



Center of Excellence of Prosthetics and Orthotics (CEPO)

Prosthetic Process

1. Before amputation

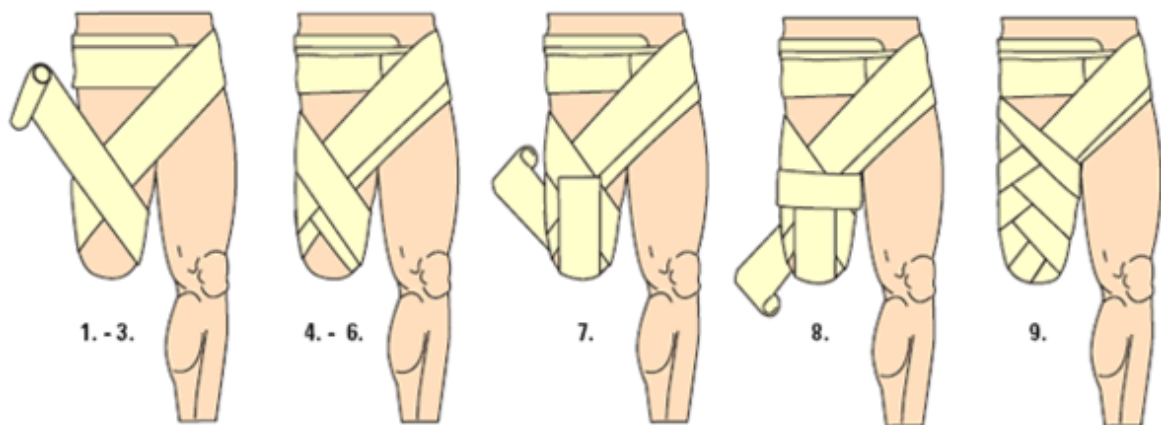
If possible, our team would like to meet the patient and responsible surgeon prior to surgery. As part of this team, we can advise on the decision of amputation level and techniques to be used for best outcome when using a prosthetic leg.

We will also be able to inform the patient of the process from amputation to receiving a prosthetic limb, offer advice on options available as well as sharing our experience of how it is to live with a prosthetic limb. At this time, we can also start planning the rehabilitation period and discuss the type of prosthesis that is most suitable to reach the patients goals.



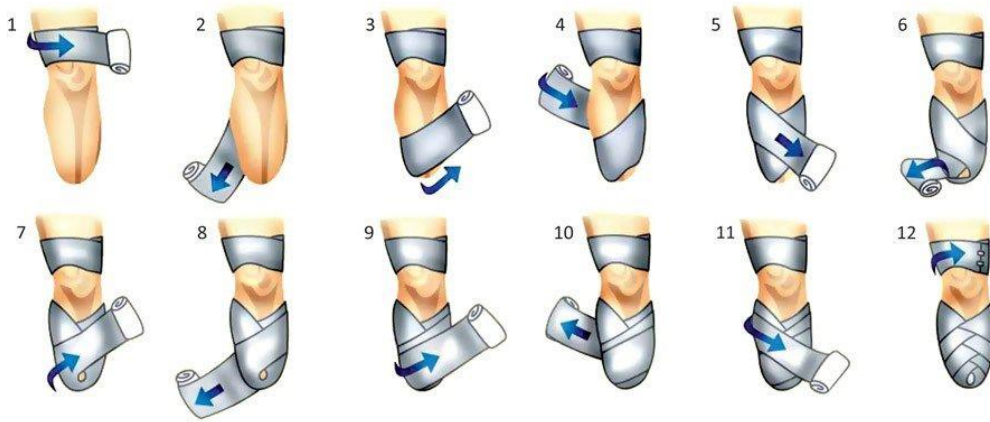
2. Immediately after amputation

After amputation it is important to take good care of the remaining limb to best prepare it for the prosthesis. The hospital will focus on treating the wound and control the swelling of the limb. This can be done in various ways, but will include either elastic bandage wrapping or a silicone sock (liner) to compress the limb in order to reduce swelling and start shaping the leg. This is a very important step to prepare the limb before fitting a prosthesis. CEPO staff can instruct in both the wrapping technique or the choice of a liner for best compression postoperatively. It is also very important to exercise both the remaining limb as well as the rest of the body to prevent loss of muscle strength and to regain balance. We will provide the patient with a training program and instructions to be followed until a first trial prosthesis can be fitted.



Above knee amputee stump bandaging technique

Center of Excellence of Prosthetics and Orthotics (CEPO)



Below knee amputee stump bandaging technique



Liner application on the stump



Center of Excellence of Prosthetics and Orthotics (CEPO)

3. First trial prosthesis

The process to get the first prosthetic leg starts once the stitches are removed and the wound is properly healed. This is usually around 3-4 weeks after amputation. The timing can of course vary depending on other complicating illnesses or injuries and will have to be decided together with the caring physician.

We prefer to always make a trial leg to start with since we know that the remaining leg will change in shape and size very quickly in the beginning. Mostly due to decreased swelling of the leg. The first “trial-” or “check- socket” is usually made of a clear plastic that allows for modifications to ensure a good and comfortable fit.

The first step in making the prosthetic leg is casting of the remaining limb to make a mold for the prosthetic socket. The socket is the part of the prosthesis in which you put the remaining part of the leg. Before the cast is applied on the leg, we will fit a liner. A liner is a type of “sock” which is put on the remaining leg. It is usually made of either silicone or polyurethane. The liner has two main functions. Firstly to provide a comfortable and protective layer between the leg and the socket. Secondly it is part of the system that holds the prosthesis to the remaining leg. We call this “suspension”. The most common types of suspension is Vacuum- or Pin- suspension. The other components of the prosthesis are various connectors and adapters, a knee joint (for above knee amputations) and the prosthetic foot. There are many different versions of both knee joints and feet available that will vary in functionality and obviously in price.

Once the first trial leg is assembled, the patient can start training to walk with a prosthesis. This is called Gait Training.



Center of Excellence of Prosthetics and Orthotics (CEPO)



Liner application on the stump preparing to casting for prosthesis

4. Gait Training

The initial gait training is best done in our CEPO training facility. Here we can adjust the leg in various ways to make sure it is safe, functional and comfortable while walking and sitting. We will also teach the patient or the care taker how to put on and take the leg off. The patient will come every day for training until the patient can walk comfortably. Once the patient feels safe and we have ensured a well functioning and comfortable prosthesis, the patient can train either at home or at a physiotherapy department.



Gait training with a prosthesis



Center of Excellence of Prosthetics and Orthotics (CEPO)

5. Final Prosthesis

After some time using the trial prosthesis the remaining leg has most likely changed in size and shape and it is time to make the final socket and prosthesis. In some cases we will need to take a new cast whereas in other cases we can copy the check socket after adjustments are made. The final socket can be made from different materials depending on individual requirements. The most common is a plastic resin, but we also make sockets in carbon fiber and other high technology materials.

The final prosthesis usually lasts for 1-2 years but can sometime last several years depending on activity level. Some parts, such as the silicone liner, might need to be replaced earlier depending on wear. After successful fitting of the final prosthesis the patient will come for checkups and service regularly as needed.



Walking with a real prosthesis