Lower Extremity Prostheses
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The longer the stump, whether above or below knee, the more effective the prosthesis and the more improved the amputee’s gait. A longer stump even in above-knee amputations provides better hip control and allows for improved gait and less difficult ambulation.

Final prosthetic fitting usually can be accomplished within three to four weeks after surgery. The basic lower extremity prosthesis essentially the same components as the upper extremity prosthesis, although it may cause different complications. Lower extremity prosthetics are heavier than those used for the upper extremity, resulting in greater problems with suspension of the harness and strap assembly. This is primarily a concern in above-knee amputations, as below-knee amputations generally use prosthetics that holds the socket in place with suction.

The prosthesis consists of the socket, joint, and a power assembly. Power is typically provided by patient musculature, although higher-level amputations such as hip disarticulation and hemipelvectomy, unique gaits must be developed for the prosthesis to be functional. Lower extremity prosthesis must be accurately aligned with body components. Proper balance and support must be achieved with joints aligned to the patient's center of gravity. Generally, if the patient complains of an awkward or staggering gait or finds that the knee joint is buckling, the problems can usually be solved with realignment. It is also important for the patient to keep in mind that a change in shoe heel height can throw alignment off and result in difficulty in using the prosthesis.

A variety of joint replacement devices are available for the above-knee prosthesis. This section will not cover all types, but caution is recommended when choosing prosthetists who are up to date on the most recent designs and their application to specific types of amputations.

Prosthesis- Hindquarter Amputation/Hip Disarticulation
New post-surgical techniques for immediate prosthetic fitting can help provide psychological support for the patient. The amputees generally use a Canadian type hip disarticulation prosthesis or a modification of that prosthesis. The design includes a single axis hip and a knee joint. Stability in the joints is aided with straps and a fairly standard prosthetic foot known as a solid ankle cushion heel (SACH) is provided.

The hemipelvectomy prosthesis (Canadian type) costs approximately $4200 to $5600, as does the hip disarticulation prosthesis. The patient typically requires a cane and the gait achieved is usually slow and awkward. Many such patients require a wheelchair.
Prosthesis- Above-Knee Amputation/Knee Disarticulation
The above-knee prosthesis typically involves a constant friction single-axis knee joint that can be locked manually when in full extension. Care is taken to maintain proper alignment of the prosthesis. The patient is encouraged to stand and bear weight on the temporary prosthesis within twenty-four hours after surgery. However, weight-bearing should be attempted only under the supervision of a trained nurse, therapist, or surgeon. Gait training by the physical therapist is begun as soon as the patient's strength returns and is followed by occupational therapy intervention for training in basic activities of daily living and personal care. The permanent prosthesis is typically fitted within three to four weeks post-surgery, although this may be delayed as much as six to eight weeks after surgery if stump healing and changes in stump size prevent permanent fitting.

As with all amputations, stump care is extremely important. It should involve good skin care, use of a stump sock, and excellent personal hygiene. In the first days and weeks of ambulation, it is important to watch for stump edema if a proper, permanent fitting of the prosthesis is to be accomplished. Environmental factors are an important consideration in prosthetic development. Both the design and the materials used may vary with the region, which the patient resides, and the weather conditions to which the patient may be exposed. Extremes of temperature and humidity are only two of a number of factors, which must be taken into consideration by the prosthetist.

A standard above-knee prosthesis will range in cost from $2901 to $4200. The cost may vary with the age and weight of the patient, environmental factors, and projected activity levels.

Prosthesis- Below-Knee Amputations
The standard below-knee prosthesis is a patella tendon-bearing prosthesis (PTB) that costs $2000 to $3000. Design and cost generally vary with age, weight, environmental factors, and projected activity level.

Prosthesis- Ankle Disarticulation
The prosthesis generally consists of a molded plastic socket and a SACH (solid ankle cushion heel) foot. The Syme's prosthesis with a medial opening generally costs $2100, while an expandable Syme's prosthesis costs $2500.

Prosthesis- Partial Foot and Toe Amputations
A partial foot amputation requiring a special shoe may involve up to $375 to $1900 for prosthetic design and development. Generally, in toe amputations and even in many partial foot amputations, only a shoe filler is used.