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# **Prostate Cancer**

**Types of Prostate Cancer**

Prostate cancer occurs only in men, accounting for 21% of all cancer cases and is most commonly diagnosed between the ages of 65 and 74. The most common type of prostate cancer is adenocarcinoma, which begins in the gland cells of the prostate. Adenocarcinoma’s account for 95% of all types of prostate cancers.    
  
The five year survival rate for men with prostate cancer is  95%, thus, the focus of treatment and rehabilitation is on increasing overall functioning and quality of life by managing the side effects of treatment.

### **What risk factors cause this cancer?**

The only known risk factor for prostate cancer is a family history (with genetic links to BRCA1 and BRCA 2 gene mutations). Other possible risk factors include:

* A diet that is high in fat, dairy products, red or processed meats
* Obesity
* Inflammation of the prostate
* Exposure to high levels of testosterone

Exposure to pesticides, cadmium or chemicals involved in rubber manufacturing

### **What are the Clinical Manifestations?**

Prostate cancer often does not cause any early signs or symptoms; they begin to appear as the tumor grows. Signs or symptoms include:

* Frequent urination, especially at night
* A strong or sudden urge to urinate
* Trouble starting the flow of urination
* Straining to urinate
* Weak, slow or interrupted urine stream
* Inability to empty bladder completely
* Urinary incontinence
* Blood in the urine or semen
* Burning or pain during urination or ejaculation
* Erectile dysfunction
* Weakness and numbness in the legs or feet
* Loss of bowel control
* Pain or stiffness in the bones of the hip, back or chest
* A cough that doesn’t go away or shortness of breath

### **What are the Treatment Options?**

Each case is unique and requires a personalized medical treatment plan. Some of the treatment options may include:

* Tumor resection:removal of the abnormal cancerous tissue through surgery
* Radiation therapy: doses of radiation used to oblate cancer cells. May be in combination with chemotherapy treatment
* Chemotherapy: systemic treatment to kill cancer cells and prevent them from dividing

Hormonal therapy: changing of hormonal levels in the body to destroy cancer cells or slow their growth.

### **What are the Possible Side Effects of Treatment?**

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* Bleeding and blood clot formation
* Sexual problems including erectile dysfunction and changes in orgasm
* Urinary incontinence
* Lymphedema risk
* Pain and swelling around the genital area
* Infection of the incision or separation of the wound

1. **Radiation Therapy:**

* Pain and swelling around the genital area
* Fatigue
* Bowel problems including diarrhea, blood in the stool, rectal pain, rectal burning or rectal leakage
* Bladder problems including more frequent urination, burning with urination or urinary incontinence
* Erectile dysfunction
* Pain and swelling between the scrotum and rectum
* Lymphedema risk

### **Chemotherapy:**

* Nausea and vomiting
* Low blood cell counts
* Fatigue
* Loss of appetite

1. ***Hormonal Therapy:***

* Sexual problems including low sex drive, erectile dysfunction, shrinking of testicles or penis
* Menopausal-like symptoms, such as hot flashes and mood swings
* Osteopenia, Osteoporosis development and pathological fractures
* Weight gain
* Breast tenderness and growth of breast tissues
* Loss of muscle and physical strength
* Fatigue
* Depression, difficulty concentrating, and memory problems
* Heart problems

**Gonadotropin-releasing hormone (GnRH) Agnoists and Fracture Risk?**

* GnRH agonists significantly increase bone turnover, with a reported 2% to 3% decrease per year in bone mineral density of the hip and spine during initial therapy, thus a surrogate for fracture risk.
* Hormones such as testosterone protect against bone loss, therefore the blockage of hormones will increase risk of osteoporosis.
* Although osteoporosis is prevalent in both men and women, men have been found to experience one third of all hip fractures related to osteoporosis.
* Mortality after a hip fracture has been shown to be greater in men than in women.
* Osteopenia is defined as Bone Mineral Density (BMD) T score between -1.0 and -2.5, while osteoporosis is defined as BMD T score less than -2.5. Fracture risk is doubled for every 1-SD decrease in BMD.

### **What is the role of Physical therapy and Rehabilitation?**

The goals of rehabilitation depend on the extent of the disease and the sequela post treatments. Overall physiotherapy can help:

* Prevent and or improve urinary continence and erectile dysfunction post surgery
  + Pelvic floor physiotherapy (including manual therapy, exercises of the pelvic floor, and the use of biofeedback devices) have been shown to be effective in strengthening the muscles of the pelvis in order to overcome the insufficiencies of the injured muscles leading to these side effects. Research has shown the benefits of pelvic floor physical therapy pre and post surgery
* Decrease cancer-related fatigue
* Improve sexual desire and activity
* Pain management
* Improve cardiovascular endurance and overall strength
* Improve psychological wellbeing and quality of life
* Establish healthy lifestyle habits for life-long wellness
* Provide support for return to activities of daily living, returning to work and recreational activities
* Osteoporosis screening, prevention and management education including a well-balanced diet rich in calcium and vitamin D, along with an individualized weight bearing exercise program to preserve or maintain bone health and integrity, minimizing risk of fractures.
* Exercise recommendations for both aerobic and strength training are the same as those for healthy Canadians. This includes 150 minutes of moderate intensity aerobic exercise per week and twice weekly strengthening exercises for all the major muscle groups of the body.
* Goal setting and action planning should accompany any new exercise program. This has been shown to lead to better adherence to new exercise programs in individuals with chronic conditions.

### **References & Resources**

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