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A Guide on Prosthetics

FOR THE NEW AMPUTEE

If you're a new amputee (or a friend or family member), you have many questions. What happens next? What can I expect? Can I resume activities I used to enjoy?

Many of those questions are best answered by your Prosthetist ***(A prosthetist is a person who measures, designs, fabricates and fits prosthesis)*** and the rest of your health care team as they create your treatment plan.

You can also take a look at information that follows to give you an overview of what a prosthesis entails.

What happens after my amputation?

The first step after your amputation is for the wound, where your limb was amputated, to heal. This normally takes 4-6 weeks, but depends on various factors - see section - *How long before I can get a prostheses?*

The nursing staff and treating doctor will ensure that your wound heals. After your amputation you will also receive physical therapy to ensure that your limb can move in all directions and that your muscles don't go weak.

Once your surgeon feels that the residual limb (The remainder of the limb that was amputated) is successfully managed and healed they will refer you onto a prosthetic management.

Together with you, your prosthetist, doctors, physio - and occupational therapists, want to give you the highest possible degree of independence, mobility and help you maintain or restore the quality of your life.

What is a prosthesis?

In medicine, a prosthesis, is an artificial device that replaces a missing body part, which may be lost through trauma, disease, or congenital conditions.

Various types of prostheses exist and depends on level of amputation and the function the prostheses is required to perform.

Prostheses are named after the body part they are replacing. Prostheses are further classified as prosthesis for your arms - Upper Extremity Prostheses & prostheses for your legs - Lower Extremity Prostheses.

Examples of prostheses are:

LOWER EXTREMITY PROSTHESES

- Foot Prostheses
- Below the Knee Prostheses *(Trans-Tibial Prostheses)*
- Above the Knee Prostheses *(Trans-Femoral Prostheses)*

UPPER EXTREMITY PROSTHESES

- Below the Elbow Prostheses
- Above the Elbow Prostheses
- Shoulder Disarticulation Prostheses

How does a prostheses work?

A prostheses is fitted to the human body to perform the functions that is lost as a result of the amputation. How a prostheses works therefore depends on the level of amputation and what function the prostheses need to perform. Prosthetic component selection plays a very important role with regards to how your prostheses will function.

For lower extremity prostheses: Prosthetic components are generally classified according to your weight and activity level. The M.O.B.I.S Scale is commonly used to match prosthetic components with patient requirements. Click on our Activity Level link on our webpage - *www.conradbarnard.co.za*

For upper extremity prostheses: Prosthetic components are chosen based on function & aesthetics required. For myo-electric components (Robot Hands) further considerations apply.

Discuss your expectations of your prosthesis in detail with your prosthetist.

What makes up a prostheses?

A prosthesis consist of the following components:

1. A SILICON LINER

A silicon liner is a sock-like cover for the residual limb and acts as a interface between the movable soft tissue of the residual limb and the hard shell of the prosthetic socket.

The function of the liner is to protect and cushion the delicate and pressure-sensitive areas of the residual limb and connects the residual limb to the prosthesis. Liners are pliable and skin-friendly, yet firm enough to prevent unwanted forces and pressure on the skin and soft tissue of the residual limb. Arm liners provide wearer comfort and safety.

2. THE PROSTHETIC SOCKET

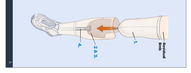
This is a hard shell normally made from the carbon fiber or fiberglass that bears the bodies weight and transfer pressure correctly onto your residual limb to not cause pain or discomfort.

A prosthetic socket further has the function of being the attachment site for the rest of the functioning components of the prosthesis - like a knee, foot or hand.

The socket is the interface between you, the patient and functional prosthetic components. A correct fitting prosthetic socket is paramount to a successful outcome.

The prosthetic socket lastly facilitates how the prostheses stays attached to your body. Different methods are available and depend on the design of the socket.

- **PROTECTIVE**
  PROPRIOCEPTIVE
  SENSORY
  - Protective sensation is the ability to feel pain, temperature, and pressure to avoid injury.
  - Proprioceptive sensation is the ability to sense the position and movement of the body and limbs.
  - Sensory sensation is the ability to perceive touch, vibration, and other stimuli through the skin.
- **VISCERAL**
  - Visceral sensation is the ability to perceive internal organ functions, such as hunger, thirst, and pain from the internal organs.
- **SOMATIC**
  - Somatic sensation is the ability to perceive sensations from the skin, muscles, joints, and bones, including pain, temperature, and touch.



Is it painful to use a prostheses?

No. A correct fitting prostheses should be very comfortable and you should be pain free when using it.

How do I get a prosthesis?

To acquire a prostheses you need to consult with a Prosthetist - This is a professional that is an expert in measuring, designing, fabricating and fitting of prestheses.

IN SHORT THERE ARE 6 STEPS IN THE PROCESS OF ACQUIRING A PROSTHESES:

1. Consulting a prosthetist to determine your prosthetic needs and requirements
2. Secure funding from medical aid (Should you be covered by medical aid), WCA, RAF (Road Accident Fund) or apply for funding through Conrad Barnard O&P
3. Start the process of measuring for a prosthesis
4. Fit & trail a trail prostheses to ensure good fit, alignment and comfort
5. Fit final prostheses
6. Learn to use your prostheses

How long before I can get a prostheses?

The time between your amputation and fitting of a prostheses depends on various factors.

THESE FACTORS INCLUDE:

- Cause of amputation
- Wound healing
- Level of amputation (Where you were amputated)

- Amount of swelling present on the far end of the residual limb and how quickly the swelling reduces.
- Level of amputee's motivation

In most cases a prostheses will be fitted 6-9 weeks after amputation. As stated in the section above - *How do I get a prostheses*; The first fitting is normally a trail prostheses (6-9 week time period refers to the trail fitting).

The process of acquiring a final prostheses vary on various aspects and can take anything from 2 - 12 weeks after trail prostheses is fitted.

It should be noted that fitting a prostheses doesn't mean that all function is restored once you put the artificial limb on - You will need to learn how to use your new limb. A prostheses form part of a rehabilitation process that takes several months.

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