

# TESTING TREATMENTS

## Chapter 4, 4.2.4 TESTING TREATMENTS

when both these methods have also been shown to result in more harm than benefit.<sup>12</sup>

A British public health expert noted that the potential for individual benefit from mammography is very small. He remarked: ‘this is not widely understood. In part this is due to obfuscation from organisers of mammography services assuming that a positive emphasis is needed to ensure reasonable compliance [with screening]’. Assessing the available evidence in 2010, he commented: ‘Mammography does save lives, more effectively among older women, but does cause some harm.’ The harms he is referring to are overdiagnosis and false positives. Critically, he observed that full examination of all the individual results from recent screening studies had yet to be examined dispassionately.<sup>13</sup> While such an impartial evaluation is awaited, women continue to be invited for mammographic screening. At the very least, they need to be given sufficiently balanced information to enable them to decide (together with their family and their doctor if they wish), whether to attend for screening – or not.

### **Prostate cancer screening: clear harms with uncertain benefits**

Prostate cancer is the second most common cancer in men worldwide,<sup>14</sup> and broadly falls into two types. Some men have an aggressive form of the disease; these dangerous cancers spread rapidly and the death rate is high. But many men have slow-growing cancers that would never progress to cause a danger to health during a man’s lifetime. Ideally, a screening test would detect the dangerous cancers – with the hope that they could be treated – but not the slow-growing ones. The reason is that treatment of any sort of prostate cancer risks distressing side-effects such as incontinence and impotence – a heavy price to pay if the cancer would not have caused problems in the first place.<sup>15</sup>

Blood levels of a substance called prostate-specific antigen (PSA) are raised in most men with prostate cancer. However, there is no clear cut-off level that will distinguish between men who have cancer and those who do not,<sup>16</sup> and as many as one in five men with clinically significant cancers will have normal PSA levels. Moreover, despite its name, PSA is anything but ‘specific’

### OVERDIAGNOSING PROSTATE CANCER

'Prostate cancer has been described as the *par excellence* example of overdiagnosis. This does *not* mean that there are not men whose lives are saved from early death from prostate cancer by early diagnosis. But . . . we have little way of knowing in advance *which* men will benefit from screening and which will be unnecessarily treated, often with serious adverse consequences to their life. The fundamental problem is that by screening and testing for prostate cancer we are finding many more prostate cancers than we ever did before, and strange as it may seem, many of these cancers would never become life threatening. In the past these men would never have known they had prostate cancer, they would go on to die of something else, dying *with* their prostate cancer, rather than *because of* it. By finding all these prostate cancers that are indolent we are giving many more men a prostate cancer diagnosis than ever before. Hence the term "overdiagnosis". This is the core dilemma that each man contemplating being tested faces.'

Chapman S, Barratt A, Stockler M. Let sleeping dogs lie? *What men should know before getting tested for prostate cancer*. Sydney: Sydney University Press, 2010: p25

– for example, non-cancerous prostate tumours, infections, and even some over-the-counter pain-killers can cause raised PSA levels. On these grounds alone, PSA clearly has serious limitations as a screening test.

Yet routine PSA testing of healthy men has been enthusiastically promoted for prostate cancer screening by professional and patient groups and by companies selling the tests, and has been widely adopted in many countries. The pro-PSA-screening lobby has been especially vocal in the USA, where it is estimated that, each year, 30 million men are tested, believing that this is the sensible thing to do. So what is the evidence that earlier detection of prostate cancer with PSA screening improves a man's outcome;

## DISCOVERER OF PSA SPEAKS OUT

'The test's popularity has led to a hugely expensive public health disaster. It's an issue I am painfully familiar with - I discovered PSA in 1970. . . .

Americans spend an enormous amount testing for prostate cancer. The annual bill for PSA screening is at least \$3 billion, with much of it paid for by Medicare and the Veterans Administration.

Prostate cancer may get a lot of press, but consider the numbers: American men have a 16 percent lifetime chance of receiving a diagnosis of prostate cancer but only a 3 percent chance of dying from it. That's because the majority of prostate cancers grow slowly. In other words, men lucky enough to reach old age are much more likely to die with prostate cancer than to die of it.

Even then the test is hardly more effective than a coin toss. As I've been trying to make clear for many years now, PSA testing can't detect prostate cancer and, more important, it can't distinguish between the two types of prostate cancer - the one that will kill you and the one that won't.'

Ablin RJ. The great prostate mistake. *New York Times*, 10 March 2010.

and what is known about harms associated with testing?

High-quality evidence about the benefits and harms of PSA screening is now becoming available. In 2010, the results from all relevant trials were systematically reviewed. This assessment showed that, although PSA screening increased the likelihood of being diagnosed with prostate cancer (as would be expected), there was no evidence of an impact on either the rate of death from the cancer or the overall death rate.<sup>17</sup>

So, is the tide turning against PSA screening? Richard Ablin, the discoverer of PSA, certainly thinks it should and has been saying as much for years. Writing in 2010, he commented 'I never dreamed that my discovery four decades ago would lead to such a profit-driven public health disaster. The medical community must

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'.<sup>18</sup>

#### 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 studies in heavy smokers

**Growth and spread of lung cancer in heavy smokers.**