



Group-4 participants

R.Indira

Dr.Dhenesh

Ms.Vetri selvi

Ms.Jyothi

Ms.Chandra vadhana

Mr.Prathap

Reviewed by:

Dr. Lallu Joseph
Secretary General
CAHO

Faculty

Ms. Freeda D'Souza
Ms. Sudha
Dr. Joseph Fidelis
Ms. Remya

What is Radiation ?

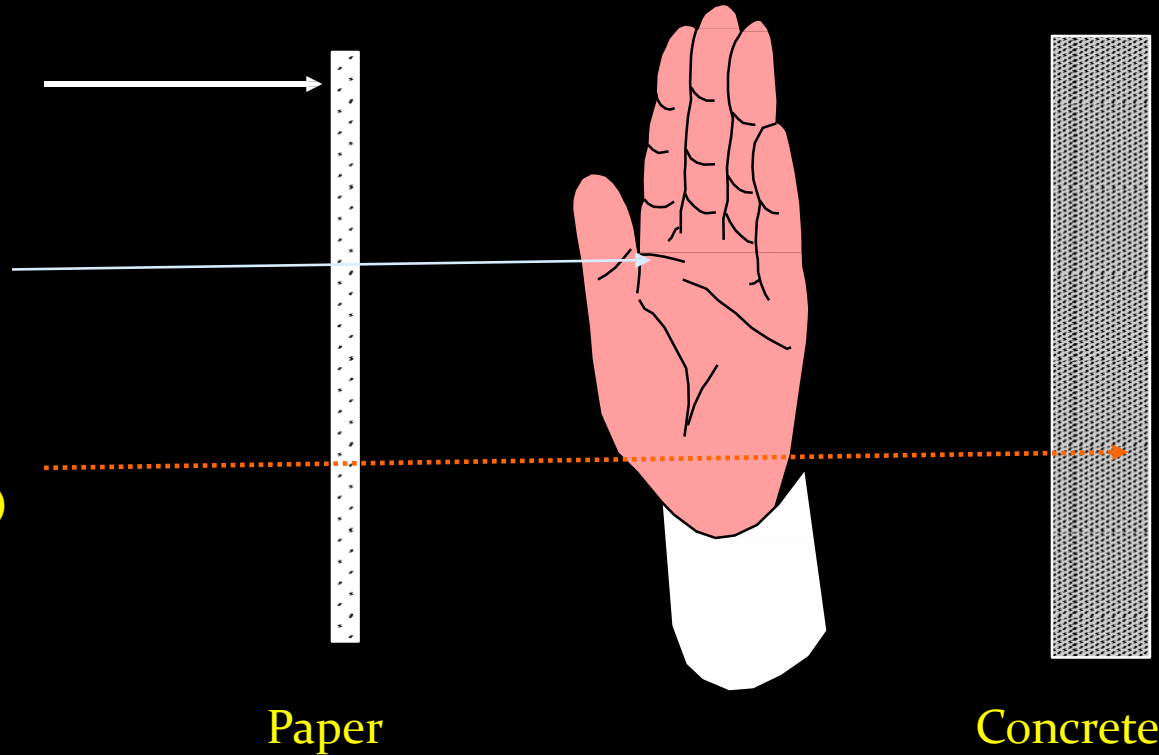
- **Radiation** is the emission or transmission of energy in the form of waves or particles through space or through a material medium.
- Radiation occurs through Ionizing Radiations and Electro magnetic waves

Ionizing radiation particles

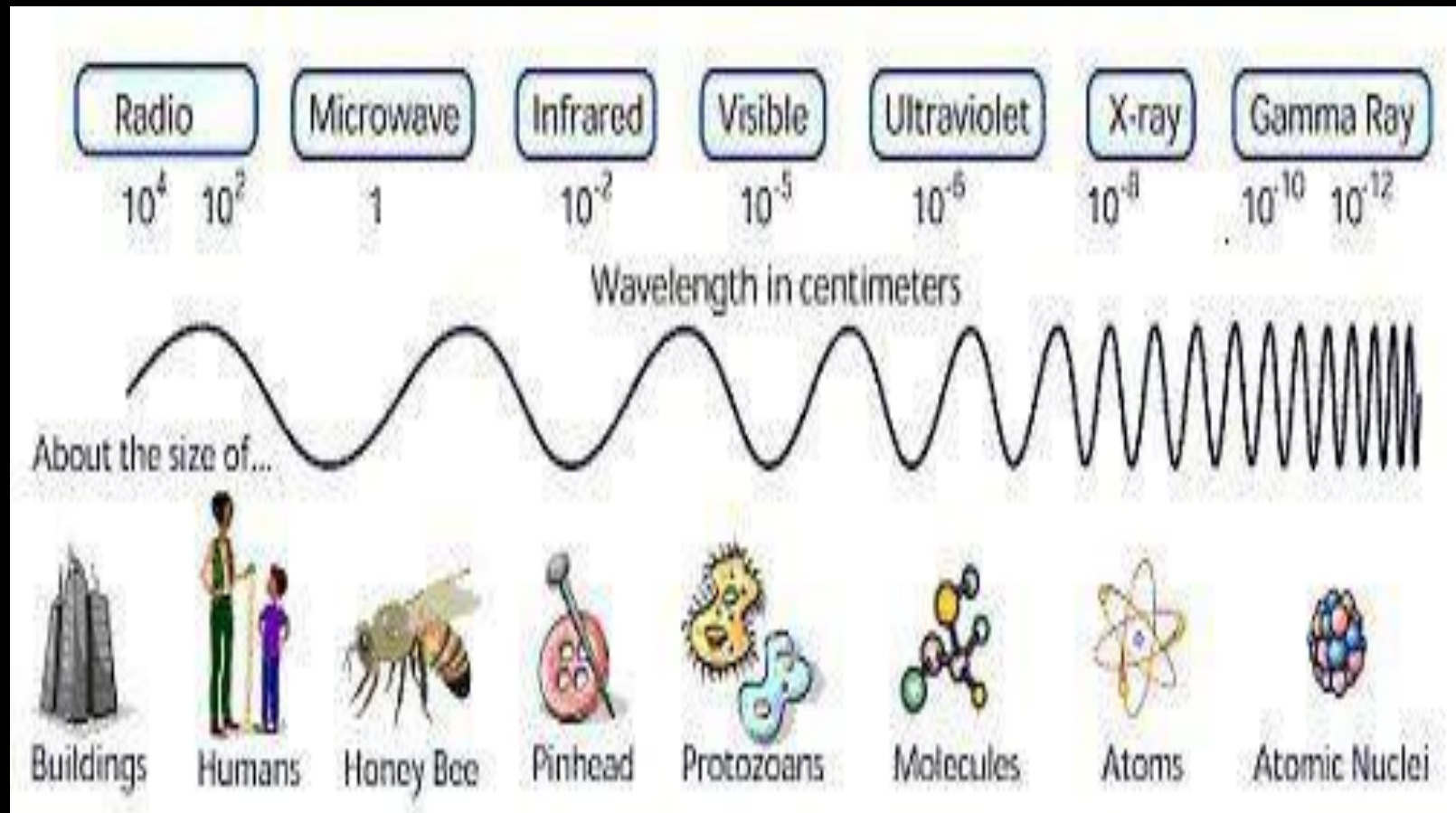
Alpha Particles
($2n, 2p$)

Beta Particles
(e^- or e^+)

Photons ($h\nu$)
(x or gamma rays)



Electromagnetic waves



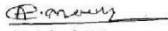
Exposure to radiation

Exposure Type	Dose Levels
Occupational Exposure (Annual)	
Whole Body Effective Dose Limits (Stochastic Effects)	50 mSv
Dose Equivalent Limits for organs (Non Stochastic Effects)	
Lens of Eye	150 mSv
All others	500 mSv
Public Exposure (annual)	
Effective dose equivalent limit, continuous exposure	1 mSv
Effective dose equivalent limit, infrequent exposure	5 mSv
Dose Equivalent Limits for lens, skin and extremities	50 mSv
Embryo Fetus Exposures	
Total dose equivalent limit	5 mSv
Dose Equivalent in a month	0.5 mSv
Annual effective education and training exposure	
Dose Equivalent Limits for lens, skin and extremities	50 mSv

Radiation safety Programme is documented



AERB LICENSE

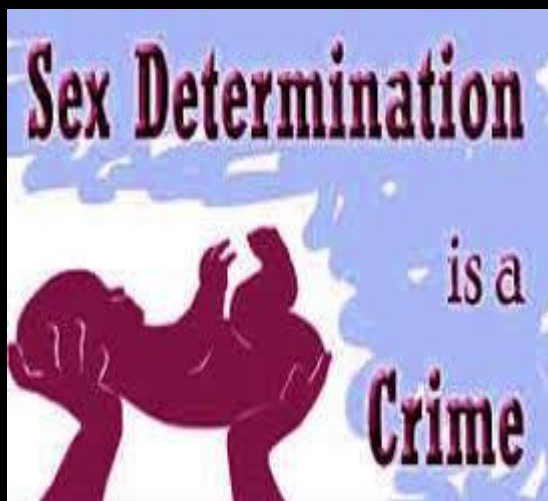
भारत सरकार परमाणु ऊर्जा नियामक परिषद् विकिरण सुरक्षा विभाग		GOVERNMENT OF INDIA ATOMIC ENERGY REGULATORY BOARD RADIOLOGICAL SAFETY DIVISION
Case File Number: DL-35772-SA-XRE-001		Issuance Date: 26/05/2016
Document Number: 16-AFSXE-108726		Expiry Date: 26/05/2019
AUTHORIZATION OF SERVICE AGENCIES FOR MEDICAL DIAGNOSTIC X-RAY EQUIPMENT		
In exercise of the powers conferred under section 16 of the Atomic Energy Act, 1962 read in conjunction with Rule-3 of the Atomic Energy (Radiation Protection) Rules, 2004, the Atomic Energy Regulatory Board (AERB) hereby grants the Authorization in favor of MR. BRIJ NATH, RAYDENT MEDITECH PRIVATE LIMITED, New Delhi hereinafter referred to as the Licensee, for providing the services as given in Table 1 of Annexure-1. This Authorization is applicable for Type of x-ray equipment as specified in Table 2 of Annexure-1.		
DIRECTOR, RAYDENT MEDITECH PRIVATE LIMITED New Delhi and MR. BRIJ NATH are hereby identified as the Employer and Licensee respectively, for the purpose of assigning the responsibilities specified in the Atomic Energy (Radiation Protection) Rules, 2004.		
The Employer and Licensee are responsible for,		
1. Ensuring compliance with the relevant provisions of the i. Atomic Energy Act, 1962 ii. Atomic Energy (Radiation Protection) Rules, 2004; iii. AERB Safety Code (AERB/SC/Med-2), 2001, Amendment 2012, and the revisions thereof iv. All applicable Safety Codes, Guides issued by AERB for the above practice and regulatory documents issued by AERB from time to time. v. Directives issued by Competent Authority from time to time. 2. Ensuring compliance with terms and conditions stated overleaf.		
Note: This Authorization is issued ONLY from the RADIATION SAFETY VIEW POINT. All other clearances shall be obtained from concerned state/central/local authorities as applicable. A copy of this Authorization shall be displayed in a prominent location in the Company premises.		
 Dr. Avinash U. Sonawane Head		
MR. BRIJ NATH RAYDENT MEDITECH PRIVATE LIMITED H NO 552 KOTLA VIHAR, PHASE 2 NANGLOI NEAR FARM HOUSE NEW DELHI, DELHI-110043 Copy to: DIRECTOR, RAYDENT MEDITECH PRIVATE LIMITED, NEW DELHI		
 परमाणु ऊर्जा नियामक परिषद्, विकिरण सुरक्षा विभाग, अणुसंशोधन भवन, मुंबई - 400094 (महाराष्ट्र) Atomic Energy Regulatory Board, Radiation Safety Division, Anushodhan Bhavan, Mumbai 400094 (Maharashtra)	 AN 0000-0001-0000 Organization	 AN 0000-0001-0000 Organization
वेबसाइट/Website: www.aerb.gov.in	दूरध्वनि/Tel: 91-22-2599 0656	दूरध्वनि/Fax: 91-22-2599 0650



LICENSE → PC-PNDT

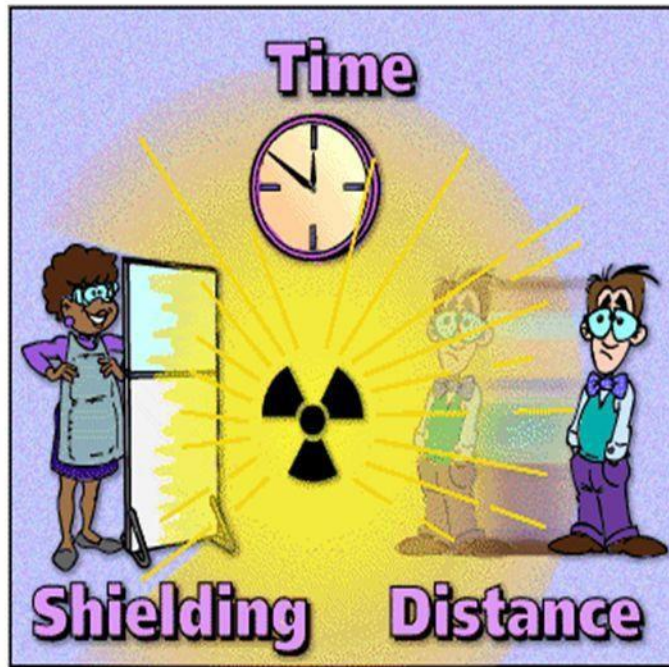


**Disclosure of Sex
of Foetus is
Prohibited
under law**



ALARA(As low As Reasonably Acheivable)

Radiation Protection Techniques



There are three basic considerations for protecting yourself from radiation:

- **Time**
- **Distance**
- **Shielding**

Screening for safety and risk before radiation (Pregnancy and MRI)

Pregnant?
or think
you could be?

Please tell
the staff
before an X ray
or nuclear medicine
procedure

What you need to know

Unborn babies are more sensitive to radiation.

Risk depends on stage of pregnancy, type of procedure and the amount of radiation used.

Diagnostic radiological procedures are safe under most circumstances even during pregnancy.

DO's and DON'Ts

Don't avoid the procedure if it's important for your health.

Do ask the medical staff what measures will be taken to reduce any risks.

Do seek advice before the procedure

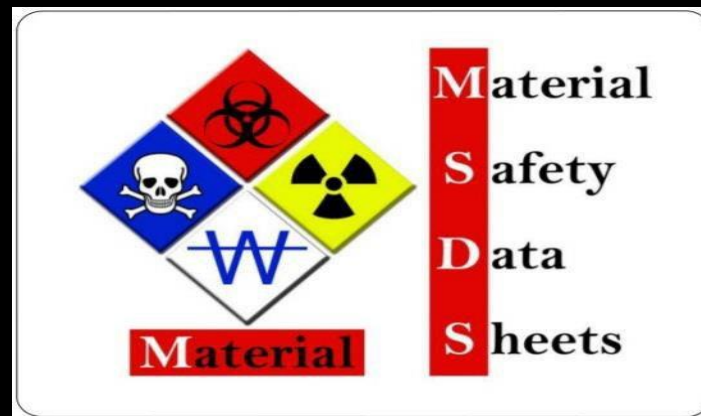
1 to 8 weeks
Low risk

9 to 12 weeks
Moderate risk

13 to 28 weeks
Low risk

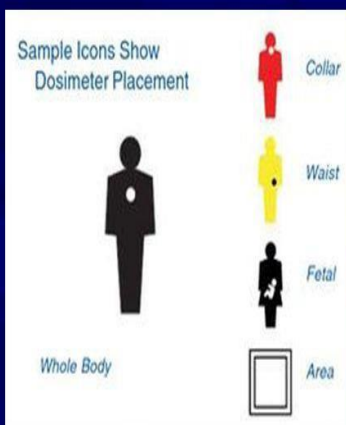


Handling, Usage and disposal of Radio-active and hazardous materials as per BMW rules



Radiation safety devices and Monitoring devices are provided

PPE and Radiation Monitoring



TYPE OF TLD BADGES

Chest Badge

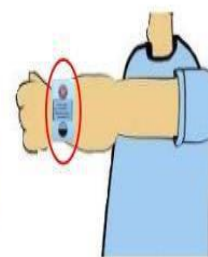
Whole Body Dose



WORN AT CHEST LEVEL

Wrist Badge

Extremity Dose



WORN IN WRIST

Finger Dosimeter

Finger Dose



WORN IN FINGER

Radiation safety devices and Monitoring devices are Tested periodically and documented

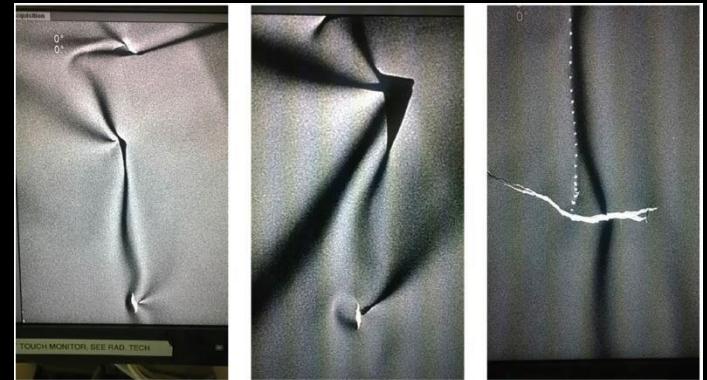


Figure 1. Three radiographs of lead aprons.



Bhabha Atomic Research Center

Staffs are trained in Imaging safety practices

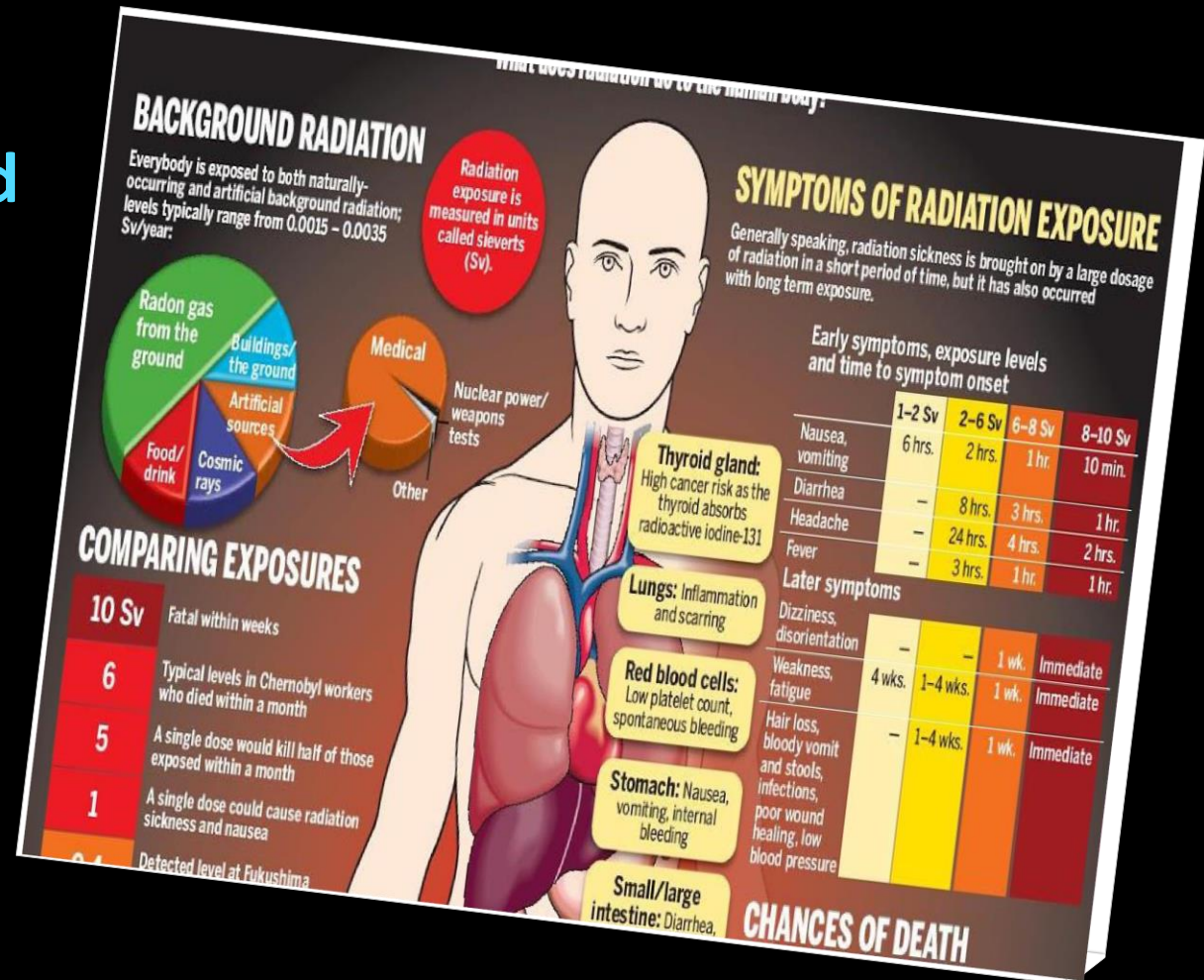


Imaging signage's are Displayed prominently in appropriate locations



If staff exposed to excess radiation?

- Change the work place of the person
- Send person for vacation and get the appropriate tests done
- This can be followed as per the organizations policy as adopted





Thank you