

Prosthetic Legs and Swimming

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I. INTRODUCTION

The problem being solved is simply the fact that amputees have a hard time leading a normal life because they have to relearn how to walk and do activities that once required little to no brain effort. Another problem is that amputees need to change their leg type when they want to do a different activity. When they want to swim, most people choose to just take the limb off completely. But now they also have the option to purchase waterproof technology to help them swim easier. The new ideas and technology for a type of "any activity" leg wear will solve these problems.

II. METHODS

The current state of the technology is usually just your average walking prosthetic leg. As mentioned earlier, there is the Hanger prosthetic for running, and in my presentation we learn about the Aqualeg, Aqualine and the idea for Neptune which would revolutionize an amputee's way of swimming. The ideas and prototypes for prosthetic legs for different activities is very broad. People use things with flippers when they swim, and use waterproof covers for most water activities. There are also a lot of ordinary walking legs that have microprocessors in the knee to help make the leg more stable when in water. Also, some prosthetic foos now feature ridged feet for better traction when walking on wet places.



III. RESULTS

The results for the few prosthetic attachments that I mentioned on my presentation are that swimming and other water activities are becoming easier to manage for

a person with one leg. There are nearly 2 million people

living with limb loss in the United States alone. Approximately 185,000 amputations occurring each year. The cost of a prosthetic leg can be anywhere from \$10,000 - \$100,000. Insurance will usually cover some or most of the costs, but the bills still add up when you need to buy another one after a few years of daily wear and tear. People with prosthetic devices to help them swim say that it is easier and feels more natural than even not wearing a device at all, which is pretty remarkable.

IV. DISCUSSION

Some limitations I noticed for different leg types for different activities is that when people want to change from walking to swimming, they have to change the type of prosthetic leg they want to wear, or have to take off their prosthetic all together. This takes up a lot of time from them enjoying what it is they wanted to do. Also, this can get very expensive. Just like a normal prosthetic leg, special legs will wear down and need to be refurbished after 3-5 years of use. Also, as you grow, you will need to be refit for sockets. These changes are very expensive and happen at least every few years. Now imagine doing that for more than one leg.

V. REFERENCES

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