ASSURE

Adapting Breast Cancer Screening Strategy Using Personalised Risk Estimation

Nico Karssemeijer

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Research field

Breast Cancer Screening

Funding

€ 5,157,355

Project Grant Agreement no: 306088

Project Url: ASSURE project website [1]

> ***Towards personalised breast cancer screening***

Profile

Who?

"I am fascinated by computer vision because it is so hard to teach a computer to see things the way humans do", says Nico Karssemeijer, Professor of Computer-Aided Diagnosis at Radboud University Nijmegen Medical Centre. With his team, he creates systems that help radiologists to detect early stages of disease in medical images.

Why?

About 1 in 8 women develop breast cancer during their lives. The number of cancers escaping detection with mammography is substantial. Personalised screening will increase the likelihood of early cancer detection, resulting in fewer deaths and an increased quality of life because less radical treatment is required.

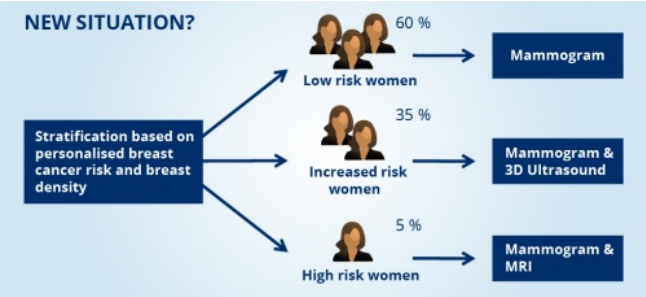
What?

The purpose of breast screening is the early detection of breast cancer. Mammography, the standard method of breast cancer screening, misses many cancers, especially in dense-breasted women. The aim of ASSURE is to develop methods to personalise breast screening, based on breast density, age, gene mutations and family history.

How?

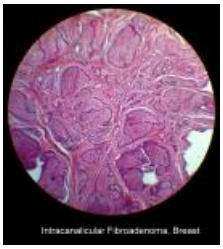
Four small and medium-sized enterprises have joined forces with leading research institutions and national screening experts in the ASSURE consortium. Together, they will develop the required tools for personalised breast cancer screening. New screening methods using MRI and automated breast ultrasound imaging will be developed.

In the Picture



ASSURE aims to stratify women (i.e. divide them in groups) based on their personal risk, which depends on their breast density, age, gene mutations, family history and personal history. They will receive a screening that is appropriate for their risk.

Timeline

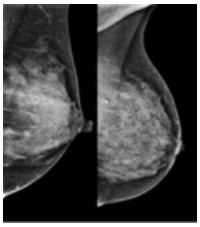


1913

Berliner surgeon A. Salomon lays the foundation for mammography by studying 3,000 mastectomies

1963

The first breast cancer screening trial is initiated in New York

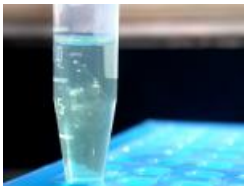


1970s

S.P. Wang invents rare-earth screens for x-ray film; these dramatically reduce radiation dose, thus paving the way for mammography

Late 1980s

Outcomes of large randomised trials demonstrate that breast screening saves lives. Nationwide breast screening programmes are initiated in several EU countries.



1994

BRCA gene mutation tests are developed to identify women at high breast cancer risk

2008

While breast cancer causes 458,000 deaths worldwide, a trial demonstrates the potential of breast ultrasound as an adjunct to mammography

2012

The ASSURE project is launched with the aim of personalising breast cancer screening

Links & Further Info

- ASSURE project website [1]
- Are you dense? [2]
- The end of one-size-fits-all screening mammography may be near (article by Lisa Fratt) [3]

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SEVENTH FRAMEWORK PROGRAMME

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