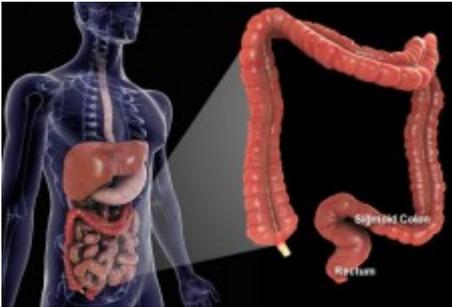


Screening Works for Some Cancers, While Overall Mortality Up

By Gil Ross — January 14, 2016



We've all been regaled doctors, the public, everyone with

advice about getting tested to "prevent cancer," also known as cancer screening. The most commonplace such tests are mammograms and the PSA test for breast and prostate cancer, respectively.

We've seen the anecdotes, about how her life was saved by a timely mammogram, or his by an only-slightly-elevated PSA level. Now they are "cancer survivors." But what is the evidence to show that those (and other) screening tests actually *save lives* a far different metric from reducing deaths due to the specific cancer being screened for. (And by the way, there has never been a test to "prevent cancer." At best, screening detects earlier or smaller cancers but does nothing to prevent their occurrence.)

Spoiler alert: the evidence is flawed or absent for most types of cancer. An article in the [recent edition of BMJ](#) ^[1] calls for a mini-revolution in how physicians and the public think of screening tests for cancer. The article is entitled, "Why cancer screening has never been shown to 'save lives' and what we can do about it," by Dr. Vinay Prasad of the Knight Cancer Institute, Oregon Health and Science University, Portland, OR, and two co-authors. (A thorough discussion of these data and its ramifications is to be had at [Med Page Today](#) ^[2]).

"Using disease-specific mortality as a proxy for overall mortality deprives people of information about their chief concern: reducing their risk of dying," the authors note in their study, which was based on their meta-analysis of 12 large screening trials. They found that even when a screening technique does lower *disease-specific death rates* (which were of modest degree anyway even when detected), there are no differences in overall mortality.

The authors proposed three possible explanations for why screening does not seem to improve overall mortality that is, save lives even in the face of reducing deaths from the specific disease being screened for:

- "Screening trials were underpowered to detect differences." (On the other hand, if a screening trial requires hundreds of thousands of subjects to detect a benefit, doesn't that mean the benefit, if any, is small?)
- "Downstream effects of screening may negate any disease-specific gains." (That means that the harms of screening may and often do outweigh any potential benefits. Screening always causes some harm, including anxiety awaiting test results. But harms escalate to include unnecessary procedures, biopsies, surgical interventions for "lesions" that would never have come to awareness absent the screening, toxic treatments for indolent lesions, impotence and incontinence, the list goes on.)
- "Screening might not reduce overall mortality because of off-target deaths." (Deaths that are not due directly to either the screening nor the disease being sought, but would not have occurred absent the test. An example is suicide after a diagnosis of breast, prostate or lung cancer in which the cancer detected would never have been a threat.)

This result echoes that of a large Stanford University [meta-analysis](#) [3] led by Dr. John Ioannidis and published in the *International Journal of Epidemiology* last year, titled "Does screening save lives in asymptomatic adults?"

Its conclusion: "Among currently available screening tests for diseases where death is a common outcome, reductions in disease-specific mortality are uncommon and reductions in all-cause mortality are very rare or non-existent."

An [editorial in BMJ](#) [4] regarding the Prasad article by Dr. Gerd Gigerenzer of the Max Planck Institute in Berlin posited several reasons why both doctors and people believe screening is so important:

"Benefits are overstated and harms downplayed. These including using the term 'prevention' instead of 'early detection,' thereby wrongly suggesting that screening reduces the odds of getting cancer. Reductions in relative, rather than absolute, risk are reported, which wrongly indicate that benefits are large. And reporting increases in 5-year survival rates wrongly implies that these correlate with falls in mortality."

From my own perspective, as some combination of physician, regular guy, and public health communicator, and based on ACSH's own writings, I'd say this advisory is super-important, in the generality. I however would continue to advise smokers and recent quitters to get their spiral CT lung scans, and for everyone over 50 to get their periodic colonoscopy. I believe these screening tests do save lives, and reduce suffering.

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Links

[1] <http://www.bmj.com/content/352/bmj.h6080>

[2] http://www.medpagetoday.com/HematologyOncology/OtherCancers/55638?xid=NL_breakingnews_2016-

01-13&eun=g321946d0r

[3] <http://ije.oxfordjournals.org/content/44/1/264.abstract>

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