Foundation for Physical Therapy
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National Alzheimer's Awareness Month Highlights
Importance of Physical Therapy

November is National Alzheimer's Disease Awareness Month. Currently, an estimated 5.2 million Americans of all ages have Alzheimer's disease. With the elderly population in this country growing by the second, it is believed that by 2025 this number will reach 7.1 million. This disease is the 6th leading cause of death in the United States and the 5th leading cause of death for those aged 65 and older. While deaths from major diseases such as heart disease and stroke have decreased over the past decade, the number of deaths from Alzheimer's has increased a shocking 68% in a ten year period.[1] With little known about strategies to prevent, cure or slow the disease, and the vast effects it has across the family as well, Alzheimer's research is hugely important in this country. Foundation alumnus Eric Vidoni, PT, PhD, is hard at work investigating Alzheimer's disease and has begun to make discoveries that could potentially change the way we look at and treat the disease.

Dr. Vidoni, Research Assistant Professor in the Department of Neurology at the University of Kansas and Education and Outreach Director of KUMC's Alzheimer 's disease Center, always knew that a career in research was for him. He combined his interest in movement and muscle with his desire for a scientific based career and his fascination with asking questions and doing experiments. He entered KU's joint PT/PhD program to receive both clinical and research training in physical rehabilitation with an emphasis on brain function. After graduating from the program in 2008, Vidoni joined the Alzheimer's Disease Center as a postdoctoral fellow with support by the Foundation's New Investigator Fellowship Training Initiative (NIFTI), accepting a faculty position a few years later in 2010 and quickly being appointed Assistant Director of the center. Now, much of Dr. Vidoni's research focuses on Alzheimer's disease, and his work on this crucial topic is beginning to take off.

Dr. Vidoni's 2009 fellowship backed by the Foundation provided partial funding for a study suggesting that Alzheimer's biomarkers and a low body mass index are linked.[2] The results of this study, published in *Neurology*, were significant in the Alzheimer's community, and the research was mentioned in online editions of U.S. News and World Report, CBS News, and CNN Health.

Vidoni credits a great deal of his success in the research arena to the Foundation and his NIFTI award.

"The NIFTI allowed me to pursue my research and go full force into developing a research theme," noted Vidoni. "Competition is fierce in the national training grant setting, so the NIFTI is a really valuable mechanism."

Much of Dr. Vidoni's current research focuses on the relationship between exercise and Alzheimer's disease. An article published in *Physical Therapy* earlier this year, on which Vidoni is the first author, discusses that while typically, the more fit a person is, the more active the brain would be while performing a task, this may not be the case for those with Alzheimer's disease.[3] These findings create more questions on the topic, and Dr. Vidoni is curious to determine whether or not exercise training may be able to reignite the relationship between performing tasks and brain activation in those with Alzheimer's disease.

Dr. Vidoni is part of a team now working on a study looking at exercise in a dose response fashion for healthy older adults. By looking at exercise as a type of medicine for those susceptible to Alzheimer's, he aims to determine whether or not it can be prescribed to patients in doses. For example, if he can determine that exercising for 150 minutes per week has twice the benefit of exercising for 75 minutes per week, clinicians can use this information to better inform their patients and create specific exercise plans for those with Alzheimer's disease or those who may be vulnerable to the disease.

Vidoni's research plans for the coming years include a study comparing the effects of resistance training, aerobic training, and a combination of both, on cognitive function. He also intends to look at ways to effectively prescribe exercise in the clinic to patients with memory impairments. While most people know that they should be exercising, Dr. Vidoni would like to be able to eventually tell people how it will specifically affect their cognition. It is his goal to be able to provide concrete data to patients explaining how a certain amount or certain type of exercise will improve their cognition by a certain amount of time or delay Alzheimer's by a certain number of years.

“The research is really about putting data behind our recommendations to people and getting some more concrete evidence behind how we educate our patients and clients,” noted Vidoni.

Dr. Vidoni hopes that his research will have a direct effect on clinical practice in the Alzheimer’s community. His goal of determining the specific effects of exercise on the onset of Alzheimer’s disease will filter down to clinicians and patients, allowing clinicians to prescribe specific plans to those at risk for Alzheimer’s or those who already have the disease. Vidoni believes that being able to tell patients how exactly certain amounts of exercise will affect their cognition will encourage more people to adopt a physically active lifestyle.

Vidoni strongly believes in the importance of a multidisciplinary team in the research field, particularly while researching a disease such as Alzheimer’s. He regularly works closely with neurologists, basic scientists, nurses, and researchers, using his physical therapist background to bring a unique perspective to the table. It’s evident that this approach to research is working, as Dr. Vidoni and his team are already making an impact on the way Alzheimer’s disease is treated.

Help researchers like Dr. Vidoni make an impact.

1. Alzheimer’s Association. www.alz.org. Accessed October 29, 2013.
2. Vidoni ED, Townley RA, Honea RA, Burns JM; Alzheimer's Disease Neuroimaging Initiative. *Neurology.* Alzheimer disease biomarkers are associated with body mass index. 2011;77(21):1913-1920.
3. Vidoni ED, Gayed MR, Honea RA, Savage CR, Hobbs D, Burns JM. *Physical Therapy.* Alzheimer disease alters the relationship of cardiorespiratory fitness with brain activity during the stroop task. 2013;93(7):993-1002.