

# Prostate Cancer

## Disease Information

### CANINE PROSTATE CANCER

Canines are the only animal species that develops spontaneous prostatic cancer with a certain degree of frequency.

The majority of canine prostate cancers are carcinomas. The most common types of carcinoma are adenocarcinomas, transitional cell carcinomas, and undifferentiated carcinomas and are most likely ductal in origin. This disease process is typically seen in elderly male dogs (intact and castrated dogs) and has no breed predilection.

Bone metastasis, just like in the cancer's human counterpart, occurs to a high degree. Lesions are more often osteoproliferative and tend to occur in the lumbar vertebrae and pelvis region.

### Detection and Prognosis

Prostate cancer is usually detected late in the disease progression in canines. It has a very guarded prognosis with a median survival of 30 days. Unlike in humans, prostatic neoplasia in canines is hormone-independent. Therefore, treatment with antiandrogens is not useful. No reliable screening test involving PSA exists. Canines have a different protease, called canine prostate specific esterase (CPSE), that exists in various prostatic pathologies, such as prostatitis, benign prostatic hypertrophy, and neoplasia.

### Metastasis

The metastatic progression of prostate cancer follows the same pathway with humans and canines. It is thought that prostate cancer evolves as a multi-step process and that this lends itself to the relatively long disease course in humans. Local control has been achieved for a certain time, but the problem still exists for metastasis to occur to the local organs and bone. This metastatic problem in humans and canines provides a comparative model to further attain novel treatment options.

### Treatment

Prostate cancer treatment includes surgery (prostatectomy), radiation therapy, and adjuvant chemotherapy. There is relative chemotherapy insensitivity in this disease. Increases in median survival times have been seen with chemotherapies such as mitoxantrone and carboplatin with anti-inflammatory agents; however, the median survival times generally remain less than one year. Radiation therapy appears to control the local disease process for a limited time as well. Due to the advanced presentation of this disease, urinary tract problems are often seen. These include urethral obstruction and dysuria. Other signs attributable to the gastrointestinal tract may include tenesmus. If bony metastasis is present, pain, abnormal gait, and myelopathic signs may be present. The prognosis continues to be one of a guarded nature.