

## Screening for disease Part 1

*"Things are seldom what they seem, skim milk masquerades as cream..." (Sir WS Gilbert).*

We all think screening is a "good idea"- after all early detection of disease gives the best chance of cure. Doesn't it? Well, maybe, sometimes, but the process of science is to sort out fact from opinion and often what is true is not what we think or expect to be true.

A number of years ago some very well done research showed conclusively that women who do a ritual monthly breast self-examination do *worse* than women who don't. Counter-intuitively, rote monthly breast self-exam is not just useless but actually *harmful*, but just to illustrate how hard it is to break thinking patterns that are ingrained and seem logical, the response of one of the breast cancer associations was to say that women should do it anyway! NO!! What part of harmful didn't they understand? And in what possible way can it do more harm than good?

It is complicated, but the researchers identified that BSE does not find lumps that are more treatable than those found by women who just notice them in the shower, and that women who practiced BSE had more biopsies, more surgery, more anesthetic and more complications including some deaths because surgery and anesthesia are never 100% safe- all for NO benefit. So harmful it is.

So I will start with a story, and in the next couple of columns I'll explore the science and try to explode some of the myths surrounding screening, and promote those screening tests that actually show benefit.

My brother-in-law Bill works in a large company that "treats" its high-ups to an "executive physical" every year. He and his wife had promised themselves a vacation in the Far East and had bought tickets to Viet Nam, and were excited to go and busy planning the adventure. A week before the trip he went in for his routine executive physical. As part of it he had a chest x-ray. Never mind that every reputable organization responsible for setting guidelines for screening tests has shown the routine chest x-ray to be useless, never mind that there is good evidence NOT to do it, never mind that Bill had NO complaints or symptoms related to his chest and is in excellent health overall - it was done. And it found he had a condition called spontaneous pneumothorax (SP) - a condition than can lead to serious breathing complications when flying. So Bill was informed, and advised not to fly until it had healed. The trip was canceled, insurance forms filled out; an annoyance and a disappointment, but better than possible death.

The treatment in people with no symptoms is to let nature take its course - these things resolve as spontaneously and mysteriously as they come. All he needed was to have his chest x-ray repeated periodically to ensure that the air was being absorbed naturally by the body. He recovered, was cleared to fly a few months later and the next year he and his wife went on their postponed vacation without incident. "All's well that ends well" wrote Shakespeare.

So why bring this up? Well, spontaneous pneumothorax is not such a rare condition. In some groups, like college students and military personnel it may be as high as 470 per million people per year. And these are only the cases we know about. Clearly, as in Bill's experience some people never have symptoms and so are never diagnosed, and never appear in the statistics. If we estimate how many people have SP without knowing it and fly without being screened, we ought to see 152 people a day carted off planes with serious problems. So clearly SP is not as dangerous as it seems - many people who have it never know and fly anyway. If we wanted to

screen for it we couldn't just have everyone get a chest x-ray when they buy their ticket - Bill had bought his ticket 6 months earlier. The only way is to have every passenger go through the x-ray machine along with their hand luggage!

So this brings up the first questions about screening. What should we screen for? When and how often should it be done? And another question - if you had a positive screen for a cancer that we could guarantee would not kill you, and in fact would not even produce symptoms in your lifetime, would you be happy knowing, or better off not knowing? Talk amongst yourselves... we'll explore more next month.