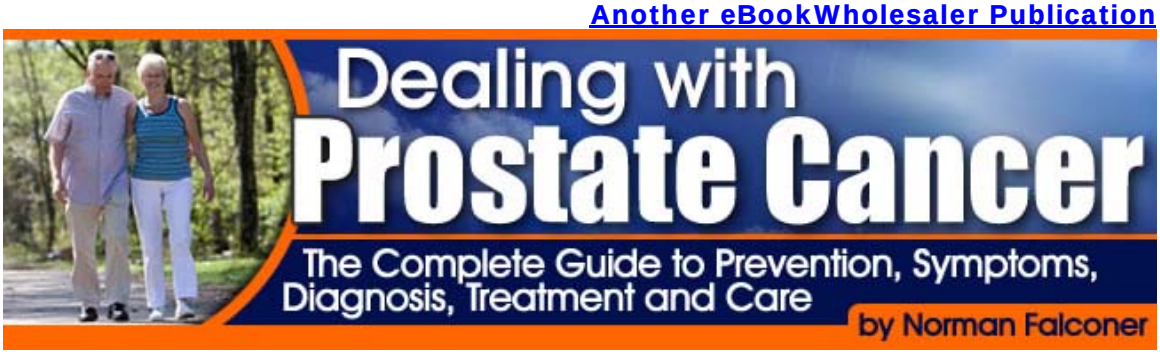


# Dealing with Prostate Cancer

***The Complete Guide to Prevention, Symptoms, Diagnosis, Treatment and Care***

***By Norman Falconer***

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## Recommended Resources

- **Web Site Hosting Service**
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# About the Author

Norman Falconer only realized the level of risk that men of his age faced from prostate and other cancers when a close friend was diagnosed with the disease.

The effect on his friend and, especially, the trauma and other problems that it brought to his family, gave Norman the incentive to learn as much as he could about the disease and the current methods of detection and treatment.

Norman feels it's very important that every man knows about the benefits of being tested for this deadly affliction.

He discovered that there was a lot of mis-information being spread about prostate cancer.

Norman hopes that his book will help get the right information to as many men and those close to them as possible, and perhaps even save a few lives.

 

# Prostate Cancer – An Overview

Prostate cancer is the cancer of the prostate gland.

The prostate gland is part of the male reproductive system. Unusual and uncontrollable growth of cells within the prostate gland cause prostate cancer. In some cases, prostate cancer can spread very slowly from the prostate to other body parts.

It might start around the age of fifty, but detection may not occur until the patient is about the age of seventy or eighty.

The incidence of prostate cancer is not the same among men in all parts of the world. It is less common in South and East Asia. The highest incidence of prostate cancer is in the USA, followed by Europe.

It is responsible for the most deaths among American men after lung cancer. Black men have the highest incidence while Asians record the lowest incidence.

Genetic factors also seem to play an important role. If your father, brother, grandfather or uncle has had prostate cancer, you may have a higher than average risk of developing prostate cancer, even possibly before the age of fifty. Identical twins have twice the risk of developing prostate cancer compared to other men.

However, there is no single gene that has been directly linked with prostate cancer. Many genes work in different combinations and research is continuing to try to locate any specific gene that might cause prostate cancer.

Prostate cancer is more prevalent in men over the age of fifty. It occurs very rarely in men below the age of forty-five.

The average age for diagnosis of prostate cancer is seventy.

 

# What is Prostate Cancer?

The Prostate gland is a small walnut-shaped gland, about three centimeters long and weighing around twenty grams in the male reproductive system. It makes and stores seminal fluid.

This gland is in the pelvic region in front of the rectum and under the urinary bladder. It surrounds the urethra - the tube that carries urine during urination and semen during ejaculation.

Prostate cancer is the growth of abnormal cells in the prostate gland. Prostate cancer is one of the most common types of cancer in men.

Normally, cancerous cells grow very fast. However, prostate cancer grows slowly and, initially, remains within the prostate gland.

If prostate cancer is detected while it is within the prostate gland, treatment can often be fast and most effective.

The prostate starts developing before birth and continues to grow until adulthood, due to male hormones or androgens. This gland produces the seminal fluid that nourishes and transports sperm.

The growth of prostate cancer may be very slow. As its early development does not have any signs or cause major problems for a while, maybe years, and detection can be difficult, it is often detected very late.

Normally, prostate cancer has hardly any symptoms. Diagnosis is often through routine checkups. In cases of benign prostatic hypertrophy, symptoms that may be present include:

increased urination, with greater frequency at night

blood in the urine

difficulty starting and maintaining a steady stream of urine, and

painful urination.

 

Occurrence of prostate cancer can affect your sexual function with painful ejaculation or difficulty achieving erection. The mixing of prostate gland secretions and semen may cause problems during sexual intercourse.

Advanced prostate cancer is the stage where it spreads to other body parts.

Prostate cancer in the spinal cord could compress the spinal cord. This could cause additional symptoms like vertebral pain and pain in the bones of the pelvis and ribs, and maybe fecal and urinary incontinence and extreme weakness in the patient's legs.

## Types of Prostate Cancer

Prostate cancer is cancer of the cells of the prostate gland. There are different types of cells within the prostate gland.

The most common form of prostate cancer is adenocarcinoma, cancer of the glandular tissue of prostate gland. Around 95% of prostate cancer is adenocarcinoma. This cancer is at the surface of the prostate and can be felt through a digital rectal examination.

More rarely, prostate cancer occurs in the tissue surrounding the prostate gland. These types of prostate cancer include leiomyosarcoma and rhabdomyosarcoma.

Another type of prostate cancer can come from an abnormal change in the prostate cells, which later turn malignant. This is prostatic intraepithelial neoplasia or PIN.

In advanced stages, prostate cancer can spread to surrounding tissue and fatty cells, the neck of the bladder, seminal vesicles or to lymph nodes in the pelvic region.

Sometimes it could also spread to the bones of pelvis, spine, chest and hip.

## Stages of Prostate Cancer

There are two main stages of prostate cancer. These are clinical staging and pathological staging.

 

Doctors conduct a digital rectal examination (DRE) and provide information about the status of prostate cancer. This is **clinical staging**.

Doctors usually conduct a more thorough examination after removal of the prostate or the lymph nodes. This helps doctors deliver an accurate prognosis. This is **pathological staging**.

**Staging** refers to the evaluation of the current stage that the cancer is at and whether it is likely, at its present stage, to travel to other parts of the body. Doctors do this staging in consultation with the pathologist that examines the sample(s).

Gradation of prostate cancer is according to the **TNM system**.

The **T** refers to **tumor**, **N** refers to **lymph node** and the **M** refers to **metastasis** (the process by which a cancer spreads to different parts of the body).

**T1** and **T2** indicate early stages of cancer.

**T3** and **T4** indicate advanced stages.

The notation **N** indicates metastasis to the lymph nodes and **M** indicates distant metastasis.

Doctors use a complex form of prostate cancer staging. Staging of prostate cancer is essential to detect the spread of prostate cancer and about how much it has affected other body organs.

The course of treatment for prostate cancer depends on these findings. Therefore, doctors use blood and imaging tests to detect location and spread of prostate cancer.

Doctors use either the Roman numbers I to IV or the letters A to D. The stages are:

**Stage I (A) prostate cancer**: The cancer is too small and cannot be felt by digital rectal examination. The cancer has not spread. Detection of prostate cancer might occur during surgery for another reason.

 

**Stage II (B) prostate cancer**: The cancerous growth is felt by digital rectal examination. However, it is within the prostate and it has not spread. Detection could be during a biopsy done due to high PSA level.

**Stage III (C) prostate cancer**: The cancer has spread outside the prostate to nearby tissues.

**Stage IV (D) prostate cancer**: The cancer has spread to lymph nodes and/or to other body parts.

 

# Who Gets Prostate Cancer?

There is no conclusive evidence to suggest that a specific factor is the main cause for prostate cancer. However, there are certain risk factors. Some of these risk factors like diet and gaining weight can be controlled. Yet, family history, genetics, and race factors cannot be controlled or changed. Again, having a risk factor does not necessarily mean you will develop prostate cancer. Some men with many risk factors do not ever develop prostate cancer while some men with very few risk factors develop prostate cancer.

## Predisposing Factors for Prostate Cancer

Every man is susceptible to prostate cancer. As the prostate gland is exclusive to the male reproductive system, this cancer affects only men. One in every six men could develop prostate cancer. However, only one in every thirty-four could die of it. Age is another contributing factor. Men over the age of sixty to eighty have the highest incidence of prostate cancer. It seldom affects men below the age of forty-five.

Prostate cancer is presently the most common cancer among American men. It is also the second most important cause for death among American men. The trend is predicted to increase with increase in population. Prostate cancer is fast becoming a major public health problem in the United States.

Some men are at a higher risk of contracting prostate cancer.

There are various predisposing factors for the occurrence of prostate cancer like race, genetics, family history, and many others. These factors may contribute to the incidence and development of the disease, either individually or collectively.

**Age:** This is by far the most important factor for development of prostate cancer. This cancer is most common in men from the age of fifty to sixty.

The highest incidence is among men aged sixty-five. Prostate cancer, in comparison to other cancers, increases faster with age although no specific reason has been found.

 

As the average mortality rate increases, there is every possibility of more cases of prostate cancer coming to the fore in the coming decades.

The aging process causes various biochemical reactions which may encourage abnormal cell growth.

Autopsy studies from different countries indicate that 15% to 30% of men older than 50 years have histological evidence of prostate cancer. Hence, by the age of eighty, around 60% to 70% of men depict carcinoma at autopsy.

But, more elderly men die of other causes, while only about 3% die of prostate cancer.

**Heredity:** Heredity is believed to have a direct influence over the occurrence of prostate cancer. If your father or brother has been clinically diagnosed with prostate cancer, chances of you developing it are more than three times the average.

You could even contract the cancer in your youth. This factor may be more important if your close relatives developed prostate cancer by the age of sixty or if more than one male family member has had this disease.

Another indicator may be that if female family members have had breast cancer, you may have a higher risk than average of developing prostate cancer sometime in your life. The onset of prostate cancer is quite early in such cases in comparison to the normal onset of the disease.

Men as young as forty can develop prostate cancer if their direct relatives have had it.

**(III) Genetics:** Studies have indicated the presence of various genes that increase prostate cancer risks. Genetic factors account for five to ten percent of the total prostate cancer cases. Very recent reports as of 11 Feb, 2008 indicate a major genetic breakthrough into the cause of prostate cancer. Australian and British scientists have discovered seven areas in human genome that could offer linkage to prostate cancer.

Dr. Ros Eeles has studied the genetic make-up of more than 10,000 men and has concluded that a specific gene, MSMB, could prove helpful in the

 

detection and screening of prostate cancer. Gene LMTK2 from another genome can provide deeper insight into better treatment options. Although these recent findings can offer a better approach into the occurrence and treatment options of prostate cancer, it would definitely take many years for these treatments to materialize and be available for use.

Clearly various genetic events help in the growth and development of a fully malignant prostate cancer cell. The initiation event occurs at the same rate independent of race or place of birth. This explains the differences in the rate of promotion or progression of prostate cancer among Japanese and American men although the initiation rate could be the same.

**Genetics:** Genetic defects could cause prostate cancer. Scientists are investigating certain genes like Hereditary Prostate Cancer Genes 1 and 2 (HPC1, HPC2) and HPCX. It is also held that genetically caused prostate cancer is different from that caused due to other factors. If women in your family develop breast cancer by the age of forty, it indicates certain genetic flaws. Such faulty genes could cause prostate cancer among male members of your family. Only 5% to 10% of cases could be due to an inherited altered gene running in the family.

**Obesity:** Obese men have a higher risk of getting prostate cancer. Rather, obese men record a higher incidence of advanced prostate cancer and often die of it. Regular physical exercise and high levels of physical activity can lower the risk of advanced prostate cancer.

**Inflammation of the Prostate:** Inflammation of the prostate gland could cause prostatitis. In some cases, sexually transmitted infections can increase the risk of prostate cancer.

**Ethnic groups:** People belonging to some specific race may show increased incidence of the disease while some other races show lower occurrences. African-American men show higher incidence of prostate cancer while its incidence is less among Asian-American and Hispanic or Latino men.

Non-Hispanic whites and African-Caribbean men may also have an increased risk of prostate cancer.

 

Prostate cancer is more common in America and north-western Europe and less common in China, India, and Japan. Scandinavian men report higher rates of prostate cancer than Asian men do.

The incidence of prostate cancer is highest among Blacks and the lowest among Asians.

Japanese and Africans living in their native countries seem to have a very low incidence of prostate cancer.

African-American men have a higher incidence of prostate cancer than do black men in Africa or Asia.

However, the other races show a tendency to develop prostate cancer once they immigrate to the United States. There is no specific reason to explain this occurrence. Some theories suggest the influence of environmental factors, socio-economic factors, diet, and lifestyles.

**Diet:** Prostate cancer occurs more in countries with a staple food of meat and dairy products than in countries with a staple food of rice, vegetables, and soybean products. Research also indicates that high dietary fat could be a major contributing factor for prostate cancer.

Fruits and vegetables contain antioxidant lycopene in high levels. Studies indicate that presence of lycopene reduces risks of prostate cancer. Suggested vegetables and fruits include tomatoes, watermelon, and pink grapefruit.

High fat content, specifically animal fat, in diets is the primary cause for prostate cancer. Consuming fiber-rich food, and a daily intake of lots of yellow and green colored vegetables, consumption of beans, lentils, peas, tomatoes, raisins, dates, and dried fruit can reduce prostate cancer risks substantially. However, the relationship between prostate cancer and dietary factors is very complex.

Men who consume lots of red meat and dairy products may have a greater risk of prostate cancer. Normally, men consuming such a diet eat more dairy products and less vegetables and fruits.

 

Consuming a diet rich in vegetables, whole grains, soy, fish, nuts, and seeds is claimed by some to lower the risk of prostate cancer.

**Smoking** is another risk factor for prostate cancer. Inhaling of toxic substances and tobacco may affect the chance of getting prostate cancer.

**Cadmium Exposure:** Exposure to heavy metals like cadmium is also believed to be a risk factor for prostate cancer.

This mineral is normally found in alkaline batteries and cigarette smoke. People in the welding and electroplating occupations are exposed to high cadmium levels. Cadmium in combination with zinc poses a high risk for prostate cancer.

The element zinc is present in multiple intracellular metabolic pathways. The prostate also contains high amounts of zinc. Several enzymes like polymerases require zinc to function properly. Such combinations may prove to be a major factor for an increased risk of prostate cancer, although there is no conclusive medical evidences to support this currently.

**Exercise:** A sedentary lifestyle due to technological advances and increased economic and monetary power could be a possible cause for prostate cancer. If it does not have a direct relation, it may still contribute to increasing your risk.

That sedentary lifestyle restricts movements and your body slackens due to absence of any exercise. This in turn causes various changes in hormone and chemical balances in your body. This could reflect on your prostate gland and might encourage the growth of cancerous cells.

If you have a sedentary lifestyle with no physical exercise, you may have a higher chance of contracting prostate cancer.

Regular physical exercise is essential for everyone.

**Vasectomy:** Observations suggest that vasectomized men report higher incidences of prostate cancer. Vasectomized men have higher levels of circulating testosterone. Further, these men have undergone vasectomy one or two decades before detection of prostate cancer. Therefore, increased

 

hormone levels due to a vasectomy might be the cause for prostate cancer in elderly men. There are conflicting reports on the relation between a vasectomy and prostate cancer.

**Testosterone:** High levels of testosterone may fuel the occurrence of prostate cancer. It does not cause prostate cancer directly, but it may help the development of existing prostate cancer.

This is the male hormone produced by testicles. Although this hormone does not directly cause prostate cancer, it could influence the occurrence of prostate cancer largely. High levels of such hormones are an increased risk. However, there is no conclusive evidence and scientists are researching into the possibilities.

**Hormones:** Dietary factors influence secretion of body hormones. Low-fat and high-fiber diets affect the male sex hormone metabolism by decreasing circulating testosterone. Testosterone is essential for growth of normal prostate epithelium. Rather, early prostate cancer is endocrine dependent.

Research and studies show that young African-American men have 15% higher serum testosterone levels than their white counterparts. Similarly, American men have higher levels of the sex hormone binding globulin than their Japanese counterparts do. These enzymes are responsible for mitotic activity of the prostate.

A vegetarian diet reduces plasma testosterone levels substantially. This can be one of the major reasons for the low incidence of prostate cancer among vegetarian men.

**BPH and hormonal activity:** The prostate gland develops before birth and continues to grow until adulthood. This growth is due to male hormones or androgens. Low hormone levels restrict the growth of the prostate gland.

In some cases, this gland continues to grow even in old men. This causes benign prostatic hyperplasia or BPH. This could cause problems with urination. BPH causes extensive changes in the prostate gland and could

 

restrict urinary outflow when the urine remains within the bladder and could cause cystitis.

With age, hormone levels fall and this causes imbalance in androgen and estrogen levels. Levels of dihydrotestosterone, the main prostatic intracellular androgen, increase and this could cause inflammation, leading to prostate cancer.

**Infections:** More than eighty percent of prostate cancer cases are due to infection by Escherichia coli. Other causes for infection include Proteus, Klebsiella, Pseudomonas, Enterobacter, Staphylococcus, or Streptococcus. These organisms enter the prostate through the bloodstream or through urethral infection. Sometimes, excessive or very infrequent sexual intercourse, catheterization, or cystoscopy could cause infections leading to prostate cancer.

### *Overall Analysis*

Prostate cancer is affected by a combination of factors. Some of these factors could play a major role.

The factors in play include genetic, environmental, and epigenetic events. The interrelation and interaction between these factors is important to research for the better treatment and possible prevention of prostate cancer.

Androgen levels in a man are the effects of interrelations and combinations of various genes like testosterone, sex hormone binding globulin, and estrogen, with environmental influences like those of zinc and cadmium. Dietary factors also play a major role. Again, diet and hormones have a direct bearing and provide important clues about the development of prostate cancer.

Presently, various universities and cancer societies are undertaking many experiments. Different men are screened for prostate cancer and their findings will offer ample guidance. This will enable doctors and scientists to clarify the relationship between histologic and clinically evident prostate cancer. It will also help many men to be available for early detection of prostate cancer.

 

# Diagnosis

Undergoing screening processes, like a digital rectal examination or prostate-specific antigen tests, when approaching the age of forty is a good preventive measure.

The positive aspect is that newer screening procedures, deeper and extensive research, and growing public awareness have been able to offer a wider perspective of prostate cancer and educate people about the possibilities and strategies of disease prevention and better treatment options.

Diagnosis of prostate cancer is through screening of blood tests and/or through physical examination.

Biopsy, Cystoscopy, and Transrectal ultrasonography are the recommended tests to diagnose prostate cancer.

Normally, biopsy of the prostate involves removal of a piece of the prostate and examining it under the microscope.

**Prostate biopsy** is done in the outpatient department and does not require any hospitalization. A biopsy gun inserts and removes special hollow-core needles in less than a second. Normally, there would be around three to six on each side of the prostate. Men report a little discomfort during a prostate biopsy.

**Cystoscopy** is the insertion of a thin, flexible camera tube down the urethra. It shows the interior of the urethra. Transrectal ultrasonography uses sound waves to create a picture of the prostate from a probe in the rectum.

Scientists have reported in April 2007 that a new blood test that can detect the presence of a prostate cancer antigen-2 (EPCA-2) in the early stages. It may indicate the presence and intensity of prostate cancer.

X-rays and bone scans can also detect the spread of prostate cancer into the bones.

 

## *How is Prostate Cancer Diagnosed?*

Prostate cancer does not show any exact symptoms. Detection of prostate cancer is often through routine screening, or while undergoing tests for any other ailment.

Men that have relatives with prostate cancer and all other men over the age of fifty should have prostate cancer screenings.

Doctors would normally question you regarding your ailments; specifically genital or urinary diseases. They could question you about changes in the pattern of urinating, including frequency, and if other family members have any history of prostate cancer.

It is not essential to conduct all the available tests for diagnosis of prostate cancer.

Doctors would normally suggest various tests and inform you of all the advantages and disadvantages of these tests.

Doctors commonly use two tests in the initial stages for their patients who have not shown any symptoms, to detect prostate cancer.

These are the **digital rectal examination** and **prostate-specific antigen tests**. These two tests in combination can provide some clues about prostate cancer, although it is not always conclusive.

### Prostate Cancer Diagnosis Tests

Tests for prostate cancer diagnosis include:

**PSA test:** PSA refers to the prostate-specific antigen test. This test measures levels of a specific protein made by the prostate and present in the blood. Men with prostate cancer report high levels of this protein in their blood.

The prostate specific antigen is a normal secretion of the cells of the prostate gland. This is mainly found in the semen. A very small amount is also found in the blood.

 

All PSA results are in nanograms per milliliter or ng/ml. A PSA count of 0 to 4 ng/ml is normal or below normal. In some men, this could be the normal level.

A PSA count of 4 to 10 ng/ml is a little above normal.

A PSA count of 10 to 20 ng/ml is slightly above normal, while anything above 20 ng/ml is seen as a very high level.

Sometimes, men with prostate cancer portray normal PSA levels. Normal PSA levels are not the same for all men.

Normal levels of PSA in the blood are under 4 nanograms per milliliter. If there is cancerous growth in your prostate gland, this level goes beyond 4.

If the PSA level in your blood is between 4 and 10, chances of you having prostate cancer is 1 in 4.

If it is more than 10, chances of prostate cancer are more than fifty percent and this could further increase.

The normal PSA level for men aged between fifty and fifty-nine is about 3 nanograms per milliliter of blood or lower.

A PSA of 4 nanograms per milliliter of blood or lower is considered normal for men aged between sixty and sixty-nine.

Men aged 70 or more usually have a normal PSA level of 5 nanograms.

PSA levels of more than five indicate that further tests for prostate cancer are warranted.

Various factors other than prostate cancer can cause fluctuating or high PSA levels. These factors might include non-cancerous enlargement of the prostate or BPH, advancing age, infection, and inflammation of the prostate and certain medications like finasteride or dutasteride, urine infections, inflammation, using a urinary catheter, recent prostate biopsies, prostatic massage, and prostate or bladder surgery.

Doctors may consider other factors and suggest a re-examination after a certain period to check if the PSA level has fallen. If PSA levels continue to

 

rise, doctors would suggest other diagnostic tests to possibly detect the presence of prostate cancer.

High PSA levels might indicate the existence of prostate cancer. Once you undergo prostate cancer treatments, your PSA levels would fall.

The PSA test is also used for measuring any progress of the prostate cancer and the effectiveness of your treatment.

Doctors normally recommend a baseline of the age of forty-five for PSA tests. They further recommend yearly screenings for all men over the age of fifty. These screenings are all the more important and essential if there are any cases of prostate cancer, or any other form of cancer, in your family.

An indicator of prostate cancer is the amount of PSA present as blood proteins and as a free circulation. The **percent-free PSA** test indicates the amount of free-moving PSA in the blood. If the amount of free-moving PSA is high, it indicates the presence of prostate cancer.

Normally, the percentage of free circulating PSA is lower in men with prostate cancer. Doctors suggest this test if your PSA results are within the border level. If your PSA test is within 4, 10, and you have a lower percent-free PSA, prostate cancer chances are high, and it is best to go for a biopsy.

However, this is not yet available everywhere.

The PSA test has its own limitations. Prostate cancer grows at a very slow pace. Therefore, coming to conclusions based on PSA tests cannot offer any discrete solution. Some men could record high PSA levels and undergo treatment for prostate cancer, although their cancer may not actually advance to such alarming levels. This is because PSA does not indicate the extent of aggressiveness of prostate cancer. Undergoing treatments like radiation and surgery have their own side effects and discomfort.

You should take this test in combination with other tests.

**(II) Digital rectal examination (DRE):** The prostate gland is just behind the rectum. Doctors insert a gloved and lubricated finger through the rectum

 

to feel for any bumps or hard surfaces suggesting growth of prostate cancer. This test takes little time and is not painful although a bit uncomfortable.

This suggests the existence of prostate cancer. An enlarged prostate will remain smooth to touch and therefore does not indicate prostate cancer. This process may not be painful but it is quite uncomfortable.

A DRE alone cannot deliver conclusive results on prostate cancer, even less than a PSA test. In many cases, the prostate may feel smooth even in the presence of prostate cancer. But, it can sometimes detect prostate cancer in men with normal PSA levels.

The DRE test should be used in combination with PSA and other tests to confirm prostate cancer diagnosis. However, medical experts are of the opinion that men over the age of fifty should undergo regular PSA and DRE tests.

The DRE test is best for detecting the extent to which prostate cancer has spread to nearby tissues in men diagnosed with prostate cancer.

Accurate early detection of prostate cancer is difficult. Undergoing tests for detection of prostate cancer is therefore very subjective. You should discuss with your doctor and consider all possible pros and cons. You should consider your general health, age, family history, lifestyle and similar associated factors that could offer a deeper insight into the possibility of prostate cancer.

Young men with prostate cancer should undergo proper treatment as the cancer could assume alarming ratios as you age. However, if prostate cancer is detected in elderly men, there is no great need to undergo serious tests, as prostate cancer grows very slowly and chances of it assuming alarming ratios is minimal. Most major medical organizations do not support regular screening and testing for prostate cancer.

**(III) MRI Scan:** This is magnetic resonance imaging scan. This scan produces a computerized image of the prostate with the help of magnetic fields.

 

This image shows a detailed cross-sectional picture of the entire prostate gland. This helps doctors study and understand the image to detect irregularities or the extent of growth of cells within the prostate gland.

**(IV) Trans-Rectal Ultrasound**: This detection method uses sound waves to detect irregularities in the prostate. Doctors use high frequency sound waves by passing a sensor over the body surface. This produces a computerized image.

Doctors may use Transrectal ultrasonography tests to detect prostate cancer. This requires insertion of a tube or a probe into the rectum. This produces a good image of the prostate on the screen for complete diagnosis.

This scan can measure size and density of the prostate. The probe would also collect a sample of the prostate for detailed diagnosis under a microscope. Although the scanning process is complete within few minutes, it is uncomfortable.

**(V) CT Scan:** CT scan refers to computed tomography scan. This is a sophisticated x-ray with the help of a computer and rotating x-ray beams. These produce images of soft tissue, bone and blood vessels. These x-rays also show any areas of dense tissue that might suggest the existence of prostate cancer.

**(VI) Biopsy:** This is a very accurate test to detect the existence of prostate cancer. Doctors take around ten samples of your prostate tissue with the help of a thin needle. They later examine it under the microscope to detect if the tissue is cancerous.

Some doctors conduct a biopsy of the prostate through the perineum. The perineum is the skin between the rectum and the scrotum. The doctor would place a finger into the rectum to feel the prostate and insert the biopsy needle through a small incision in the perineum. The procedure involves the passing of a needle through the rectum into the prostate.

 

Doctors give a local anesthetic, as the process is normally painful and very uncomfortable. They additionally prescribe antibiotics to prevent any possible infection.

Normally, a biopsy takes only fifteen minutes and can be done within the doctor's office. You should drink plenty of fluids over the next twenty-four hours. You could experience bleeding in your urine, bowels or in semen after sexual intercourse for a few days after a biopsy for prostate cancer.

Although a biopsy is more effective in detecting prostate cancer than most other tests, it may not deliver exact results in 5% to 10% of cases. The biopsy may not detect the presence of prostate cancer if the needles do not pass through them. Doctors might suggest a second or a repeat biopsy if results are negative while other factors indicate prostate cancer.

Biopsy results from your pathologist provide various clues as to the extent of your prostate cancer. The number of biopsy core samples could indicate the extent of your cancer.

The percentage of cancer in the core samples can indicate the aggressiveness or intensity of the disease. It also indicates the location of prostate cancer.

**(VII) Bone scan:** Prostate cancer, in advanced stages, can spread to bones; specifically those of the spinal cord, thighs and legs.

You would then experience lot of pain in your thighs, legs and back.

Doctors may conduct a bone scan to detect if your prostate cancer has spread to the bones.

For a bone scan, doctors inject a small amount of a radioactive substance into a blood vessel. This substance passes through the blood and collects in the bones. A scanner detects radiation levels. The scanner also takes pictures of the bones or depicts them on a computer screen. These images and radiation levels can help doctors assess the presence and extent of prostate cancer in the bones.

 

## *Gradation of Prostate Cancer*

Tests cannot completely determine or provide conclusive evidence of prostate cancer.

Prostate cancer investigation requires staging and gradation processes to show its intensity and the extent of its spread within your body.

**Gradation:** Pathologists use terms like low, medium, or high grade to describe prostate cancer findings. They use a specific system, popularly known as the Gleason system.

This system uses scores of 2 to 10 to indicate the extent of prostate cancer. **Grade 1** refers to the cancerous tissue as being similar to prostate gland tissue; the chance of prostate cancer is nil.

If prostate gland tissue features are available as a random basis across the prostate, it is a grade 5 tumor.

The Gleason score is the total of all the stages.

Another system involves gradation of G1 through G4. A higher score refers to high-grade tumors or cancerous growth. Normally, high-grade tumors grow faster and spread more than low-grade tumors.

**Staging:** Staging refers to the extent of prostate cancer. Staging normally refers to the location and spread of prostate cancer. Stage I and II refers to localized occurrences; your prostate cancer has probably not spread outside the prostate gland.

Stage III refers to the locally advanced form of the disease. Your prostate cancer could be outside the gland and may be in the seminal vesicles.

Stage IV means the cancer has spread beyond the seminal vesicles to lymph nodes and/or to other tissues or organs.

Medical communities are divided over the beneficial effects of prostate cancer screening. Those advocating regular screening believe that early detection of prostate cancer can offer better treatment options and fewer side effects. However, another section feels that prostate cancer grows very slowly and

 

does not cause immediate problems. Therefore, treatment procedures should be according to your age and other associated factors.

## *Is It Possible to Find Prostate Cancer Early?*

Early detection tests for prostate cancer became common since the nineties.

Such tests include prostate-specific antigen or PSA test and digital rectal exam or DRE test. These tests can detect prostate cancer in the early stages. However, they have specific limitations and hence, results are not always dependable and accurate.

The American Cancer Society (ACS) urges and recommends doctors to advise all men over the age of fifty to undergo PSA and DRE tests every year. It further recommends that men with higher risk like African-Americans or men having first-degree relatives with prostate cancer, undergo these tests from the age of forty-five.

Rather, such men could have their first test at the age of forty. You can decide on further tests depending on the results of the initial test. Doctors and health professionals should offer and allow open discussion of the possibilities of prostate cancer, benefits of early detection, and treatment options.

 

# Signs and Symptoms of Prostate Cancer

Prostate cancer has very few signs or symptoms in the early stages. Early detection of this cancer is rather difficult. Often, you get to know of the existence of prostate cancer when you go for any other medical checkup like a digital rectal examination (DRE) or prostate-specific antigen (PSA) tests.

Prostate cancer treatments can cause various side effects like erectile dysfunction or impotence, or bladder control problems, etc.

As you age, the prostate gland enlarges and causes blockage against the urinary bladder or urethra. This is benign prostatic hyperplasia or BPH. BPH is not cancer; however, signs and symptoms of BPH are similar to those of prostate cancer. You need to undergo a thorough medical check-up and testing to confirm the exact diagnosis of your ailment.

Growth of the prostate is not always linked to prostate cancer. Some men experience continued prostate growth. Although this could cause urinary problems, it may not be indicative of prostate cancer. This non-cancerous growth of the prostate is not a cause for worry.

You may not experience any symptoms at all. Signs and symptoms of prostate cancer depend on the extent and spread of prostate cancer.

Signs and symptoms for prostate cancer may include:

**Frequent urination:** You experience the need to urinate very frequently. This feeling is intensified specifically at night. You may wake up many times to visit the toilet.

**Incontinence:** Urinary incontinence is your inability to control the urge to urinate. Often, this causes accidents, as you are unable to reach the bathroom in time to urinate.

**Difficulty starting urination**: Growth of the prostate gland often causes difficulties in starting urination. This growth stresses on the urethra and constricts it. This is the cause for difficulty in starting urination. Further, it

 

also causes difficulty in maintaining the urine stream. Sometimes, you pass blood in your urine.

**Discomfort during urination:** You may feel uncomfortable or encounter pain or a burning sensation during urination. This condition is dysuria. Although this is not a very common symptom of prostate cancer, it is present in a few cases. However, this is predominant in benign prostatic hyperplasia. You would often feel you are unable to empty the bladder completely.

**Painful erections and ejaculations:** Growth or enlargement of the prostate gland affects blood flow into the penis. You may have trouble having erections or they may be less rigid. Constriction of the urethra narrows down the ejaculation channel. Therefore, passage of semen during ejaculation is narrowed and forced. This is the reason for pain during ejaculation.

**Impotence:** Impotence is the inability to have a satisfactory erection for penetration during intercourse. Sudden occurrence of impotence may be a symptom of the presence of prostate cancer.

There could also be less semen during ejaculation as prostatic disease affects the flow of ejaculatory fluid produced by the prostate gland and seminal vesicles.

**Blood in the semen:** This condition is **Hematospermia**. The blood in the semen would not be visible to the naked eye.

**Urinary Infections:** Constriction of urethra by prostate gland could cause formation of cystitis. This leads to urinary infections.

Advanced prostate cancer may cause these specific symptoms:

**Pain in the lower back and spinal regions:** As prostate cancer spreads, it can cause cancerous growth of cells in other body parts. This growth could extend to the bones of the pelvic and spinal region. This gives rise to severe pain in these regions.

 

**Numbness and pain in legs and thighs:** Prostate cancer causes severe pain and a numb feeling in the thighs and legs. You may suddenly not be able to move your legs. It could also cause swelling of the legs.

**Sudden inability to pass urine:** This symptom appears from nowhere. You are unable to pass urine. However, you do not experience any pain.

**Bone fractures:** Prostate cancer advances into the bone tissue and makes them weak and vulnerable to frequent fractures. Bone pain remains intense.

 

# Treatment

Treatment options for prostate cancer include radiation therapy, surgery, hormonal therapy, proton therapy, chemotherapy, or a combination of all these.

As prostate cancer is normally a disease of elderly men, many die of other causes rather than prostate cancer.

Surgical removal of the prostate is a treatment option if prostate cancer is in the early stages, or if radiation therapy does not bring any results.

Response to initial treatments is often the main determining factor for the outcome of the disease.

Doctors often debate whether to treat localized prostate cancer. They must judge the beneficial and harmful effects of prostate cancer treatments and how they could affect your survival chances and the quality of life.

Your diet also plays an important role in development of prostate cancer. A diet rich in red meat, fatty substances and dairy products may encourage the development of prostate cancer.

Some claim that a generous intake of vegetables and fruits may lower the incidence of prostate cancer.

Green leafy vegetables and tomatoes are recommended.

Tomatoes and tomato products contain high levels of lycopene which may help to protect against prostate cancer.

Lycopene is a chemical occurring naturally in tomatoes, watermelons, pink grapefruits, papaya, and guava. Cooked tomatoes are more effective as cooking releases this chemical from their storage spots and helps in easy absorption.

Low intake of omega-3 fatty acids (found in fatty fishes like salmon), insufficient intake of vitamin E (present in green, leafy vegetables) and the mineral selenium may increase the risk of prostate cancer.

 

Insufficient exposure to ultraviolet (UV) light lowers the vitamin D content in the body which may increase the risk of prostate cancer.

Certain medications may also lower the risk of prostate cancer. Daily use of anti-inflammatory medicines like: aspirin, ibuprofen, or naproxen, and cholesterol-lowering drugs like statins are believed by some to possibly decrease the risk of prostate cancer.

Frequent ejaculation can decrease prostate cancer risks.

Infections and inflammation of the prostate gland are very high-risk factors for prostate cancer.

Sexually transmitted infections, like chlamydia, gonorrhea, or syphilis, increase the risk of prostate cancer.

Obesity and high levels of testosterone in the blood may pose higher risks of prostate cancer.

 

# Treatment Options for Prostate Cancer

The choice of any specific prostate cancer treatment option depends on a number of factors.

Some of these include:

your age

your general health

your mental stability

the extent of progress of your prostate cancer

side effects of different treatment options, and

the effectiveness of the treatment options.

It is not easy to make such a difficult decision. You may want to discuss with your family and friends or get opinions of other doctors.

You may want to talk with other patients and learn of their experiences.

But, it has to be in accord with what the medical fraternity thinks is the best for your situation.

## Prostate Cancer Treatment Options

Treatment options normally depend on the extent of your prostate cancer. If your prostate cancer has spread to major body parts, radiation or surgery could be the best options.

If it is in the initial stages, active surveillance may be a good option.

### *(I) Radiation Therapy*

This therapy uses high radiation levels to kill the cancer cells or restrict their growth with minimum damage to other healthy body cells.

Radiation therapy is of two types:

External radiation with the help of a radiation machine directed at the prostate and Internal radiation by implanting radioisotopes through thin plastic tubes into the affected area either permanently or temporarily.

 

External Radiation sessions normally consist of five days each week spread over eight to nine weeks. The radiation therapist would place you in a specific position on the treatment table. The radiation treatment then starts with the help of the radiation machine.

You do not feel anything during the treatment. This treatment involves passing the radiation rays through your body to kill cancerous cells.

Therapists take weekly X-rays or port films to check if the treatment is addressing the affected area specifically. These X-rays do not provide any information about the progress of your disease.

Therapists could also mark specific areas on your skin as an identification mark.

**Side Effects:** Skin exposed to radiation could become swollen, reddish, sensitive and warm. Sometimes, it could peel around the area. Skin reactions are temporary and go away after four to six weeks of completion of treatment.

Hair loss and increased perspiration are added side effects.

Long-term side effects include enlarged pores, darkening of skin, thickening of tissue and change in sensitivity levels of skin, urinary problems like frequency and bleeding and erectile dysfunction.

Radiation therapy could make you feel mildly fatigued, although you can continue with your regular routine. It is best to plan and pace your activities and take lots of rest.

Eating nutritious and well-balanced meals can help you overcome fatigue.

### *(a) 3-D conformal radiation therapy with CT*

If your cancer is localized within the prostate, undergoing 3-D conformal radiation therapy with CT may deliver results that are more precise. Radiation is from different directions and minimizes damage to normal tissues.

This therapy can cause side effects like diarrhea, inflammation of the rectum, impotence and incontinence.

 

### *(b) Intensity-Modulated Radiotherapy (IMRT)*

Intensity-Modulated Radiotherapy (IMRT) is a very precise and advanced technique of delivering radiation beams according to the shape and depth of the prostate cancer.

After completion of radiation therapy sessions, you have to schedule your follow-up tests and checkups with your doctor.

## (II) Radioactive Seed Implants

This is another type of radiation therapy. This is the same as **Brachytherapy**. It involves planting of radioisotopes permanently or temporarily. This is a newer treatment option for prostate cancer. It is claimed to be as effective as regular external radiation and radical prostatectomy in ten-year follow-up studies.

### *Permanent Brachytherapy (Low Dose Rate or LDR)*

Your doctor implants around forty to a hundred iodine-125 or palladium-103 radioactive seeds into the prostate gland with the help of an ultrasound. Implantation is according to a computer-generated plan best suited for your condition. These implants become inert after a specific period, although they remain permanently within your prostate. These implants help deliver maximum radiation within your prostate without affecting other body tissues.

### *Temporary Brachytherapy (High Dose Rate or HDR)*

This involves placing hollow needles filled with iridium-192 into the prostate for around five to fifteen minutes. Then, your doctor removes the iridium and the needles.

You undergo two or three similar sessions spread over several days. The implants remain permanently but they become inert after about ten months.

The entire procedure could take around an hour and a half each time.

This treatment best suits prostate cancer patients with PSA levels lower than 10, Gleason score equivalent or less than six, almost no abnormality on the digital rectal exam, less aggressive cancer, and cancerous growth restricted within the prostate.

 

**Side Effects:** These are primarily urinary-related. They include frequent urination, inability to totally empty the bladder and a burning sensation during urination.

Diarrhea, rectal bleeding, and urinary incontinence as side effects are very rare. The impotence rate could be 25% after five years of treatment and could increase to 50% if you also undergo hormone therapy.

You should restrict prolonged contact with children and pregnant women for around two months after treatment.

## (III) Chemotherapy

This treatment option is specifically for recurrent or advanced prostate cancer cases. It could also deliver results where hormone treatment has been ineffective.

Chemotherapy is not for treating prostate cancer in the early stages. The complete treatment extends for three to six months according to the type of chemotherapy medications.

The treatment is divided into specific cycles and recovery periods.

Chemotherapy medications are normally given intravenously and rarely through the mouth. The drugs pass through the bloodstream and reach cancerous cells anywhere in the body.

This treatment helps shrink cancer cells and may make them disappear completely.

**Side Effects:** Just as chemotherapy kills the fast-dividing cancer cells, it also kills healthy cells across the hair follicles, gastrointestinal tract lining, membranes lining the mouth and in the bone marrow.

However, these are temporary side effects and the healthy cells may soon grow back.

Other side effects include loss of appetite, hair loss, diarrhea, vomiting, nausea, mouth sores and permanent infertility.

 

A low count of white blood cells increases the risks of infection, while a low count of blood platelets and red blood cells may cause anemic fatigue and bleeding or bruising from minor injuries.

You can take medications for these side effects according to the advice of your doctor.

## (IV) Radical Prostatectomy

This is surgical removal of the prostate gland with some of the surrounding tissues. Doctors may prescribe this treatment for men under the age of seventy without any major health problems if your prostate cancer is localized.

Radical prostatectomy is of two types:

Retropubic prostatectomy and

Perineal prostatectomy

**Retropubic prostatectomy:** Your surgeon makes an incision in the lower abdomen to remove the prostate, surrounding tissue and lymph nodes if necessary.

The surgeon would locate nerves on either side of the prostate and check if prostate cancer has spread to these nerves. The surgeon would not remove them if they are not affected, as these nerves are necessary for an erection. This will reduce the chances of erectile dysfunction and incontinence after the surgery.

The surgery could last two to four hours.

**Perineal prostatectomy:** With this surgery, the surgeon makes an incision in the skin between the scrotum and the anus. The surgeon, if necessary, removes the prostate and some lymph nodes.

This surgery is not very common as it is difficult to use nerve-sparing techniques.

This surgery could take a little less time than retropubic surgery.

 

Surgery risks involve bleeding, infection and blood clots in your legs that might sometimes travel to the lungs (Medical staff monitor you for any sign of clots).

The recovery period for these operations is normally a stay of three days at the hospital. You may have to stay away from work for around three to five weeks.

Surgeons normally insert a catheter through the penis into the bladder during the surgery. This remains so for ten to twenty-one days to help easy urination during the recovery period.

**Side Effects:** These include urinary incontinence and impotence. But, you may recover normal continence levels within six months of surgery.

## (V) Laparoscopic Prostate Surgery

This surgery is done with the help of a laparoscope. This has a special camera. The surgeon makes small incisions of five to ten millimeters below the belly and passes carbon dioxide through a small tube. This lifts the abdominal wall and allows a clearer view through the laparoscope.

The laparoscope transmits a picture of the prostate onto a video monitor.

This surgery is the best option if your prostate cancer is not aggressive and has not spread beyond the prostate. However, if you have had any pelvic laparoscopic surgery or undergone hormone treatment for prostate cancer, you should not opt for this treatment.

This surgery is less invasive, recovery time is less and you need fewer medications.

Chances of infection are very low and your hospital stay is much shorter. You can go back to work within two to three weeks. The effectiveness of this treatment option is the same as that of the other operations.

**Side Effects:** These are similar to invasive surgery; side effects may include impotence and incontinence. Urinary infections may exist for the initial two to three months.

 

As this technique is comparatively new, there is not enough evidence as to whether it leads to higher rates of potency.

For around six months, you should refrain from lifting heavy loads or do any abdominal exercises like sit-ups.

## (VI) Hormone Therapy

This treatment involves removal or blocking of hormones to treat prostate cancer. It is the same as androgen suppression therapy or androgen deprivation therapy.

This treatment may be effective if your prostate cancer has spread outside the prostate. It may reduce the progression of the cancer effectively and offer better survival rates.

In some cases, doctors recommend hormone treatment after surgery for better treatment of prostate cancer.

The prostate grows further if exposed to the male hormone testosterone and androgens. Hormone treatment can stop production of testosterone and all androgens temporarily or permanently.

This treatment can be through injections, pills, and drugs.

Occasionally, it involves surgical removal of the testicles that produce testosterone. This prevents any further stimulation of prostate cancer.

Sometimes, hormone therapy is used as an effective treatment option before, during or after local treatment.

The LHRH or GnRH is a luteinizing releasing hormone, and Gonadotropin-releasing hormone is one of the most important hormones released by the body before production of testosterone.

Hormone therapy aims at blocking the release of LHRH or GnRH through use of LHRH agonists or LHRH analogues.

Doctors normally prescribe monthly shots of Eligard, Lupron, Viadur, Trelstar and Zoladex. In some cases, dosage could be tri-monthly, quarterly or yearly depending on the aggressiveness of your prostate cancer.

 

Most of the cancerous cells in the prostate respond positively after removal of testosterone. Yet, some cancerous cells grow independently of testosterone.

Hormone therapy is unable to kill these cancerous cells. So, despite undergoing hormone therapy, cancer may still spread within your body.

Hormone therapy is not always a very effective treatment option.

But, it may contain and restrict your prostate cancer.

### *Orchiectomy*

Some men choose to undergo Orchiectomy. This is surgical removal of the testicles. Since over ninety percent of testosterone production is in the testicles, removing them can be a good option.

Nonetheless, orchiectomy being a nonreversible and a permanent surgical solution, many men are adverse to it and opt for drug therapy instead.

## (VII) Active Surveillance

Although this is not a treatment option in the strictest meaning of the term, it is a way of combating prostate cancer.

If surgery or hormone treatments do not seem viable, you can adopt a wait and watch attitude to follow up your prostate cancer.

However, you still need to undergo PSA and DRE examinations every six months, with a yearly biopsy.

Your doctors will have to review the progress of your prostate cancer minutely. If there are any indications of a growing prostate cancer with any advancing symptoms, doctors would then advise immediate surgery or other more suitable treatment options.

This technique is a good choice for men with slow-growing cancers or if you have other serious medical conditions that could shorten your lifespan.

 

## (VIII) Other Treatment Options

Although surgery, hormone treatment and radiation therapy are the traditional treatment options available, there are a few less popular treatment options also. These include:

**(a) Cryotherapy:** This treatment option has been available for some time but is used rarely. This surgery involves insertion of probes into the prostate through the perineum and passing of liquid nitrogen or argon gas through it. This freezes prostate tumors and cells.

However, it can cause serious erectile and urinary dysfunction. This therapy is the same as cryoablation or cryosurgery. If you have been using hormone or radiation therapy, this option may not deliver good results.

**(b) High-Intensity Focused Ultrasound:** This treatment option involves killing prostate cells with heat. Through this treatment, a probe is inserted into the rectum through which high-intensity ultrasound waves are delivered. This treatment option is still in the experimental stages.

## (IX) Emerging Therapies

Scientists and researchers are trying to discover newer therapies to overcome shortcomings of the therapies and treatments in use for prostate cancer. Often, prevalent treatments destroy existing good cells of the body and thereby reduce the capability of the overall immune system.

However, the FDA has not yet approved any specific therapy for use in prostate cancer. Nonetheless, researchers are sure that soon there could be more targeted therapies for use in treatment of prostate cancer.

They believe that these therapies might offer better results and possibly with less severe side-effects or no side-effects.

 

# Coping with Prostate Cancer – The Action Plan

Prostate cancer diagnosis and treatment can prove very stressful and overwhelming. It will be easier if you draft a coping action plan to coordinate and sustain all these facets.

## Coping Help Sources

You and your family can take help from the different sources available. These sources provide necessary help in a professional and supportive manner. These include:

### *Counselors*

Professional and trained counselors can help you overcome your innermost doubts and tackle difficult feelings. These counselors offer you individual time and attention. They listen to all your queries patiently and address all possible consequences of prostate cancer on your life. They can draft suitable strategies that help you get control over your life and thereby enjoy a better quality of life. Sometimes, such counselors could prescribe medications to treat depression.

### *Social Workers*

Social workers offer help and counseling regarding your prostate cancer diagnosis and treatments. They educate you about possible concerns, adjusting to lifestyle changes, and refer to national agencies or support groups. They arrange for temporary lodging and look after all your other requirements.

### *Support Groups*

Support groups are made up of people dealing or having dealt with similar experiences. You can take part in discussions of support groups, meet others with similar prostate cancer symptoms as you, learn from their experiences, and understand how they are coping with the disease. This offers an immense psychological boost that you are not alone in your disease; there are many others suffering similar feelings and experiences. This gives greater mental strength to face the situation. However, never substitute your

 

doctor's advice with that of any member of the support group. Follow your doctor's advices religiously.

### *Financial Counselors*

Financial factors prove to be a major cause for worry for most prostate cancer patients. There are financial counselors available through your hospital, or your doctor can give you the necessary information. Talk and discuss your financial position and decide about how best you can accommodate your additional expenses for prostate cancer treatments. These counselors would offer necessary advice about all financial issues regarding your prostate cancer treatment.

## Gather Information

Try to collect as much information about prostate cancer as possible from various sources like the Internet, medical journals, medical organizations, and professionals in this sphere. Collection of information can help you understand the disease in its entirety and remain prepared for all consequences.

### *Family*

Family members and, especially your spouse, will have to play a major role in your coping plan for prostate cancer.

Take the time to have a frank discussion of all pros and cons of your prostate cancer.

You both can visit and talk with your doctor to learn about the possible side effects of treatments or symptoms.

This helps your spouse prepare to handle any emergencies.

### *Home*

Domestic affairs take a backseat and, often, there could be frequent disruptions in the regular household routines due to your prostate cancer treatments.

Organize help at home.

 

You can engage trained nurses at home to help with giving injections, bathing, administering medications and looking into all your medical requirements.

You can engage domestic help to look after regular household chores.

Your spouse would be definitely stressed because of your ailment and treatments. Having such people to help at home can be a great boost and stress reducer.

If need be, you can ask your friends or neighbors to give a helping hand.

## Personal Strategy

Although these coping strategies may provide an effective action plan to reduce the effects of your prostate cancer and treatment, you should maintain a positive attitude and remain optimistic.

Always express your feelings and emotions openly without bottling up your guilt or grief. Talking over matters makes you feel better and relieves stress from your body.

This is essential as high stress levels can cause excessive spreading of prostate cancer cells.

Impotence is a major effect of prostate cancer. This is a very personal matter for discussion between you and your spouse. Develop and maintain easy and open communication channels.

 

# Prostate Cancer Treatment and Stress

The existence of prostate cancer can cause a lot of stress. You may fear possible consequences, be wary of the selected treatment options and how effective they could prove to be.

You may be unsure of your future, with the possibility of disability and financial problems due to your prostate cancer treatment.

Stress due to prostate cancer translates into fatigue, disturbed sleep, anxiety, body aches and pain, headaches, irritability and tension.

Scientists from Wake Forest University School of Medicine are the first to have published reports in Science Daily (dated Apr. 11, 2007) that the stress hormone epinephrine causes changes in prostate cancer cells, making them more resistant.

Epinephrine levels remain elevated during stressful situations.

Laboratory studies indicate that a specific protein called BAD, responsible for cell death, becomes inactive if exposed to epinephrine.

Keeping stress at bay is essential to gain the best from prostate cancer treatments.

This is possible by having well-balanced and nutritious meals, regular exercise and getting sufficient rest through proper sleep.

Maintain a positive psychological outlook by developing a positive attitude and accepting the fact that certain events are beyond your control.

So, brooding and pondering over them only worsens your present situation.

Also, express your opinions in an assertive tone instead of becoming angry, aggressive or bleakly passive.

You should learn to keep your mind and body relaxed without depending on drugs or other artificial aids.

Use simple relaxation techniques like listening to music, reading books, biofeedback, using audiotapes for deep breathing and visualization.

 

Practice mind relaxation techniques. You should sit in a comfortable position, close your eyes and breathe through your nose.

Concentrate on your breathing; making it slow and steady. Do not allow your mind to wander away; instead, keep it engaged in pleasant thoughts.

Try to keep realistic targets for accomplishments for each day without overburdening yourself.

Completion of such targets offers a psychological boost.

Share your thoughts and feelings with family and friends.

Joining cancer support groups and mingling with people that have similar problems and apprehensions can help you understand your situation better.

 

# How to Prevent Prostate Cancer

Prostate cancer can develop due to various factors. There is no clear evidence to confirm the specific causes for prostate cancer.

It is too early to ascertain which of the prevention strategies are most effective or deliver best results.

**Cancer Tests:** Regular screening through PSA and DRE tests can warn you of prostate cancer. These tests may not be always conclusive, but can offer an insight into things to come.

Doctors normally advise all men over the age of fifty to undergo these tests annually.

**Genetic factors:** If you have any direct relatives (father, grandfather, or brother) with prostate cancer, chances of you contracting prostate cancer are probably higher than average.

Similarly, if female relatives have breast cancer, you might have a tendency for prostate cancer in your genes.

Going for regular checkups can help detection of prostate cancer in the early stages and prevent it from developing into advanced stages.

**Race:** Prostate cancer is predominant in African-Americans and Europeans. Asian men record a very low incidence of prostate cancer. Yet, Asian men immigrating to the western countries show a higher incidence of prostate cancer.

Although you cannot change your race, adopting screening techniques is a good preventive measure.

**Diet:** A diet rich in animal fat and dairy products may increase your risk of prostate cancer. Avoid fatty food. Eat lots of vegetables and fruits like tomatoes and grapefruit. Include more fiber foods, whole-grain foods like whole-wheat bread and brown rice, and restrict your intake of salt and sweets.

 

Include omega-3 fatty acids in your regular diet from salmon, mackerel and herring.

Eat phytoestrogens - available through soybeans and similar legumes.

Eat moderate meals and restrict your accumulation of calories.

**Green Tea:** Green tea contains antioxidants like polyphenols that some people claim may help to prevent prostate cancer. Some people say that you can use supplements to reap similar benefits.

**Beverages:** Some people claim that four to eight glasses of red wine over a week may lower the prostate cancer risk.

Refrain from alcohol consumption totally or restrict to less than two drinks in a day.

**Sexual Activity:** Frequent sexual activity may reduce the risk of prostate cancer. Frequent ejaculations help flush away toxins and prevent their build-up in the prostate. This also improves your immune system and offers better protection from prostate cancer.

It may also relax your mind and lower unnecessary nervous system activity.

**Zyflamend and Selenium:** Taking selenium supplements is claimed by some people to perhaps reduce the risk of prostate cancer.

Some people claim that herbal supplements like Zyflamend and the intake of selenium supplements may reduce your prostate cancer risk. They also claim that these preparations may help to reduce the effects of prostate cancer.

**Vitamin D through Sunlight:** Regular sun exposure can allow accumulation of the necessary amount of vitamin D in your body. Vitamin D is believed by some to offer protection from prostate cancer.

However, you must also protect yourself against excessive exposure, as this can cause kidney damage and hypocalcaemia.

**Physical exercises:** Maintain a schedule of regular workouts and other physical exercise. Exercise releases specific hormones that may help with some effects of prostate cancer.

 

None of these factors can guarantee any benefit, let alone complete immunity to prostate cancer.

Consult your doctor before using any preparation or starting any exercise or other therapy at all

 

# Prevention

There is no substance, treatment or system which is proven to prevent prostate or any other cancer.

However, many people claim to have found something which they say has helped them or people they know to reduce their chance of getting prostate cancer or helped with the effects of the disease.

This section tries to cover many of those reports but I do not endorse any of them.

Always consult your doctor for qualified professional advice which will take into account your own circumstances, medical condition and history.

## *Complementary and Alternative Therapies*

What does complementary and alternative therapy mean?

The National Center for Complementary and Alternative medicines define complementary and alternative therapies as diverse health and medical care services, products and practices that are not the part of the conventional medicine. These therapies are sometimes used with the conventional form of medication. Alternative medication is used by some people instead of conventional medication.

Are complementary and alternative therapies used widely?

Studies of complementary and alternative therapy are inconsistent. There has been a rise in the percentage of people in the USA that have tried some form of complementary or alternative therapy from 33.8 in 1990 to 42.1 in 1997. Another analysis states that only 28.9% of US adults had used complementary and alternative therapy at least once.

What points must be considered before using complementary and alternative therapy?

Cancer patients who are considering the use or are using complementary or alternative therapy must discuss their decision with the physician or nurses, as they would have done with any therapeutic application. This is essential,

 

as there may be some interference from complementary and alternative therapy.

The National Center for Complementary and Alternative Medicine (NCCAM) and National Cancer Institute (NCI) sponsoring complementary and alternative therapy are co-sponsoring or sponsoring different clinical methods in the study of complementary and alternative therapy for cancer. Many of these studies are to check the effects of the complementary methods along with conventional methods.

These include:

**Acupuncture:** Acupuncture is used by some people to try to reduce the symptoms of colorectal cancer that is in an advanced state.

**Combination Chemotherapy and Radiation Therapy:** This therapy, with or without shark cartilage is used to treat patients with non-small cell lung cancer which cannot be surgically removed.

**Hyperbaric Oxygen Therapy:** This therapy is used in patients with a laryngectomy. Larynx means the voice box and laryngectomy is the process of removing a part or the entire larynx from the human body.

**Massage Therapy:** This therapy is claimed by some people to bring relief in patients who are suffering from the fatigue associated with the disease.

**Pancreatic Enzyme Therapy:** This therapy and a specialized diet are used by some people as part of their treatment for pancreatic cancer.

**Mistletoe Extract:** Along with chemotherapy, this treatment is claimed by some people to be applicable for people suffering from solid tumors.

What questions should patients ask their doctor or health care provider before starting complementary and alternative therapy?

Here are few questions that cancer patients should be asking their health care providers:

What are the benefits I can expect from this therapy?

Are there any risks involved in this therapy?

 

Are the benefits enough to outweigh the risk involved?

What side effects should I expect from this therapy?

Will this therapy interfere with my conventional treatment?

Is the complementary and alternative therapy a clinical trial package?

Will my complementary and alternative therapy be covered under the health insurance?

 

# Herbal Treatments for Prostate Cancer

Imbalance of proper diet intake is claimed by some people to have led to the many chronic diseases we have today.

Herbal systems attempt to balance the body with enough nutrients.

But, there is no scientific study of treatment through herbal treatments.

There are claims of herbal treatments making a difference. However, be very cautious in your approach about herbal treatments.

Take the medication only after full consultation with your doctor and under guidance, because there have been reports of side effects such as:

Venous thrombosis, a condition where blood clots in the vein,

Tenderness of breasts and

Decline in the desire for sex.

There is a herbal treatment for prostate cancer derived from the stinging nettle, an herb.

## *Cernilton*

Cernilton is another herbal treatment that is gaining popularity among the herbal cure advocates. Cernilton is made out of rye pollen extract, and is used for treatment of prostatitis and BPH.

## *Flavonoids*

Citrus fruits, onions, green tea, red-wine, parsley, and soybeans are rich in Flavanoids, which have antioxidant properties.

## *Lycopene*

Lycopene is claimed by some people to be good for people with prostate cancer. Research has revealed that eating cooked tomatoes may help to reduce the risk of prostate cancer in men. Some people claim that if men consumed ten or more tomato-based meals per week then they may be forty-five percent less likely to develop prostate cancer.

 

Apart from tomatoes, watermelons, grapefruits and guavas are rich in lycopene.

### *Pygeum*

Pygeum is another popular herbal preparation promoted by many people. Pygeum is an indigenous African treatment that is obtained from the bark of the tree. The herbal solution contains DHT inhibiting chemicals, which is claimed by some people to be helpful when treating an enlarged prostate.

### *Saw Palmetto*

Seronoa Repens, or Saw Palmetto, is claimed by some people to have therapeutic properties that may help to relieve some symptoms or effects of prostate cancer. The DHT hormone (Dihydrotestosterone) is responsible for prostate disorder and Saw Palmetto is claimed by some people to reduce the DHT production which might help to prevent inflammation of the prostate and its enlargement.

### *Selenium*

Selenium is a mineral found in the prostate. The decrease in its level in the prostate may be a factor in various problems. Foods that are rich in Selenium are chicken, shellfish, grains and garlic.

### *Zinc-Rich Foods*

Zinc, the mineral, is also found in the prostate. A decrease of the zinc level in the prostate may be a factor in various complications of the prostate.

Foods that are rich in zinc are clams, lamb chops, wheat germ, whole oatmeal, oysters, pumpkin seeds and sunflower seeds.

## Recommendations

Before you start with any kind of treatment, always consult your physician. Your physician can provide you the right advice for the best utilization of herbal supplements in the prevention or treatment of prostate cancer.

 

# The Immune System and Prostate Cancer

James P. Allison, Howard Hughes Medical Institute investigator and his team are conducting research to find immunotherapy strategies that could deliver positive improvements in immunotherapy.

From the team's experiments on mice, recent reports as of January 10, 2008 indicate that body's immune system might use a common molecule to recognize prostate tumors.

This molecule comes from a protein found in all the body cells. Yet, immune cells respond only if it is present on the surface of cells within a tumor. Therefore, immune cells in mice can detect prostate cancer. Further, these immune cells pose a very feeble attack against the tumor.

The specific type of immune cell works through a killer T cell. There are numerous receptors on each of the cell bristles that can detect a foreign molecule. As soon as the receptor detects this foreign molecule, it destroys the specific cell. The killer T cell then replicates and sticks to the same foreign molecule to destroy it.

Each of these T cells has an exclusive receptor according to genetics and through a random process. The T cell antigen receptors are fork-like proteins that recognize molecular signals on invading cells. There can be innumerable such receptors and there may be different kinds. Distribution of these cells is random across the body tissue.

However, an intriguing aspect was that the T cells replicated on noticing the malignancy.

Allison and his team conducted experiments to detect what activated the T cells. They soon discovered that only molecules from the nucleus activated the T cells. However, nuclear proteins are not on the surface of the cell and T cells can only recognize molecules on the surface of other cells.

 

Deeper research showed that specific nuclear proteins activated T cells. This specific protein was histone H4. Such histones are found in large numbers in the nucleus.

Allison and his team are currently conducting studies to determine if histone H4-reactive T cells in the blood of prostate cancer patients could be a diagnostic detector or marker.

This might help to find a way of early detection of prostate cancer in the future.

 

# Eating Right and Maintaining Good Nutrition

Maintaining good nutrition is essential to help with combating the side-effects of cancer treatment.

This can give you more energy and you will probably also feel better.

## *Maintain a Basic Calorie Intake*

Maintain the basic calorie needs of your body. If you suffer from cancer and you maintain a stable weight, then the estimated calorie intake is possibly about fifteen calories per pound of weight.

If you are losing weight, then you might add five hundred calories every day. For example, if a person weighs 160 pounds, then the caloric intake of the person should be 2,260 calories each day to maintain a stable weight.

## *Take Protein each day*

Proteins help the body in repairing and rebuilding damaged body tissue. An estimated protein intake might be 0.5 to 0.6 grams for every pound of body weight.

For example, a person weighing one hundred and fifty pounds requires around seventy-five to ninety grams of protein intake per day. Foods that are rich in proteins are dairy products, meat, eggs, fish and legumes - especially beans.

8 oz of milk - 8 grams of protein

One ounce of fish, meat or poultry - 7 grams of protein

## *Drink Enough Fluids*

Drink around eight cups of fluids each day. This is the best way of preventing dehydration. Fluids can be water, milk, juice, milkshakes, gelatin, broths and other beverages.

Avoid fluids that contain caffeine or excess sugar.

However, if the treatment's side effect is diarrhea and vomiting, then you will need to consume extra fluids.

 

### *Enough Vitamins*

If your food is not vitamin-rich, then you may need to take vitamin supplements.

Natural sources of vitamins include nuts, olive oil, seeds, avocado oil, non-fat milk, peas and wheat germ.

### *Foods that are Rich in Lycopene and Quercetin*

These plant pigments promote health and may have cancer-fighting abilities. Foods that are rich in lycopene are watermelons, papaya, red grapefruit, red berries and tomatoes.

Quercetin has anti-inflammatory and antihistamine properties that may be beneficial in reducing the pain of the inflamed prostate.

Foods that are rich in quercetin are green and black tea, apples, onions, red wine, citrus fruits, raspberries, red grapes, broccoli, citrus fruits, cherries and leafy green vegetables.

### *Get a Dietician's help*

A dietician will provide you suggestions to improve your eating. This might cover taste changes, feelings of fullness and any difficulty in swallowing.

Your dietician can guide you with ways to maximize the calories and proteins. There are many tips that a dietician may provide you, which may be beneficial for you and your health.

## Nutritional Recommendations

1. Reduce the intake of animal fat. Studies reveal that the intake of excess fat may stimulate the growth of prostate cancer.

2. Avoid the intake of trans-fats. They are found in baked, fried foods and margarines.

3. Avoid caffeine, spicy foods and alcohol.

4. Include fresh fish in your diet, especially those which are rich in omega-3 fatty acids. Fish that are rich in omega-3 fatty acids are sardines, salmon, trout and mackerel. Eat them at least 2 to 3 times a week.

 

5. Eat more herbs, fresh fruits and vegetables. Colorful vegetables and fruits may contain powerful nutrients.

6. Avoid high-calcium diets. They may act as prostate cancer stimulators.

7. Avoid high quantity zinc supplements.

8. Eat food that is rich in vitamin C such as citrus fruits, spinach, berries, cantaloupe, mango and sweet peppers.

9. Avoid salted foods, pickled and preserved foods.

10. Eat cruciferous vegetables such as cauliflower, cabbage, and broccoli. They are said by many people to have cancer-protecting properties.

 

# Prostate Cancer and Regular Exercise

Many times, the result of cancer and its treatment is a decrease in physical activity. This can result in a lack of energy and tiredness.

Moderate and regular exercise is very beneficial.

Before you start out with your exercise regime, here are few guidelines. If you keep these guidelines in mind, you will not just benefit with the exercise but it will also help to prevent complications.

## Doctor's Advice

Before you start with your exercise program, make sure you take your doctor's advice, because the doctor will recommend how much or what sort of exercise is okay for you.

Slow and Steady

Do not suddenly start with heavy exercise. Remember a good exercise routine always begins with slow exercises. These let your body adjust to the new routine.

Maintain a Schedule

It is good to maintain regularity. Do not have a long gap between your exercise schedules. It may be ideal to exercise at least three times a week.

### *The Right Exercises*

The right exercise will not burden you - it will invigorate you. It will not leave you feeling exhausted, stiff or sore.

If your exercise is leaving you with such feelings, then please modify your regime, because you may be overdoing or using the wrong exercises.

Most exercises may be safe, as long as you keep in mind the guidelines but do not overdo it.

Some generally productive and usually safe activities are:

Swimming

 

Regular brisk walking

Indoor stationary cycling

Low impact aerobics under the supervision of a certified instructor or as taught by the certified instructor.

Brisk and Slow Pace Walking:

Exercise comprising of brisk walking stretching thirty to sixty minutes 4 to 5 days a week is beneficial. On the other hand, walking at a slower pace for forty to sixty minutes, once or twice in a week will bring great benefits.

Maintain Moderation

Prostatitis may be caused by over activity.

Moderation is the key to lowering the risk. Most men who are over the age of sixty-five should not devote more than three hours to exercise every week.

This may be enough to reduce the chances of dying because of prostate cancer. Studies have seen a reduction in advanced prostate cancer by seventy percent in men who exercised 3 hours in a week.

## *Recommendation*

There is no evidence of direct correlation between exercise and the curing of prostate cancer but most health agencies recommendation for the prostate cancer patient is to focus on both diet and exercise.

Regular exercise is usually beneficial for your prostate.

 

# Prognosis of Prostate Cancer

Prostate cancer is the cause for most number of deaths in the US after lung cancer. There have been various research studies into the prognosis of prostate cancer and many are still going on.

It is not possible to predict the exact outcome of prostate cancer, your responses to treatment, chances of cure and other concerns.

Doctors find it difficult to give specific survival chances unless they have the individual's full history and current test results.

Prostate cancer is a very slow growing cancer and many factors affect its progress. This is one of the main reasons that doctors are unable to predict its outcome.

But, there are certain factors that can help you provide a guideline or an overall view of the state of your prostate cancer:

Your age and general health can affect prostate cancer treatments.

The stage of your cancer can explain how far your prostate cancer has spread or affected other body organs. This gives an insight into survival and recovery chances.

There is no clear evidence between PSA levels and the progress of prostate cancer. Normally, high PSA levels indicate advanced prostate cancer.

It may also be one factor in deciding the treatment options. But, sometimes, PSA levels remain low although you have prostate cancer. This is because these cancer cells mutate excessively and do not make PSA. This type of prostate cancer is very aggressive and can spread fast.

So, PSA levels may not provide a clear picture and you should discuss different diagnoses with your doctor to understand your prostate cancer.

The Gleason score shows the aggressiveness of prostate cancer. This is useful for deciding suitable treatment options.

 

Recurrence of prostate cancer can offer higher recovery chances if prostate cancer recurs only within the prostate.

## Prognosis of Prostate Cancer Stages

**(I) Early Stages:** If your prostate cancer is in the early stages, survival rates are excellent with cure rates of 98% in most cases. This is because prostate cancer grows and spreads very slowly and treatment may cure you completely.

**(II) Advanced Stages:** Prostate cancer in the advanced stages could be within more divisions like:

**(a) Locally Advanced:** Your prostate cancer has now spread outside the prostate to nearby regions. Yet, survival chances may be very good and can extend to many years in most men.

**(b) Metastasized Cancer:** In this stage, your prostate cancer has spread to distant organs of your body and your survival chances may not extend beyond one to three years.

In some cases, men survive beyond this while more men die of other causes.

**(c) Recurrence:** Sometimes, after undergoing prostate cancer treatment, you could experience a relapse. If the cancer is still within the prostate, it may be curable. If however, the cancer has spread beyond, it might be best to go for hormone treatments for better survival chances.

But, chances of another recurrence are high.

### *Survival Rates*

Survival rates for prostate cancer differ widely. The published survival rate indicates the percentage of patients living a specific number of years after diagnosis of the cancer.

The ten-year survival rate indicates 93% while it is 77% for fifteen-year survival rate.

Beyond this, survival rates remain better stabilized.

 

If you are diagnosed with low-grade prostate cancer, your survival rate can extend to over twenty years after diagnosis.

However, if you are diagnosed with a severe form of prostate cancer, your survival chances may be less than a decade after diagnosis.

 

# Prostate Cancer – Frequently Asked Questions

### *What is prostate cancer?*

Prostate cancer is cancer of the prostate gland. Prostate cancer refers to unrestricted growth of cancerous cells within the prostate gland. This could slowly spread to lymph nodes and bones.

### *What is advanced prostate cancer?*

Advanced prostate cancer is the same as metastatic prostate cancer. Prostate cancer that spreads beyond the prostate gland into lymph nodes, nearby tissues, bones or other body parts is called advanced prostate cancer.

### *How common is prostate cancer?*

Prostate cancer is the second most common non-skin cancer affecting American men. There is a new prostate cancer case every 2.5 minutes. Prostate cancer affects every sixth man. Every nineteen minutes, a man dies of prostate cancer.

### *Does prostate cancer afflict elderly men more?*

Yes. With increase in age, men show a greater risk of developing prostate cancer. Statistically, more than 65% of prostate cancer cases are men over the age of sixty-five. Under the age of forty, prostate cancer affects only 1 in 10,000 whereas the rate goes up to 1 in every fourteen for men between 60 and 69.

### *Is there a cure for prostate cancer?*

Cure rates for prostate cancer vary. Normally, most prostate cancer cases, almost ninety percent of them, are in the local and regional stages. Many such cases may be disease-free within five years.

### *What are the symptoms of prostate cancer?*

Prostate cancer in the early stages has almost no symptoms. Very few men experience urinary difficulties like higher frequency, urination with burning sensation, hesitant urination, pain in the back, stiffness in the legs, and difficulty in having an erection. As these symptoms may be indicative of other diseases also, you need to undergo a thorough check-up.

 

### *Are specific men at a higher risk for prostate cancer?*

African-American men and men with a family history of prostate cancer are at a higher risk of prostate cancer. If your direct relatives like father, grandfather, or brother have prostate cancer, you have a higher risk of developing prostate cancer. If one of your direct relatives has prostate cancer, your risk chances are doubled. If there is more than one direct relative with prostate cancer, your risk chances are four times higher. Such high-risk men should undergo annual PSA and DRE tests.

### *Does prostate cancer make a man impotent?*

Most prostate cancer treatments carry a high risk of impotency. Newer therapies and research are offering increased effectiveness of treatments without loss of potency.

There are further medical options available for regaining sexual potency.

### *Is it possible to father children after prostate cancer treatment?*

Prostate cancer is normally diagnosed in elderly men, by which time you would have fathered children. Newly developing detection techniques can now detect prostate cancer in young men in the early stages.

However, a clear and frank discussion with your doctor before starting with prostate cancer treatment is advisable.

 

# A Reminder from Norman Falconer.

I was motivated to write this book after a friend died from prostate cancer.

His illness and the trauma and ongoing problems which it caused to his family could perhaps have been prevented if he had accepted the temporary discomfort of being tested.

So, please discuss your potential risk with your doctor and get tested.

Do it now.

Norman Falconer 2008

 

 