

Prosthetic Gait and Activities Training

Most people who receive their first prosthesis require structured instruction in order to use it with maximum success.^{1,2} Prior to training, the clinic team should ascertain whether the patient has a well-healed amputation wound and is in reasonably positive physical and emotional condition. The prosthesis should fit properly, have optimal alignment, and be well constructed.

For all patients, minimum training includes learning to don the prosthesis and being able to transfer from various chairs. Without these skills, the individual is very unlikely to wear the prosthesis or walk in a functional manner.

DONNING PROSTHESES AND DRESSING

Although donning instruction need not begin on the first day of gait training, early in rehabilitation the patient should be taught a method that enables accurate, independent, and rapid donning. Otherwise, the person will have to depend on a family member or friend to assist in the process; in spite of the best intentions, after a while, most people who cannot don the prosthesis independently find it less bothersome simply to avoid coping with the prosthesis. Being able to dress in street clothes is a related, basic activity.

Transtibial Prosthesis

Most transtibial prostheses can be donned while the individual sits. The basic method is the same for prostheses that have cuff suspension with or without a waist belt and fork strap, elastic sleeve suspension, supracondylar brim, or supracondylar-suprapatellar brim suspension. First, the patient dons the required number of amputation limb socks. If the patient has a silicone or urethane liner, this is put on the amputation limb. Second, after removing the resilient liner from the socket, the liner is donned. Securing nylon fabric to the outside of the socket reduces friction between the liner and the socket, thus facilitating donning. Third, the

individual inserts the amputation limb (covered by the socks and/or liner) into the socket. Finally, the person secures the cuff, waist belt, or elastic sleeve if any of these are worn.

The prosthesis with distal pin suspension can also be donned while sitting (Figure 14-1). First, the patient dons the silicone liner, which has a distal pin. Second, the person puts on any socks needed to ensure snug socket fit. The socks will have a distal hole through which the pin is placed. Third, the amputation limb with its liner and socks is inserted into the socket in a manner that permits the pin to engage the locking mechanism in the bottom of the socket. Some patients use a simple device to aid donning.³

If thigh corset suspension is used, then the donning procedure has both sitting and standing steps. While seated, first, the patient puts on the amputation limb socks and the socket liner. Second, the amputation limb covered with socks and liner enters the socket. Third, the patient fastens the thigh corset *loosely*. Then the person stands and bears enough weight on the prosthesis in order to lodge the amputation limb fully into the socket. Afterward, the patient fastens the thigh corset *snugly*. If the corset were fully fastened while the patient sat, the amputation limb would tend to be lifted from the socket, creating a space between the bottom of the limb and the bottom of the socket; the limb would tend to develop distal edema.

Transfemoral Prosthesis

Prior to donning a transfemoral prosthesis, the patient should remove the suction valve and place it on a nearby table. Although one can don a transfemoral prosthesis while sitting, it is much easier to accomplish this task while standing. The beginner should stand near a stable support, such as a sturdy chair or parallel bars.

The traditional method involves pulling the thigh into the socket. This requires having a pull sock, a length of tubular cotton stockinet equal to at least twice