

The Pros and Cons of

PSA TESTING for PROSTATE CANCER

This pamphlet provides information to assist men in making an informed decision about using the PSA (prostate specific antigen) test for detection of prostate cancer.

The Pros and cons of PSA for detection of prostate cancer

The PSA blood test for early detection of prostate cancer has been available for some years. There is some debate at the moment on the benefits of using this test in men who show no signs of cancer. The reason for the controversy is that the PSA test does not yet meet the generally accepted criteria for a screening test. However, we know that the PSA test is the best way to detect prostate cancer at an early stage of the disease, when there is a good chance of cure.

This pamphlet is designed to give you the information you need to discuss the pros and cons of using PSA for the early detection of prostate cancer with your doctor before making your own decision.

The Prostate: what, where, why

The prostate is a small gland, the size and shape of a walnut. It is below the bladder and in front of the rectum and surrounds part of the urethra, the tube carrying urine from the bladder. The prostate creates fluid that carries sperm during ejaculation.



Problems?

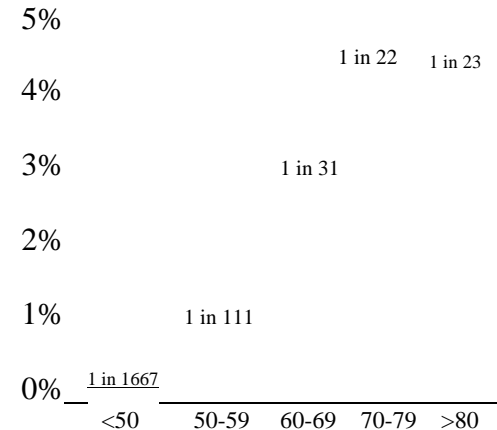
The most common prostate problems are:

- Age-related prostate enlargement – called benign prostate hyperplasia (BPH).
- Inflammation of the prostate (prostatitis), which may be caused by infection
- Prostate cancer

What is my risk?

Prostate cancer is the most frequent type of cancer in men, and the second most common cause of cancer death. It generally affects men over 60 years of age. As you grow older, your chance of getting

prostate cancer increases, as shown in the graph below, which shows your risk of developing prostate cancer **in the next five years** based on your current age.



The cancer is frequently confined to the prostate gland alone, and may cause no problems. In fact, most men with prostate cancer die from other causes. But prostate cancer can turn into a very serious disease when it invades other parts of the body. It can cause discomfort, pain and eventually death.

A 50-year-old man who would be expected to live until age 77, has a 4 in 10 risk of developing microscopic prostate cancer sometime in his lifetime, a 1 in 8 chance of having cancer diagnosed, and a 3 in 100 chance of dying of it.

Signs or symptoms to look for

There are no specific symptoms that enable prostate cancer to be detected at an early stage. You should talk to your doctor if you have difficulties in urinating, or urinating more frequently. Most of the time, however, these are symptoms of prostate enlargement, not cancer.

Men who have a relative who has already had prostate cancer are at a higher risk of developing prostate cancer themselves.

Why test for Prostate Cancer?

Prostate cancer is a serious condition, and like most cancers, the chance for cure is best when diagnosed early before the onset of symptoms. However, not all prostate cancers need to be treated, and there is a need to uncouple diagnosis with treatment.

There are two methods of detection for prostate cancer: checking the prostate using a digital rectal examination (DRE) and the PSA test. Feeling the prostate by DRE is the simplest, but is not particularly effective. Used alone, it may miss about 50% of cancers and is therefore inadequate for screening purposes.

What is PSA?

PSA testing is a blood test to determine prostate-specific antigen (PSA) levels in the blood. PSA is a protein produced only by the prostate, and high or low PSA levels can indicate whether there is cancer activity or not. PSA testing also has certain limits.

Combining the PSA test and DRE is currently the most effective means of detecting prostate cancer, and can identify most early stage cancers. The chance that a man with a normal PSA and DRE has a significant prostate cancer is very low.

Even if the test shows an increased PSA level or the DRE is abnormal, it does not necessarily mean that cancer is present. In fact, approximately 70% of men with one abnormal result do not have prostate cancer. However, if PSA levels are > 10 $\mu\text{g/L}$ or both test results are abnormal, there is a 50% chance that cancer will be found.

What happens if my PSA is elevated?

If either your DRE or PSA test is abnormal, the next step is a transrectal ultrasound (TRUS) and biopsy. Biopsy of the prostate consists of inserting a needle into the prostate through the front wall of the rectum and removing fragments

of prostate tissue, which are then examined under a microscope. Local anaesthetic is used but it can cause a certain degree of discomfort. No hospitalization is required, and the complication rate is very low.

What would happen if a biopsy finds prostate cancer?

On the average, about 1 in 4 men with a PSA between 4 – 10 and 2 in 3 men with a PSA greater than 10 will have a biopsy positive for cancer.

Every case of prostate cancer requires unique treatment approaches depending on a person's age, health, and grade of cancer. When the cancer is confined to the prostate, curative treatment using surgery or radiation is often recommended:

- Radical prostatectomy is the complete surgical removal of the prostate
- Radiotherapy uses radiation to destroy the cancer cells. The radiation may be given from the outside (external beam radiation) or from the inside (brachytherapy), where radioactive seeds are implanted directly into the prostate gland
- Hormone therapy may also be used, alone or in combination with radiation or surgery
- Active Surveillance. When the cancer is deemed to be low risk, especially

in men not expected to live more than 10 years, no treatment may be necessary. Instead the cancer should be monitored.

Benefits and limitations of treatment

Most men with early stage prostate cancer will be cured by treatment. Overall about 1 in 6 men with prostate cancer die of it, but where the cancer is caught early that falls to less than 1 in 10. Recent studies indicate that men < 65 years of age treated with surgery, compared to watchful waiting, have improved prostate-specific and overall survival. For early prostate cancers the success rates of surgery and radiotherapy are similar, and the treatment that might be best for you needs to be decided in consultation with a urologist and a radiation oncologist.

The most common complications of the surgical treatment include a risk for some degree of incontinence (inability to retain urine), and some loss of erectile function (impotence). With radiotherapy, there is also a risk of impotence, and a possibility of radiation-induced irritative bowel or urinary symptoms from inflammation of the rectum and/or bladder.

Can prostate cancer be prevented?

Unfortunately, we do not yet fully understand the cause of prostate cancer, nor how to prevent it. Some studies suggest that a high-fat diet (especially red meat) increases risk, and a diet rich in vegetables, fish, and soy products may provide protection. Eating a healthy diet is good advice for many other reasons as well!

Does PSA Testing really help?

Based on medical knowledge today, we cannot answer this question definitively. PSA testing, which is the most accurate means of detection, offers both advantages and disadvantages. Large-scale studies are underway to determine whether widespread PSA testing can decrease prostate cancer mortality.

Since the onset of PSA testing, the number of men diagnosed with metastatic disease has fallen dramatically. As well, prostate cancer mortality has fallen substantially. While earlier diagnosis from PSA testing has likely contributed to this trend, other factors are involved. In the meantime, there is consensus among experts that men should be informed about the benefits and risks of the test to help them make their own decision whether to have it or not.

Benefits of PSA Testing?

- It may provide reassurance if normal
- If you have prostate cancer then PSA testing, combined with a DRE, is the most effective way of detecting it, usually years before symptoms appear
- Most cancers detected in this way are found “early” before they have spread beyond the prostate, in which case a cure is more likely. If treatment is successful, the consequences of more advanced cancer is avoided
- Men whose prostate cancer is detected later (when PSA is very high, or when the cancer has clearly spread outside the prostate), may benefit from earlier treatment with hormone therapy with or without radiotherapy
- Early treatment diagnosis and treatment may improve survival rates for patients with intermediate or high-grade cancer

Downside of PSA Testing?

- May lead to unnecessary anxiety and medical tests when no cancer is present
- May increase the number of prostate biopsies, which can cause discomfort,

and a small chance for an infection requiring treatment by antibiotics

- Opting for “active surveillance” if cancer is diagnosed may also bring on anxiety and uncertainty
- May detect slow growing (silent) cancer that may never bother you or shorten your life span, which may lead to unnecessary treatments that have side-effects

Know what the numbers mean

If you do get tested, ask your doctor for your PSA number and keep a record. Knowing where you stand helps you take care of yourself. You may not need to be tested every year if the first two test results are well within the normal range. As any one result may be high for other reasons (infection, recent ejaculation, etc.) an abnormal result should always be checked.

Check our age on the chart to find the typical PSA level for your age.

Age	
40-49	less than 2.5
50-59	less than 3.5
60-69	less than 4.5
70-80	less than 6.5

PSA rises with age. The rate of increase is also important, and any change above a normal slow increase with age needs to be checked out. If your PSA is over the typical number or has suddenly jumped, ask your doctor if the increase is of concern.

Recommendations

The BC Cancer Agency and The Prostate Centre at VGH recommends that men should be informed about the benefits and limitations of use of PSA and DRE for early detection of prostate cancer. If, after making your informed decision, you chose to have a PSA test, then we recommend it be done once annually for 2-3 years, and if normal and stable, it can then be done every 2-3 years.

Remember:

- Routine PSA and DRE should not usually start before 45 years of age
- You should be in reasonably good health with a life expectancy of at least 10 years. PSA testing should usually stop around age 75, (but it is important that men over 75 with symptoms see their doctor)
- You should be prepared to undergo a biopsy of the prostate if the PSA level or rectal examination is abnormal

- If the biopsy reveals prostate cancer is present, you should be prepared to choose between several treatment options. If a low-grade tumour is involved, one option will be active surveillance

Your doctor is the best person to answer your questions and help you to decide what is best for you. Get your doctor’s input before you decide if you should be tested.

More information?

- BC Cancer Agency
604-675-8003
1-888-675-8001, Local 8003
www.bccancer.bc.ca/PSAScreening
- Canadian Cancer Society
1-888-939-3333
www.bc.cancer.ca
- The Prostate Centre at VGH
www.prostatecentre.com
- BC Foundation for Prostate Disease
www.bcprostatecancer.org
- Canadian Prostate Health Council
www.canadian-prostate.com
- Canadian Prostate Cancer Network
www.cpcn.org

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background information about PSA
screening may also be found.*