

The evolving art of screening

In Preventive Medicine, "secondary prevention" generally refers to screening, practices aimed at identifying disease, or risk factors for disease, before symptoms occur. With the constant development of new screening tests, technologies, and methods, including genetic screening tests for cancer risk, your choices are getting both better, and tougher. So best to have a bit of inside information. My first advice to you is to understand that more is not always better, whether it refers to medicine, technology, or even information. With regard to information from screening tests, it is generally useful only if it serves as a basis for action, or some decision. If we can screen for a disease we don't know how, or whether, to treat, what is the good of such information? A generally accepted prerequisite for screening is that the information be tied to a choice, or an action. Before you ask to be screened, not after, is the time to discuss what you can do with the information.

Another issue with regard to screening is whether you are actually learning something you didn't already know. For example, there is lots of attention on various types of CAT scans of the coronary arteries to learn about heart disease risk. But, of course, we already have lots of ways to learn about heart disease risk, such as cholesterol, and HDL, and blood pressure, and weight, and diet, and smoking status, and so on. This is not to say that the CAT scan is not valuable, but rather, the information we have long been able to get ought not to be tossed out every time a new technological advance is made. If your cholesterol and blood pressure are high, if you are sedentary, eat poorly, and/or smoke, you are at risk of heart disease, and should do something about it if so inclined, with or without a CAT scan. Again, a screening test should add

valuable information; it is of limited use if it simply "repeats" what we already know.

Perhaps the thing you are most likely to overlook if you have the sense that more information is always, or at least often, better, is that such information can at times be wrong. The probability that a screening test will give you misinformation depends not only on the test, but on you. Here are some examples.

Consider that you are at very low risk of a disease, say 1 in a thousand (not unrealistic for many diseases for which we screen), and you undergo a test that finds disease when it is there 95% of the time, and rules out disease when it is not there 95% of the time (an excellent test). If this test is positive, your chance of having the disease is 2% (I'll spare you the math; trust me!). If negative, this test is much more reliable; the chances of you being free of disease with a negative test are 99.9%. But of course, you only had a 1 in a thousand risk to start.

If your risk is much higher (say, for example, you have multiple risk factors for heart disease and are deciding about the CAT scan), such as 1 in 3, a test with similar properties will yield very different information. A positive result means a 90% probability of disease.



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The bottom line: many screening tests are of tremendous value and could even save your life, but not every test is a test you should have. Ask in advance about risks, benefits, and how the information could be used. Then make informed decisions to get maximal benefit from the increasing sophistication of modern preventive practice.

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