

TESTING TREATMENTS

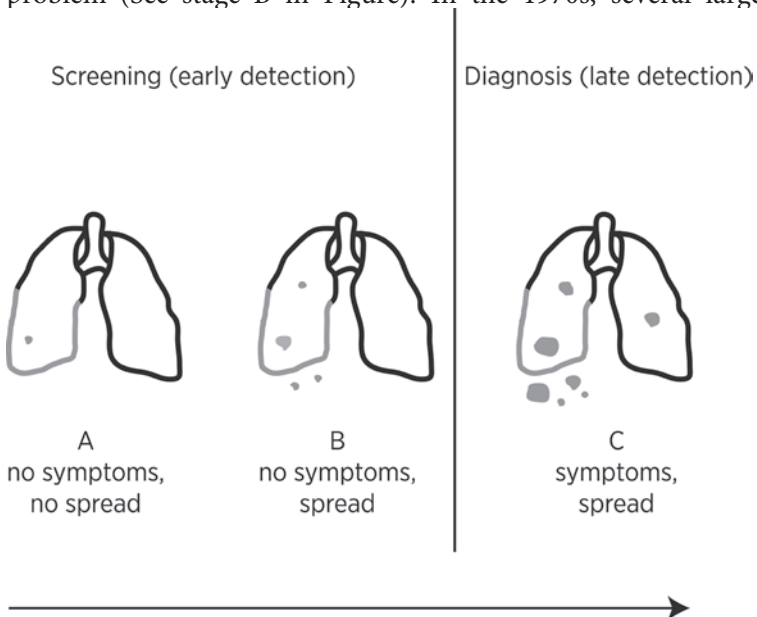
Chapter 4, 4.2.5 EAR IS NOT NECESSARILY BETTER

confront reality and stop the inappropriate use of PSA screening. Doing so would save billions of dollars and rescue millions of men from unnecessary, debilitating treatments'. At the very least, any man, before undergoing PSA testing, should be informed of the test's limitations and possible adverse consequences. As one group of experts noted: '[men] should be advised that the test cannot tell [them] whether they have a life-threatening cancer but that it could lead them through a thicket of tests and treatments that they might have better avoided.'¹⁸

Lung cancer screening: early but not early enough?

Screening may detect disease earlier, but not always early enough to make a difference (see Figure).

Some cancers, for example lung cancer, spread within the body before the patient has any symptoms and before any tests can detect the presence of the cancer. Attempts to detect lung cancer by the use of chest X-rays illustrate this problem (See stage B in Figure). In the 1970s, several large



Growth and spread of lung cancer in heavy smokers.

SELLING SCREENING

'Selling screening can be easy. Induce fear by exaggerating risk. Offer hope by exaggerating the benefit of screening. And don't mention harms. It is especially easy with cancer — no diagnosis is more dreaded. And we all know the mantra: early detection is the best protection. Doubt it, and someone may suggest you need your head examined.

"If you are a woman over 35, be sure to schedule a mammogram. Unless you're still not convinced of its importance. In which case, you may need more than your breasts examined." Old American Cancer Society Poster.

Messages selling screening are everywhere. The news regularly tells the story of celebrities asserting that their lives have been saved because of the early diagnosis of a cancer. It is very unusual to hear stories of those injured by overdiagnosis and overtreatment.

Popular magazines report emotionally charged but wholly unrepresentative stories about young women with breast cancer and their fears of dying and leaving their young children.

Medical centers use screening as a business strategy, offering free tests to attract patients. Public service announcements — like the American Cancer Society's slogan above — speak for themselves.'

Woloshin S, Schwartz LM. Numbers needed to decide.
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showed that, although the cancers were detected earlier, there was no evidence this led to a decrease in deaths from the disease. The lung cancers detected on the X-rays had already spread beyond the lungs. So, these patients lived longer with their cancer diagnosis and were treated earlier, but there was no evidence that it made any difference to their life expectancy.

More recently, a large randomized trial involving 53,000 current and former heavy smokers compared chest X-ray

screening with screening by a special sort of computed tomography (CT) scan called a spiral CT. Both groups were assigned to three annual screening procedures. Spiral CT diagnosed lung cancers at an even earlier stage than did chest X-rays, and in a small proportion of patients this was sufficiently early (stage A in Figure) for treatment to be of benefit (346 deaths from lung cancer in the spiral CT group vs 425 in the chest X-ray group). But this beneficial outcome came at the expense of a large proportion of people wrongly labelled with lung cancer. Overall, for every 1,000 heavy smokers who had three annual X-rays or scans, over eight years of follow-up, three fewer died of lung cancer. But 13 still died of lung cancer despite earlier detection, and 233 received a false-positive result that required further investigation.¹⁹

Genetic tests: sometimes useful, often dodgy

Not so long ago ‘genetic testing’ was more or less confined to generally rare, single-gene disorders – for example, the childhood-onset muscle-wasting disease Duchenne muscular dystrophy, or Huntington’s disease, a progressive nervous system disorder that usually starts to affect people in middle age. Genetic tests are done to diagnose such conditions but can also be used to screen healthy people whose family history indicates that their chances of developing the disorder in question are above average, and to guide their family plans.

However, most diseases cannot be attributed to a single faulty gene. Usually, diseases depend on the way in which risk variants in several genes interact, and on the interaction of these genetic risk variants with environmental factors. Only when there is a ‘critical’ combination of genetic risk variants and environmental factors will a disease become apparent.¹

Despite the complexity of ascribing most conditions to aberrant genes, media and promoters of direct-to-consumer genetic testing extol the supposed virtue and simplicity of genetic risk profiling. All you need to do is send off a saliva sample to a company for DNA analysis and they will take your money and send you your profile. But the information you receive is unlikely to help you – or your clinician – make any sensible predictions