

Ask EuroSafe Imaging Tips & Tricks

Paediatric Imaging Working Group

Immobilisation of the paediatric patient

Claudio Granata (IRCCS Istituto Giannina Gaslini, IT)

Joana Santos (ESTeSC-Coimbra Health School, PT)

Elina Samara (Valais Hospital, CH)

Introduction

- Several techniques of immobilisation exist and are employed in radiology routine.
- Keeping the paediatric patient still will improve image quality and reduce radiation exposure.
- The immobilisation need must be explained to the parents or legal tutors in order to prepare the child and provide support during the imaging procedure.

Immobilisation benefits

- Keeping the paediatric patient still will improve image quality and reduce radiation exposure
- No image blurring
- Correct projection
- Correct beam collimation
- Correct shielding position
- One exposure is enough
- Lower dose for the accompanying person and the personnel

Immobilisation techniques

- **Do it with no device!**
- Perform the radiological examination when the child is asleep or calm after having been fed
- Hypnosis - different techniques exist for different ages, for example, for ages 0-2y tactile or visual stimulation and at the beginning of the verbal phase (ages 2-4y) videos or books may be used
- Sedation or anaesthesia, when the child is very agitated to avoid repetition of the examination
- Hold the child - this technique should be used only in rare cases and the accompanying person should wear a protective apron

Immobilisation techniques

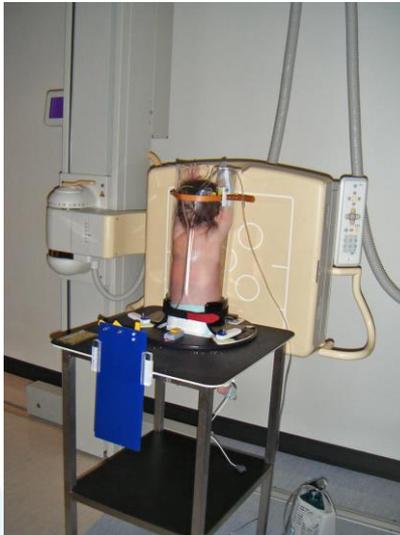
- **Use some device**
- Sponges, Plexiglas or sandbags may be used for small children
- Velcro straps
- Sheets
- Plastic molds



<http://cspmedical.com>

Immobilisation devices

- Pig-O-Stat
- Immobilisation chair
- Beb'x
- Med-Vac



<http://www.clearimagedevices.com>



<http://cfimedical.com/medvac>



<http://cspmedical.com>

Before employing any immobilisation technique

- Normal anatomic position has to be maintained
- The simpler the immobilisation method, the better for both patient and staff
- Attention has to be paid so as respiration and blood circulation are not blocked and no injuries are caused by the immobilisation system
- Be sure that the immobilisation device stays out of the x-ray field so as to avoid any image artifacts
- Explain to the accompanying person the benefits of the immobilisation

Conclusion

- Use immobilisation when needed
- Optimise your immobilisation techniques to optimise radiation exposure to paediatric patients
- Reduce the need of retake 😊

References

- European commission, European guidelines on quality criteria for diagnostic radiographic images in paediatrics, report 16261
- ICRP Publication 121, Radiological protection in paediatric diagnostic and interventional radiology
- ASRT, Best Practices in Digital Radiography, 2012

- The authors have nothing to disclose about the references given in this T&Ts.