

Cancer Screening

What is a cancer?

Most people have a fairly good idea of the traditional view of cancer. This states that a cancer is an uncontrolled growth of tissue in the body that causes symptoms such as a lump or pain, and can lead to death. For most of these cancers there is some form of treatment available such as surgery, chemotherapy or radiotherapy. The commonsense view is that it is a good idea to find these cancers as early as possible so that they can be treated and hopefully cured before they become too advanced. This is what screening is: looking for cancer in people who have no reason to suspect that they have it. Unfortunately the situation is not so simple.

Cancers are classified and identified according to the appearance of minute samples looked at with a microscope. So when a lump is removed that seems to be a cancer, the diagnosis can be checked by examining a small fragment. This also means that it is possible to identify tiny cancers from body tissue that otherwise looks quite normal and is not causing any problem whatsoever. The harder one looks, the greater the chance of finding these microscopic collections of cancer cells. So we are now finding more and more cancers like this, and the problem is that once they have been found, we do not know what to do about them.

What can happen to cancers only found by screening?

So what happens to these microscopic cancers? There are three possible outcomes:

- These tiny collections of cells will grow bigger until they form an obvious lump, cause symptoms, or kill the patient.
- The cells continue to grow slowly but never cause any symptoms because the patient dies of something else.
- The cells stay the same and do not increase significantly in number.
- The cells die by themselves because they are abnormal or are killed off by the body's own natural defences.

So the cancers in the last three groups we would never had known about if we had not started looking for them. The main problem is that when one of these microscopic cancers is found, we do not know to which group it belongs. So if a cancer is found in you that falls into one of the last three groups then all the testing, anxiety, treatments and side effects will have been a complete waste of time. You, however, will feel that the cancer has been beaten and your life has been saved. This problem of finding and treating cancers that would never have caused any problem is called overdiagnosis.

Cancer screening is your choice

It may well be that because we cannot predict into which group you would fall, that you would rather risk unnecessary investigation and treatment because there is a chance that you would fall into the first group. Only large clinical trials can give us an idea of the possible

risks and benefits of screening. For example recent studies suggest that for cancer of the prostate for every 1000 men who undergo screening with PSA tests, somewhere between 0 and 1 will avoid death in the next 10 years from prostate cancer because of screening, although about 110 will be diagnosed with the condition and receive treatment.

Only you can decide whether or not to undergo screening for cancer. Good balanced information is not always available, and the screening industry employs a lot of people who feel that what they are doing is of great benefit and are uneasy about being challenged. So there will always be a lot of pressure on you to undergo screening, but nobody can make you take part if you do not wish to.

For some cancers such as prostate or breast we have quite good information, but for others it is very limited.

Breast Cancer

There have been many studies looking at the benefits of mammography screening, and the experts do not always reach the same conclusions because the possible benefits are so small. The treatments now are so effective that most cancers that are found as a breast lump can be treated very effectively, so the benefit of finding them earlier is minimal. The small number of very aggressive breast cancers that spread quickly and kill are unlikely to be picked up on routine mammography screening.

- There is a lot of information available now but it can be bewildering for a woman deciding whether or not to have screening. A good starting point is an article written by Dr Iona Heath, the past president of the Royal College of General Practitioners, explaining why she has chosen to decline the offer of breast screening. It is available through the link on this page on the Kingstone surgery website as is further information on the publications listed below. (If you are not able to print this or any others yourself from the internet please ask me.)
- According to the Independent UK Panel for Breast Cancer Screening that reported in 2012, it appears that for every 180 women who undertake breast screening, one life will be saved at the cost of treating three people in whom the cancer would never have caused any problems. This means that if you or a friend are found to have a cancer on a screening mammogram there is a three out of four chance that any treatment (which could include surgery, radiotherapy or chemotherapy) would have been completely unnecessary.
- Another piece of research published in 2013 by researchers at the University of Oxford suggested that mammography screening has no benefit at all. You can read a report about this here.
- The NHS breast screening leaflet is sent out to those invited for screening and is available on their website
- More information about the problems of overdiagnosis in breast cancer is available in the leaflet produced by the Nordic Cochrane Centre. Below is a summary produced from this information:

Breast Cancer Early Detection

by mammography screening

Numbers for women aged 50 years or older who participated in screening for 10 years

	1,000 women without screening	1,000 women with screening
Benefits		
How many women died from breast cancer?	5	4
How many women died from all types of cancer?	21	21
Harms		
How many women without cancer experienced false alarms or biopsies?	–	100
How many women with non-progressive cancer had unnecessary partial or complete breast removal?	–	5

Source: Gøtzsche, PC, Jørgensen, KJ (2013). *Cochrane Database of Systematic Reviews* (6): CD001877.
Numbers in the fact box are rounded. www.harding-center.de

Where no data for women above 50 years of age are available, numbers refer to women above 40 years of age.

Gigerenzer G *BMJ* 2014;348:bmj.g2636

The whole area of overdiagnosis is a controversial one and not all doctors agree. I have written about this because it is something that I do feel strongly about. The opinions expressed are my own personal ones.

Dr Jonathan Sleath
Kingstone Surgery

Further Reading and Resources:

Welch, H.G. "Overdiagnosed: Making people sick in the pursuit of health" 2011