RHYTHM

RADIATION, HEALTH, SAFETY & QUALITY FOR YOUTH

RHYTHM

Radiation, Health, Safety and Quality for Youth: A Comprehensive Approach to Justification, Optimisation, and Education

The 4-year RHYTHM project aims to improve the quality and radiation safety of medical imaging for children, adolescents, and young adults, with a particular focus on CT, SPECT/CT, PET/CT, and CT as part of radiotherapy planning. Recognising the sensitivity of this population to ionising radiation and the critical need for optimised imaging practices, RHYTHM targets key challenges in justification, optimisation, availability, and accessibility of imaging services. These challenges include inappropriate imaging practices, disparities in access to dedicated paediatric imaging equipment, and insufficient education and outreach to healthcare professionals and patients.

RHYTHM aims to address these issues through an interdisciplinary and collaborative approach, involving stakeholders from healthcare, industry, regulatory bodies, and patient advocacy groups.

RHYTHM's objectives will be achieved by:

- **Improving justification and optimisation practices**, incl. the development of evidence-based recommendations for referral guidelines, clinical guidelines, and clinical decision support systems
- **Facilitating accessibility to dedicated imaging equipment and services**, incl. the development of optimized imaging protocols tailored to paediatric and young adult needs
- **Advancing education and training curricula and materials** tailored to multidisciplinary professional groups to enhance capacity building
- **Implementing outreach campaigns** to raise awareness about imaging safety and the benefits of optimised practices among parents, young adults, and healthcare providers

Additionally, RHYTHM aims to develop a **European CT dose and image repository**, a novel tool adopting a dual approach to improve paediatric imaging practices. This repository will:

- Establish Diagnostic Reference Levels (DRLs) tailored to diagnostic CT clinical indications.
- Enable direct comparisons of scanner protocols, dose indices, and image quality across institutions using the same CT scanner models.

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RHYTHM is coordinated by the European Institute for Biomedical Imaging Research.

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Facts and figures

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Clinical Coordinator: Institute for Maternal and Child Health - IRCCS "Burlo Garofolo" – Trieste (I), Italy

Scientific Coordinator: Panepistimio Kritis - University of Crete, Greece

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