Hereditary prostate cancer treatment
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Prostate cancer is the most common cancer in men. In the general population, 1 in 6 men will develop prostate cancer in their lifetime. The rate of death from prostate cancer is 10%, which is significantly lower than many other malignancies.

Prostate cancers are assigned a Gleason score. Gleason scores are used as a guide to determine how aggressive a prostate cancer is. Low Gleason scores (6 or under) are considered to be less aggressive. High Gleason scores (8 and above) describe prostate cancers whose cells appear very abnormal and thus more aggressive. Aggressiveness of prostate cancer can also be assessed with a PSA blood test. A PSA greater than 20 identifies more aggressive disease.

Localized prostate cancer has many treatment options. No option is better than another and each has its own side effects to consider. Prostate cancer treatment typically starts with local therapy followed by hormonal therapy.

Compared to the general population, men who are BRCA2 carriers have a prostate cancer risk that is 2.5 to 4 times higher and they are 8 times more likely to die from the disease if it develops.

In one study, researchers analyzed the genetic mutations of tumors from men with advanced metastatic prostate cancer. These advanced tumors often had tumor specific (somatic) mutations in various DNA repair genes.

About 12% of the 700 men studied had germline mutations. The most common germline mutations were in

44% BRCA2
13% ATM
12% CHEK2
7% BRCA1
NCCN guidelines recommend germline genetic testing for all men with metastatic prostate cancer. Prior counseling is necessary; talking with a genetics professional when making decisions about screening, prevention, and germline genetic testing is beneficial.

National organizations have conflicting recommendations for prostate cancer screening. National Comprehensive Cancer Network (NCCN) guidelines recommend PSA screening beginning at age 45 for men with a BRCA mutation—this guideline is based on prevention rather than data. However, for men aged 55 to 69 years, the USTSPF recommends that the decision to undergo periodic prostate-specific antigen PSA screening for prostate cancer should be an individual one due to lack of data to support efficacy.

Many primary care physicians and urologists do not know that a man’s BRCA carrier status increases his risk of prostate cancer, so it is important that men know their carrier status and act as their own advocate for heightened screening compared to the average man. Early detection and treatment are critical to better outcomes.

Studies have found that men with advanced prostate cancer and DNA repair deficiency (germline mutations in BRCA2 or other related genes) can have exceptional responses to platinum-based chemotherapy and to PARP inhibitors.

Ongoing research focuses on screening, early treatment of localized prostate cancer, and treatment of advanced prostate cancer. The GENetic Testing for MEN with prostate cancer (GENTleMEN) study at the University of Washington offers free genetic testing for men with metastatic prostate cancer. Participants are mailed a free spit-in-a-tube DNA test kit and receive their genetic test results in a few weeks.