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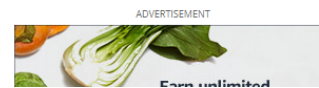
# Limbitless Solutions at UCF launches kids' bionic arm research

By Daniela Vivas Labrador  
Special to Orlando Sentinel • Apr 12, 2022 at 7:35 pm



FEEDBACK

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For eight years, the University of Central Florida's Limbitless Solutions has been on the cutting edge of outfitting children who have lost limbs with new 3-D printed bionic prosthetics that revolutionize their lives. Now, the organization is reaching for the next level of that mission, partnering with children's hospitals to research the effect of these devices on young patients' brains.

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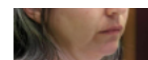
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Although there has been a lot of research on limb loss and prosthetics usage, not much has been done on the possible effects of that usage on the patient's brain. Limbitless Solutions, along with Jacksonville-based Wolfson Children's Hospital and Nemours Children's Health, will be investigating these impacts in an upcoming four-month clinical trial.

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"The idea for this study came about several years ago and we proposed it to the hospital after presenting it at a conference," said Albert Manero, president of Limbitless Solutions. "They were so receptive to being able to do this type of work, and it really is a cutting edge look at the brain and how it evolves from using prosthetics."

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Shea McLinden, a UCF health sciences junior and Limbitless Solutions intern, explained that when someone gets a prosthetic for the first time, it is a new experience to learn how to flex certain muscles to use the prosthetic. The study will look at brain images to identify any changes, such as different neural pathways being developed that would possibly be developed due to this learning process.

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The amount of imaging and testing needed to carry out a research project like this made it impossible before, and Manero said he is glad Wolfson and Nemours joined Limbitless in this project.

“The clinical research allows for functional MRI testing along with other advanced imaging techniques in order to be able to scan the child’s brain as they are thinking about moving part of the prosthetic,” Manero said. “That will allow us to be able to see how that part of their brain is changing to the training that they are doing to learn their prosthetic.”



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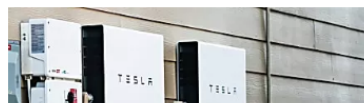


This research is also reinforcing the organization’s previous partnership with UCF’s School of Visual Arts and Design and the Nicholson School of Communication and Media, as participants will use training video games to learn how to use their prosthetics during the study.

“This particular clinical trial is really looking at how that training is affecting the brain and how it is improving the use of the bionic arm, so we are really excited to be able to see how that partnership continues to grow and develop,” Manero said.



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Limbitless Solutions has worked with about 40 families since it started in 2014.

Limbitless Solutions’ first-ever clinical research was in Portland, Oregon. Manero said that despite the constant back-and-forth travel, he was happy with the opportunity. Now, he is even more excited to work with the Central and North Florida healthcare communities.

Limbitless is still looking for the five participants for this pilot study, which will require several trips to the Wolfson hospital in Jacksonville during the four-month period.

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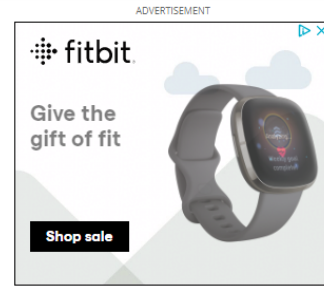
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“For applicants who are the ages 9 through 12 and have not used a prosthetic before, this is a great opportunity to consider being involved in the research,” Manero said, inviting members of the Central and North Florida communities to submit their information at <http://trials.limbitless-solutions.org/>.

*This story is part of a partnership between the Orlando Sentinel and UCF's Nicholson School of Communication and Media.*



Link to the story's video on the Orlando Sentinel YouTube channel: <https://youtu.be/f51f0-cMHFA>