



Briefing note: Commercial imaging screening tests

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Background

Commercial screening tests are recognised by the World Health Organisation as a commercial determinant of health:

- “The promotion of non-evidence-based screening tests is not regulated and is a growing concern, particularly as direct-to-consumer laboratory tests become increasingly available, notably through the internet (digital marketing). Companies heavily promote packages of screening tests that individuals can purchase regardless of their age and risk factors. **Private clinics market “full check-ups” to health-conscious consumers, typically involving blood tests and full-body imaging.** Most of these screening tests and procedures are conducted without any valid medical indication, and their sensitivity/specificity is unclear. **Furthermore, their capacity to reduce the incidence or mortality of NCDs is absolutely not demonstrated.** These tests are not part of any established screening pathway nor are they subject to a quality assurance scheme; therefore, if an abnormal result is detected, it can lead to all sorts of diagnostic procedures and overtreatment. Many of the unnecessary diagnostic procedures and treatments resulting from such “wild screening” are not only costly but **can also cause mental and/or physical harm to individuals who were originally in good health”** (1)

The UK National Screening Committee has a robust method of evaluating new technologies and will recommend screening which is likely to be of benefit; of commercial companies, they say

- "Often they only offer a test. If an individual then receives an abnormal finding from the test, it is up to them to seek any advice, possible further investigation or treatment. Often the tests will need to be repeated by the NHS.
- **Companies may offer screening that is not evidence-based.** This means there are no reliable studies confirming that it leads to improved health outcomes for those screened. Companies often promote screening as simply offering peace of mind.
- Often there is no quality assurance, meaning the tests might not be the same everywhere.”

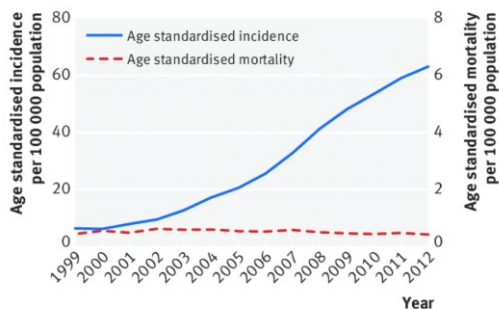
Real world problems:

Incidental findings in imaging screening tests are common:

- 17% of brain MRIs have an 'abnormality' (US study, 13.3% no follow up recommended, 3.7% follow up recommended, uncertain outcome, ie overdiagnosis/lead time bias) (2)
- MRI of the lumbar spine shows 'abnormalities' in over half of asymptomatic people (3)
- CT scans of asymptomatic research volunteers in imaging studies show incidental findings in almost 40% of people (4) . The researchers considered that in a handful (9 out of 1376 volunteers) there was a 'clear benefit' in an earlier diagnosis; however, this does not prove that screening was beneficial, because they may be subject to lead time bias - without the scan, the diagnosis may have been made later but with the same outcome for the patient.

These can lead to overdiagnosis and over treatment

- Classical case is of screening for thyroid cancer; a rise in diagnosis without benefit is the classical finding; screening started in 1999 (5). Surgery and radiotherapy that is not going to help you can only harm you.



https://www.researchgate.net/figure/Trends-in-incidence-of-and-mortality-from-thyroid-cancer-in-South-Korea-1999-2012-The_fig1_311239896



The “peace of mind” promised may not transpire, for example:

false positives in breast cancer screening are associated with negative psychosocial outcomes (6)

false positives in PSA screening are associated with increased anxiety (7)

false positives in lung cancer screening result in more negative psychosocial outcomes (8)

and scans are not helpful for telling if you are 'getting away' without eating well, or drinking too much, or smoking.....they cannot provide that kind of reassurance.

And even finding something 'early'....

Unless we have a control group, we can't say that equal outcomes would have happened without the screening test. It is tempting to conclude that the test was helpful if we 'find' something - but if we do enough tests, things will always be found. The question is always whether that is a useful finding for the patient. Because of the amount of false positives, it usually is not.

The health service

Commercial companies often 'hand back' results to GPs to deal with - even though your GP would not have recommended these tests. That means there are fewer appointments left for people who are unwell. There has been a lack of research into how big an impact is on the NHS private screening companies have, but even as far back as 2018, most NHS GPs had patients wanting to discuss the results of private health screening, and thought the vast majority of tests that had been done were inappropriate (8). This means that while the companies benefit, patients do not.

- 1) Commercial Determinants of Noncommunicable Diseases in the WHO European Region, 12/6/24
- 2) UK National Screening Committee 21/11/23 NHS and commercial health screening tests: important considerations <https://www.gov.uk/government/publications/uk-nsc-commercial-screening-test-considerations/nhs-and-commercial-health-screening-tests-important-considerations>
- 3) P.A. Rowley, M.J. Paukner, L.B. Eisenmenger, A.S. Field, R.J. Davidson, S.C. Johnson, S. Asthana, N.A. Chin, V. Prabhakaran, B.B. Bendlin, B.R. Postle, H.H. Goldsmith, C.M. Carlsson, M.A. Brooks, N.H. Kalin, L.E. Williams, H.A. Rowley Incidental Findings from 16,400 Brain MRI Examinations of Research Volunteers American Journal of Neuroradiology Mar 2023, DOI: 10.3174/ajnr.A7821
- 4) Jensen MC, Brant-Zawadzki MN, Obuchowski N, Modic MT, Malkasian D, Ross JS. Magnetic resonance imaging of the lumbar spine in people without back pain. N Engl J Med. 1994 Jul 14;331(2):69-73. doi: 10.1056/NEJM199407143310201. PMID: 8208267
- 5) Park S, Oh C, Cho H, Lee J Y, Jung K, Jun J K et al. Association between screening and the thyroid cancer “epidemic” in South Korea: evidence from a nationwide study BMJ (2016) *BMJ*;55 :i5745 doi:10.1136/bmj.i5745
- 6) Brodersen J, Siersma VD. Long-term psychosocial consequences of false-positive screening mammography. Ann Fam Med. 2013 Mar-Apr;11(2):106-15. doi: 10.1370/afm.1466. PMID: 23508596; PMCID: PMC3601385
- 7) Katz DA, Jarrard DF, McHorney CA, Hillis SL, Wiebe DA, Fryback DG. Health perceptions in patients who undergo screening and workup for prostate cancer. Urology. 2007 Feb;69(2):215-20. doi: 10.1016/j.urology.2006.09.059. PMID: 17320653; PMCID: PMC1868466
- 8) Letter, RCGP, to the Science and Technology Committee, 7/10/19 <https://www.parliament.uk/globalassets/documents/commons-committees/science-technology/Correspondence/191007-Professor-Helen-Stokes-Lampard-RCGP-to-Chair-Re-DTC-Genomics.pdf>