



Fit for LIFE

UF'S INSTITUTE ON AGING IS LEADING EFFORTS TO KEEP OLDER AMERICANS MOVING LONGER

BY CZERNE M. REID

Shortly after moving from Rome, Italy to Memphis, Tennessee, Marco Pahor was walking to work as he had done every day for years when a police officer asked if his car had broken down.

While living in Europe, Pahor typically got several hours of exercise daily by walking to and from public transportation, taking stairs and bicycling in the course of his daily activities.

"In Italy, you exercise to live," he says. "When I moved to Memphis I realized that you have to exercise to exercise."

Now at the University of Florida, Pahor runs most mornings and weight trains at the gym a few times a week.

Being physically active is not just a way of life for the 53-year-old Pahor, who has been director of the UF Institute on Aging since 2005. It is a major focus of the research program he leads. His mission, and that of the institute, is to use multidisciplinary basic, clinical and translational research and training programs to help older adults maintain their health and physical independence.

The institute builds on a long tradition of aging research at the University of Florida, where geriatric studies have been conducted in various disciplines since 1951, when the first baby boomers were entering kindergarten.

As the boomers advanced in age, UF also advanced in its studies of how to help them enjoy good health in their golden years.

Today, UF is well-positioned to be an authoritative voice on aging and geriatrics. Florida is the nation's "oldest" state, with nearly 19 percent of its 18 million resi-

dents older than 65. As the retiree population of the state grows, Florida has the opportunity to lead the nation in the science of aging.

UF has embraced that challenge through the Institute on Aging. In recent years the institute has blossomed, recruiting top researchers, conducting leading-edge research and winning multi-million-dollar grants from the National Institutes of Health and other agencies.

They include the largest grant ever to the university — \$64 million from the National Institute on Aging to pursue a conclusive answer about whether physical activity can help older adults retain their mobility longer. The first two years of the Lifestyle Interventions and Independence for Elders, or LIFE, study is covered by \$29.5 million through the American Recovery and Reinvestment Act of 2009.

The six-year LIFE study will compare the long-term effectiveness and practicality of a physical activity program and a successful aging health education program among seniors.

Many studies have shown that regular exercise improves physical performance, and the U.S. Department of Health and Human Services recommends that adults engage in at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic activity each week, as well as muscle-strengthening activities.

Still, little is known about whether exercise actually helps prevent major movement disability, defined as the inability to walk a quarter of a mile, or four blocks.

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UF's Oak Hammock retirement community is a natural laboratory for Marco Pahor's research.

disability in older people — whether you can prevent them from being unable to walk — is lacking,” Pahor says.

Ultimately, about 1,600 participants will be randomly assigned to take part in either a structured physical activity program that includes moderate-intensity physical activity such as walking and exercises to improve strength, balance and flexibility, or in a successful aging program that includes health education workshops and supervised stretching. Individuals will be followed for about four years.

The study is being conducted at UF and seven other institutions around the country: Northwestern University, the LSU Pennington Biomedical Research Center, Stanford University, Tufts University, the University of Pittsburgh, Wake Forest University Health Sciences and Yale University.

The results of this study have important implications for public health in a rapidly aging society and will fill an important gap in knowledge in geriatric medicine, Pahor and a colleague wrote in a January commentary in the journal *Archives of Internal Medicine*.

The study will also provide valuable information about the impact of physical activity on a range of health conditions, and make a mark on clinical practice and public health policy. In the end, that means a benefit to individuals as well as to the wider society, the researchers say.

In January, the National Institutes of Health awarded the institute another \$15 million in recovery act funds for the construction of a 40,000-square-foot building to house its programs. The one-stop facility — which includes clinical research suites, laboratories, and lifestyle intervention amenities such as an indoor walking track and demonstration kitchen — will make it easier for older adults to take part in

clinical trials, and strengthen connections among existing UF research centers. Those include the Claude D. Pepper Older Americans Independence Center, the Clinical and Translational Science Institute and the newly established Cognitive Aging and Memory Clinical Translational Research Program.

The building project will create or retain an estimated 376 jobs, three quarters of which will be construction-related. The others include 30 faculty positions as well as graduate assistants and support and administrative staff.

Scheduled to open in 2015, the four-story building is being designed according to LEED Platinum certification standards of the United States Green Building Council. Platinum is the highest of a four-level rating system aimed at responding to environmental challenges such as responsible use of resources, reduction of pollution and making indoor spaces conducive to good health and well being. The new building incorporates features to improve indoor air quality through the use of low-emission building materials, efficient energy production and use through photovoltaic cells, and light sensor technologies and water conservation technologies. The project also calls for prevention of construction activity pollution and reduction of light pollution from the completed building.

With more than 90 active NIH and other grants totaling more than \$160 million, the new Institute on Aging building promises to be a busy place.

“The Institute on Aging initiative is very important to the state and the nation,” says Win Phillips, UF’s vice president for research. “Major support from the National Institutes of Health enables the University of Florida to take a national leadership position in this important endeavor.”

One of the early successes under Pahor's tenure was a winning bid to establish a coveted Claude D. Pepper Center at UF, one of only 11 around the country. UF's Pepper Center is focused on addressing the problem of muscle loss during aging, a condition called sarcopenia.

"Over time, muscle shrinks as fat expands," Pahor says. "We are looking for novel ways to slow this process, but right now nothing beats the benefits of physical activity."

Pahor began his commitment to aging at the bedside, for 16 years practicing geriatric medicine in Italy and conducting research on arrhythmia and damage to the aging heart.

In 1990, his interest in conducting large population studies on cardiovascular disease led to a career-defining meeting with Jack Guralnik, chief of the Laboratory of Epidemiology, Demography, and Biometry at the National Institute on Aging, who was in Italy teaching a three-week course on the epidemiology of aging.

"He was clearly one of the star students in the class — he was very knowledgeable and highly motivated to do good work," Guralnik says. "It was just obvious to me then that he was really dedicated to doing really good science in aging."

When Guralnik invited Pahor to become a visiting scientist at NIH, Pahor seized the opportunity. For three years, he traveled from Italy several times a year to participate in large epidemiological projects at NIH and at the Johns Hopkins University.

The NIH experience convinced Pahor he should relocate permanently.

"I realized that if I wanted to continue in this area I'd be more likely to succeed on this side of the Atlantic Ocean than the other," he says.

Pahor spent three years at the University of Tennessee Health Science Center in Memphis studying aging and hypertension. He then moved to Wake Forest University in North Carolina to head the prestigious Sticht Center on Aging and Rehabilitation, and became engaged in physical activity research. He led Wake Forest's successful effort to renew its Pepper Center and restructured the center to expand its focus from behavioral science to include translational science, integrating biological sciences and genetics.

It was during this period that the seeds of the LIFE study began to germinate, when a pilot study found that the rate of onset of mobility disability was lower among a group of older adults who engaged in a structured exercise program for a year, compared with a group of seniors who took part in a health education program for the same length of time.

That and later, larger studies have contributed to what Pahor called in his *Archives of Internal Medicine* commentary "a growing body of evidence that has given legs to the

hypothesis that the promotion of physical activity may be the most effective prescription that physicians can dispense for the purposes of promoting successful aging."

In late 2004 the UF College of Medicine was looking to reinvigorate its aging research program and Pahor was ready for a new challenge.

"When I looked at his CV my first reaction was, why would he want to move," says Craig Tisher, then dean of the College of Medicine. "He had a very strong program at Wake Forest."

But Pahor saw an opportunity at UF to create and shape a program that would bring together researchers from around the campus as part of the same multidisciplinary team.

In addition to assuming leadership of the Institute on Aging, Pahor was named chair of a new Department of Aging and Geriatric Research, which focuses on finding ways to prevent disabilities that keep people from performing basic activities of daily living, such as walking, eating, taking care of personal hygiene or just getting out of bed.

The institute employs a multidisciplinary approach, incorporating basic laboratory science as well as human trials to identify potential areas in which to intervene.

Today the institute's talented epidemiologists, exercise physiologists, geneticists, physicians and other experts work under one umbrella toward a common goal. The institute has recruited talented senior and junior faculty over the years who are taking innovative approaches to the science of aging.

Professor Christiaan Leeuwenburgh, chief of the biology of aging division, leads a team that is working to identify cellular processes that lead to the loss of various functions such as sight and hearing in the elderly. The group is also investigating the molecular mechanisms by which processes such as programmed cell death influence loss of muscle mass in the elderly.

Junior faculty members, such as assistant professors Todd Manini and Stephen Anton, also are actively engaged in a number of studies, including a clinical trial of whether resveratrol, a compound found in red wine and dark-skinned grapes, can help improve memory and physical functioning in older adults.

And leading the team forward is Pahor, who still takes the stairs every time. ❌

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