What Are the Long-Term Side Effects of Prostate Cancer Treatment?

A new five-year study identifies how different treatment options affect long-term bowel, bladder and sexual function.

February 11, 2020 By Benjamin Ryan

Any man who is diagnosed with prostate cancer and faces treatment choices must grapple with the risk of side effects. Urinary incontinence and erectile dysfunction are the most common. Sometimes, these side effects are temporary and get better with time.

Until now, however, there haven't been good long-term data to help oncologists help men with prostate cancer make informed choices about treatment that take these side-effect risks into account.

The new study included more than 2,000 men who were followed for five years after receiving various types of prostate cancer treatment. The resulting paper quantifies key differences in those treatments' associations with long-term bowel, bladder and sexual function. The study, called CEASAR, for the Comprehensive Effectiveness Analysis of Surgery and Radiation for Localized Prostate Cancer, is coordinated by the Vanderbilt University Medical Cancer (VUMC) and follows men who were diagnosed with localized prostate cancer (meaning the cancer had not spread beyond the organ) between 2011 and 2012.

The study authors have published findings from the first five years of their follow-up of these men in the Journal of the American Medical Association and recently received funding for an additional five years. The researchers looked at two different groups of men with prostate cancer who tend to face very different treatment options: those with favorable risk and those with unfavorable risk.

The 1,386 men with favorable-risk prostate cancer received one of these treatments:

- active surveillance, in which they received treatment only if their cancer worsened over time
- nerve-sparing prostatectomy, in which surgeons remove the prostate but attempt to protect adjacent nerves in an effort to preserve sexual function
- external beam radiation therapy, in which daily doses of radiation attack cancer cells

- low-dose-rate brachytherapy, in which radioactive “seeds” are planted in an attempt to combat the cancer.

The 619 men with unfavorable-risk prostate cancer received one of two treatments:

- prostatectomy, which is the surgical removal of the prostate
- external beam radiation therapy with androgen deprivation therapy, in which radiation is paired with medications to lower levels of male hormones, which can stimulate prostate cancer growth.

The men who received surgery saw an immediate, steep drop-off in their erectile function compared with men who received other types of treatment. Over time, however, the men showed improvement, while erectile function continued to decline for those who received radiation, such that the two groups of men progressively converged on this measure.

“Whether you get surgery or radiation, there is a chance of reduced erectile function,” senior author Daniel Barocas, MD, MPH, an associate professor and vice chair of urology at VUMC, said in a press release. “While the time course is different for surgery and radiation, our study shows that only about half of men undergoing these treatments who had erections good enough for intercourse before treatment will still have an erection good enough for intercourse five years later.”

Looking at urinary function, the study authors found that after five years, receiving a prostatectomy was associated with worse incontinence compared with receiving other forms of treatment, regardless of the cancer risk group. By this point in time, 10% to 16% of men who received surgical removal of their prostate said they had a moderate or major problem with urinary leakage, compared with 4% to 7% of men who received other forms of treatment.

There were no clinically significant differences in bowel function after five years across the treatment types.

“If you look at the side effect profile for external beam radiation, most of those men, after a year, have rebounded in terms of their urinary and bowel function, which is a novel finding of our study,” Barocas said. “The brachytherapy patients have a more difficult time with the urinary and bowel symptoms in that first year.”

In the unfavorable-risk group, external beam radiation therapy with androgen deprivation therapy was associated with low hormonal function scores six months after treatment and with low bowel function after one year. These effects lessened with time, however. The men who received this form of treatment, compared with those who received a prostatectomy, also had superior sexual function five years after treatment as well as lower levels of incontinence at each time point

throughout the study’s follow-up.

“This work provides critical and understandable information to patients and providers to help them make better decisions in localized prostate cancer,” said David Penson, MD, MPH, chair of the department of urology at VUMC.

To read a press release about the study, click here.

To read the study abstract, click here.

To learn more about prostate cancer, click here.

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.cancerhealth.com/article/longterm-side-effects-prostate-cancer-treatment