Radiation protection –practical 4
Radiation Dose Limits

Asst.Lec.Dumoaa Haider Shakir

Radiation Dose Limits

- Doses are crucial safety guidelines established to ensure that radiation exposure remains within safe levels for workers and the general publics.
- Limits are set by international organizations such as the International Commission on Radiological Protection (ICRP) and the International Atomic Energy Agency(IAEA).
- Dose limits help ensure that no person is exposed to an excessive amount of radiation in normal situations.
- They consider various factors, including

1. The type of radiation
2. Duration of exposure
3. The specific circumstances of the exposure.

Dose Limits Recommended by ICRP

- Limit on Dose from Occupational Exposure
- Limit on Dose from Medical Exposure
- Limit on Dose from Puplic Exposure

Dose Limit of Occupational Exposures

- Occupational Exposures : Exposures incurred at work, Any hazardous agent including all exposures incurred at work regardless of their sources.

Occupational Exposures Contd....

Application	Occupational Exposure Dose limit
Whole body Effective Dose	20 mSv/year (averaged over defined period of 5 years, with not more than 50 mSv in single year) In INDIA, this provision is limited to 30 mSv should not exceed in any single year
Parts of Body: Equivalent Dose	
Lens of Eye	150 mSv/year
Skin	500 mSv/year (Averaged over areas of no more than any 1 cm^2 regardless of the area exposed and nominal depth is 7.0mg/cm^2)
Head & Feet	500 mSv/year (Averaged over areas of the skin not exceeding 100 cm^2)

- **For Occupational Women:**

- **No special dose limits for occupational women in general i.e. As same as that of men are applicable (which has given above table)**

- **Once pregnancy has declared, special controls have to be consider to avoid deterministic effects (Mental Retardation, congenital malformations) in new born child**

- **The effective dose limit for pregnant woman is as like as general public 1 mSv during remaining period of pregnancy**

Dose Limit of Medical Exposures

- **Medical Exposures: Exposures incurred by individuals as part of their own medical diagnosis or treatment (patient).**
- **Due to direct benefit of exposed individual, the commission recommends that dose limits should not be applied to medical exposures**

Dose Limit of Public Exposures

- Public Exposures: Exposures incurred by members of public from radiation sources(excluding any occupational or medical exposures) the normal a background radiation including exposure to natural sources

Public Exposures

Contd.....

Application	Public Exposure Dose limit
Whole body Effective Dose	1 mSv/year (averaged over defined period of 5 years, with not more than 5 mSv in single year)
Parts of Body: Equivalent Dose	
Lens of Eye	15 mSv/year
Skin	50 mSv/year (Averaged over areas of no more than any 1 cm^2 regardless of the area exposed and nominal depth is 7.0mg/cm^2)
Head & Feet	50 mSv/year (Averaged over areas of the skin not exceeding 100 cm^2)