

Above and Below the Knee Prosthetic Leg Covers

Background:

There are many types of leg prosthetics.

- Below the knee- The patient maintains their knee and their amputation is between their knee and ankle.
- Above the knee- The patient's leg is amputated between the hip and knee .
- Hip disarticulation- The majority of the patient's leg is removed.

Existing Products:

There are many issues with the products that already exist including:

- The material they're made of is fragile
- They're very obvious
- Many have intricate designs, making them difficult to clean
- They have price points anywhere from 300 all the way up to 1500 dollars

My Idea:

After taking my first prosthetics class I was inspired to try to make a prosthesis cover that would be durable, affordable, inconspicuous, and compatible with all devices.

Resources: Jade Myers, University of Rochester Medical Center Prosthetics and Orthotics

Parts of a Prosthetic Leg:

- Socket- Houses the residual limb and keeps the prosthesis attached to the wearer
- Knee- Only for above the knee and hip disarticulation prosthetics and acts as a mechanical replacement for the patient's lost knee
- Pylon- A strong metal pipe in place of a shin that supports the user
- Foot- Acts as a replacement for the patient's foot and provides stability and support

Prosthesis Needs Around the Globe:

In different parts of the world people with limb differences are discriminated against and outcast from society. As a result, their prosthetics need to be very different. They need prosthetics that can be concealed easily or can pass as biologically correct limbs and because of their economies they need devices and parts that they can afford.

Above the Knee Prosthesis Cover:

- Shape inspired by a shin guard to prevent mobility restriction
- Covers prosthetic knee in the front
- Attaches at the top of the pylon and top of the foot

Below the Knee Prosthesis Cover:

- Connects to the bottom of the socket and top of the foot