



## London Borough of Enfield

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<b>Report title</b>	<b>Health Visiting, Breastfeeding and Women's Health (Screening) Appendix 1 – Balancing the benefits and harms of screening</b>
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Because investigations are never 100% effective there are three risks associated with screening programmes. First, there is the risk of a “false negative” – this is where the test indicates low risk but the individual subsequently develops the disease. This can cause harm because the individual may be falsely reassured by the screening test and ignore subsequent symptoms of disease.

The second risk is the risk of a “false positive” – this is where the screening test indicates high risk but the individual does not have a disease. Although the individual does not have the disease they are still at risk of harm. Alongside the psychological harm associated with worrying about a potentially serious illness there is also the risk of physical harm from follow-up investigations that attempt to confirm the screening result.

Finally, a similar risk exists for individuals who would have only developed a mild or nonprogressive case of the disease which would never have caused them symptoms or harm but who are identified by screening. This is known as overdiagnosis and is depicted in Figure 1A. Screening tests cannot predict the likelihood that an early case of a disease is likely to progress or not and most people opt for further investigations and treatment. For individuals with mild disease this can lead to unnecessary treatment (overtreatment), which again comes with the risk of psychological and physical harms.

Because of these risks it is important that screening programmes are only implemented when there is good evidence that the benefits of screening outweigh the potential harms. This requires, amongst other things, a disease process that has an early asymptomatic stage, an investigation that minimises both “false negatives” and “false positives”, an investigation that is tolerable to the population, and an effective treatment for the disease.

In the UK, all NHS screening programmes are evaluated and approved by the UK National Screening Committee which applies a modified version of a set of medical criteria known as the Wilson and Jungner criteria. These criteria (of which some examples are given above) list the important factors that must be considered to ensure a screening programme is effective. Figure 2A depicts the assessment of this balancing for breast screening using the best available evidence.

Figure 1A – Screening and the relationship with cancers of varying aggressiveness<sup>1</sup>

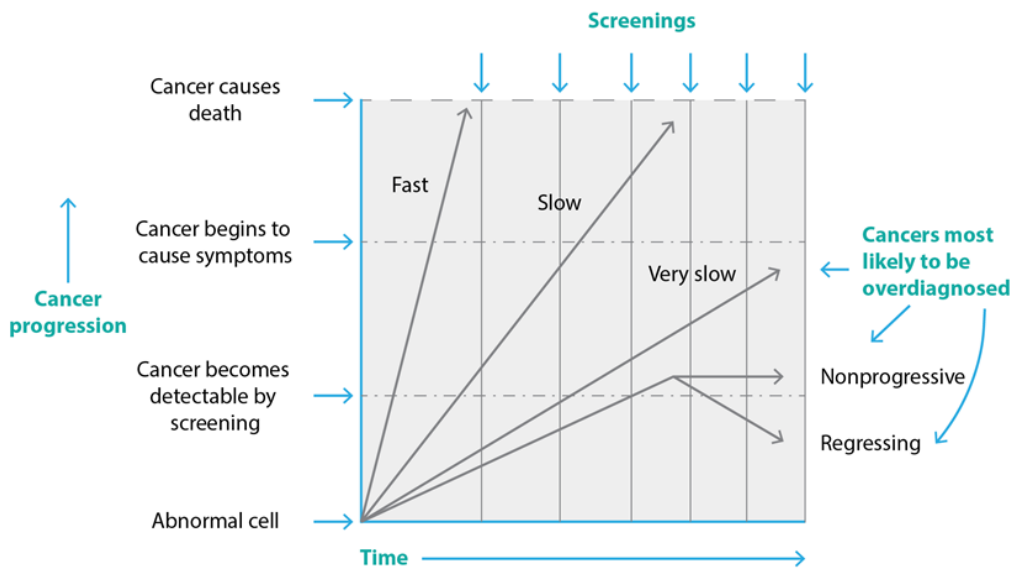
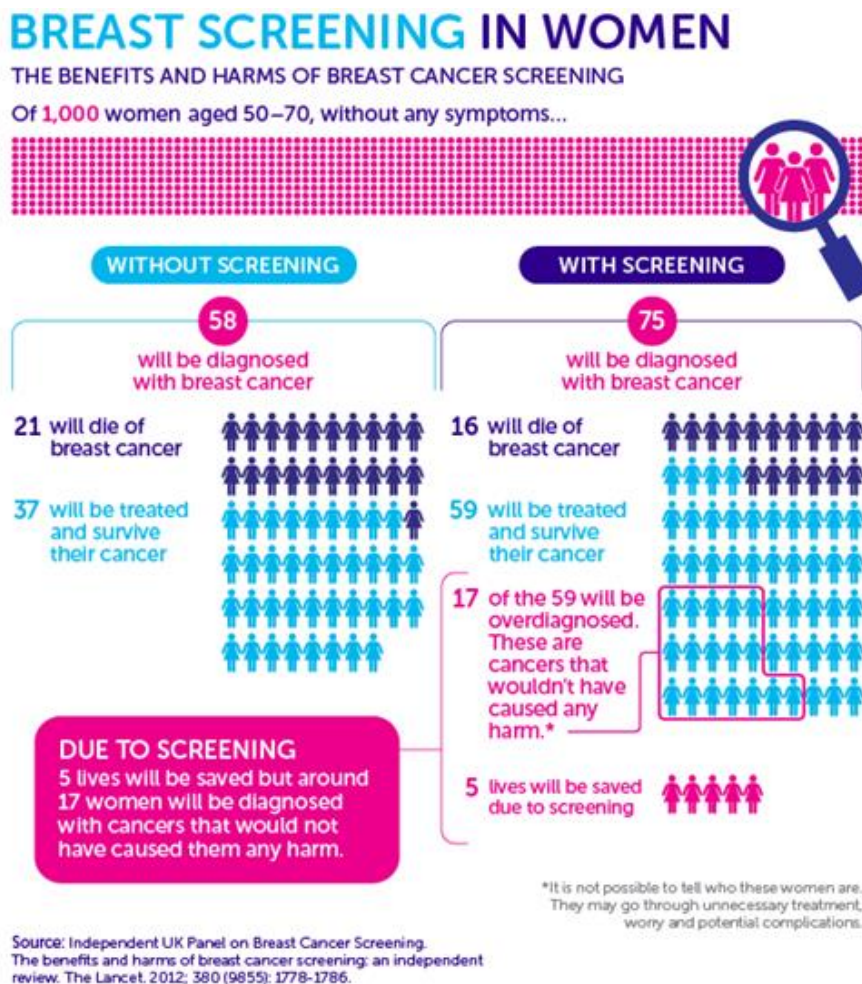


Figure 2A – The benefits and harms of breast cancer screening<sup>2</sup>



<sup>1</sup> Carter SM, Barratt A (2017) [‘What is overdiagnosis and why should we take it seriously in cancer screening?’](#) Public Health Research & Practice

<sup>2</sup> Cancer Research UK (2018) [‘Overdiagnosis: when finding cancer can do more harm than good’](#)