



LEADING THE WAY

Dear friends and colleagues,

Here at the UF Institute on Aging, we have two broad goals: to be a leader in conducting research about the complexities of aging and translate those findings into clinical practice.

One of the most important aspects of aging is cognitive decline. We work tirelessly to identify what techniques can help prevent decline in cognition as we age, how to prevent frailty in older adults and how to address chronic pain — another issue that plagues older adults. But to simply research the challenges that older adults face is not enough. That's why we also work diligently to implement what we find in our research to actually treat patients at our UF Health Senior Care clinic and UF Health Shands Hospital as well as the assisted living facility Oak Hammock at the University of Florida and the Signature Healthcare of Gainesville nursing home.

We hope our research findings will be put to work in clinical practices across the state, country and world. Several IOA researchers are studying ways to address pain in older adults, while others are influencing recommendations for exercise in older adults through the American College of Sports Medicine. We are also celebrating our part in a large National Institutes of Health initiative to uncover the mechanisms of exercise, which will hopefully translate into people engaging in more targeted and optimized types of physical activity.

One of our proudest accomplishments is the graduation of the first students from our program that offers a master's degree in medical sciences with a concentration in gerontology. Our online education programs continue to garner interest and accolades, and we are excited to grow.

Every day, we at the University of Florida collaborate to push the boundaries of aging research — all with the goal of providing increasingly better care for the current and future generations of older adults.

Marco Pahor, M.D.
 Director, UF Institute on Aging

FOSTERING NEW RESEARCH

The UF Institute on Aging, the UF Pain Research and Intervention Center of Excellence and the UF Clinical Translational Science Institute have funded four pilot projects aimed at uncovering many aspects of pain and aging. The projects include:

1 Managing chronic pain

The management of chronic pain in older adults is limited by the difference in individuals and the lack of tools to determine the best strategies for treatment. One factor that influences the experience of pain is emotional disposition — how people respond to perceived challenges. New research in the neuroscience of emotion suggests that long-term negative mood and adverse emotional experiences alter emotional systems. UF IOA researcher Kim Sibille, Ph.D., and psychology researcher Andreas Keil, Ph.D., will use the stress hormone cortisol and an evaluation of life stress to examine the extent to which these measures predict the ability to respond to a chronic knee pain intervention. They will also test how increasing neuroplasticity may improve outcomes.

2 Untangling oxytocin in older adults

Oxytocin is a neuropeptide that has been shown to have pain-reducing effects, but how the medication works in older adults is not well-understood. The project by IOA researchers Natalie Ebner, Ph.D., and Yenisel Cruz-Almeida, Ph.D., examines the effects of oxytocin on pain in older adults and will tease out the neurobiological processes associated with oxytocin's pain relief.

3 Painless brain stimulation

Increasing evidence suggests that transcranial direct current stimulation, or tDCS, is likely to help treat pain in older adults. But some people benefit from the painless, low-electrical current, which is applied to the scalp, while others do not. In this pilot project, IOA researchers Yenisel Cruz-Almeida, Ph.D.; and Adam Woods, Ph.D., are investigating how tDCS works in the brain, and for whom the treatment can work.

4 A better way to track pain and activity

Older adults may sometimes have difficulty describing chronic pain. The severity of pain fluctuates daily with activity levels and people often can't recall their pain experiences. Biomedical engineer Parisa Rashidi, Ph.D., pain researcher Roger Fillingim, Ph.D.; IOA researcher Todd Manini, Ph.D.; and scientists in the IOA's Data Science & Applied Technology Core are using smart watches to help older adults more accurately report knee pain while their activity is being recorded in the background. This science will help match pain experiences with movement information to build a better understanding how pain impacts community mobility and quality of life for older adults.

Geriatric Masters Program Enrollment:



8 students enrolled in graduate certificate program



21 students pursuing master's degrees in medical sciences with a concentration in gerontology



9 students hold graduate certificates as of May 2017



3 students will have graduated from the master's program as of May 2017

ADVANCING GERIATRICS
THROUGH EDUCATION

In 2015, Maria Schlafke was the first student enrolled in the department of aging and geriatric research's master's degree program in medical sciences with a concentration in gerontology. Now, Schlafke is looking forward to making a difference in the lives of Florida's aging residents.

Schlafke said her studies will add to her experience as an elder care mediator and elder-caring coordinator in probate and guardianship cases. Her master's degree will help to resolve challenging legal cases involving elders and their families. When an elder care case gets crowded with attorneys and emotional family members, Schlafke said her training will provide a thorough and unbiased perspective about the best interests of the person at the center of the case.

"Becoming a gerontologist will really help me to evaluate and ascertain the needs of the elderly and be able to resolve high-level conflicts that arise about their care," she said.

The value of this master's degree is that it is an interdisciplinary program that can be put to use by people in many different professions that serve the elderly, including attorneys, accountants, nurses, nursing home administrators and government officials, she said.

"The program gives you a true understanding of the social, biological and psychological components of aging in ways that help the elderly," Schlafke said.


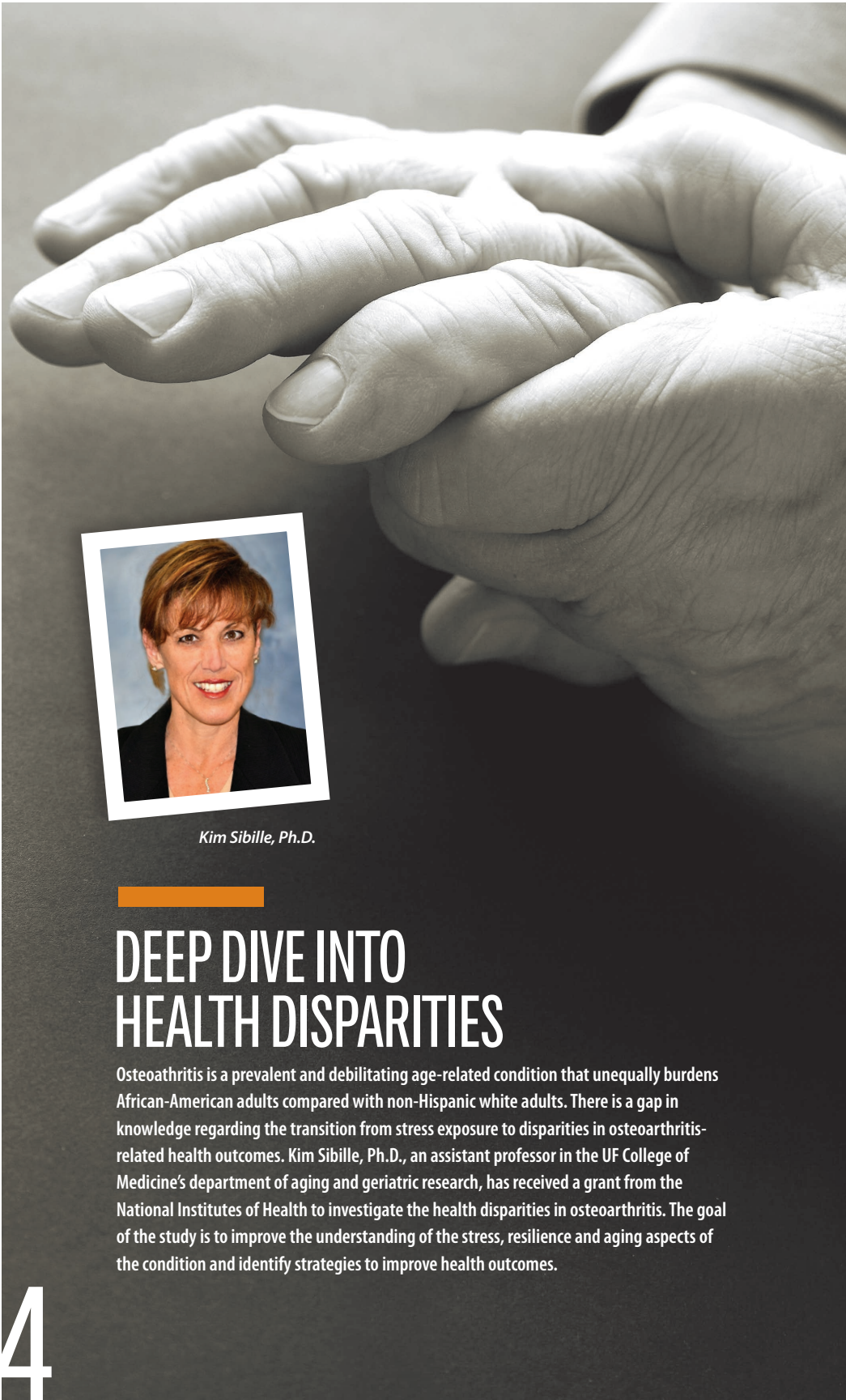
As Schlafke closes in on her April 2017 graduation, she is also no longer alone.

Eight students are now enrolled in the graduate certificate program in aging and geriatric practice, and 21 students are pursuing master's degrees in medical sciences with a concentration in gerontology. As of May 2017, nine students will hold graduate certificates, and three students will have graduated from the master's degree program.

The program was recently lauded by the UF Office of Faculty Development and Teaching Excellence's Online Education Awards. Christy Carter, Ph.D., an assistant professor and the director of educational programs for the UF Institute on Aging and department of aging and geriatric research, and instructional designer Alecia Monteiro have been recognized for the class "Theories of Aging" with an Online Education Excellence Award in the graduate courses category.



Maria Schlafke



Kim Sibille, Ph.D.

DEEP DIVE INTO HEALTH DISPARITIES

Osteoarthritis is a prevalent and debilitating age-related condition that unequally burdens African-American adults compared with non-Hispanic white adults. There is a gap in knowledge regarding the transition from stress exposure to disparities in osteoarthritis-related health outcomes. Kim Sibille, Ph.D., an assistant professor in the UF College of Medicine's department of aging and geriatric research, has received a grant from the National Institutes of Health to investigate the health disparities in osteoarthritis. The goal of the study is to improve the understanding of the stress, resilience and aging aspects of the condition and identify strategies to improve health outcomes.

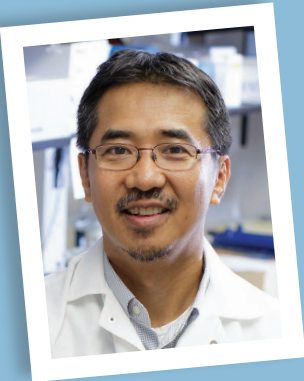
4



Todd Manini, Ph.D.

SERVICE OUTSIDE THE INSTITUTE ON AGING


Associate professor Todd Manini, Ph.D., has been named chair of the strategic health initiative – aging, a committee of the American College of Sports Medicine. The committee is tasked with revising the ACSM's recommendations for exercise and physical activity for older adults as well as the organization's best practices statement on physical activity programs and behavior counseling in older adults. Manini has also become a member of the neurological, aging and musculoskeletal study section of the National Institutes of Health, which reviews applications on epidemiologic research in neurological disorders, conditions related to aging, and musculoskeletal conditions in human populations.



Shinichi Someya, Ph.D.

EXERCISE MAY STEM HEARING LOSS

Exercise may help prevent age-related hearing loss — at least in mice. University of Florida researchers have found that sedentary mice were more likely to lose structures that are crucial to their auditory system than active mice. The lack of exercise resulted in hearing loss that was 15 percent greater among the inactive mice, according to research led by Shinichi Someya, Ph.D., an associate professor in the UF College of Medicine's department of aging and geriatric research. Someya and his colleagues tested how exercise among aging mice impacted the loss of hair cells, strial capillaries and neurons that affect hearing.



5



72
Research projects

- 58 Clinical translational science studies
- 14 Basic science studies



1,146
Research study participants

2,614 Visits conducted



11
Affiliated UF colleges

- Agricultural and Life Sciences
- Dentistry
- Education
- Engineering
- Health and Human Performance
- Liberal Arts and Sciences
- Medicine
- Nursing
- Pharmacy
- Public Health and Health Professions
- Veterinary Medicine



241
Trainees

- 10 Graduate students
- 34 Volunteers
- 4 Postdoctoral associates
- 3 Visiting fellows
- 136 Clerkship students
- 19 Undergraduates
- 21 Master's degree students
- 11 Certificate students
- 3 Non-degree students



259
Publications

194 Clinical
65 Preclinical

2016 YEAR IN REVIEW: UF Claude D. Pepper Older Americans Independence Center: Research areas and key findings

Effect of muscle-strength loss on metabolic health

The study examines the relationship between the age-associated loss of muscle strength known as dynapenia and metabolic risk factors in obese and non-obese older adults. Our results indicate that non-obese, dynapenic older adults have fewer metabolic disease risk factors than non-obese, non-dynapenic elderly people. Among obese older adults, dynapenia was associated with lower risk of meeting metabolic syndrome criteria for waist circumference and diastolic blood pressure. Dynapenia may help protect obese older adults from the risk of metabolic syndrome, which heightens the risk of heart disease and other health problems. Our findings have clinical implications and suggest that metabolic disease risk is not increased by the presence of dynapenia in obese individuals.

★Aubertin-Leheudre M, ★Anton S, Beavers DP, ★Manini TM, Fielding R, Newman A, Church T, Kritchevsky SB, Conroy D, McDermott MM, Botoseneanu A, Hauser ME, ★Pahor M

Journal of the American Medical Directors Association. 2016 Nov 30. doi: 10.1016/j.jamda.2016.10.001

★ in front of name indicates
UF Institute on Aging researcher

The benefits of physical activity

Maintaining independent mobility is especially important among older persons, who are at the greatest risk for disability. The length of time that someone is disabled likely has more influence on quality of life than the disability itself. Older people who lose their mobility are less likely to remain in the community and have higher rates of disease, death and disability. The study demonstrated that a physical activity intervention reduced the amount of time with a major mobility disability by 25 percent. This reduction was accomplished not only by decreasing the risk for initial mobility disability but also through enhanced recovery and diminished risk for subsequent episodes.

Gill TM, ★Guralnik JM, ★Pahor M, Church T, Fielding RA, King AC, Marsh AP, Newman AB, Pellegrini CA, Chen SH, Allore HG, Miller ME.

Annals of Internal Medicine. 2016 Dec 20;165(12):833-840. doi: 10.7326/M16-0529

Accurate activity tracking in older adults

Activity monitors that use accelerometers can shed significant light on the health effects of daily physical activity and sedentary patterns. But they aren't perfect: Some accelerometers may be less sensitive at slower walking speeds, leading to potentially inaccurate data about physical activity. Forty-five older adults were fitted with an activity monitor and walked 400 meters at both a usual and rapid pace. This study validates our hypothesis that older adults

with slow habitual walking speed may be misclassified as not performing moderate to vigorous physical activity according to the traditional counts for hip-worn activity monitors. These findings are expected to create a better understanding of how to most accurately use hip-worn activity monitors in older adults and those with functional impairments for estimating moderate to vigorous activity.

★Corbett DB, ★Valiani V, Knaggs JD, ★Manini TM.

Medical Science Sports Exercise. 2016 Nov; 48(11):2216-2221. doi:10.1249/MSS.0000000000001018

The benefits of an embedded geriatrician

When older adults have access to a geriatrician in the hospital, they are much less likely to die and more frequently leave the hospital healthier, according to a study we presented at the annual meeting of the American Geriatrics Society. The study found that embedding a geriatrician to consult with older patients about their care as soon as they come through the hospital doors caused the mortality rate of older patients in the trauma unit to drop by 50 percent and by 58 percent in the units where patients with chronic illness receive care. We also found a 4 percent increase in patients being able to go home after treatment, bypassing a long-term care facility.

★Solberg L, ★Pei Q, ★Cruz M, Moore F, ★Pahor M, ★Wu S, ★Manini TM.

2015 May. Paper presented at the annual meeting of the American Geriatrics Society, National Harbor, MD.

Hospitalization and mobility

How much does a medical diagnosis and hospitalization affect mobility? Using the hospital records of more than 18,000 adults, we found that approximately one of every five patients who were mobile at admission became significantly impaired during hospitalization. However, approximately half of patients observed to have mobility impairment at admission recovered during hospitalization. Conditions most associated with mobility impairment and recovery are varied, but older patients hospitalized for blood poisoning, heart valve disorders or aneurysms appear to be most at risk of not recovering from mobility impairment by the time of discharge

★Valiani V, Gao S, Chen Z, Swami S, Harle CA, Lipori G, ★Sourdet S, Wu S, Nayfield SG, Sabbá C, ★Pahor M, ★Manini TM.

Journal of the American Medical Directors Association. 2016 May 1;17(5):465.e1-8. doi: 10.1016/j.jamda.2016.02.003.

Neuroimaging age-related changes in pain modulation

Recent studies show that older adults seem to experience pain more frequently and chronically, but researchers don't know why. We have received funding to establish a research program that will identify the neurobiological mechanisms that contribute to this dysfunctional pain regulation. We will examine the structural and functional connectivity of corticostriatal regions in older and younger adults and determine their association with an individual's ability to

modulate pain. Our research program will be the first to evaluate age-related changes to the part of the brain that governs pain regulation, with the goal of understanding age-related changes in pain processing that may lead to personalized, targeted therapies for pain.

★Cruz-Almeida Y, ★Cohen R, Fillingim R

Basic Research

A drug's effect on body weight

Rapamycin is a drug with immunosuppressant activity and is mainly used to prevent organ rejection after transplantation. It also has been shown to increase lifespan in mice by regulating cellular activities such as growth and survival, nutrient sensing and protein synthesis. This study aimed to test the hypothesis that rapamycin has a central mechanistic component with respect to the regulation of food intake and body weight. The present data in old rats refuted our hypothesis, demonstrating that central rapamycin does not have a physiological effect on body weight, food intake or adiposity. In addition, locomotor activity and grip strength were unchanged with central rapamycin treatment.

★Toklu HZ, Bruce EB, Sakarya Y, ★Carter CS, ★Morgan D, Matheny MK, Kirichenko N, ★Scarpace PJ, Tümer N.

Clinical and Experimental Pharmacology and Physiology. 2016 Sep;43(9):802-7. doi: 10.1111/1440-1681.12601.

Aging, exercise and hearing loss

Now hear this: long-term exercise can have a positive effect on age-related hearing loss, or AHL, in mouse models. In this study, we show that regular exercise slowed age-related hearing loss and cochlear degeneration significantly in a well-established mouse model of hearing loss. Our findings suggest that regular exercise slows the development of AHL, likely by increasing cochlear blood flow/circulation and reducing the loss of strial capillaries associated with age-related increases in inflammation. Further studies are needed to confirm the findings in humans and determine whether effects that are more robust could be achieved in animal models that maintain a high level of running throughout their lives.

★Han C, Ding D, Lopez MC, Manohar S, Zhang Y, Kim MJ, Park HJ, White K, Kim YH, Linser P, Tanokura M, ★Leeuwenburgh C, Baker HV, Salvi RJ, ★Someya S.

The Journal of Neuroscience. 2016 Nov 2;36(44):11308-11319. doi:10.1523/JNEUROSCI.2493-16.2016



7,138 Patient care visits

- 30 Oak Hammock assisted living
- 1,727 Oak Hammock geriatrics
- 1,003 Oak Hammock skilled nursing facility
- 2,253 UF Health Senior Care
- 1,787 UF Health Shands Hospital
- 338 UF Health skilled nursing facility

The biology of longevity

What makes some rats live so long? To get some hints about the longevity of the oldest animals, data from the livers of naturally long-living rats and other less-aged counterparts were analyzed. We found that there was a doubling in the amount of two proteins that are important for mitochondrial dynamic functioning and the protection of mitochondrial DNA in the oldest animals. Therefore, the achievement of an adult-like “stationary” situation of balanced mitochondrial dynamics can affect various mitochondrial processes and reasonably contribute to a successful and long aging, as inferred from our results.

★Picca A, Pesce V, Sirago G, Fracasso F, ★Leeuwenburgh C, Lezza AM. *Experimental Gerontology*. 2016 Dec 1;85:33–40. doi: 10.1016/j.exger.2016.09.010.

Perspectives on chronic liver disease

While chronic liver disease is a growing worldwide health concern, available therapies for treatment and prevention are limited. Accumulating evidence indicates that the onset of fatty liver disease is causatively linked to mitochondrial dysfunction and abnormal fat accumulation. Understanding of the precise mechanisms behind the onset of chronic liver disease and enhanced vulnerability to stress is a key component to successful development of therapeutic strategies. This review highlights our up-to-date knowledge about the mechanistic roles of autophagy — the normal process that deals with cell destruction in the body— in the development of fatty liver disease and its vulnerability to surgical stress.

Flores-Toro JA, Go KL, ★Leeuwenburgh C, ★Kim JS.

Archives of Pharmacol Research. 2016 Aug;39(8):1050–61. doi: 10.1007/s12272-016-0807-8.

MOTRPAC FUNDING



UF IOA RECEIVES NIH MOTRPAC FUNDING

The UF Institute on Aging has received a portion of a \$170 million push from the National Institutes of Health to discover the underlying mechanisms of exercise that produce physical benefits.

For years, researchers have established that regular exercise is correlated with lowered risks of cancer, heart disease, stroke and diabetes, and can help weight control. But how exercise impacts the body’s “molecular map” of proteins, peptides, circulating nucleic acids, lipids, hormones and other molecules is not well-understood.

“We know that physical activity has beneficial impacts, but we really don’t know how this happens — what the mechanisms are by which physical activity improves health,” said Marco Pahor, M.D., director of the UF Institute on Aging and chair of the department of aging and geriatric research. “That’s the core of this project and it involves multidisciplinary expertise to make this understanding happen.”

The initiative, called Molecular Transducers of Physical Activity in Humans, or MoTrPAC, is a research consortium that involves 25 universities and research centers across the country. The grants, which total approximately \$170 million through fiscal year 2022, will support researchers who will collect and analyze samples from people of different races, ethnic groups, sex, ages and fitness levels as well as from animals.

In conjunction with Wake Forest University and the University of Vermont, Pahor will lead the consortium’s coordinating center, which will manage the development and implementation of the study’s protocols in both humans and animals.

Seven clinical centers across the country, six for adults and one for those younger than 18 years of age, will recruit participants beginning in 2018. MoTrPAC will also include seven chemical analysis sites, three preclinical animal study sites, a bioinformatics center and the coordination center. The program will provide funding to store data in a user-friendly public resource that any researcher can access.

MoTrPAC is funded through the NIH Common Fund and managed by the National Institute of Arthritis and Musculoskeletal and Skin Diseases, the National Institute of Diabetes and Digestive and Kidney Diseases, the National Institute on Aging and the National Institute of Biomedical Imaging and Bioengineering.





TESTOSTERONE TREATMENT EFFECTIVE FOR OLDER MEN

As men age, their sexual function, vitality and strength can decline, but researchers had not yet established whether testosterone treatment is actually beneficial. A team that included IOA researchers has established testosterone's benefits in a study published in February 2016 in *The New England Journal of Medicine*.

The paper examines the first three of seven trials in a long-term study called The Testosterone Trials, or the TTrials. In this first study, researchers analyzed the results of the first three trials, which examined sexual function, physical function and vitality, including mood and depressive symptoms, walking speed and walking distance.

The researchers found that the treatment increased the blood testosterone level from moderately low to mid-normal in men ages 19-40 and improved all aspects of sexual function, including sexual activity, sexual desire and the ability to get an erection.

"The results of the TTrials show for the first time that testosterone treatment of older men who have unequivocally low testosterone levels does have some benefit," said Marco Pahor, M.D., the director of the UF Institute on Aging and a co-author of the paper.

Researchers screened 51,085 men and found 790 who had a sufficiently low testosterone level to be part of the study. The subjects were randomized into two groups: one that applied a daily testosterone gel and the other a daily placebo gel, for one year.

Across the three trials, adverse events including heart attack, stroke other cardiovascular events and prostate conditions were similar in men who received testosterone and those who received a placebo. However, the number of men in the TTrials was too small to draw conclusions about the risk of testosterone treatment. A larger, longer-term trial is needed to get more definitive safety results, Pahor said.

The TTrials were conducted at UF and the Perelman School of Medicine at the University of Pennsylvania as well as 11 other sites.

Snyder PJ, Bhasin S, Cunningham GR, Matsumoto AM, Stephens-Shields AJ, Cauley JA, Gill TM, Barrett-Connor E, Swerdloff RS, Wang C, Ensrud KE, Lewis CE, Farrar JT, Cella D, Rosen RC, Pahor M, Crandall JP, Molitch ME, Cifelli D, Dougar D, Fluharty L, Resnick SM, Storer TW, Anton S, Basaria S, Diem SJ, Hou X, Mohler ER 3rd, Parsons JK, Wenger NK, Zeldow B, Landis JR, Ellenberg SS.

New England Journal of Medicine. 2016 Feb. 18; 374(7):611-24. doi: 10.1056/NEJMoa1506119

SUBVERTING SARCOPENIA

As people age, they often lose muscle mass — a condition called sarcopenia. This kind of muscle loss can begin as early as age 40 and result in 1 to 4 percent loss in strength per year, according to researchers.

Maintaining muscle strength is important to keep older adults mobile and healthy, said Laurence Solberg, M.D., chief of the division of geriatric medicine in the UF College of Medicine's department of aging and geriatric research.

That's why he and UF Senior Care clinic supervisor Nicole Mansfield have added a simple screening for sarcopenia as older adults come to the clinic for their regular checkups.

"Sarcopenia is a screenable condition where you're looking at gait speed, grip strength and muscle mass," said Solberg. "Every time our patients come in to our clinic, we assess their walking speed, grip strength and their weight." IOA studies have shown that a decrease in walking speed leads to a decline in muscle mass and functional abilities.

If patients slow or become weaker, they can participate in an intervention to prevent them from becoming frail. After adding the screening a year ago, Solberg said they have identified several patients who have volunteered to participate in research or physical therapy.

Clinicians assess patients' grip strength using a dynamometer, an instrument that is set specifically for each person's age and gender. Walking speed is measured and their weight is documented as part of their vital signs.

"We're putting translational research into clinical practice by taking what we've seen in the lab and bringing it to the bedside," Solberg said.

STUDYING PAPAYA'S POTENTIAL

Could a tropical fruit extract provide cognitive benefits for older adults? That's what a team of UF Institute on Aging researchers and their collaborator want to know. Fermented papaya preparation, a natural health food made by biofermentation, is being studied to see whether it improves brain energy metabolism, neuroinflammation, cognitive function and health-related quality of life. In early 2017, researchers were recruiting participants for a clinical study to assess its effectiveness. Adam Woods, Ph.D., an assistant professor and assistant director of the Center for Cognitive Aging and Memory in the Evelyn F. and William L. McKnight Brain Institute of the University of Florida, is leading the research along with Stephen Anton, Ph.D., an associate professor in the UF College of Medicine's department of aging and geriatric research.



TRAINING THE MENTORS

Developing the next generation of clinical and translational scientists is crucial to future scientific advances. It also doesn't happen without a lot of focused effort. That's where the UF Clinical and Translational Science Institute's Mentor Academy comes in. Its goal: making better mentors. To do that, the Mentor Academy's Master Mentor program provides training to optimize the relationship between experienced researchers and mentees at all experience levels.

Mentor Academy participants attend eight sessions that cover a range of topics, including individual development plans, communications skills, challenging conversations with mentees, mentoring ethics and promoting professional development.

Three members of the UF Institute on Aging who recently completed the program said it substantially improved their mentoring capabilities.

Thomas Buford, Ph.D., an assistant professor in the UF College of Medicine's department of aging and geriatric research, said the discussions about best practices in communicating and aligning mentor-mentee expectations were particularly helpful.

"I really appreciated an evidence-based approach to mentoring. I also enjoyed and benefited from the diversity of perspectives among participants in the academy. As an added bonus, these interactions also led to some collaborative working relationships," he said.

For Kim Sibille, Ph.D., an assistant professor in the department of aging and geriatric research, the mentoring topics, group discussions and resources provided during the academy have been beneficial.

"They have contributed toward a strong foundation from which to further develop my mentoring efforts," Sibille said.

The subjects covered during the Master Mentor program were relevant and useful, according to Stephen Anton, Ph.D., an associate professor and chief of the division of clinical research in the department of aging and geriatric research.

"By participating in this program, I learned a number of useful strategies for handling challenging situations commonly experienced by mentors," he said.



Stephen Anton, Ph.D.

Thomas Buford, Ph.D.

WELCOME, NEW FACULTY

Karyn Esser, Ph.D., a professor in the UF College of Medicine's department of physiology and functional genomics and associate director of the Myology Institute, has pioneered research on the role of circadian rhythms in skeletal muscle health. Her lab found that mutations in two different "molecular clock" genes lead to significant disruption in skeletal muscle structure and function. After that initial discovery, she studied the circadian clocks in muscle that are critical for skeletal muscle homeostasis and health. Her lab is also pursuing a project to test the potential for time-of-day lifestyle interventions as a therapeutic approach to enhance the body's molecular clock function and reduce muscle weakness and wasting. Esser came to UF from the University of Kentucky, where she was the director of the Center for Muscle Biology.



Karyn Esser, Ph.D.

Why every dollar counts



Unlocking life's mysteries — particularly the secrets of how long and how well we live — is the distinct focus of the UF Institute on Aging.

Our scientists and physicians are dedicated to achieving a better understanding of the biological mechanisms of aging and of how we can enhance our physical independence and cognitive abilities.

Your gift can make the critical difference in funding new scientific endeavors. Imagine discoveries that fuel positive cellular changes or lead to new therapies to help rehabilitate aging bones and joints ... private philanthropy makes all this and much more possible.

To learn more about how you can invest in a healthier and more independent tomorrow for us all, please contact Mary Ann Kiely at 352-273-9620 or mkiely@ufl.edu.

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PROGRESS

2013
2014
2015
2016
2017

◀ Annual Report