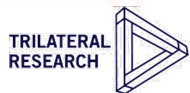


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iToBoS

Intelligent Total Body Scanner for Early Detection of Melanoma



**Intelligent Total Body Scanner
for Early Detection of Melanoma**

iToBoS is a research project funded by European Union's Horizon 2020 research and innovation programme, in the topic SC1-BHC-06-2020-Digital diagnostics-developing tools for supporting clinical decisions by integrating various diagnostic data. The project has a duration of 48 months (1 April 2021-31 March 2025) and a total budget of 12 million Euro.

CONTEXT

Melanoma is one of the most aggressive cancers that can be discovered at an early stage, and it is responsible for 60% of lethal skin neoplasia. Its incidence has been constantly increasing and could become a public health challenge because of an increase in life expectancy of the elderly population. Total body skin examination, the primary screening mechanism for melanoma, checks each pigmented skin lesion individually in search of typical melanoma signs. This can be a time-consuming technique for patients with atypical mole syndrome or a larger number of naevi.

OBJECTIVE

The overall aim of the iToBoS project is to build a new diagnostic tool for the early detection of melanoma; it will include a novel total body scanner and an AI-enabled Computer Aided Diagnostics (CAD) tool, exploiting all the available information of the patient. This holistic assessment tool should understand the specific characteristics of every patient in order to enable a personalised, early detection of melanoma.

SPECIFIC OBJECTIVES

- 1 Develop a novel skin scanner to enable an integrative diagnosis platform.
- 1 Detect and diagnose relevant changes over time in pigmented skin lesions.
- 1 Integrate all required data sources and clinician's knowledge for accurate diagnosis through an AI cognitive assistant.
- 1 Achieve a highly personalised diagnosis of melanoma and offer clinicians understandable AI support (avoid black box).
- 1 Acquire a comprehensive and representative dataset of skin lesions with ground truth.
- 1 Organise two challenges for skin lesion analysis.
- 1 Facilitate the daily use of the Cognitive Assistant through the design of an intelligent Human-Computer Interface.
- 1 Validate the technology in the target clinical scenario (Barcelona, Trieste and Brisbane).

BENEFITS



More contextualized
and personalized
diagnostics



Improve accuracy



Clinical decision
support



Integration
of various
data sources



Intelligent human-
computer interface