

A to Z of Medical Terms Used in Relation to Prostate Cancer

Abiraterone (Zytiga). A drug normally used for castrate-resistant prostate cancer (formerly hormone-resistant or hormone-refractory prostate cancer) -- i.e., prostate cancer not responding to androgen deprivation or treatment with anti-androgens.

Actinium-225 - A radioactive isotope which emits alpha radiation for cancer treatment physically close to prostate cancer cells.

Active surveillance. A way of monitoring prostate cancer with regular tests, rather than treating it right away. The aim is to avoid or delay unnecessary treatment in men with less aggressive cancer. Tests include PSA tests, digital rectal examinations (DRE), MRIs and repeat biopsies. These tests check for any changes that suggest that the cancer may have grown, and treatment can then be offered at an earlier stage.

Adenocarcinoma. A cancer that occurs in the cells of a gland, such as the prostate gland. The majority of prostate cancers are adenocarcinomas. See also carcinoma.

Adjuvant therapy Treatment given in addition to the main treatment to increase the likelihood of successfully controlling the cancer. For example, hormone therapy given at the same time as radiotherapy. See also neoadjuvant.

Advanced prostate cancer. Prostate cancer that has spread outside the prostate gland to other parts of the body, such as the bones or lymph nodes.

Aggressive. This word may be used to describe a cancer that is more likely to develop and spread quickly. See also Gleason score.

Agonist. A drug used to treat prostate cancer by stopping the production of testosterone by the testicles. Common examples are Lupron or Eligard.

Alpha-blockers. Drugs that can be used to help treat benign prostatic enlargement (BPE). They relax the muscles around the neck of the bladder and in the prostate, making it easier to pass urine.

Androgens. Hormones that are responsible for male characteristics. The male sex hormone called testosterone is an androgen. See also hormones and testosterone.

Androgen Deprivation Therapy (ADT) (aka Hormone Therapy) – A mechanism to reduce levels of male hormones, called androgens, which stimulate prostate cancer cells to grow. The main androgens in the body are testosterone and dihydrotestosterone (DHT). Most of the testosterone are made by the testicles, with a small amount made by the adrenal glands. Lowering androgen levels or stopping them from getting into prostate cancer cells often makes prostate cancers shrink or grow more slowly. Drugs such as Lupron (which stops the production of testosterone) and Casodex (which blocks testosterone) from binding to prostate cancer cells, are generally referred to as first-line ADT.

Androgen Receptor (AR). A protein within the prostate gland that must bind to the androgen in order for the androgen to work. In prostate cancer, androgens bind to androgen receptors inside the cancer cells, which cause the cancer cells to grow.

Antagonist. A drug used to treat prostate cancer by stopping the production of testosterone by the testicles and other sources. Examples are Degarelix (Firmagon) which is administered via injection and Relugox (Orgovyx) via pill form.

Anti-androgens. Hormone therapy drugs that stop testosterone from reaching the prostate cancer cells. Without testosterone the cancer cells are not able to grow.

AR-V7. An androgen-receptor splice-variant 7 protein. A circulating tumor cell (CTC) blood test is done to determine the presence of AR-V7. If AR-V7 is present, the use of secondary hormone therapy drugs, like abiraterone or enzalutamide, would have little effect on men with castrate resistant prostate cancer. Hence, Docetaxel, Cabazitaxel, and Radium-223 would be considered effective therapies in patients who have AR-V7. Only about 10% of men have the AR-V7 splice variant protein.

Artera AI ProstateTest – A test which uses biopsy results to determine (i) the risk of distant metastasis within 10 years and (ii) if the use of short-term ADT, in conjunction with radiation, would be beneficial.

Atypical small acinar proliferation (ASAP). The term used when your prostate tissue shows signs of prostate cancer but there is not enough evidence to say for certain whether you have prostate cancer or not. It is found by looking at prostate tissue under the microscope. If you are told you have ASAP, you may need to have another biopsy so that the pathologist can take another look at the cells in your prostate.

Benign This word is used to describe a tumor that is not cancerous. See also tumor.

Benign prostatic enlargement (BPE). A non-cancerous enlargement of the prostate. It is a common condition that mainly affects men over the age of 50. Also known as benign prostatic hyperplasia (BPH).

Biochemical Recurrence (BCR) - Occurs when PSA rises above a given threshold to indicate that local therapy has failed. Also referred to as “Biochemical Relapse” or “PSA Failure”. The threshold differs for surgery and radiation.

Biomarker. A indicator of some biological state or condition use to measure and evaluate normal biological processes, pathogenic processes, or pharmacologic responses to some form of therapy. They are often used to help make decisions in making a diagnosis and selecting a course of treatment. A prognostic biomarker provides information about the patients overall cancer outcome, regardless of therapy. A predictive biomarker gives information about the potential effect of a given therapy.

Biopsy. The removal of small samples of tissue to be looked at under a microscope to check for signs of cancer. A biopsy of the prostate gland may be used to help diagnose prostate cancer.

Biopsy core. A sample of tissue taken during a biopsy. See also biopsy.

Bisphosphonates. A group of drugs which may be taken by men with prostate cancer that has spread to the bones and is causing pain. They do not treat the cancer but may help with symptoms.

Bladder. A sac made of muscle which collects and stores urine before it is passed out of the body. See diagram on last page.

Bladder neck incision. A procedure to help improve the flow of urine and relieve urinary symptoms by making small cuts in the neck of the bladder.

Bone marrow. Soft tissue found inside the bones that makes red blood cells, white blood cells and platelets. Chemotherapy treatment for prostate cancer affects how well your bone marrow works.

Bone scan. A scan of the body, similar to an X-ray, which uses a radioactive dye to highlight the bones and find any areas of damage. A bone scan may be used to find out whether prostate cancer has spread to the bones.

Brachytherapy. A type of internal radiotherapy for treating localized prostate cancer. This uses radioactive seeds which are either (i) implanted permanently into the prostate gland where they give off a low dose of radiation, or (ii) temporarily implanted with high dose seeds and then later removed.

BRCA1/BRCA2 Genes. Genes which belong to a class of genes known as tumor suppressor genes, which regulates the cycle of cell division by keeping cells from growing and dividing too rapidly or in an uncontrolled way. Mutations in these genes increase the risk of cancer.

Cancer. A condition where cells in the body grow in an abnormal or uncontrolled way to form a tumor. These cells may spread to surrounding tissue and other parts of the body. See also carcinoma and adenocarcinoma.

Carcinoma. Cancer which begins in the tissues that cover the outside and line the inside of an organ. Carcinomas are the most common type of cancer. See also adenocarcinoma.

Castrate Resistant Prostate Cancer – Prostate cancer which is no longer responsive to androgen deprivation therapy. Was also previously referred to as "hormone-refractory prostate cancer" or "androgen-independent prostate cancer". A clear indication of this type of cancer is a rising PSA while undergoing androgen deprivation (hormone) therapy.

Catheter (urinary). A thin tube that is used to drain urine from the bladder out of the body. This can be a tube through the penis (urethral catheter), or through the abdomen (suprapubic catheter).

Cells. The basic building blocks which make up every part of the body. Cells normally multiply in a controlled way. Cancer occurs when cells start multiplying in an uncontrolled way, forming a tumor.

Chemotherapy. Chemotherapy uses anti-cancer drugs to kill cancer cells. It is used to treat prostate cancer that has spread outside the prostate gland and is no longer responding to hormone therapy. Chemotherapy is used to help control symptoms of prostate cancer and not to cure it. The two common drugs used are Docetaxel (Taxotere) and Cabazitaxel (Jevtana).

Checkpoint (Blockade) Inhibitor. A drug which allows killer T-cells within the immune system to attack cancer cells. Tumor cells have proteins that reveal the cells' cancerous nature. But sometimes they cover themselves in proteins of normal cells (called immune checkpoints) which allows them to look like healthy cells, thus deceiving the immune system and allowing the tumor cell to go unmolested. Two of these proteins are called CTL-4 and PD-1. A checkpoint inhibitor blocks these proteins on cancer cells, thus removing the blinders that prevent T cells from recognizing the cells as cancerous and leading to an attack by the killer T-cells. Pembrolizumab (Keytruda), Ipilimumab(Yervoy), Nivolumab (Opdivo) and Atezolizumab (Tencentriq) are examples of checkpoint inhibitors which are being considered for prostate cancer.

Circulating Tumor Cells (CTCs). Cancer cells that detach from a primary tumor and travel through the bloodstream or lymphatic system to other parts of the body.

Clinical trial. A medical research study involving people, who are always volunteers. Trials may investigate new drugs and combinations of drugs, as well as new technology and procedures.

Combined Androgen Blockade (CAB). A form of hormone therapy that uses both an agonist and an anti-androgen to treat prostate cancer. Also called maximal androgen blockade or complete androgen blockade. See also agonists and anti-androgens.

Complementary therapy. Therapy which can be used alongside medical care. Examples include acupuncture, massage and making changes to your lifestyle and diet. Some people find these therapies help them to cope with cancer symptoms and side effects such as tiredness.

Computerized Tomography (CT) scan. A scan that uses a computer linked to an X-ray machine to take a series of images of the body. You may have a CT scan to find out whether the cancer has spread outside the prostate.

Core. A small cylinder of prostate tissue taken with a thin, hollow needle inserted into the prostate gland. Cores are samples taken from the top (apex), middle, and bottom (base) portions of both lobes (sides) of the gland and should have its own diagnosis listed separately in the pathology report. The report should show the percentage of the core that contained cancer.

Cryotherapy. A treatment that uses freezing and thawing to kill the cancer cells in the prostate gland. It can be used to treat prostate cancer that has come back after treatment with radiotherapy or brachytherapy. It is also sometimes offered as a first treatment for prostate cancer. Also known as cryosurgery or cryoablation.

Cystitis. Inflammation of the bladder that causes a burning sensation when you pass urine, have difficulty passing urine, or the need to pass urine more often. Radiation cystitis can be a side effect of radiotherapy.

Cytotoxic drugs. Medicines used in chemotherapy to kill prostate cancer cells, wherever they are in the body. See also chemotherapy.

Decipher Test. A genomic test, which evaluates the pathways of 22 genes which are associated with aggressive prostate cancer. The test, which is based on a small tissue sample from the prostate gland removed during surgery or from a prostate biopsy, predicts the probability of metastasis and provides an assessment of tumor aggressiveness.

Diagnosis. Identification of a health problem or condition.

Diarrhea. Passing frequent, loose or watery stools (feces or poo) from the bowel. See also feces.

Digital rectal examination (DRE). A physical examination in which a doctor feels the prostate gland for lumps with a gloved, lubricated finger through the back passage (rectum). The DRE is used to help diagnose prostate problems and prostate cancer.

Dihydrotestosterone (DHT). A hormone which is converted from testosterone in the prostate gland. It is about three to four times stronger than testosterone itself and binds to the androgen receptor much more avidly.

Enlarged prostate. See benign prostatic enlargement.

Enzalutamide (Xtandi). An antagonist drug used for the treatment of metastatic castration-resistant prostate cancer.

Erectile Dysfunction (ED). Difficulty getting or keeping an erection. Erectile dysfunction has many possible causes. It can be a side effect of some treatments for prostate cancer. Also known as impotence.

Estrogen A female sex hormone that may be used as a type of hormone therapy for men with advanced prostate cancer.

External beam radiotherapy (EBRT). Radiotherapy using high energy X-ray beams (either Photon or Proton) directed at the prostate gland from outside the body. This type of treatment may be used to treat localized or locally advanced prostate cancer or to ease symptoms from prostate cancer that has spread to other parts of the body.

Extracapsular Extension. A condition where the tumor has penetrated the prostate capsule and begun growing outside of it.

Fecal incontinence. Problems controlling bowel movements which lead to stools (feces or poo) leaking from the rectum. Also known as bowel incontinence.

Fatigue. Extreme tiredness or exhaustion which can interfere with everyday life. This can be a side effect of treatments for prostate cancer, particularly hormone therapy.

Fistula. An abnormal opening between two parts of the body that may be caused by injury or infection. This is an uncommon complication of some treatments for prostate cancer, where a hole forms between the rectum and the tube that carries urine through the penis (urethra).

Flare. When cancer grows more quickly for a short time after treatment is started because of a temporary rise in the level of testosterone. This can be caused by the first injection of an LHRH agonist. May also be called a tumor flare.

Focal Laser Ablation (FLA) Therapy. The use of an MRI-guided laser to generate high levels of heat to target and eradicate cancerous tumor(s) within the prostate.

Focal Therapy. A therapy used to treat only the tumors (and a surrounding margin) within the prostate gland in lieu of treating the entire gland. Examples used include Cryotherapy, High Intensity Focused Ultrasound (HIFU), Focal Laser Ablation (FLA) and radiation.

Fraction. A single session of a course of radiotherapy treatment. See also radiotherapy.

Free PSA. The amount of prostate-specific antigen (PSA) in the blood that is not attached to other proteins. The percent-free PSA is the ratio of free PSA to the total PSA level, which includes both free and bound PSA. A doctor may order a free PSA test if a patient's total PSA level is between 4 and 10. A percent-free PSA above 25% is generally considered normal. A lower percent-free PSA may indicate a higher risk of prostate cancer.

Frequency. The frequent need to pass urine. This can be a symptom of a prostate problem.

Gallium 68. A positron-emitting isotope generated from germanium-68 (with a half-life of 68 minutes) for use in diagnostic PET scans. It is usually attached as a tracer to mark the location of prostate cancer cells containing PSMA.

Genes. The biological information that is inherited from your parents. Genes control how the body grows and works. See also genetics.

Genetic Mutation. A permanent change in a cell's DNA sequence. They can be caused by mistakes during cell division or exposure to environmental factors that damage DNA.

Genetic Testing. A type of medical test to determine if germline or somatic mutations exist. Genetic test results could affect prostate cancer treatment options from active surveillance to advanced cancer treatments. Germline testing is generally done via a saliva or blood test. Somatic testing is usually done via a tissue sample from the tumor itself or from liquid biopsy if cancer cells have migrated into the blood stream. Men with a family history of prostate cancer and men diagnosed with advanced prostate cancer should get genetically tested.

Germline Mutation – A genetic mutation which occurs in a parent's reproductive cells (egg or sperm). These mutations are in every cell of the body and can be inherited from either parent.

Gleason grade. A grading system which shows how aggressive prostate cancer is likely to be. Cancer patterns in a prostate biopsy sample are given a grade. Non-aggressive cells are grade 1 and the most aggressive are grade 5. However, today doctors usually only give a Gleason grade of 3 or more. See also Grade Group.

Gleason score. Your Gleason score is worked out by adding together the grades of the two most common patterns with the highest grade in the biopsy samples. The higher the Gleason score, the more aggressive the cancer and the more likely it is to spread. Gleason scores run from 2 to 10. However, today doctors usually only give a Gleason grade of 3 or more, so your Gleason score will normally be between 6 and 10. See also Gleason grade.

Gonadotrophin-releasing hormone (GnRH) antagonist. A type of hormone therapy that is given by injections in the abdomen. It blocks the message from the brain that tells the testicles to produce testosterone.

Grade Group – A system used by a pathologist to grade each sample of prostate cancer cells based on how quickly they are likely to grow or how aggressive the cells look. There are 5 Grade Groups. Grade Group 1 is the least aggressive and Grade Group 5 is the most aggressive. The Grade Group has replaced the Gleason scoring system as a more accurate way to grade prostate cancer cells.

Gynecomastia. Swelling of the breast area. This can be a side effect of some types of hormone therapy.

Hesitancy. The need to wait a while before being able to pass urine, even when the bladder is full.

Heterogeneity. A condition where the same disease or condition can be caused by varying different genes or mutations.

High-grade PIN (prostatic intraepithelial neoplasia). This is a benign condition, but is often seen in conjunction with a cancer and is considered to be a precursor to developing a cancer (i.e. pre-cancer). It is not important in someone who already has prostate cancer.

High Intensity Focused Ultrasound (HIFU). A treatment that uses high frequency ultrasound waves to heat and destroy cancer cells. HIFU is a relatively new treatment for prostate cancer and you may be offered it as part of a clinical trial.

Holmium Laser Enucleation of the Prostate (HoLEP). A type of surgery that may be used to treat benign prostatic enlargement (BPE). A laser is used to remove tissue from the prostate gland that is pressing on the urethra. Also known as laser prostatectomy. See also benign prostate enlargement (BPE).

Hormone refractory / hormone resistant. Prostate cancer that is no longer responding to treatment with any type of hormone therapy and has started to grow. Also referred to as castrate resistant.

Hormones. Chemicals found in the body that help control some of the body's functions. The male hormone called testosterone can cause prostate cancer to grow more quickly. See also androgens and testosterone.

Hormone therapy. Hormone therapy controls prostate cancer by stopping testosterone production or by stopping testosterone from binding to prostate cancer cells. There are different types of hormone therapy, which can be given by injection, implants, tablets or surgery. Hormone therapy can keep the cancer under control for many months or years before you may need to consider other treatment options. It can also be used with other treatments to help make them more effective.

Hospice. Hospices provide a range of services to men living with advanced prostate cancer and their families. Specialist doctors and nurses provide treatment to manage symptoms as well as emotional, spiritual and practical support. Hospices provide day services, a short stay to improve control of symptoms, and also a place of care at the end of life. Hospices may also have nurses who are able to visit you in your home. See also palliative care.

Hot flashes. A common side effect of hormone therapy. Hot flashes give a sudden feeling of warmth. They can affect each man differently, from feeling overheated for a few seconds to hours of sweating and discomfort.

Hypofractionated Radiation Therapy. Radiation treatment in which the total dose of radiation is divided into large doses and treatments are given over a shorter period of time (fewer days or weeks) than standard radiation therapy.

Image Guided Radiotherapy (IGRT). The term used to describe using images of the prostate to guide radiotherapy. This uses either regular computerized tomography (CT) scans, or seeds (known as fiducial markers) which are implanted into the gland and can be seen on X-rays and used as a marker. See also computerized tomography (CT) scan.

Impotence. The inability in a man to achieve an erection or orgasm.

Intensity-Modulated Radiotherapy (IMRT). An advanced form of 3D therapy, is the most common method of EBRT for prostate cancer. It uses a computer-driven machine that actually moves around the patient as it delivers radiation. Along with shaping the beams and aiming them at the prostate from several angles, the intensity (strength) of the beams can be adjusted to limit the dose reaching the most sensitive normal tissues. This lets doctors deliver an even higher dose to the cancer, while minimizing exposure to surrounding organs and tissue.

Laparoscopic prostatectomy. Surgery to remove the prostate gland through several small cuts in the abdomen. Also known as keyhole surgery. See also radical prostatectomy and robotic prostatectomy.

LHRH agonists. Luteinizing hormone-releasing hormone (LHRH) agonists are a type of hormone therapy which stops the body from producing testosterone. They are given by injection or implant. Common examples include Lupron, Zoladex, Eligard and Trelstar.

Libido. The desire to have sex. Hormone therapy can reduce your libido.

Liquid Biopsy. – A simple blood test to look for cancer cells from a tumor that are circulating in the blood, or for pieces of DNA from tumor cells that are in the blood, which enables doctors to discover a range of information about a tumor. Traces of the cancer's DNA in the blood can give clues about which treatments are most likely to work for that patient. One use of a liquid biopsy is to detect a specific gene mutation which would make a prostate cancer patient less responsive to secondary hormone therapy such as enzalutamide or abiraterone.

Localized prostate cancer. Prostate cancer that is contained within the prostate gland.

Locally advanced prostate cancer. Prostate cancer that has spread to the area just outside the prostate gland, but has not spread to other parts of the body.

Lower Urinary Tract Symptoms (LUTS). Problems passing urine, including leaking urine, needing to pass urine frequently or urgently, and needing to get up in the night to pass urine. LUTS are common in older men and have several possible causes. See also frequency, hesitancy, urgency, urinary incontinence and nocturia.

Lutentium-177. A radioactive isotope which emits beta radiation for cancer treatment physically close to prostate cancer cells.

Lymphatic system. This is part of the body's immune system which helps the body fight infection. The lymphatic system is made up of a network of vessels, which carry a fluid called lymph, and lymph nodes. See also lymph nodes.

Lymph nodes. These are small bean-shaped glands which are part of the lymphatic system. They are clustered in various sites around the body including the groin and pelvis. The lymph nodes in the groin and pelvic area are near the prostate gland and are a common place for prostate cancer to spread to. Lymph nodes are sometimes called lymph glands. See also lymphatic system.

Lymphedema. A swelling in part of the body resulting from the build-up of lymph fluid. Cancer-related lymphedema may be caused by a blockage of the lymphatic system. This blockage may be caused by either the cancer itself or some treatments for cancer, for example surgery or radiotherapy. See also lymphatic system.

Magnetic Resonance Imaging (MRI) scan. An imaging technique that uses magnets to create a detailed picture of the prostate and the surrounding tissues. An MRI scan may be used to find out whether the cancer has spread outside the prostate or to determine the size and location of any tumors.

Malignant. This word is used to describe a tumor that is cancerous and has the ability to spread. See also tumor.

Metastasis. Prostate cancer cells which have spread from the prostate gland and moved to other parts of the body.

Metastatic Castrate Resistant Prostate Cancer – Prostate cancer which has spread outside of the prostate gland and which is no longer responsive to androgen deprivation therapy.

Metastatic spinal cord compression. Pressure on the spinal cord. This is a rare complication in advanced prostate cancer where the cancer has spread to the spine (spinal metastases). The cancer presses on nerves in the spine causing symptoms.

Microsatellite instability (MSI). A shortening or lengthening of small repetitive elements in DNA, which in turn, results in the inability of certain enzymes to repair random mutations that occur during DNA synthesis.

Morbidity. Relating to disease or the side effects of a treatment.

Mortality rate. The number of people who die from a disease.

MRIdian Radiotherapy. An FDA-approved cancer treatment that uses a combination of magnetic resonance imaging (MRI) and radiation to treat tumors. It delivers high doses of radiation with greater precision and does not require the use of implanted markers.

Multi-disciplinary team (MDT). The team of health professionals or specialists involved in your care. The team may include a specialist nurse, a consultant oncologist and a consultant urologist. See also clinical nurse specialist, oncologist, and urologist.

Multi-Parametric MRI (MP-MRI). An imaging scan which creates more detailed pictures of your prostate than a standard MRI scan. It does this by combining up to 4 different types of images, the most common of which are T2-weighted imaging, diffusion-weighted imaging and dynamic contrast-enhanced imaging.

Neoadjuvant Therapy. Treatment given before the main treatment to increase the likelihood of it being successful. For example, hormone therapy may be given before radiation to shrink the prostate gland and make the radiation more effective. See also adjuvant therapy.

Neuroendocrine Prostate Cancer (NEPC). A high-risk, lethal subset of prostate cancer, representing a very small percentage of diagnosed prostate cancer and is generally diagnosed in the later stages of advanced disease. In its pure form, NEPC is similar to other high-grade or small cell neuroendocrine carcinomas, often lacking PSA expression.

Nerve-sparing. Treatment that aims to avoid damaging nerves. For example, during surgery to remove the prostate, the surgeon may try to avoid damaging the nerves that help control erections.

Nocturia. The need to get up at night to pass urine. This can be a symptom of a prostate problem or a side effect of some of the treatments for prostate cancer.

Non-Metastatic Prostate Cancer – Where the prostate cancer is still confined to the prostate gland.

Oligometastatic Prostate Cancer. Defined as up to five extracapsular prostate cancer lesions which have been identified on conventional imaging.

Oncologist. A doctor who specializes in cancer treatments other than surgery, for example radiotherapy or chemotherapy. There will usually be an oncologist in your multi-disciplinary team. See also multi-disciplinary team (MDT).

Oncology. The specialty of the diagnosis and treatment of cancer.

Oncotype DX. An assay of the biopsy tissue, which looks at the pathway of 17 genes and helps predict the aggressiveness of the cancer and chance of metastasis. It provides information to assist men in deciding on treatment options, to include active surveillance.

Orchiectomy. A type of hormone therapy for prostate cancer which involves an operation to remove the testicles or the parts of the testicles that make testosterone.

Osteoporosis. A condition in which the bones become weaker. This can have many causes. In prostate cancer it is a possible side effect of some types of hormone therapy. Also called bone thinning.

Palliative care. The aim of palliative care is to control pain and other symptoms and to meet a person's emotional, social and spiritual needs. Palliative care can be provided at any stage of advanced prostate cancer, and is not just for men in the final stages of life. Men with advanced prostate cancer may have palliative care for many months or years.

Palliative radiotherapy. Radiotherapy given to slow down the growth of cancer and control symptoms in men with advanced prostate cancer, rather than trying to get rid of the cancer.

PARP Inhibitor. Poly (ADP-ribose) polymerase (PARP) is a family of proteins involved in DNA repair, genomic stability, and programmed cell death. PARP helps repair DNA when it becomes damaged. Blocking PARP helps to keep cancer cells from repairing their damaged DNA, causing them to die. PARP inhibitors are a type of targeted therapy. Olaparib (Lynparza) and Rucaparib (Rubraca) are examples of a PARP inhibitor, which have been approved by the FDA for the treatment of advanced cancer patients who have a mutated BRCA1 or BRCA2 gene.

Pathologist. A doctor who specializes in studying cells and tissues under the microscope to identify diseases. A pathologist will examine biopsy samples to diagnose prostate cancer cells.

Pathology Report. A report which gives a diagnosis for samples of tissue removed during a biopsy or a radical prostatectomy. The degree of information provided will depend on the way the tissue sample was obtained – transrectal (random) biopsy, targeted biopsy or surgical removal of the prostate. The format and presentation of the report will vary among pathologists.

PCA3 Test. – The prostate cancer antigen 3 gene (PCA3) is a non-invasive urine-based test which helps to detect if prostate cancer may be present and if a biopsy is needed.

Pelvis. The space surrounded by the hip bones where the bladder, lower part of the bowel and the prostate gland are located.

Penile rehabilitation. Treatment for erectile dysfunction which aims to improve sexual function after treatments for prostate cancer. Options include tablets, injections and vacuum pumps which can be started in the weeks and months after treatment. See erectile dysfunction.

Perineum. The area between the scrotum and the back passage (rectum). See diagram on last page.

Perineural Invasion. Means that cancer cells were seen surrounding or tracking along a nerve fiber within the prostate and that there is a higher chance that the cancer has spread outside the prostate. It does not definitively mean that the cancer has spread.

Photon Beam Radiation - A type of radiation therapy that passes through the body and uses high-energy x-rays or gamma rays to treat cancer. IMRT is a form of photon beam radiation.

Pluvicto – a treatment option for prostate cancer which uses a PSMA PET scan to detect the sites of cancer in the body and a radioisotope called Lutetium-177 to kill the cancer cells.

Positive Surgical Margin. A condition which indicates that cancer cells were detected along the edge of the cut tissue after a radical prostatectomy, an indication that cancer cells may have been left behind. A positive margin is an indication that further treatment may be required.

Positron Emission Tomography (PET) Imaging. A non-invasive medical imaging technique that uses a radioactive tracer to produce 3D images of how organs and tissues are working.

Proctitis Inflammation of the lining of the bowel. This can be caused by radiotherapy for prostate cancer and may lead to symptoms such as bleeding from the back passage, difficulty emptying the bowels or a feeling of needing to go to the toilet to empty the bowels but finding you are unable to.

Prognosis. The expected outcome of a treatment. Often used to describe life expectancy.

Prolaris Test. An assay of the biopsy tissue, which looks at the pathway of 46 genes and helps predict the aggressiveness of the cancer. It provides information to assist men in deciding on treatment options, to include active surveillance.

Prostatectomy. See radical prostatectomy.

Prostate gland. Only men have a prostate gland. The prostate gland's main job is to make most of the fluid that carries sperm, called semen. It lies underneath the bladder and surrounds the tube that men pass urine and semen through (urethra). See diagram on last page.

Prostate Specific Antigen (PSA). A protein that is produced by the prostate gland. It is normal for all men to have a small amount of PSA in their blood. A raised PSA level can be due to a variety of reasons including age, infection, benign prostatic enlargement (BPE) and prostate cancer.

Prostate Specific Membrane Antigen (PSMA). A protein found on the surface of prostate cancer cells. It is used in PET imaging tests and therapies to detect and treat prostate cancer. PSMA expression has been shown to correlate with disease progression, with the highest levels expressed in hormone-refractory and metastatic disease.

Prostatic intraepithelial neoplasia (PIN). Changes in the cells that line the prostate gland. It is found by looking at prostate tissue under the microscope. PIN is not the same as prostate cancer and does not cause any symptoms. However, some research suggests that finding PIN in the prostate gland may mean that there is a greater chance of finding prostate cancer cells in the future.

Prostatitis. Inflammation or infection of the prostate gland which could increase the PSA level.

Proton Beam Radiation. A type of external beam radiation, which, unlike photon beam, does not pass through the body. Because the beam does not exit the body, less healthy tissue is affected. The stopping of the beam within the prostate gland is a phenomenon called Bragg's Peak which allows for a higher release of energy.

PROSTOX - A DNA test that predicts a patient's risk of developing late genitourinary (GU) toxicity after radiation therapy for prostate cancer. The test analyzes a patient's germline DNA for specific genetic variants.

Provenge (Sipuleucel-T). An immunotherapy, approved by the FDA, usually given to men who have early metastasis after they have been on androgen deprivation therapy (ADT). It's a vaccine where an engineered protein is added to a man's own cells, which is then designed to kick-start the immune system.

PSA bounce. A phenomenon which is a temporary rise in PSA scores after radiotherapy, either external beam radiation or implant of radiation seeds (brachytherapy). The rise is at least 0.1 to 0.5 ng/ml within a 1 – 3 year period after treatment and is not considered to be due to prostate cancer recurrence.

PSA density. Your PSA level in relation to the volume of your prostate gland. See also prostate specific antigen (PSA) and prostate gland.

PSA doubling time. The time it takes for the PSA value to double. This is used to help predict the possibility of metastasis and make treatment options. Doubling times are generally calculated at 3 months, 6 months, 9 months, or 1 year intervals. Generally, the shorter the doubling time, the higher the risk that the cancer is aggressive.

PSA Nadir - The absolute lowest level that the PSA drops after treatment. The PSA nadir is used as a gauge to assess the success of a given treatment. The identification of the nadir can be complicated when hormone therapy is used in conjunction with radiation treatment.

PSA Screening – The taking of a PSA test to determine if prostate cancer exists.

PSA test. A test that measures the amount of PSA in the blood. It can be used alongside other tests to help diagnose prostate problems and to monitor prostate cancer growth and the effectiveness of treatment. See also prostate specific antigen (PSA).

PSA velocity. The rate at which your PSA level rises over time. This can give an indication of how quickly prostate cancer is likely to grow in the future.

PSMA PET Scan. A medical imaging procedure that detects prostate cancer cells throughout the body by using a radioactive tracer that binds to a protein called prostate-specific membrane antigen (PSMA), which is highly expressed on prostate cancer cells. It allows doctors to pinpoint the location of tumors and assess the spread of the cancer to other parts of the body.

Radiation cystitis. See cystitis.

Radical prostatectomy. Surgery to remove the whole prostate gland and seminal vesicles. See also laparoscopic prostatectomy and robotic prostatectomy.

Radioisotope. A radioactive tracer used in PET scans to image the tissue concentration of certain types of molecules.

Radiologist. A doctor who specializes in diagnosing medical conditions using X-rays and scans.

Radiotherapy. The use of high energy radiation to destroy cancer cells. There are different types of radiotherapy, including external beam radiotherapy and brachytherapy.

Radium-223 . A radioactive isotope of radium that specifically targets bone metastases, which are prostate cancer cells that have spread to the bones. See also Xofigo.

Rectum. The last part of the bowel before the anus. See diagram on last page.

Rectal Spacer - A gel-like substance which is injected between the prostate and rectum, creating a temporary space to minimize the amount of radiation exposure to the rectum and to reduce potential side effects like bowel issues. Both SpaceOAR and Barrigel are used as rectal spacers.

Recurrent prostate cancer. Prostate cancer that has returned after treatment.

Remission. Someone who has had cancer is said to be in remission when tests no longer show any signs of cancer.

Risk factor. Something that may make a person more likely to develop a disease. For example, the risk of getting prostate cancer increases with age, so age is a risk factor for prostate cancer.

Robotic prostatectomy. Laparoscopic prostatectomy (keyhole surgery) which is carried out with the help of a robot. See laparoscopic prostatectomy and radical prostatectomy.

Salvage therapy/Second line treatment. A treatment aimed at getting rid of the cancer if it has returned after the first treatment.

Saturation biopsy. A type of biopsy which involves taking many more tissue samples from different areas of the prostate gland than a normal biopsy. You may have a saturation biopsy if previous biopsy results are normal but cancer is still suspected. Also known as a template biopsy. See also biopsy.

Screening. Testing the general population to find out if people have a disease at an early stage, before symptoms develop.

Scrotum. The pouch of skin that contains the testicles. See diagram on last page.

Self Advocacy - The act of speaking up for yourself, asking for what you need, and making your own decisions that affect your health. For prostate cancer, this includes learning as much as you can about your particular cancer, all of the treatment options which would apply to your situation and not relying solely on a doctor's recommendations.

Self-management. Being actively involved in looking after your own health and well-being. Examples include changing your diet and taking regular exercise which may help manage the impact of prostate cancer and its treatment.

Seminal vesicles. The two glands situated behind the prostate gland and bladder which produce some of the fluid in semen. See diagram on last page.

Somatic Mutation - A change to a person's DNA which occurs sporadically or randomly. While a majority of these mutations are caused by accident in cell division, some are caused by external factors such as smoking, or exposure to toxic chemicals or radiation.

Sphincter (urinary). The circular muscle that surrounds the tube which urine is passed through (urethra) and controls the flow of urine from the bladder.

Staging. A process of determining how much cancer is in the body and where it is located. It describes the severity of the cancer based on the magnitude of the original (primary) tumor as well as the extent cancer that has spread in the body. A common staging system for prostate cancer is the TNM system, which is based on the extent of the tumor (T), the extent of spread to the lymph nodes (N), and the presence of metastasis (M).

Stereotactic Body Radiation Therapy (SBRT). An image-guided technique to deliver higher doses of radiation to the prostate gland – usually given over 5 treatment sessions.. The main advantage of SBRT over IMRT is that the treatment takes less time (days instead of weeks) and costs less.

Steroids. Steroids are a type of drug which can be used as treatment for prostate cancer when hormone therapy is no longer working well. They can reduce swelling, inflammation and pain and may improve appetite. They are also used alongside other treatments such as chemotherapy. Steroids can be given as tablets or injections.

Stricture. A narrowing of a tube in the body. A stricture in the tube that carries urine from the bladder out of the body (urethra) can be caused by inflammation and some treatments for prostate cancer.

Testicles / testes. Part of a man's reproductive system. The testicles are contained in the scrotum and produce testosterone and sperm. See diagram on last page.

Testosterone. A male sex hormone. Testosterone can make prostate cancer cells grow faster. Testosterone is produced by the testicles, the adrenal glands and to a small extent the prostate cancer itself. See also androgens and hormones.

Theranostics. A field of medicine which combines specific targeted therapy based on specific targeted diagnostic tests. It's a combination of therapy and diagnostics, in the same mechanism, to treat and image a particular disease. For prostate cancer, the combined use of the Gallium 68 PSMA PET scan with the Lutentium-177 radioisotope is a form of theranostics.

Three-dimensional conformal radiation therapy (3D-CRT). A form of radiation which encompasses the use of special computers to precisely map the location of your prostate. Radiation beams are then shaped and aimed at the prostate from several directions, which makes it less likely to damage normal tissues.

Tissue. A group of cells that perform a specific job. For example, prostate tissue.

Transrectal Ultrasound (TRUS). A scan that uses sound waves to make an image of the prostate gland using a probe inserted into the rectum. TRUS can be used to guide a prostate biopsy.

Transrectal Prostate Biopsy - A procedure that removes a tissue sample from the prostate gland using a thin needle inserted through the rectum. The procedure is usually performed using transrectal ultrasound (TRUS) to guide the needle.

Transperineal Prostate Biopsy - A procedure that removes tissue samples from the prostate gland using a thin needle inserted through the perineum (the skin between the scrotum and rectum). The procedure is usually performed using an ultrasound probe to guide the needle. Generally, reduces the risk for infection.

Trans-urethral resection of the prostate (TURP). Surgery to remove prostate tissue that is pressing on the tube which you pass urine through (urethra). TURP may be used to treat benign prostatic enlargement (BPE).

Triple Androgen Blockade (TAB) - Use of combined androgen blockade (i.e. use of an oral anti-androgen with medical or surgical castration) with a 5 alpha-reductase inhibitor.

Tumor . Abnormal growth of cells. Tumors can be benign or malignant. See benign and malignant.

Tumor Volume. In a biopsy core specimen, the report should state how many cores contained cancer cells and the amount of cancer (in millimeters and/or a percentage) within each core. This information can help determine the tumor's overall size and aggressiveness. A prostatectomy specimen report should describe what percent of the gland contains cancer and the zones (central, transition and peripheral) which contain cancer. If extracapsular extension has occurred (i.e. tumor has spread outside the gland), the report may specify the percent of involvement and if the seminal vesicles or any lymph nodes were involved.

Transurethral Ultrasound Ablation (TULSA-PRO) - a minimally invasive procedure that, under MRI guidance, delivers precise doses of therapeutic ultrasound to treat prostate cancer while sparing the healthy nerve tissue surrounding the prostate.

Urethra (male). The tube that carries urine from the bladder, and semen from the reproductive system, through the penis and out of the body. The urethra passes right through the prostate gland. See diagram on last page.

Urgency. A sudden and immediate need to go to the toilet. This can be an urgency to pass urine which can be a symptom of prostate problems, or an urgency to open the bowels, which can be a side effect of radiotherapy.

Urinary incontinence. Problems controlling the passing of urine. This can range from leaking a few drops of urine when you cough or sneeze to being unable to control when you pass urine at all.

Urologist. A doctor who specializes in the urinary and reproductive systems. Urologists are also surgeons.

Urology. The study and treatment of diseases of the urinary system, which includes the prostate gland.

Xofigo (Radium-223). A radioactive material used to treat prostate cancer that has spread to the bones. It is intended for men whose cancer has spread (metastasized) only to their bones and who have already received treatment to lower testosterone.

3D conformal radiotherapy. A type of external beam radiotherapy that directs the radiotherapy beams to fit the size and shape of the prostate. This reduces the risk of side effects.

5-alpha reductase inhibitors. Drugs that are normally used to treat benign prostatic enlargement (BPE) by shrinking the prostate or stopping it from getting any bigger. However, it is also stops the conversion of testosterone into dihydrotestosterone (DHT) with the intent of reducing prostate cancer growth

The prostate gland and surrounding parts of the male body

