

First comprehensive review of European breast cancer screening programs finds benefits outweigh harm

September 12 2012

A major review of breast cancer screening services in Europe, jointly led by researchers at Queen Mary, University of London, has concluded that the benefits of screening in terms of lives saved outweigh the harms caused by over-diagnosis.

The results, which are published in a special supplement of *The Journal of Medical Screening* [1] today (Thursday), show that for every 1,000 women screened every two years from the age of 50 to the age of about 68-69, between seven and nine lives would be saved, and four cases would be over-diagnosed.

The European Screening Network (EUROSCREEN) working group [2], with members from nine European countries where outcome of screening programmes have been assessed, reviewed the estimates of benefit in published European studies in terms of [breast cancer](#) deaths prevented, and the major harms, in particular, the rates of what are called "over-diagnosed" cancers. These are breast cancers diagnosed as a result of screening, which would never have given rise to any symptoms during a woman's lifetime and would not have been diagnosed had she not been screened.

A second working group – European Network for Indicators on Cancer (EUNICE) – reviewed the organisation, participation rates and main performance parameters of 26 screening programmes in 18 countries,

involving 12 million women, between 2001 and 2007 [3]. The reports from both working groups have contributed to the review published today.

Stephen Duffy, Professor of Cancer Screening at the Wolfson Institute of [Preventive Medicine](#) at Barts and The London School of Medicine & Dentistry, part of Queen Mary, University of London (UK), who is one of the coordinators of the EUROSCREEN working group and co-author of the supplement, said: "This is the only comprehensive review of the results of breast screening services in Europe. It reports results from screening millions of women, and confirms that the screening services are delivering the benefits expected from the research studies conducted years ago. In particular, it is good news that lives saved by screening outweigh over-diagnosed cases by a factor of two to one."

The researchers also found that for every 1,000 women screened, 170 women would have at least one recall followed by a non-invasive assessment before absence of cancer could be confirmed (a negative result), and 30 women would have at least one recall followed by invasive procedures, such as a biopsy, before confirming a negative result. Screening results that lead to recalls in these circumstances are called "false positives" and can cause women stress and anxiety until the negative result is confirmed.

Dr Eugenio Paci, Director of the Cancer Prevention and Research Institute in Florence, Italy, who is a second EUROSCREEN coordinator and co-author, said: "By weighing up the pros and cons of breast [cancer screening](#) programmes we hope to ensure that women are fully aware of the chief benefits and harms and can make a fully informed choice when they decide whether or not they wish to attend screening. There has been quite a lot of discussion recently over the worth of [breast cancer screening](#) and for this reason it is timely that the international group of experts has assessed the impact of population-based screening in Europe

and has found that it is contributing to the reduction in deaths from the disease.

"We believe that not only should our conclusions be communicated to women offered breast screening in Europe, but that, in addition, communication methods should be improved in order to raise [women's](#) awareness, and to make information more accessible, relevant and comprehensible."

More information: [1] "Summary of the evidence of breast cancer screening outcomes in Europe and first estimate of the benefit and harm balance sheet", by the EUROSCREEN working group. Journal of Medical Screening 2012, volume 19, supplement 1.

[2] The EUROSCREEN working group included representatives of nine European countries: Denmark, Germany, Italy, France, Norway, Spain, Sweden, The Netherlands, United Kingdom.

[3] The EUNICE working group included representatives from 18 European countries: Belgium, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Italy, Luxembourg, Norway, Poland, Portugal, Republic of Ireland, Spain, Sweden, Switzerland, The Netherlands, United Kingdom.

[4] Financial support was provided by the National Monitoring Italian Centre to host EUROSCREEN meetings and the supplement publication, and by the National Expert and Training Centre for Breast Cancer Screening, Nijmegen, The Netherlands to host a EUROSCREEN meeting.

Provided by Queen Mary, University of London

Citation: First comprehensive review of European breast cancer screening programs finds benefits outweigh harm (2012, September 12) retrieved 27 April 2024 from <https://medicalxpress.com/news/2012-09-comprehensive-european-breast-cancer-screening.html>

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