# Myth Busters

## Myth: *Early Detection is Good for Everyone*

Sometimes patients schedule annual visits to health professionals even if they don't have any symptoms, because clinicians might discover something with their specialized knowledge and technologies that enable "early detection" of illness. Doctors and advocacy organizations often encourage this screening of healthy people, in the belief that it is good practice.

Unfortunately, many widely used tests are not very accurate, or they find conditions for which there is no effective treatment. At worst, the leave patients worse off then they were before.

### *No clear answers*

Evidence-based guidelines suggest that instead of an annual health check-up, for which there is no evidence, doctors should tailor screening to individual patient health profiles and move to "opportunistic" screening—taking the time to talk about prevention and screening when patients come see them for an acute problem.[1-4]

According to some researchers, doctors should also focus screening on people who can benefit the most, provide follow-up treatment and monitor their patients' compliance with medical recommendations. Finally, they should screen only for conditions that cause serious illness or functional difficulties and only when an accurate test and effective treatments are available.[5]

Of course, no test is 100% accurate. If a condition is very rare in the population being screened, the false-positive rate will be high. Even with common conditions, prevalence will still be low enough to lead to many false-positives. These false results cause stress and anguish for patients who do not actually have the condition.[6,7] A test that provides a false-negative result is also problematic, as it can lead to complacency and a false sense of security—for example, a common urine dipstick test to detect diabetes could fail to do so in four out of every five patients who have the disease.[8,9]

Another problem with many screening tests is "lead-time bias"—the test could discover a disease before the patient feels ill, but it does not actually extend the patient's life. This early detection can artificially inflate survival time by moving up the diagnosis date, making the test appear to be useful, even though mortality doesn't in fact change.



## Exhibit A: *The PSA test*

Early detection is often an important strategy in the fight against cancer, particularly with cancers that are aggressive and must be found early to improve the patient's odds of survival. However, one of the more widely used tests—to detect prostate cancer, a relatively slow-growing form of cancer—is quite problematic.

The prostate-specific antigen (PSA) test does not detect cancer itself—only a biopsy can do that—but rather, levels of a protein produced by the prostate gland, which is associated with prostate cancer. The test itself leads to treatment for many cases of cancer that, if left alone, would never become life threatening.

Advocates often claim that since the PSA test was introduced, deaths from prostate cancer have dropped, but mortality rates started falling well before the PSA test could have had an effect.[10-12] The test is not recommended for widespread screening of men without symptoms, largely because of its high false-positive rate. Patients receiving a false-positive result can suffer anxiety and they may have to undergo painful and unnecessary follow-up treatments that can have severe side effects, such as impotence and incontinence.[10,11,13,14]

More importantly, research to date shows that patients with prostate cancer who take the test have no better odds of surviving than patients who don't. This includes a recent study of more than 71,000 men, which found similar mortality among screened patients compared to unscreened patients.[15] A Canadian study also estimated that only 16% of tested men with prostate cancer would have their lives extended by treatment. The rest would have died of another cause before the cancer had a chance to become lethal.[16]

## EXHIBIT B: *Prenatal screening for Down syndrome*

Another popular strategy for early detection is to look for genetic abnormalities in fetuses early in the pregnancy to find birth defects and other problems. The tests were often recommended for women older than 30, where birth defects were common.

To screen for Down syndrome, women can choose to undergo amniocentesis in the second trimester. The test result could be quite accurate, although it will not indicate whether the genetic abnormality is mild or severe. The problem is the lack of an effective treatment option—the only treatment available by the time the results come back would be therapeutic aborting, which clinicians are reluctant to provide at this stage of pregnancy. And, while other screening procedures can be used in the first trimester, they are associated with greater rates of miscarriage and complications.[17]

## *Conclusion*

Before any specific test is put into widespread use, patients and practitioners need to consider whether it is worthwhile and accurate and whether they would be empowered to do something with the results.

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