

PSA: Friend or Foe?

Maybe you heard media reports earlier this year about PSA testing for prostate cancer. Results published in the March 2009 New England Journal of Medicine involved studies in the United States and Europe comparing men that were or were not screened for prostate cancer with the PSA test.

Despite the initial findings recently available, the studies are ongoing. So far, the results developed from averages in large groups of men, suggest that PSA screening helps some men, but other men then receive unnecessary treatments.

Statistical interpretations can be confusing and need to be carefully evaluated. A study of 77,000 men in the United States indicates that regular PSA screening did not save a significant number of lives over 10 years. A study of 182,000 men in Europe suggests a 20 percent reduction in deaths among those screened regularly. In that study, according to researchers, 48 men had to be treated for every life saved.

Prostate cancer screening, and treatment for that matter, is an evolving science. Variability exists between screening and treatment approaches. It is widely acknowledged that the PSA is an imperfect test, and better diagnostics and interpretations of results are needed to avoid unnecessary treatments. However, the PSA test still has value to some men.

Beyond the news stories discouraging men from prostate cancer screening, APCaP wanted to provide additional perspectives—prostate cancer survivor and patient advocates and urologists.

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Read about the future of prostate cancer screening in an interview with H. Ballentine Carter, MD from John Hopkins on page 4.

Survivor & Patient Advocate Perspective

Media stories about recently published studies on the PSA said that prostate tests save few lives and screening can lead to risky and unneeded treatments.

Running through the news articles is a fascination with numbers, not human lives. “But the number of lives saved was small— seven fewer prostate cancer deaths for every 10,000 men screened,”



states one news article. Examining this criterion for 259,000 men screened, the “small” figure was 206 lives— men who might be fathers, sons, or dear friends.

According to the American Cancer Society’s Cancer Facts & Figures 2009, improvements in prostate cancer survival, particularly at 5 years, are partly due to earlier diagnosis and treatment improvements. Over the past 25 years, the 5-year prostate cancer survival rate for all stages combined increased from 69 percent to almost 99 percent. Relative 10-year survival is 91 percent and 15-year survival is 76 percent.

What is the value of one human life, or ten, or 100, or 200, 1,000, or more? PSA testing clearly saves some lives. This point is de-emphasized in media stories about the study results.

In some if not many news reports, there was no mention of African-Americans or genetically endangered patients with inherited prostate cancer. Researchers need to measure the efficacy of PSA testing in these specific groups of men. After all, one in four African-American men will be affected by prostate cancer compared to one in six men overall.

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APCaP promotes prostate cancer awareness, education, and advocacy. Special emphasis is directed toward prostate cancer prevention strategies for healthy men in their 40s and 50s. APCaP supports these strategies through a quarterly newsletter, a website, physician-led educational lectures, exhibits at national meetings, patient peer counseling, as well as fundraising events. In addition, APCaP's board members serve as representatives on local, regional, state, and national prostate cancer related boards, commissions, committees, and advisory boards.

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More Red Meat Equals More Disease

Are you a carnivore? Americans are known for eating red meat in abundance. In fact, Americans consume around four times more meat and dairy than the rest of the world. Now, study results following a million people offers more compelling evidence about disease risk from red meat intake.

People who ate red meat daily had a higher risk of dying over a 10-year period than their peers who eat less red or processed meat. People who ate the most red meat daily (equivalent to a quarter-pound burger or small steak per day) had about a 30 percent greater risk of dying compared with those who consumed the least amount of red meat. Deaths were primarily attributed to cardiovascular disease and cancer.

The red meat in the study included all types of beef and pork, including bacon, cold cuts, ham, hamburgers, hot dogs, and steak, as well as meat in pizza, chili, lasagna, and stew.

Processed meats were also examined. Those who ate the largest amounts of processed meat in bacon, red-meat sausage, poultry sausage, cold cuts, ham, regular hot dogs, and low-fat hot dogs also had a slightly higher mortality risk than those who consumed the least.

Study researchers estimate that 11 percent of deaths in men and 16 percent of deaths in women during the study could have been prevented by reducing consumption of red meat.

Based on their findings, the study authors recommend that people replace high-fat red and processed meats with protein-rich foods such as fish, beans, eggs, and low-fat dairy, as well as filling half a plate with vegetables and a quarter with meat to keep portions in control.

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PSA RECOMMENDATIONS:

As a reminder, healthy men over 50 should have an annual PSA blood test. However, African Americans and people with a family history of prostate cancer should begin testing between ages 35 and 40.

Reducing Toxic Exposures

Today's food supply contains many pesticides. A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating pests. Pesticides have not always been used on foods. Conventional farming was organic until the 1940s when farmers began using pesticides.

Think about it. The food you eat contains chemicals that are used to kill bugs. Don't you think that a substance that can kill pests might also harm you?

The health impacts from using pesticides in the food supply are still being studied. So far, scientific studies show that pesticides harm human health and the environment, and often at doses previously declared "safe" by the pesticide industry and the government.

Pesticides have been linked to cancer, nervous system, and hormone dysfunction, as well as skin, eye and lung irritation, according to U.S. and international government agencies.

The majority of the U.S. population has detectable concentrations of multiple pesticide residues in their bodies, according to several research studies through groups such as the Environmental Working Group (EWG) and the Centers for Disease Control and Prevention.

What can you do? It is best to eat a varied diet of organic foods and wash all produce and especially non-organic foods. Washing and rinsing fresh produce may reduce levels of some pesticides, but it does not

eliminate them. Peeling also reduces exposures, but valuable nutrients are lost when foods are peeled.

Depending upon where you live, your regular grocery store may have an organic section, and you may have a nearby health food store or a local farmer's market.



The Shopper's Guide to Pesticides from the Environmental Working Group's Food News lists foods with the highest and lowest levels of pesticides.

The produce ranking is based on an analysis of 87,000 tests for pesticides on these foods, conducted from 2000 to 2007 by the U.S. Department of Agriculture and the Food and Drug Administration.

People can lower their pesticide exposure by almost 80 percent by avoiding the top twelve most contaminated fruits and vegetables and eating the least contaminated instead, according to an Environmental Working Group study. People that eat the Dirty Dozen are exposed to approximately 10 pesticides daily and 3,650 annually. People that eat the Clean 15 are exposed to approximately 3 pesticides daily and 730 annually.

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Improving Prostate Cancer Screening

APCaP recently spoke with H. Ballentine Carter, MD, Professor of Urology, Oncology at Johns Hopkins Medicine and Director, Division of Adult Oncology at Brady Urological Institute. In the aftermath of recent American and European PSA study results, the discussion focused on the future of prostate cancer screening. Dr. Carter is an internationally recognized expert in the diagnosis and treatment of prostate disease.



“As the second leading cause of male cancer deaths in the United States, prostate cancer is a devastating disease. There is no question that PSA screening saves lives. But, prostate cancer is dramatically overdiagnosed and overtreated. There are benefits and harms—these are the two extremes. Physicians and patients need to understand this and focus on how to reduce the harm,” said Dr. Carter.

Understanding PSA Screening

To help reduce current misunderstanding about the PSA, Dr. Carter clarified news stories reported earlier this year.

“In mid-March, a lot of men woke up, read their newspapers, and felt extremely confused. Based on news headlines casting doubt on routine prostate cancer screening through the PSA, men had to decide whether or not to have the test,” explained Dr. Carter.

Men will not be able to understand the study results without comprehending the basic components of the study design. A randomized clinical trial assigns people into two or more groups. In the PSA studies, men were placed in a screening or non-screening group. The random assignment into one group or another is designed to create equal distribution for scientists to compare both groups. However, study results become contaminated when the groups are not equal due to age, genetics, and other factors.

Prostate cancer is the second most common form of cancer diagnosed among American men.

In the National Cancer Institute Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial (PLCO), there was no difference in mortality found between the two groups of men that compared screening and non-screening. Since it is difficult to recruit a non-screening group in the United States, men in both groups had been screened for prostate cancer before. The two groups were therefore more alike than different and that impacted study results. Also, since the follow up time period of the study was relatively short, there were few prostate cancer deaths in both study groups, and that was the outcome researchers wanted to measure.

In the European Randomized Study of Screening for Prostate Cancer (ERSPC), there was a 20 percent reduction in mortality in the screening arm. The significant cost of PSA testing is illustrated through 70 percent more men that were diagnosed with prostate cancer in the screening versus non-screening groups. These cancers never would have been diagnosed without screening. This overdiagnosis with some overtreatment is the major concern of PSA testing.

“Comparing the effectiveness of screening over one decade between prostate, breast, and colon cancers also shows the high rates of prostate cancer overdiagnosis, overtreatment, and need for better strategies,” said Dr. Carter.

Prostate Cancer Screening

- ◆ 1,400 men need to be screened for prostate cancer to prevent one death
- ◆ 48 men need to be treated for prostate cancer to prevent one death

Breast Cancer Screening

- ◆ 1,200 women need to be screened for breast cancer to prevent one death
- ◆ 10 women need to be treated for breast cancer to prevent one death, which means 5 times fewer women need to be screened than men screened for prostate cancer to prevent one death
- ◆ 15 to 20 percent mortality reduction

Colon Cancer Screening

- ◆ 1,000 people need to be screened for colon cancer to prevent one death
- ◆ 20 to 30 percent mortality reduction

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Improving Prostate Cancer Screening *(continued from page 4)*

Future of Prostate Cancer Screening

“To continue saving lives while reducing the harm of overdiagnosis and overtreatment from the PSA, the future of prostate cancer screening needs to include better interpretation of the PSA, screening reductions in older men, active surveillance, and new diagnostic strategies,” explained Dr. Carter.

1. Better Interpretation of the PSA

Physicians need to use the PSA test more judiciously and interpret it better. The current approach to PSA is that if it reaches a certain number, a biopsy is done. This approach results in too many false positives. In the European PSA study, three out of four men had these false alarms that trigger unnecessary biopsies.

Another way to interpret a PSA is to assess the history in men over 10 to 15 years. Men with a life threatening disease have more rapid rises in PSA than men who do not. This information, interpreted correctly, allows doctors to assess risk and determine if a biopsy is really necessary.

John Hopkins has introduced a concept of risk counts, or the number of times the PSA is above normal. Research suggests that the probability that a person has life threatening cancer increases 50 percent each time the PSA rate of change increases by .4 per year. Risk count appears to be associated with a harmful and potentially life threatening disease. Dr. Carter referred to other research such as studies done by William J. Catalona, MD that support this interpretation of risk count.

2. Screening Reduction in Older Men

PSA screening is common in older men; however, men over age 75 are least likely to benefit from prostate cancer screening. Non-aggressive cancers are common as men become older. PSA testing identifies non-lethal prostate cancers that men would not have known about otherwise.

Research authored by Ed Schaeffer, MD, PhD, in the April 2009 Journal of Urology analyzed data from the Baltimore Longitudinal Study of Aging suggesting that men with a PSA of 3 or below at age 75 do not die of prostate cancer. Screening reduction in older men will greatly reduce overdiagnosis and overtreatment.

Since two out of three men after age 75 have a PSA below 3, two-thirds of these men do not need to have PSA testing anymore.

3. Active Surveillance

All men will not benefit from prostate cancer treatments since some cancers will never progress to a harmful state. For instance, in a randomized trial comparing surgery to no treatments, surgery reduced mortality, but only in men under age 65.

Instead of treatments, some men are candidates for active surveillance, also known as watchful waiting.

The type of man that should consider surveillance is older (especially 70 years or above) with a PSA less than 10, a Gleason score less than 6, and no detectable prostate cancer through a digital rectal exam (DRE). These men are more likely to be in a low risk category for prostate cancer.

In the United States, 10 percent of low risk men pursue active surveillance. Therefore, 90 percent are being treated. This ratio should be very different because a lot of older men with low risk disease do not need treatments. Dr. Carter said this occurs for three major reasons, including that doctors and patients fear missing the opportunity for cure, fear of lawsuits, and financial incentives for treating versus non-treating.

4. New Diagnostic Strategies

Instead of one single biomarker, the future of PSA is a panel of biomarkers. A new urine marker called PCA3 that was discovered at John Hopkins and now used at other medical facilities is helpful in determining if a cancer is missed on a biopsy. But, like the PSA, it is not a perfect test. Another marker in the very early stages of development, and also identified at Hopkins, is called EPCA. In addition, future research findings may provide insights into the relationship between specific gene profiles and prostate cancer risk.



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Improving Prostate Cancer Screening

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Prostate Cancer Prevention

There is growing evidence that daily exercise and food are helpful. Dr. Carter recommends a diet that is relatively low in animal and dairy fat, and relatively high in fruits, vegetables, as well as healthy grains and nuts. He counsels that serving portions are more important than dietary extremes.

Bottom Line

Men should not stop screening for prostate cancer, and they need to understand the uncertainty. Everyone should focus on opportunities to reduce harm. Dr. Carter suggests that men acquire their baseline PSA level at age 40, and check again at age 45. These numbers will provide a tremendous amount of data regarding prostate cancer risk throughout a man's life. Men should then have their PSA checked again at age 50, and every other year thereafter, depending on their scores and any increases over time.

More Red Meat Equals More Disease

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The study was published in the December 2007 issue of the online journal PLoS Medicine. Researchers from the National Cancer Institute, National Institutes of Health, and AARP analyzed health data from 500,000 people aged 50 to 71 who participated in the National Institutes of Health-AARP Diet and Health Study beginning in 1995-1996.

The following recommendations about red meat consumption come from major organizations.

- ♦ The American Cancer Society recommends reducing red and processed meat consumption to reduce the risk of prostate cancer.
- ♦ The American Institute of Cancer Research recommends that people consume less than 18 ounces of red meat (the equivalent of a child-size fast-food hamburger) per week to reduce the risk for cancer.
- ♦ The American Heart Association recommends limiting saturated fats to less than 7 percent of total daily calories. Animal products, such as meat and dairy, tend to be higher in saturated fats.

Reducing Toxic Exposures

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For your own copy of the **Pocket Guide of the Dirty Dozen and Clean 15**, visit the Food News website at www.foodnews.org. More information about health and the environment is available on the Environmental Working Group's website at www.ewg.org.

SHOPPER'S GUIDE TO PESTICIDES	
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"Let's just start cutting and see what happens."

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PSA: Friend or Foe? *(Continued from page 1)*

Inherited prostate cancer accounts for approximately 10 percent of all prostate cancer diagnoses, and as many as 43 percent of prostate cancer cases diagnosed before age 55. In African American men, the chances of prostate cancer are one in three (33 percent) for men with one close relative with the disease, 83 percent with two close relatives, and 97 percent with three close relatives.

Most of the survivors involved with APCaP recognize benefits from the PSA test, imperfect as it may be. To frighten off men until another test is developed would be a tragedy.

For years APCaP has urged men to be screened at the appropriate age, to obtain a baseline PSA, and to be screened periodically depending on their condition. APCaP board members have attended American Urological Association meetings with discussions about the impact of PSA increases over time (velocity) and whether a PSA score of four or two should be considered a tipping point, among many other topics. Research continues to reveal more information about the best ways to understand and utilize PSA testing. Men need to educate themselves about the overall pros and cons, ask their doctors questions, and collect multiple opinions when necessary.

Some men may decide not to be screened with PSA at all. What else does that leave for prostate cancer screening? APCaP recognizes that PSA testing may result in unnecessary treatments, and calls for better interpretations of findings to distinguish between benign and malignant to avoid over-treatment. Until more reliable screening approaches are widely available, APCaP strongly recommends prostate cancer screening with the PSA.

APCaP's Scientific Advisory Board provided the following comments and perspectives about the recently published European and American studies on the PSA.

Phillip Kantoff, MD, Dana Farber Cancer Institute
These studies are difficult for many to reconcile, but they do not resolve the screening controversy. Specifically, the PSA is the best test we currently

have for detecting prostate cancer and it is likely that its use reduces mortality from prostate cancer. On the other hand, PSA testing leads to many unnecessary biopsies and to the diagnosis of prostate cancer in men who would not die of the disease. Until we have better tests for detecting aggressive forms of prostate cancer, we need to carefully separate the diagnosis of prostate cancer from treatment in order to reduce over-treatment.

Paul Schellhammer, MD, E. Virginia Medical School

I believe that the screening trials have provided hard data that supports the concern that many men are not well served by the diagnosis and treatment of prostate cancer. That is not to say however that a number of men do not derive benefit, and the healthcare community cannot ignore this benefit. To maximize the benefit and minimize the harm that might result from the diagnosis of prostate cancer does not, in my opinion, reside in cessation of PSA testing, but does necessitate recognition of the tests limitations, and the need to educate physicians and especially patients about the limitations, and all the while searching for better markers for nonlethal and lethal cancer and more effective treatments for the latter. In the meantime the dilemma faced by men will continue. Dr.H. Gilbert Welch, author of "Should I be tested for cancer? Maybe not and here's why" and a physician whose opinion I respect, has noted that his analysis of the data convinces him that he would not have a PSA. I also respect my opinion and I made the decision to have periodic PSA testing. As a result I was diagnosed with prostate cancer, have received in succession surgery, radiation, intermittent and continuous androgen deprivation, second line hormone therapy, and participated in a phase 2 clinical trial. I have no regrets. But it does not matter what Dr. Welch thinks or what I think. Each individual needs to calculate and calibrate his own situation. For some there will be intuitive conviction towards one direction or another, but for others there will be indecision, which, unfortunately, current data cannot entirely resolve.

Nicholas J. Vogelzang, MD, Nevada Cancer Institute

We need better tests than PSA. That having been said, data from studies performed in the United States are still premature and possibly contaminated by screening PSA tests done prior to entry into the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial (PLCO).



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