

AgeX Trial

May 2020

Completion of randomisation into the AgeX trial, with follow-up continuing throughout the 2020s

The UK Breast Screening Programme routinely invites women aged 50-70 years for triennial screening. Because of uncertainty about the effects of screening outside this age range, a cluster-randomised trial (AgeX) was established in April 2009 to assess reliably the risks and benefits of one extra screening invitation before age 50 and, separately, of one extra invitation after age 70.

Random allocation of small clusters of participants was used to determine (in a 50:50 ratio) which younger women would be offered one additional screen before age 50 and which would not, and which older women would be offered one additional screen after age 70 and which would not. Recruitment was embedded in the NHS Breast Screening Programme in England, involved five-sixths of its 78 breast screening units, and has over the past decade involved a total of 4.4 million women.

Following the suspension of routine breast screening in March 2020 due to COVID, and the expected overload on breast screening services when screening eventually re-starts, the AgeX investigators decided in May 2020 that randomisation into AgeX should cease permanently. The trial itself will not cease, however, as follow-up by electronic linkage to routine government records will continue throughout the 2020s and beyond. For breast cancer mortality the first report will be on the follow-up to 2026, after which there will be subsequent reports on longer follow-up.

When recruitment ended, a total of some 4.4 million women had been randomly allocated to be sent or not to be sent one additional screening invitation. Although the intent had been to continue until about 6 million had been recruited, 4.4 million will, with sufficiently long-term follow-up, suffice.

Follow-up is by electronic linkage to routine government health records to assess the short-term and long-term effects of additional screening on: detection and treatment of breast lesions; breast cancer incidence; breast cancer mortality; hospital admissions for various reasons; hospital procedures; and cause-specific mortality. The primary analyses of breast cancer mortality will examine separately women offered screening before age 50 and after age 70, eventually sub-divided by the oestrogen receptor status of the cancer and by 5-year time periods (0-4, 5-9, 10-14 years) since randomisation.

The 2018 Independent Enquiry into the nationwide delivery of breast screening issued its final report in December 2018, recommending that AgeX should continue “until its planned end in 2026”, and formal Government statements in both Houses then accepted this recommendation. But, although recruitment was to have ended in 2026, electronic follow-up was not, and should continue indefinitely.

Over the past decade, establishment of the AgeX trial has been a remarkable achievement by the NHS and the resource-constrained breast screening clinics throughout England, collaborating through Oxford University’s Nuffield Department of Population Health. Now AgeX has become the largest randomised trial of any treatment ever conducted, and recruitment has ended. Over the next decade, because of the excellence of the UK electronic medical records now available to researchers, long-term follow-up will, at little further cost, yield uniquely reliable evidence that is of worldwide relevance about the effects of an additional screening invitation on breast cancer mortality.

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