

## Philly, welcome to the bionic age

- ◆ Futuristic muscle-powered prosthetics now at new South Street center
- ◆ Former Walter Reed prosthetist shows advances



Colby Helffrich, 23, who lost most of his fingers in a train accident, shows off a prosthetic hand controlled by his arm muscles.

# Future of artificial hands on South St.

◆ Company with reputation for advanced hand prosthetics has opened clinic ◆ Former Walter Reed prosthetist, two patients show off their wares



Padilla, a retired Army sergeant who lost his lower forearm in Afghanistan, has one of the most advanced prosthetics

## Separate motors

Padilla now has a Bebionic 2, which has separate motors for each finger, as well as multiple settings which allow rotation of the hand and ability to choose which fingers open and close.

He is the second patient to receive this model at Walter Reed. Older prosthetics contained sensors that controlled the grip, while modern hands now have the ability to have their pressure controlled manually. "I can catch the ball with the net, hit it out with my right hand, recatch it with my right in midair and then throw it, all in one motion," Padilla said.

Retired Army Sgt. Ramon Padilla's first prosthetic hand had little personal touch, nearly breaking his young son's own hand three years ago.

But Padilla's new version, which he showed off yesterday at Philadelphia's newest bionic company, Advanced Arm Dynamics, has given the 36-year-old who lost his left hand and forearm fighting in Afghanistan the versatility to catch a ball and — gently — hold his son's hand.

"My new hand can carry heavy items or I can hold hands with my family. I used to have to switch hands out when I wanted to do both," Padilla said.

Former Walter Reed Medical Center clinician, Ryan Spill, recently opened up the clinic on South Street.

The prosthetics company has already constructed bionic limbs for 1,500 patients at its other clinics throughout the country. But the futuristic body parts don't come cheap. Hands like Padilla's can cost anywhere from \$60,000 to \$75,000 depending on features and abilities. The current generation of prosthetics rely on muscles to send messages to the artificial limb.

"Targeted muscle reinnervation is the future, with the ability to control prosthetics mentally," Spill said.

## Two Stories

Padilla and an Arkansas man, Colby Helffrich, have two of the newest and most advanced prosthetic limbs that Advanced Arm Dynamics has to offer



**Padilla**, 36, lost his arm in May 2007 while serving in the 173rd Airborne when a rocket-propelled grenade exploded next to him, with shrapnel destroying his arm. Padilla was released from care in July 2007, and retired from the military in September 2009.



**Helffrich**, 23, was hit by a train in March 2009. The accident led to losing all fingers but the thumb on his left hand. After more than a year's wait and development, Helffrich has only had his finished prosthesis for two weeks, but is already able to use it effectively.