

# ALL ABOUT THE DOSE



The Basic Safety Standards Directive (Council Directive 2013/59/EURATOM of 5 December 2013) lays down basic safety standards for protection against the dangers arising from exposure to ionising radiation.

EU countries must ensure compliance in national legislation by 6 February 2018



Source: [ec.europa.eu/energy/sites/ener/files/documents/CELEX-32013L0059-EN-TXT.pdf](http://ec.europa.eu/energy/sites/ener/files/documents/CELEX-32013L0059-EN-TXT.pdf)

## RAISING AWARENESS

International Patient Safety Day

International Day of Radiology

17 September 8 November

## AS LOW AS REASONABLY ACHIEVABLE (ALARA) PRINCIPLES

- 1 Time** minimising the time of exposure directly reduces radiation dose
- 2 Distance** increasing the distance between you and the radiation source will reduce exposure by the square of the distance
- 3 Shielding** using absorber materials is an effective way to reduce radiation exposures

## BASIC SAFETY STANDARDS DIRECTIVE KEY POINTS



- ✓ System of radiation protection based on **justification, optimisation** and **dose limitation**
- ✓ **Responsibilities:**
  - Justification (referrer, practitioner)
  - Optimisation (practitioner, medical physicist, radiology technicians)
- ✓ **Patients** must be **informed** about risks and benefits of examinations using ionising radiation
- ✓ Screening of patients who have no symptoms, eg, breast screening, should either be part of a health screening programme or have documented justification, following guidelines from relevant medical organisations. Directive also covers radiological health assessment for other purposes, eg, employment, immigration
- ✓ **Diagnostic reference levels (DRLs)** should be used and regularly reviewed. When DRLs are exceeded, corrective action needs to be taken
- ✓ **Medical physicist role:** dosimetry, optimisation, application and use of diagnostic reference levels (DRLs), equipment selection, acceptance testing, QA, analysis of untoward radiation exposures, staff training
- ✓ New **occupational dose limit** for the lens of the eyes - 20 mSv/year
- ✓ **Education and training** on medical radiological practices and radiation protection
- ✓ **Equipment:** new equipment should show dose amount, and be able to transfer dose information to the medical record. Information relating to patient exposure forms part of the report of the medical radiological procedure
- ✓ **Procedures:** use referral guidelines, follow clinical protocols and perform clinical audits. Analyse and learn from accidental exposures
- ✓ **Population dose evaluation** taking into account age distribution and gender

Source: European Society of Radiology (2015) Summary of the European Directive 2013/59/Euratom: essentials for health professionals in radiology. Insights Imaging, 6: 411-7.

## ESR EUROSAFE IMAGING VIDEO



## FURTHER INFORMATION

### EuroSafe Imaging

[eurosafeimaging.org](http://eurosafeimaging.org)

### European ALARA Network

[eu-alara.net](http://eu-alara.net)

### Canada Safe Imaging

[car.ca/en/education/canadasafeimaging](http://car.ca/en/education/canadasafeimaging)

### Image Wisely

[imagewisely.org](http://imagewisely.org)

### Image Gently

[imagegently.org](http://imagegently.org)

### Radiation Protection of Patients (International Atomic Energy Authority)

[rpop.iaea.org/RPoP/RPoP/Content/index.htm](http://rpop.iaea.org/RPoP/RPoP/Content/index.htm)

### Dose Index Registry

[acr.org/Quality-Safety/National-](http://acr.org/Quality-Safety/National-Radiology-Data-Registry/)

[Radiology-Data-Registry/](http://acr.org/Quality-Safety/National-Radiology-Data-Registry/)

[Dose-Index-Registry](http://acr.org/Quality-Safety/National-Radiology-Data-Registry/)

### ESR Basic Patient Safety Standards and Audit Tool

[myesr.org/cms/website.php?id=/en/services/](http://myesr.org/cms/website.php?id=/en/services/ESRAuditTool.htm)

[ESRAuditTool.htm](http://myesr.org/cms/website.php?id=/en/services/ESRAuditTool.htm)

### ACR/RSNA Patient Information

[radiologyinfo.org](http://radiologyinfo.org)

### EuroSafe Imaging e-learning Platform

[eurosafeimaging.org/training](http://eurosafeimaging.org/training)

## PATIENT INFORMATION

**EuroSafe Imaging** [eurosafeimaging.org/information-for-patients](http://eurosafeimaging.org/information-for-patients)

**UK National Health Service** [nhs.uk/conditions/Radiation/Pages/Introduction.aspx](http://nhs.uk/conditions/Radiation/Pages/Introduction.aspx)