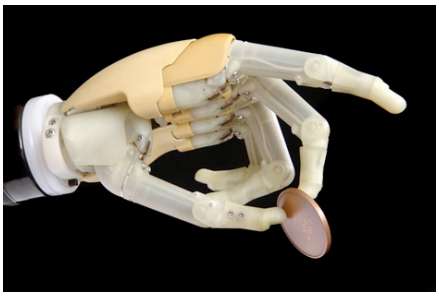
Touch Bionics' i-LIMB Hand

Andrew Westover - Biomedical Engineering – University of Rhode Island

The human hand is an incredible development of evolution. It's combination of structure and feedback enable a massive array of movements and uses. All of this makes the human hand one of the most devastating body parts to lose as well as one of, if not the, hardest part of a limb to replicate.

On July 17, this year, Touch Bionics, a Scotland-based prosthesis developer, announced that its i-LIMB bionic hand was available for use in the United States and Europe. This announcement marks the biggest step in bionic hand development to date. The i-LIMB is the world's first fully articulating and commercially available bionic hand. In other words it has four smart motorized fingers and a unique multi-position motorized thumb.



The ability of the i-LIMB to articulate each finger individually literally and figuratively opens doors for amputees. Patients using other prosthetic hands would never be able to maneuver a key into a key hole to unlock a door. This is only one of the many fine motor skills that this device allows patients to complete.

In addition to the fully articulating fingers and a multi-position thumb, Touch Bionics implanted extremely effective feedback sensors in the fingers that control grip strength to enable patients to carry or hold fragile items without dropping or breaking them.

A complex machine like this must be hard to control and even harder to use effectively. Wrong. The iLimb hand is controlled using a traditional two-input myoelectric sensor system that reads nerve impulses in the remaining portion of the patient's limb. This is exactly the same method of control that is used on existing simple myoelectric prosthetics. This means that patients who are already used to there old prosthetic don't have to worry about learning a completely new system of controls and are able use the i-LIMB effectively in a mater of minutes.

Of Bionics couldn't stop there, they have designed two different "skins" that the user simply slides over the bionic had. The patient can chose either a white semi-translucent skin that displays the inner workings of the hand or a high-definition silicone skin that's built to match the skin color and appearance of the user's remaining limb. Some patients even chose to leave the hand uncovered for a robotic look as seen in the picture to the left.

The i-LIMB is powered by a single battery that can be charged over night and lasts all day.

All of this innovation has to come with a price. As mentioned earlier, the i-LIMB is available now through selected clinics in the UK and United States at a price around 18,000 American. This is almost twice as expensive as existing myoelectric devices.

Reference:

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