

# Brachytherapy

## Increased use in patients with intermediate- and high-risk prostate cancers

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**BACKGROUND:** Brachytherapy is a well-established and effective primary treatment modality for low- and favorable intermediate-risk prostate cancers. Although the benefits of brachytherapy in unfavorable intermediate- and high-risk prostate cancers have not been as clear, research suggests that brachytherapy boost may improve biochemical progression-free survival in these patients.

**OBJECTIVES:** This article aims to discuss evidence for the revival of brachytherapy use in unfavorable intermediate- and high-risk prostate cancers and specific nursing implications in the management of these patients.

**METHODS:** The literature on brachytherapy and its use to treat localized prostate cancers was reviewed.

**FINDINGS:** Nurses should be knowledgeable about the indications for brachytherapy, patient eligibility, anticipated side effects, and symptom management.

### KEYWORDS

prostate cancer; brachytherapy; radiation therapy; cancer risk; localized prostate cancer

### DIGITAL OBJECT IDENTIFIER

10.1188/21.CJON.321-328

**IN THE UNITED STATES, PROSTATE CANCER IS THE MOST COMMON** solid organ cancer in men and the second leading cause of cancer-related deaths in men (American Urological Association, 2020). An estimated 248,530 men are expected to be diagnosed with prostate cancer in 2021 (American Cancer Society [ACS], 2021). The incidence of prostate cancer increases with age, and the average age at diagnosis in the United States is 66 years. About 76% of prostate cancers are detected when the disease is localized to the prostate (Rawla, 2019). In the United States, the five-year relative survival rate for men diagnosed with prostate cancer is 97.5% (National Cancer Institute [NCI] Surveillance, Epidemiology, and End Results Program, n.d.). As clinical research advances, recommendations for the treatment of localized prostate cancer are becoming more refined.

This article will focus on brachytherapy, a long-established treatment modality for localized prostate cancer. Brachytherapy use peaked at 16.7% in 2002 and then declined to a low of 8% by 2010 (Brookland & Mallin, 2019). Select evidence for the revival of brachytherapy, specifically for unfavorable intermediate- and high-risk prostate cancers, will be reviewed, along with implications for nursing in the management of patients receiving this therapy. A review of the literature was performed to identify the use and evolution of brachytherapy in the treatment of localized prostate cancers.

## Prostate Cancer

### Diagnosis and Risk Determination

Early-stage prostate cancer is often asymptomatic. Most prostate cancers are detected based on elevated prostate-specific antigen (PSA) levels or abnormal digital rectal examination (DRE). Cancer staging is used for treatment planning and to predict prognosis. For localized prostate cancer, staging is used to determine a patient's overall risk group. Localized prostate cancer is divided into six risk groups: very low, low, favorable intermediate, unfavorable intermediate, high, or very high risk.

Clinical T, PSA level, and Gleason score determine a patient's risk group. For details of initial risk stratification for localized prostate cancer, go to [www.nccn.org](http://www.nccn.org). Clinical T describes the extent of the main tumor based on DRE findings or imaging (ACS, n.d.).

PSA is a protein made by prostate gland cells that can be measured in the blood. Generally, a PSA greater than 4 ng/ml is considered abnormal. Although PSA levels can vary because of age, medications, certain activities, and the presence of genitourinary infections, usually the higher the PSA