The aim of radiography

- Help diagnostic work
- Baseline radiograph
- Treatment plan
- Follow up examination
- Documentation
**Imaging technics**

- **intraoral**
- **extraoral**
  - plain
  - panoramic
- **special**
  - tomography, CT, MRI, US,
  - PET, SPECT

**X-Ray Film**

- intraoral is direct exposure technique
- extraoral technique is using intensifying screen-film system
- 2 major differences between intraoral and extraoral films:
  - silver content
  - chromatisation (spectral sensitivity)
Extraoral film
• 15x30 cm, 10x24 cm - panoramic
• 13x18, 18x24, 24x30 cm - plain films

• intra-oral films contain more silver than extra oral films (4 to 5 times more)
• the emulsion of intra-oral films is thicker than the emulsion of extra-oral films
• different film types can require different processing conditions

Image formation
• Physical rules
  absorption
• Geometric rules
  Radiogram:
   • Magnification
   • Distortion
   • Summation
   • “forget”
  Central projection
Basic steps

• Position of patient’s head
  – Sagittal and occlusal planes

• Film positioning

  Filmholder with aiming device

  Image quality
  Radiation protection
  Standardisation

• Tube positioning
  – Horizontal angulation

  Horizontal angulation

  Buccal object rule

  Orthoradial
  Distoeccentric
  Mesioeccentric

  Vertical angulation

  – Centering

  To position the enter point of the central beam
Intraoral projections

- Bisecting angle
- Paralleling
- Crown view
- Bite-wing
- Occlusal

Panoramic technic

Advanced panoramic technics
Digital imaging systems

Exposure time depends on

- Tissue
- Film speed
- Developer chemicals
- Source-film distance

Processing

- A latent image (non-visible image) is formed when silver halide crystals ($\text{Ag}^+\text{Br}^-$) are exposed to X-Rays (Intra-Oral) or light (Extra Oral)
- To produce a visible and archival image, the film must be processed
- Processing has a critical influence on image quality and patient dose
- Processing can be done manually or automatically
Steps of Processing

- Developing
- Rinse (only for manual processing)
- Fixing
- Washing
- Drying

Viewing conditions

- Viewing box
- No surrounding light
- 2x magnification

The way of thinking