Cancer Education and Prevention in the Athletic Training Center

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In the last 10 years, 13 million new cases of cancer have been diagnosed. It was expected that 552,200 Americans would die from cancer in 2001, which is more than 1,500 people per day. Heart disease is the leading cause of death in the United States, and the second leading cause is cancer, which leads to 25% of all American deaths (American Cancer Society, 2001). Athletic trainers and therapists are in a position to be at the forefront of cancer education and screening through the preparticipation physical examination, and as an allied health professional, an athletic trainer or therapist is often the first person an athlete sees in the medical chain of action. The purpose of this article is to provide a brief overview of various cancers affecting healthy people, as well as to educate athletic trainers and therapists about the basic risk factors, warning signs, and prevention of common cancers.

The term cancer encompasses a large group of diseases that are characterized by the uncontrolled growth and spread of abnormal cells. The major classifications of cancer are carcinoma, sarcoma, lymphoma, and leukemia. Agents known to cause cancer are termed carcinogens. The suspected causes of cancer are grouped into the following categories: occupational, biological, environmental, medical, and viral exposures and chemicals in food.

The seven warning signs of cancer are easily noted by the acronym CAUTION and are listed in the sidebar. These signs cross over many types of cancers and should be used as a guide for determining when an athlete should be referred to a physician for follow-up. Each of the following sections addresses a specific type of cancer and outlines its risk factors, warning signs, and any known methods of prevention.

Key Points

- Student athletes are at risk for cancer.
- Student athletes must know their risk factors for developing cancer.
- Athletic trainers and therapists can help educate student athletes about cancer.
- Increased awareness about cancer by both athletic trainers and therapists and student athletes can help detect cancer in its earliest and most curable stages.
- Cancer education includes knowing one’s family history of cancer.
- Key Words: education for life, risk factors, breast cancer, testicular cancer, skin cancer, oral cancer, lung cancer

CAUTION: The Seven Warning Signs of Cancer

- Change in bowel or bladder habits
- A sore that does not heal
- Unusual bleeding or discharge
- Thickening or a lump where there should not be one
- Indigestion or difficulty swallowing
- Obvious change in a wart or mole
- Nagging cough or hoarseness
Breast Cancer

This year, there will be 190,000 women and 1,800 men diagnosed with breast cancer, and 45,000 women and 400 men will die from it (National Cancer Institute, 2001). Breast cancer affects women and men, both as victims and as the spouses, friends, and family members of victims.

The risk factors closely associated with breast cancer are late age of menopause, obesity in post-menopause, early menarche, having one's first child after the age of 30, never having breast-fed, having a primary female relative who has had cancer (i.e., sister, mother, or grandmother), being over the age of 40, lengthy exposure to cyclic estrogen, and having a higher education and socioeconomic status. Approximately 10% of breast-cancer cases are hereditary, but other factors might also contribute to the familial nature of breast cancer, such as similar lifestyles among family members. Extensive research has been done on the possible relationship between abortion and breast cancer, but no consistent and direct relationship between breast cancer and either spontaneous or induced abortion has been shown.

According to the American Cancer Society (ACS), a woman's overall lifetime risk of having breast cancer is 1 in 8. The risk increases with age, and an alarming recent trend has found breast cancer to be on the rise in women under the age of 40 (ACS, 2001). The National Cancer Institute (NCI, 2001) has further broken down the breast-cancer lifetime probability data by age: The NCI calculates that under the age of 30 years the risk is 1 in 2,000, from age 30 to 40 it is 1 in 233, from age 40 to 50 it is 2 in 53, from age 50 to 60 it is 1 in 22, from age 60 to 70 it is 1 in 13, and from age 70 to 80 it is 1 in 9. The NCI also estimates the risk during one's lifetime as 1 in 8. An excellent component of the NCI Web site is a breast-cancer risk-assessment tool that allows users to determine their current and future risks of breast cancer (NCI).

The 5-year survival rates for victims of breast cancer depend on whether the cancer is localized, regionalized, or systemic. For instance, if breast cancer is found while it is still localized, the survival rate is 97%. If it is regionalized the rate drops below 72%, and if it is systemic it plummets below 21% (NCI, 2001). Obviously, early detection greatly increases one's chances of survival. Early-detection strategies include regular (monthly or more often) breast self-examination, annual physician checkups, and annual mammograms after age 36. The warning signs of breast cancer are nipple discharge, skin irritation, retraction or scaliness of the nipple, distortion, lump, dimpling, thickening tissue, and swelling.

One preventive strategy is exercise, which lowers body fat and thereby reduces the risk of breast cancer. Exercising 4 hr/week has been found to lower one's risk by 58%. Research has shown a link between moderate or heavier drinking, so limiting alcohol consumption might also help prevent breast cancer.

Testicular Cancer

Testicular cancer is the most common solid tumor found in men between the ages of 14 and 34 years (ACS, 2001). In the last 4 years the incidence of testicular cancer has been on the rise, and researchers are currently trying to determine why.

The known risk factors for testicular cancer include undescended or late-descending testicles, mothers who took diethylstilbestrol during pregnancy, and repeated scrotal contusions. Early-detection efforts include monthly or more frequent testicular self-examination, annual physician checkups, and seeking out a physician immediately if one has any of the signs or symptoms associated with testicular cancer, such as discomfort or pain in scrotal area, a thickening or lump around the testicles, or scrotal-area swelling.

In about 90% of cases, men have a painless or uncomfortable lump on a testicle, or they might notice testicular enlargement or swelling. Men with testicular cancer often report a sensation of heaviness or aching in the lower abdomen or scrotum. There are a number of noncancerous conditions that can produce symptoms similar to those of testicular cancer; one example is scrotal injury, which often occurs in sports. A frequent symptom of later stage testicular cancer is lower back pain. Other symptoms of advanced testicular cancer are shortness of breath, chest pain, cough, and bloody sputum (all of which are indicative of cancer having spread to the lungs). A real concern involving testicular cancer is the fact that some men who have it experience no symptoms at all. This makes it crucial for men to practice frequent testicular self-examination. Team physicians should include the evaluation of male athletes' testicles, as well