PORTS FOR PEOPLE with disabilities are becoming increasingly popular. In regard to people with amputations alone, there are between 300,000 and 500,000 living in the United States. A large portion of these people actively participate in sports. Whether it be a congenital or acquired amputation, these athletes have the same desire and drive to compete at high levels of athletics as do able-bodied athletes. These athletes do, however, have special medical concerns that need to be taken into account. This column addresses some of the common issues that you must be aware of when working with athletes with amputations.

**Congenital and Acquired Amputations**

Amputations occur at many different levels on all upper and lower extremities. Because of this variety, there is an international classification system for amputations that differentiates between two types. The first is a congenital limb deficiency in which the athlete is born with a missing or deformed limb. Acquired amputations are the second classification and consist of removal of a limb after birth. Congenital amputations are twice as prevalent as acquired amputations.

Amputations are also described according to their location, for example, above-elbow (AEA), below-elbow (BEA), above-knee (AKA), and below-knee (BKA) amputations. Amelia is the term used for the congenital absence of a whole limb, phocomelia refers to the congenital absence of the middle segment of a limb, and hemimelia refers to the congenital absence of half of the limb (e.g., hemimelia is equivalent to an AEA or AKA; partial hemimelia is equivalent to a BEA or BKA). Lower extremity amputations are more common than upper extremity amputations, and the incidence of amputation is more prevalent in men.

**Causes and Characteristics**

Vascular disease and trauma are the two most common causes of amputations, followed by malignant tumors and infections. Vascular diseases
that cause amputations include venous insufficiency and vasospastic disorders. These can lead to painful ulceration and cause gangrenous areas, resulting in amputation.³ In the case of athletes with trauma-related amputations, the athletes’ bodies are generally healthy, but close attention should be paid to the area of amputation because infection can still occur, leading to further complications. A common cause of amputations among the adolescents is a malignant bone tumor.³ Other causes of amputations include congenital deformities resulting from decreased growth while still in the uterus, genetic factors, or environmental exposures of the mother during pregnancy.

**Skin and Edema Conditions**

Athletes with amputations face many of the same medical issues as athletes with other disabilities. First, blisters and pressure sores are a problem if proper care is not taken to prevent them or if left untreated once they occur. Care should be taken to ensure proper prosthetic fit and use of absorbent material to help prevent ulceration. Athletes with amputations might also have thermoregulatory and circulatory problems because of a reduced area of body surface, which decreases the body’s ability to dissipate heat. The sports-medicine staff must monitor these athletes more closely than others for heat illness. Another problem faced by a person with an acquired amputation is edema or swelling in the area of amputation. This swelling can cause a poor fit of the stump into the prosthesis. Athletic therapists treat such cases to reduce the swelling in the extremity.

All types of amputation can be overwhelming for athletes. Referral to counseling can help reduce their anxiety and stress caused by an acquired amputation.⁴

**Gait and Motion**

After having a surgical amputation, the athlete must address several issues regarding locomotion. Locomotion is initially more difficult because of the change in weight distribution that results from the unilateral weight loss. Coordination, proprioception, and balance are decreased after the loss of the extremity.³ For that reason, proper gait and mechanics of movement should be discussed and addressed during therapy sessions. Remember that these athletes are making physical adjustments to a new way to walk or move, so the athletic therapist should allow a suitable time to adjust and guide them to work on the muscles that promote proper gait or movement. This is essential for their success as athletes.

**Phantom Pain**

In addition to movement adjustments, an athlete with an amputation might experience what is called phantom pain. Phantom pain is the presence of burning or shooting pain perceived in the area that was removed and is usually more intense at night.⁴ The athlete should be advised that phantom pain is a common and natural occurrence and not be alarmed by its presence. If the pain is treated pharmacologically, observe the athlete for possible allergic reactions or the occurrence of any side effects. Some approaches that do not involve drugs include transcutaneous electrical neuromuscular stimulation (TENS), compression stockings, stump shrinkers, manipulations, hot or cold treatments, or massage of the part of the limb that remains.⁴