

# Controversy about PSA Screening for Prostate Cancer.

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## ABOUT OUR ORGANIZATION

PROSTAID Calgary is a not-for-profit, self-funded society founded in 1993. We are registered in Alberta as Prostate Cancer Canada Network Calgary Society. We are one of the largest survivor-based prostate cancer support groups in Canada. PROSTAID Calgary speaks to issues concerning men's health, particularly prostate cancer. PROSTAID Calgary does not give medical advice. We encourage all men to speak openly with their family members and health care professional about any personal health issues.

PROSTAID Calgary's mission is to:

- Help and support men and their families as they deal with prostate cancer,
- Educate and inform men and their families about prostate cancer, and
- Build awareness and advocate in the community about prostate cancer.

Our programming is free and offered to the public via:

- Three focus groups that meet monthly – Newly diagnosed / Active Surveillance; Warriors (advanced disease) and Ladies, Partners and Caregivers. These focus groups meet in private.
- Monthly general meetings with presentations by health care experts. We video record these presentations and have 95 posted on our YouTube channel at "PCCN Calgary". Since Dec 15, 2011, these videos have been viewed more than 42,800 times.
- Our PROSTAID Calgary / PCCN Calgary website. Since being launched in Feb 27, 2008, it has been visited more than 140,800 times.
- Our journal *The Digital Examiner* is distributed monthly to over 1300 members and professionals interested in prostate cancer.
- Our print and video Knowledge Library is freely available to members and the public.

## THE CONTROVERSY – PSA Screening to assess risk of prostate cancer.

In Canada, prostate cancer is the most common male malignancy and the third most common cause of cancer death in men. From March 1-3, 2016, Calgaryans were introduced to vastly divergent views concerning the use of the prostate-specific antigen (PSA) test and PSA screening prior to a cancer diagnosis to assess a man's risk of prostate cancer.

This latest discourse about PSA screening followed publication by Dr. Dickenson from the University of Calgary and co-authors of the article "*Trends in prostate cancer incidence and mortality in Canada during the era of prostate-specific antigen screening*" in the Canadian Medical Association Journal OPEN (Dickenson, 2016). The article presented data depicting prostate cancer incidence and mortality in Canada from 1969 – 2007 in relation to the introduction of the PSA test.

Trends in prostate cancer incidence and mortality in Canada have been reported many times since the PSA test was introduced in late 1980s (Morrison et al, 1995, Nam and Klotz, 2007; Kachuri, 2013).

In the USA, early detection through the use of serum PSA testing has resulted in an 80% decrease in the proportion of men with metastases at diagnosis and a >45% decrease in the age-adjusted prostate cancer mortality rate today, compared with the same statistics in the pre-PSA era prior to 1991 (Reinhardt and Catalona, 2013).

In Europe, the Gothenburg randomized population-based prostate cancer screening trial started in 1994 illustrates the benefit of organized PSA-screening, which reduced prostate cancer mortality. However,

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single men, men with low socioeconomic status, and men with low education were more likely to absent for screening during follow-up. It was felt that an organized screening program may reduce such socioeconomic inequalities (Godtman, 2016).

In their recent 2016 article, Dickenson *et al.* sought to describe secular changes in the Canadian epidemiology of prostate cancer. In particular, they examined these trends in incidence and mortality in relation to the onset of PSA testing. They concluded:

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- Incidence of prostate cancer was increasing before PSA screening occurred, but rose further after it was introduced, and
- Reduction in prostate cancer mortality began before PSA screening was widely used, and was larger than could be anticipated from screening alone.

Dickenson *et al.* suggested that:

- Screening caused artefactual increase in incidence, but no more than a part of the reductions in prostate cancer mortality, and
- The reduction may be due to changing treatment or certification of death.

At the beginning of March, 2016, Dr. Dickenson spoke to two radio stations about the article and the authors' conclusions concerning their analysis. Overall, our organization believes the article makes only a limited contribution to helping to resolve the controversy concerning the utility of the PSA test to assist in screening for prostate cancer risk.

During his radio interviews, Dr. Dickenson voiced the same extreme position that he and his co-authors took as members of the 2014 Canadian Task Force on Preventative Health Care recommending against prostate cancer screening for men of the general population. The concern of the 2014 Task Force was that PSA screening offered little benefit, and set the stage for significant harms to be incurred by men as a result of over-diagnosis and over-treatment of an indolent (slow growing) form of prostate cancer that would be unlikely to develop into an aggressive cancer and cause death.

The Task Force acknowledged that PSA testing:

- Be discussed with men at increased risk of developing and dying from prostate cancer, including men of the black race, and men with a family history of prostate cancer, and
- Has a legitimate place in the clinical diagnosis, treatment, and management of prostate cancer.

Of great concern to PROSTAID Calgary were the Task Force recommendations **for men who have not previously been diagnosed with prostate cancer**. For these men, the Task Force and specifically Dr. Dickenson recommends:

- For men aged less than 55 years, **not screening** for prostate cancer with the PSA test. (*Strong recommendation; low-quality evidence.*),
- For men aged 55–69 years, **not screening** for prostate cancer with the PSA test. (*Weak recommendation; moderate-quality evidence.*), and
- For men 70 years of age and older, **not screening** for prostate cancer with the PSA test. (*Strong recommendation; low-quality evidence.*)

The Task Force relied on the results from two large clinical trials to develop their recommendations. Unfortunately, the trial designs and implementation of the clinical work were not free of problems. As a result, the data for the purposes of the Task Force was low quality and therefore definitive analysis and recommendations were compromised.

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After the Canadian Task Force's recommendations were released, Murray Kraun, MD of the Department of Medicine and Faculty of Pharmacy, University of Toronto wrote the following in a solicited article for the Canadian Medical Association Journal:

*If the Canadian task force's guideline panel had been composed solely of sociologists, psychologists, and ethicists, my bet is that we would have heard more about patient choice and empowerment. If the panel had comprised health economists and decision analysts, we would have heard about preference-sensitive decisions and cost-effectiveness. As it stands, the task force's guideline provides a good summary of the data on the effectiveness of prostate cancer screening and a reasonable review of the rate at which potential harms occur.*

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Kraun's concluding points were:

- Recommendations for clinical practice should be based not only on evidence of outcomes (which the Task Force attempted to address), but also on patient preferences, social values, and costs to the health care system (which the Task Force did not address),
- Patient preferences, particularly for preference-sensitive decisions, require attention, formal study, and weight in clinical and policy decision-making, and
- Whether to screen for prostate cancer is a preference-sensitive decision.

According to Kraun, there was not enough evidence to mount an organized screening program. However, the falling overall mortality in some countries that screen intensively, the evidence that treatment may have a very modest disease-specific mortality benefit, and the highly variable preferences for treatment outcomes suggested that patients should not be pushed out of decision-making in this area.

## Melbourne Consensus Statement

Various conflicting guidelines and recommendations about prostate cancer screening and early detection have left both clinicians and their patients quite confused.

At the Prostate Cancer World Congress held in Melbourne in August 2013, a multidisciplinary group of the world's leading experts in this area developed a set of consensus statements to bring some clarity to the confusion.

The five consensus statements below provide clear guidance for clinicians counselling their patients about the early detection of prostate cancer.

Consensus Statement 1: For Men Aged 50–69 Years, Level 1 Evidence Shows that PSA Testing Reduces the Incidence of Metastatic Prostate Cancer and Prostate Cancer-Specific Mortality Rates.

Consensus Statement 2: Prostate Cancer Diagnosis Must be Uncoupled from Prostate Cancer Intervention.

Consensus Statement 3: PSA Testing Should Not Be Considered on Its Own, But Rather as Part of a Multivariable Approach to Early Prostate Cancer Detection.

Consensus Statement 4: Baseline PSA Testing for Men in Their 40s is Useful for Predicting the Future Risk of Prostate Cancer and Its Aggressive Forms.

Consensus Statement 5: Older Men in Good Health with a >10-year Life Expectancy Should Not Be Denied PSA Testing Based on Their Age

### Where Now for Calgary Men and Their Families

What do the Canadian Task Force for Preventative Health Care and Dr. Dickenson's recommendations against PSA screening for prostate cancer say to men? Forget about the early detection of prostate cancer. Visit your family doctor only if you have pain, urinary blockage, etc. Tough luck if your urologist confirms you have high risk advanced prostate cancer and even metastatic prostate cancer. Suck it up and be tough, because your disease by then may well not be curable.

For PROSTAID Calgary and our members, the Task Force recommendations make no sense. To say no to any form of PSA screening, while not providing options or proposing an improvement process for everyone to consider, was irresponsible. The Canadian Task Force on Preventative Health Care blew it. It had a unique opportunity to take a collaborative, multidisciplinary approach to its work, but it didn't. Quite frankly, it is hard to see how the Task Force's recommendations against PSA screening for the early detection of prostate cancer are consistent with "preventative health care".

Family doctors are the gatekeepers to specialists in our Canadian health care system and to prostate cancer diagnosis and care. PROSTAID Calgary strongly believes that family doctors should use all the tools available to help them assess their patients' prostate cancer risk.

Our members know that:

- The PSA test is simply a blood test and is safe to administer,
- While the PSA test may not be the 'perfect' test, it is a valuable tool as part of 'smart' screening and risk assessment (McDonald and Parsons 2015),
- The PSA test for risk assessment is most useful when the test is repeated over several years starting when a man is 40 or older. The trend of the PSA number over time is more important than an individual result until a threshold PSA number is reached,
- Yes, much research is underway to develop new biomarkers. Unfortunately, it appears that new biomarkers to replace the PSA test are unlikely to appear in Alberta hospitals for many years,
- Without fail, a small percentage of men having their PSA tested at a public PSA clinic will learn that they have an elevated PSA that requires further study,
- These men are advised to visit their family doctor for a check-up, which might include a digital rectal examination (DRE), a second PSA test, discussion of the results, and an opportunity to talk about the potential benefits and risks of the next steps and treatment options,
- After speaking with one of our members, many men without any symptoms decide to visit their family doctor for a checkup, only to learn that they have an abnormal DRE and/or an elevated PSA that needs confirming by a prostate cancer specialist,
- Men with significant symptoms who present to their family doctor may have an advanced or incurable form of the disease,
- PROSTAID Calgary knows of too many of our living members, and those who died from prostate cancer, who missed the chance to catch their disease early, while there was still a chance to treat their disease with 'curative' intent,
- Treatment for prostate cancer, whether an indolent or an aggressive form, is only ever started after a diagnosis of prostate cancer has been confirmed by specialists,
- Treatments for prostate cancer are scaled to the aggressiveness of the disease and proceed only with patient consent. Any treatment can be stopped if a patient so desires, and
- Side effects of treatments do occur and can be difficult to deal with. In extreme instances, side effects of treatment may even be life threatening.

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PROSTAID Calgary knows from its members' experience that above the process is conducted in Calgary with diligence and concern for the well-being of the patient. We are not so naïve as to understand that there has never been over-diagnosis and over-treatment of indolent disease. Prostate cancer is in most instances a slow growing disease. That is why we counsel men to take time to learn about the disease, their diagnosis, and their treatment options. Out of our 1000 members, PROSTAID Calgary is certain to have a survivor that can lend support to a man newly diagnosed with prostate cancer. While we do not give medical advice, we have no hesitation pointing a man to our Knowledge Library and to a survivor who started his journey living with prostate cancer with a similar diagnosis and set of treatment options.

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Active surveillance is a clinical process to monitor low risk disease and to initiate active treatment if the cancer progresses. The clinical process was developed by Dr. Laurence Klotz of the University of Toronto more than 15 years ago specifically with the intent of reducing overtreatment of low risk prostate cancer. Clinical data concerning active surveillance is now very mature (Klotz, 2015). Treatment trends indicate a significant increase in the use of active surveillance for low risk prostate cancer. For example, the proportion of men with low-risk prostate cancer in Canada and no record of surgical or radiation treatment (a potential indicator of the use of active surveillance) rose to 69.9% in 2013 from 46.1% in 2010 (Tran *et al.* 2016).

PROSTAID Calgary has informed members and the public about PSA screening and active surveillance for more than 10 years. Our Knowledge Library and YouTube channel at "PCCN Calgary" has information about both topics for men, their wives and partners, and caregivers.

## Background about the PSA test

1. The PSA test has been around for a long time:
  - PSA was first measured quantitatively in blood by Dr. Lawrence Papsidero in 1980.
  - Stamey, *et al.* were one of the first clinical research teams to study the clinical use of PSA as a marker of prostate cancer. In 1987, they reported use of an immunoassay to quantify the PSA level in 2200 blood samples from 699 patients, of whom 378 patients had prostatic cancer. PSA was elevated in 122 of 127 patients with newly diagnosed, untreated prostatic cancer, including 7 of 12 patients with unsuspected early disease and all of 115 with more advanced disease. After radical prostatectomy, patients' PSA fell to undetectable levels. In six patients followed post-operatively by means of repeated PSA tests, PSA was useful in detecting residual and early recurrence of tumor and in monitoring responses to radiation therapy.
  - Stamey, *et al.* however also found that PSA was increased in 86% of those patients diagnosed with benign prostatic hyperplasia (BPH).

Therein lies part of the problem with use of the PSA test as a screening tool to assess risk for prostate cancer – the PSA test is not specific for prostate cancer – the test also detects PSA resulting from BPH.

2. Within Canada's publicly funded healthcare system, provincial government guidelines do not support prostate cancer screening with the PSA test, despite national primary care and specialist groups taking a more favorable position (Nam and Klotz, 2009). However, surveys among patients and physicians indicate that prostate cancer screening is widespread. Methods of prostate cancer screening mainly consist of the PSA level, the free-to-total PSA ratio, and digital rectal examination (DRE). Nomograms\* based on Canadian-based cohorts are being used and evaluated in the context of a prostate cancer screening program. Factors such as age, ethnicity, family history of prostate cancer, and urinary symptoms are being incorporated in PSA evaluations to assess an individual's risk for prostate cancer.

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\*Prostate cancer nomograms are prediction tools designed to help patients and their physicians understand the nature of their prostate cancer, assess risk based on specific characteristics of a patient and his disease, and predict the likely outcomes of treatment.

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