

# Androgen-Deprivation Bone Loss in Patients With Prostate Cancer

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An increasing number of men with prostate cancer being treated with androgen-deprivation therapy (ADT) are at increased risk for developing osteoporosis. Osteoporosis often is overlooked in men and can have significant adverse economic effects and reduce quality of life, particularly if a fracture occurs. Nurses play a major role in identifying men who are at risk because of lifestyle factors and ADT. Men receiving ADT should undergo regular screening with bone densitometry to detect osteoporosis and monitor the effectiveness of therapy. Nurses also have a major role in administering medications to promote bone health. Many implications exist for patient education related to bone health in men.

**P**rostate cancer is a major public health issue. Advances in screening and treatment have resulted in a large population of men who must learn to live with and manage the side effects of therapy, particularly androgen-deprivation therapy (ADT). The National Cancer Institute reported that 2,177,975 men are alive with a history of prostate cancer (Horner et al., 2009). Bone loss is a significant issue among older men with prostate cancer receiving ADT. This article describes implications for nurses as they care for men with alterations in bone health caused by ADT.

Prostate cancer mainly affects men older than 40 years, with a median age at diagnosis of 68 years (Ries et al., 2008). An estimated 192,280 new cases of prostate cancer occur and 27,360 men die from the disease each year (American Cancer Society [ACS], 2009b). Incidence is higher among African American men than Caucasian men; an estimated 27,130 cases of prostate cancer were diagnosed in African American men in 2009, accounting for 34% of all cancers diagnosed in this population (ACS, 2009a). Prostate cancer is the second leading cause of cancer death in African American men, accounting for an estimated 3,690 deaths annually. The death rate for prostate cancer is 2.4 times higher in African American men than in Caucasian men (ACS, 2009b); the difference accounts for about 40% of the overall cancer mortality disparity between African American and Caucasian men.

Despite high mortality rates in some minority populations, epidemiologic evidence suggests that men with localized prostate cancer can expect relative survival rates of almost 100% at five years, 93% at 10 years, and 79% at 15 years (ACS, 2009a). The good survival rates are attributed largely to effective local treatment of the prostate with surgery or radiation and, in part, to the fact that hormonal therapy often can shrink a tumor or decrease its growth (Lu-Yao et al., 2008).

The prostate cancer trajectory and good long-term prognosis pose significant challenges for healthcare providers, particu-

## At a Glance

- ◆ Men with prostate cancer receiving androgen-deprivation therapy (ADT) are at high risk for developing osteoporosis.
- ◆ Men receiving ADT should undergo risk evaluation for osteoporosis and have regular screening with bone densitometry to evaluate the effectiveness of therapies.
- ◆ Nurses should educate men receiving ADT about osteoporosis, risk factors, prevention and screening strategies, and medications to promote bone health.

larly related to bone health in older men receiving ADT. Bone loss among men is largely under-reported and underassessed (National Osteoporosis Foundation [NOF], 2008). Men with localized prostate cancer receiving ADT experience a 5- to 10-fold higher rate of bone loss within the first year of ADT compared to the general population (Greenspan et al., 2005). The risk for developing osteoporosis among older men receiving ADT approaches 50% at four years and 80% at 10 years (Higano, 2008).

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