

Acute radiation effect is not dangerous effect. These effects are mainly cause when the radiation dose must be large, and dose have been delivered in short time

- These effect causes just after exposure or within 24 hours to exposure. These are easy to cure and control

- Mainly nausea, vomiting, headache, fever, skin and tissue burns are including in acute radiation sickness

(ii) Chronic radiation sickness

Chronic radiation sickness occurs after a month or year of taking exposure in high amount. These effects are dangerous effect and difficult to cure and these may lead to death. Sometimes small dose of radiation continuously or over many years cause chronic effect.

Cataract, cancer, genetic mutation is some examples of chronic effect

2. Stochastic Effect

Stochastic effects are associated with lower doses and have no threshold. Stochastic effects are the biological effects that occur randomly, the probability of which increases with increasing dose

There is no threshold dose below which is resourcefully certain that a stochastic effect cannot occur.

The main stochastic effect is cancer Radiation-induced hereditary effects and cancer incidences are examples of stochastic effects

Stochastic effect is of two types

(i) Somatic stochastic effect

(ii) Genetic effect

(i) Somatic stochastic effect

These effects of radiation limited to exposed individual and they are distinguished from genetic effect. These effects are harming that exposed individuals suffer during their lifetime.

LDs

A way to estimate the relative poisoning potency of drugs and medicines used is LD₅₀ test because the use of death as a "target" allows for comparisons between chemicals that poison the body in very different ways.

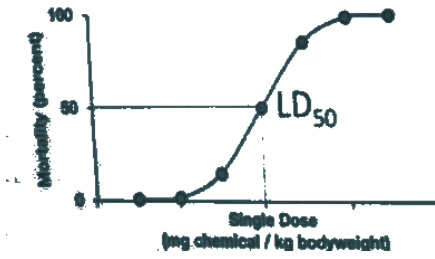
LD stands for "Lethal Dose". LDs is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. The LD50 is one way to measure the short-term poisoning potential (acute toxicity) of a material.

Toxicologists can use many kinds of animals but most often testing is done with rats and mice. It is usually expressed as the amount of chemical

administered (e.g., milligrams) per 100 grams (for smaller animals) or per kilogram (for bigger test subjects) of the body weight of the test animal.

Importance of LD₅₀

Chemicals can have a wide range of effects on our health. Depending on how the chemical will be used, many kinds of toxicity tests may be



required.

Radiation Dose and its Effects

Since different chemicals cause different toxic effects, comparing the toxicity of one with another is hard. We could measure the amount of a chemical that causes kidney damage, for example, but not all chemicals will damage the kidney.

We could say that nerve damage is observed when 10 grams of chemical A is administered, and kidney damage is observed when 10 grams of chemical B is administered. However, this information does not tell us if A or B is more toxic because we do not know which damage is more critical or harmful. Therefore, to compare the toxic potency or intensity of different chemicals, researchers must measure the same effect. One way is

to carry out lethality testing (the LD₅₀ tests) by measuring how much of a chemical is required to cause death.



UNIT IV