

# *Saving Kidneys 10*

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## *Prostate Cancer*

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This booklet will tell you more about the prostate cancer. It will also help you understand this disease in a better way. You will also come to know the causes and treatment of this disease.

Kidneys are two bean-shaped organs, situated behind the stomach on either side of the vertebral column. Each kidney is capable of sustaining life independently. In other words, a person can have normal life even with one kidney. Kidneys are a part of the urinary system. The urinary system consists of the kidneys, ureters, urinary bladder and the urethra.

The kidneys remove wastes and extra water from the blood to form urine. If these wastes are not removed they can be harmful to the body. They perform other important functions also.

In addition to removing wastes, kidneys release hormone Erythropoietin, release hormone Renin, release active form of vitamin D, and help in balancing the body fluid by maintaining the right amount of water in the body.

## **Prostate Cancer**

Prostate cancer is the second most common cancer in the USA. It is not uncommon in our country also. 50% of the males after the age of 60, will have some problems in passing urine. 10% of these may have prostate cancer.

## **Screening & Diagnosis**

Screening for prostate cancer can be performed quickly and easily in a physician's office using two simple tests: the prostate specific antigen (PSA) blood test, and the digital rectal exam (DRE).

## **The PSA Test**

PSA is an enzyme produced in the prostate that is found in the seminal fluid and the bloodstream. An elevated PSA level in the bloodstream does not necessarily indicate prostate cancer, since PSA can also be raised by infection or other prostate conditions such as BPH. Many men with an elevated PSA do not have prostate cancer.

A PSA level greater than 4.0 nanograms per milliliter of serum was established as the cutoff. A PSA level above 4.0 ng per milliliter of serum may trigger a prostate biopsy to search for cancer.

It is important to note that the PSA test is an imperfect screening tool. A man can have prostate cancer and still have a PSA level in the "normal" range.

## **The Digital Rectal Exam (DRE)**

The digital rectal exam should be performed along with the



PSA test. The DRE is performed by a physician who will insert a gloved finger into the rectum to feel the peripheral zone of the prostate where most prostate cancers occur. The physician will be checking for hardness of the prostate or for irregular shapes or bumps extending from the prostate – all of which may indicate a problem. The DRE is particularly useful because the PSA test may miss up to 25% of cancers, and the DRE may catch some of these

### **Causes & Risk Factors**

No single cause of prostate cancer has been identified. There are likely a variety of causes and contributing factors that lead to prostate cancer. The major known risk factors for prostate cancer are age, race and family history. Although there are no conclusive data, diet and other environmental factors may play a role as well.

### **Age**

Age is the single most important factor in the development of prostate cancer. It is extremely rare for a man under the age of 40 to develop detectable prostate cancer. Detectable prostate cancer takes time to develop. The chance of having prostate cancer increases rapidly after age 50. In fact, about 80% of all prostate cancers are diagnosed in men over the age of 65.

## Race

Asian men living in Asia have the lowest incidence; however, their prostate cancer risk appears to rise the longer they live in Western culture. Prostate cancer is most common in North America and northwestern Europe. It is less common in Asia, Central America and South America. While genetics may play a role, diet is suspected to be a major factor in these racial differences.

## Family History

Approximately 25% of men with prostate cancer have a history of the disease within their family. However, it is believed that only 9% of all prostate cancers are purely hereditary.

## Diet

Diet and weight may play a role in the development of prostate cancer. High intake of animal fats, such as those found in red meat, and polyunsaturated fats (corn oil, safflower oil, margarine, etc.) may be associated with higher rates of prostate cancer; however, it is unclear exactly how dietary fat might relate to increased risk.

## Obesity

Recent studies have shown that men who are overweight or obese are at significantly higher risk for developing prostate cancer. Moreover, early weight gain in life is negatively correlated with survival for men who go on to develop prostate cancer.

## Nutrition

Nutrition may play an important role in the prevention of prostate cancer. Fruits and vegetables, especially cooked tomatoes, contain key sources of cancer-fighting agents, such as lycopene, antioxidants and fiber.

## Vitamin D & Sunlight

Vitamin D is known to protect the body against cancer. While vitamin D is contained in milk and some fish, the main source is from the skin, which forms vitamin D when it is exposed to sunlight. Studies have shown that people living in regions that get less sunlight have higher rates of prostate cancer. This may also help to explain some of the racial differences in the incidence of prostate cancer. People with dark skin absorb less sunlight and are known to have lower levels of vitamin D.

## Circulating Male Hormone Level

Lifetime risk of prostate cancer may be linked to the amount of the male hormone testosterone circulating in a man's body as early as puberty. Prostate cancer cell growth may be fueled by the presence of testosterone. Therefore, one of the most common treatments for prostate cancer, especially if it returns after first-line treatment, is the complete suppression of testosterone production and action in the body. It has also been shown that men who have their testicles surgically removed (orchiectomy; castrated) before puberty rarely develop prostate cancer. However, these observations do not prove that prostate cancer is caused by high levels of testosterone in the body.

## Treatment

Treatment of prostate cancer is decided according to the stage of the disease. If cancer is limited to the prostate gland, then surgery / radiation therapy is advised. When cancer spreads outside the prostate gland hormonal therapy in form of monthly injections or removal of both the testes is advised.

## Points to remember

PSA and DRE are two simple test to detect prostate.

Earlier the condition is detected easier the treatment is.

80% of all prostate cancers are diagnosed in men above 65.

Asian men living in Asia have the lowest incidence of this disease.

## Key words:

Prostate, Digital Rectal Exam (DRE), Prostate Specific Antigen (PSA) test

Please also refer the following information booklets from India Renal Foundation for more information.

1. Choosing Your Treatment
2. Haemodialysis
3. Peritoneal Dialysis
4. Transplantation

5. Diabetes & Kidney Failure
6. High Blood Pressure & Kidney Failure
7. Kidney Failure & Anaemia
8. Kidney Stones & Kidney Failure
9. Benign Prostate Disease
10. Urinary Tract Infection
11. Polycystic Kidney Disease



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