



Health effects of cardiac fluoroscopy and modern radiotherapy in paediatrics



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What

Harmonic is a [European-funded project](#) that aims at better understanding the long-term health effects of medical exposure to ionising radiation in children, specifically cancer patients treated with modern radiotherapy techniques and cardiac patients treated with X-ray guided imaging procedures.

Why

The use of radiation for medical diagnosis and treatment procedures has had a major impact on improving the survival of paediatric patients. Although the benefits of these techniques largely outweigh the risks, there is [a need to better understand the long-term health effects of such exposures](#) in order to optimise treatment plans in these young patients and reduce the risk of late toxicities.

"Our ultimate goal is to improve the quality of life of children treated with medical radiation"



How

By building European cohorts and registries for long-term follow up of paediatric patients, we aim to:



Investigate the late health effects of ionising radiation in children.



Provide the medical and radiation protection communities with tools for long-term follow-up of children exposed to medical radiation.



Improve estimates of radiation doses to specific organs.



Investigate possible biological mechanisms leading to the development of late adverse health effects.



Establish recommendations to optimise radiotherapy and intervention cardiology treatments and further reduce radiation doses.

Expected Impact

Harmonic, a consortium of **24 European partners**, will provide much needed information on the effects of low to high doses of radiation on humans and help improve radiological protection in medicine.

The project is based on building a close relationship with clinicians, sociologists and patients, which will ensure the study is relevant not only in terms of clinical effectiveness but also in terms of patient care and quality of life.

Partners



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