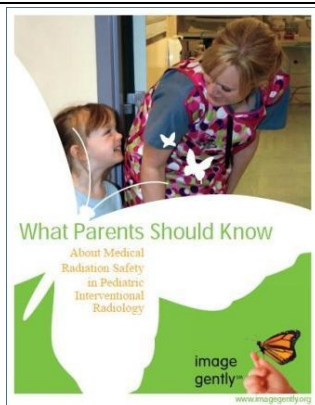


10 Pearls: **Lasten** säteilyaltistuksen optimointi toimenpideradiologiassa

1. Muista: kasvavalla lapsella eräät kudokset ja elimet ovat herkempiä säteilylle kuin aikuisten vastaavat elimet ja kudokset



2. Keskustele vanhempien kanssa ennen tutkimusta:

- Kysy aikaisemmista säteilytutkimuksista
- Vastaa kysymyksiin, jos vanhemmat ovat huolestuneita lapsensa säteilyaltistuksesta

image gently

Patient's Name _____ MR# _____ Date of exam _____

Step Lightly Checklist

Review steps below before starting the procedure.

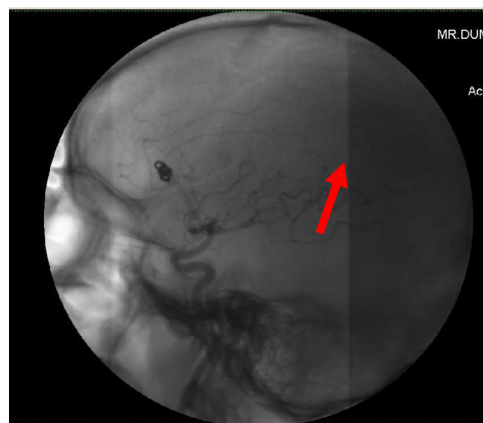
Safety is a team effort: don't be afraid to ask the necessary questions to ensure you are working as a team to keep radiation dose to patients and staff as low as possible.

Reducing radiation dose must be balanced with safe, accurate and effective completion of the procedure. Not all the steps below may be possible in each case, depending on patient size, technical challenge and critical nature of the procedure. Overall patient safety is most important. The goal is to minimize the dose to the patient while providing important and necessary medical care.

- ☐ Ask patient or family about previous radiation ([record card downloadable at this link](#)). Answer questions about radiation safety ([parent patient brochure downloadable here](#)).
- ☐ Use ultrasound when possible.
- ☐ Position hanging table shields and overhead lead shields prior to procedure with reminders during the case as needed.
- ☐ Operators and personnel wear: well fitted lead aprons, thyroid shield and leaded eye wear.
- ☐ Use pulse rather than continuous fluoroscopy when possible, and with as low a pulse as possible.
- ☐ Position and collimate with fluoroscopy off, tapping on the pedal to check position.
- ☐ Collimate tightly. Exclude eyes, thyroid, breast, gonads when possible.
- ☐ Operator and personnel hands out of beam.
- ☐ Step lightly: tap on pedal and review anatomy on last image hold rather than with live fluoroscopy when possible; minimize live fluoroscopy time.
- ☐ Minimize use of electronic magnification, use digital zoom whenever possible.
- ☐ Acknowledge fluoroscopy timing alerts during procedure.
- ☐ Use last image hold whenever possible instead of exposures.
- ☐ Adjust acquisition parameters to achieve lowest dose necessary to accomplish procedure: use lowest dose protocol possible for patient size, lower frame rate, minimize magnification, reduce length of run.
- ☐ Plan and communicate number and timing of acquisitions, contrast parameters, patient positioning and suspension of respiration with radiology and sedation team in advance to minimize improper or unintended runs.
- ☐ Move table away from X-ray tube in both planes. Move patient as close to detector in both planes.
- ☐ Use a power injector, or extension tubing if injected by hand.
- ☐ Move personnel away from table or behind protective shields during acquisitions.
- ☐ Minimize overlap of fields on subsequent acquisitions.
- ☐ After procedure: record and review dose.

3. Kerro ja ota käyttöön tiimissäsi potilasturvallisuuden parantamiseksi tarkistuslista ennen tutkimusta

4. Suunnittele toimenpide tarkasti etukäteen välttääksesi turhia ja toistettuja tutkimuksia



http://www.pedrad.org/associations/5364/files/ImGen_StpLight_Chcklst.pdf



5. Suojaa potilaan kilpirauhanen, rinnat, silmät ja suk rauhaset aina kun mahdollista



RPOP Posters webpage!

<https://rpop.iaea.org/RPOP/RPoP/Content/AdditionalResources/Posters/index.htm>

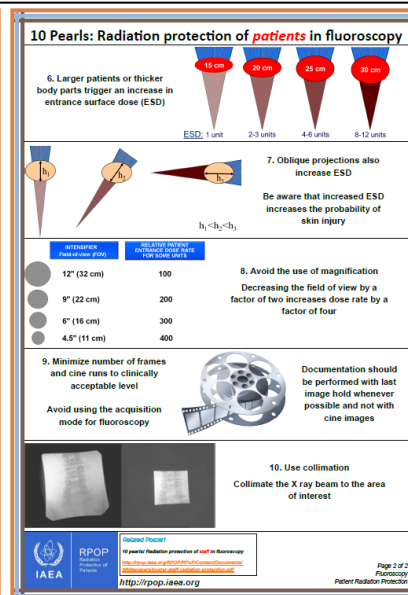
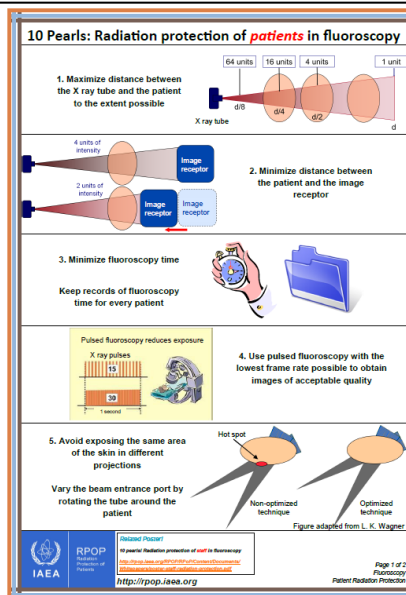
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Interventional Radiology
Children Radiation Protection
Translated by Anja Henner

<http://rpop.iaea.org> <http://www.pedrad.org/associations/5364/ig/>

10 Pearls: Lasten säteilyaltistuksen optimointi toimenpideradiologiassa

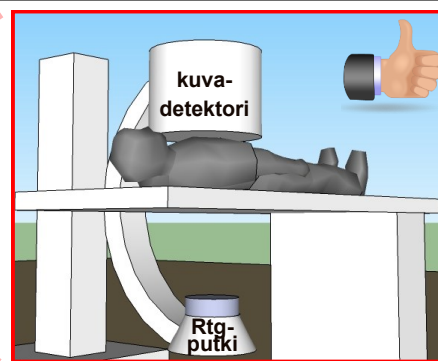
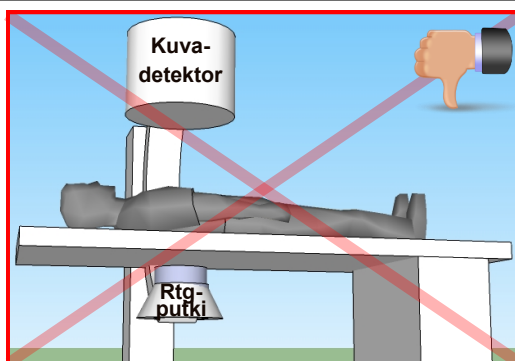
6. Käytä optimoituja ohjelmia:

- Harvenna pulssausta läpivalaisussa. Laske 7.5 pulssista /s 3 pulssiin / s aina kun mahdollista
- Ota hila pois käytöstä, jos mahdollista silloin, kun lapsi painaa alle 20 kg
- Käytä hilan tilalla ilmapäliä
- Minimoi läpivalaisuaika
- Minimoi päällekkäiset primäärkentät, jos joudut

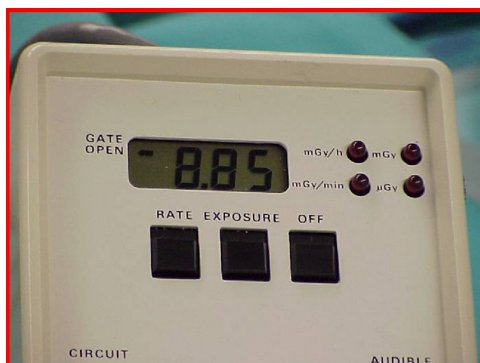


7. Käytä aina, kun mahdollista LIH toimintoa mieluummin kuin otat uuden kuvan

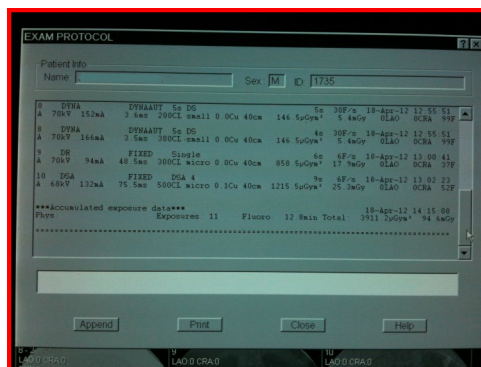
8. Ilisää potilaan ja röntgenputken välistä etäisyyttä ja lyhennä kuvanvahvistimen / dtektorin ja potilaan välistä etäisyyttä



9. Hyödynnä laitteessa olevia annosseuranta- ja optimointiohjelmia



10. Arvioi ja tallenna annostiedot tutkimuksen jälkeen



RPOP Posters webpage!

<https://rpop.iaea.org/RPOP/RPoP/Content/AdditionalResources/Posters/index.htm>