

Ask EuroSafe Imaging Tips & Tricks

CT Working Group

What Patients Should Know – Role of the CT Team

Eileen Kelly (Galway University Hospitals, IE)

Matthias Stefan May (University Hospital Erlangen, DE)

Robert Bujila (Karolinska University Hospital, SE)

Introduction

- Computed tomography (CT) can be an intimidating experience for patients
- Information can be suboptimal or lacking
- Radiation dose can be a major concern for patients
- A CT team of health professionals will be involved in the exam workflow and interact with the patient
- Practices employed by the health professional to minimise radiation dose will be discussed further

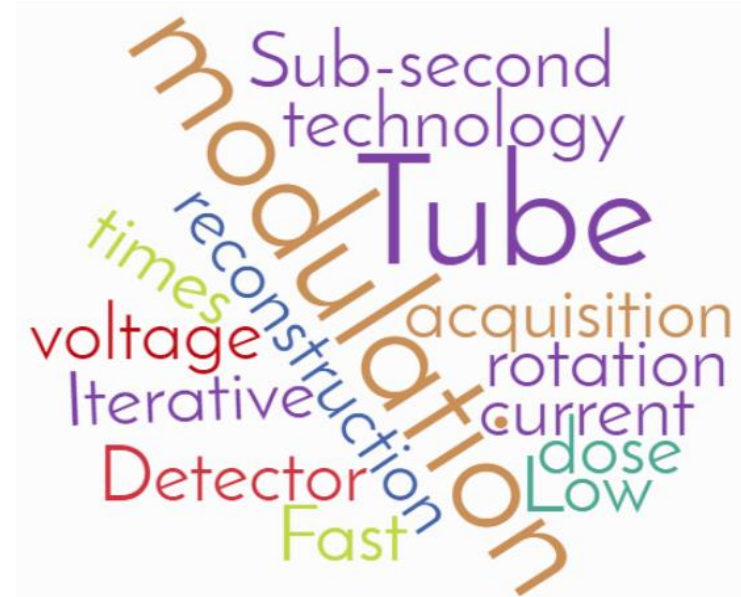


Optimisation

- Health professionals responsible for CT imaging are highly skilled and are responsible for delivering radiation doses that are as low as reasonably achievable – ALARA
- CT scan protocols are developed by specialists where doses are optimised for the particular CT examination
- A wide range of techniques from technological to emotional can be employed by the health professional to minimise radiation dose

Technological Factors

- CT technology has undergone significant advances
- Some CT scan radiation doses are comparable to conventional X-ray radiation dose
- The amount of radiation that is used can be adapted to different patient sizes and body regions
- Advances in computer software used in the production of CT images has also resulted in lower radiation dose during CT scanning



Positioning Techniques

- The health professional employs patient positioning techniques to minimise radiation dose
- During body scanning the patient's arms are raised behind their head
- With dose modulation this position will reduce the radiation dose delivered compared with arms by the patient's side
- During CT head scanning the patient's chin is tilted down to avoid radiation exposure to the lens of the eyes

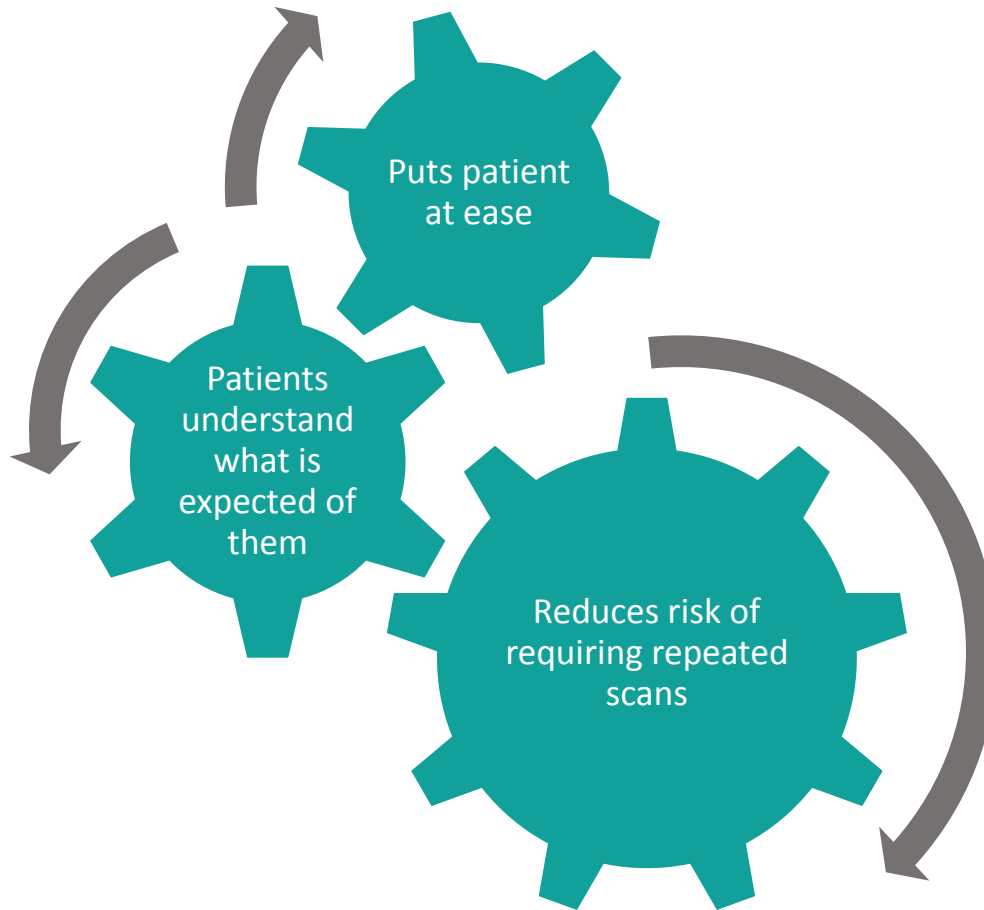


Immobilisation Devices

- The health professional may use immobilisation devices such as foam pads or straps
- Those devices are necessary to ensure that the patient remains still throughout the examination
- Their use reduces the risk of repeated scans due to movement
- Such devices are particularly useful when scanning paediatric patients

Communication

Effective communication is a key factor during CT



Quality Assurance & Dose Records

- Strict Quality Assurance (QA) protocols are in place in CT departments to ensure equipment is operating within accepted standards
- QA records are maintained and reviewed by engineers and medical physicists
- A dose summary of the examination is archived with the patient images
- Audit of radiation doses and continuous improvement in practice ensure radiation doses remain at minimum levels

Females of Reproductive Age

- Hospitals have local protocols for CT scanning of female patients of reproductive age
- For 'high dose' CT scans (scans of areas of the body between the nipples and knees) it is important that pregnancy is ruled out before the appointment is made
- Scans can be scheduled on day 1-10 of menstrual cycle for 'high dose' scans
- The health professional establishes the pregnancy status of the patient immediately before the scan
- If pregnancy is suspected, the scan should be deferred until the next menstrual period or until pregnancy is out-ruled
- If the clinical question is urgent, an alternative non-ionising imaging examination may be performed
- If CT is still required, the risks of radiation exposure and benefits of the scan are considered and explained explicitly to the patient by the referrer in consult with radiologist



Conclusion

- The health professional plays a key role in maintaining radiation doses at a minimum
- This is achieved by advances in technology, patient positioning techniques and effective communication
- Maintaining dose records facilitates audit and continuous improvement
- Establishing pregnancy status is important, particularly for high dose CT procedures

References

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