities.