NEWSLETTER
INSTITUTE FOR SUCCESSFUL LONGEVITY
FLORIDA STATE UNIVERSITY

HOW OLD IS TOO OLD to run for PRESIDENT?

How old is too old to run for president?

The presidential contest is fully underway, and many of the candidates fit the definition of "older adults," those age 65+ years. In the past I've been queried about candidates for high office (such as former Canadian Prime Minister Jean Chretien) who are of pensionable age. Usually the concerns of the journalist are not that the candidate might die in office, but rather that they may become demented and whether we should have either an age limit on candidates or some form of fitness testing.

FROM THE DIRECTOR

Neil Charness, Ph.D., is the William G. Chase Professor of Psychology at Florida State University and director of the Institute for Successful Longevity.

As to an age limit, we already have a lower bound, namely that the president of the United States must be at least 35 years of age (and a natural-born citizen). At the time that age requirement became law around 1789, average life expectancy at birth was probably around 37 years in Massachusetts towns (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2885717/). In short, the minimal age was at about the age when half the population became deceased after surviving birth. So if we had kept pace with that norm, then today the minimal age to be president would be about 77 years.

Age is ultimately a strange measuring stick for an individual, as it represents the number of times since birth that a person has made a circuit around the sun. It is hard to see a connection between solar loops and, for instance, cognitive capacity. Nonetheless, there are strong associations (not cause and effect relationships) between a person's age and important developmental and social markers. For instance, adult age is the strongest predictor for the development of dementia. Age is also the strongest risk factor for mortality, as insurance company tables make clear, though other risk factors such as smoking, skydiving, riding a motorcycle, your occupation, drugs that you take (prescribed and not, such as alcohol), and pre-existing medical conditions will increase your life-insurance premiums. So, yes, the older the presidential candidate, the greater the risk for death in office or for dementia.

Clearly, the chief executive officer of the United States should be capable of effective problem-solving and decision-making and should be able to work with Congress to advance our country's well-being.

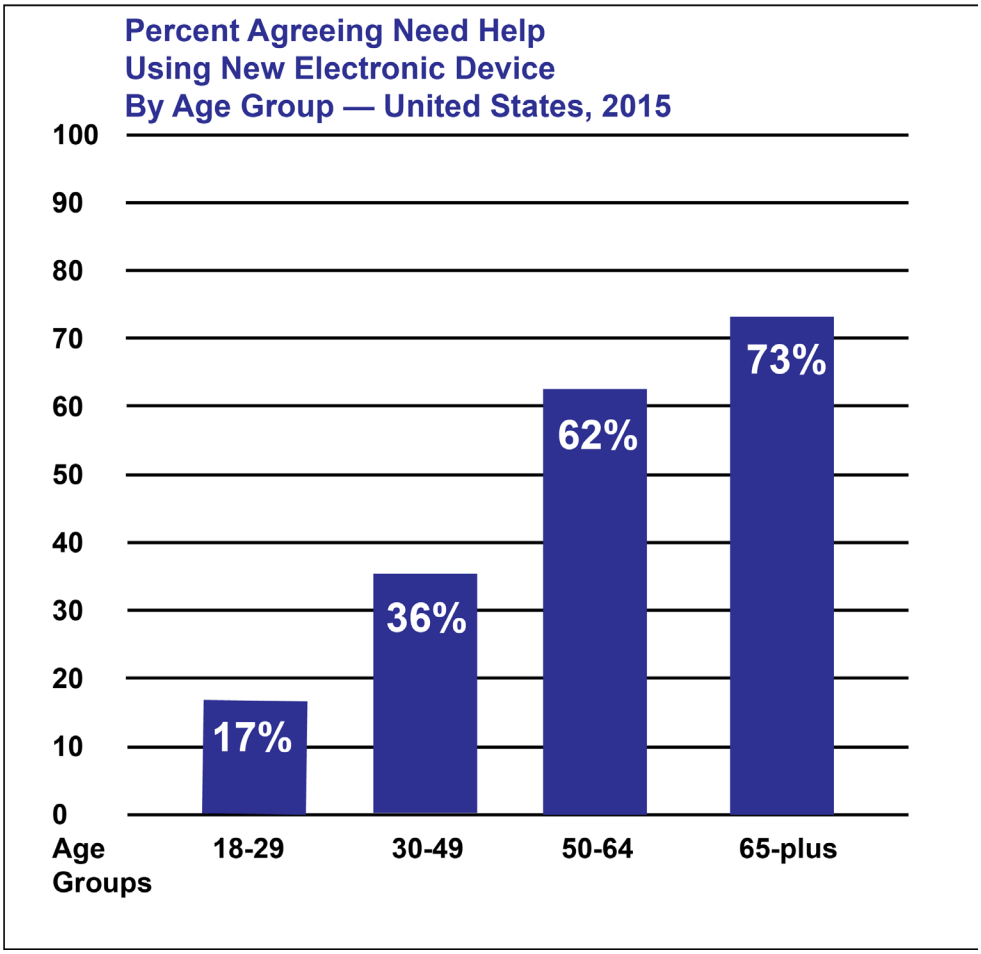
How great is the risk? We should probably be less concerned with death in office, as there are procedures spelled out on succession that assure that party policy priorities are going to be respected (as is the case, too, for removal from office by impeachment). More of concern is dementia, diminished mental capacity for making sound decisions. As an example, Ronald Reagan was likely suffering from dementia while in office. Alzheimer's disease seems to have a very long gestation period, measurable in decades. A famous study examined the early essays of nuns, comparing writing characteristics for those who in late life developed dementia and those who did not. One feature that differentiated the two groups was idea density, the average number of ideas expressed per ten words, with those showing early life dense-idea sentences less likely to become demented (https://jamanetwork.com/journals/jama/fullarticle/396775). Apparently the Republic survived that incident of a dementing president without too much damage.

It is true that the prevalence of dementia increases strikingly with age, but at the age range of most of the candidates, age 65-74, only about 4% of Americans in Medicare show dementia. Even for those age 75-84, the prevalence is only about 13%. About one-third of those age 85+ have dementia (https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S1552526018332527?returnurl=https:%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1552526018332527%3Fshowall%3Dtrue&referrer=https:%2F%2Fwww.cdc.

gov%2Faging%2Faginginfo%2Falzheimers.htm).

Of course, there are normative age-related changes in cognitive capability (abilities involved in solving problems and making decisions) that are likely to occur as we age. Processes such as speed of information processing, reasoning, working memory capacity, and spatial ability tend to decline linearly from the decade of the 20s in cross-sectional studies. (Cross-sectional studies contrast people at one point in time who differ in age, hence look at age differences. Longitudinal studies follow the same people across time and examine age changes.) Measures such as speed of processing and reasoning have been termed "fluid" abilities that are mostly involved in abstract problem-solving ability, that is, solving a novel problem unrelated to your prior experience. A practical example is setting up a new electronic device (e.g., a smartphone), where there is a strong linear trend with age in needing help to do so.

On the other hand, a set of abilities termed "crystallized" tend to show increases with age through the decade of the 60s, if not beyond. Crystallized abilities represent knowledge derived from your culture. Examples would be the size of your word vocabulary and your knowledge about news events. Such knowledge accumulation takes decades.



Clearly, the chief executive officer of the United States should be capable of effective problem-solving and decision-making and should be able to work with Congress to advance our country's well-being. For managing crises, fast, accurate decision-making is paramount. For getting legislation passed, knowledge of the process coupled with people skills are important. So the question of how age affects presidential performance might revolve around the balance of fluid and crystallized abilities and more specifically whether knowledge facets that increase with age might compensate for fluid facets that show age-related declines.

Most complex skills, such as playing chess, show steep rises in performance into the decades of the 30s and 40s and then slow but steady decline thereafter (https://psycnet.apa.org/record/2007-07952-008). Given that people are typically at their peak for fluid abilities in their 20s, research indicates that acquired knowledge is an important component of skill in chess. For political savvy we might expect an even longer journey before peak performance is reached, based on learning how to pick good people for Cabinet posts and persuading both friends and foes to pass legislation.

In conclusion, is age a highly relevant factor in picking a president? Skill seems like a more relevant factor. The research literature suggests that older adults can retain high levels of skill late into life. But, in the end, it is your choice what attributes you want in a president. So, get out and exercise your choice. Vote!

Walter Boot awarded $4.6-million grant for center to focus on older adults with cognitive impairment

Walter Boot, Ph.D., professor in the Department of Psychology and a Faculty Affiliate of the Institute for Successful Longevity, and a team of researchers from FSU, the University of Illinois and Weill Cornell Medicine have been awarded a $4.6-million grant to establish a center focused on developing technologies to improve the lives of older adults.

Walter Boot, Ph.D., is a professor in FSU's Department of Psychology and a Faculty Affiliate of the Institute for Successful Longevity.

The grant is from the National Institute on Disability, Independent Living, and Rehabilitation Research. The new center, named ENHANCE (Enhancing Neurocognitive Health, Abilities, Networks, & Community Engagement), will focus on older adults living with cognitive impairment, including mild cognitive impairment and traumatic brain injury.

"As the number of older adults in America increases dramatically over the next few decades, so will the number of older adults living with cognitive impairment," Boot said. "Cognitive impairment can have many causes, including traumatic brain injury and stroke. Our new center strives to develop new, cutting-edge technologies to help older adults with cognitive impairment live independently and continue to meaningfully engage with their community."

Neil Charness, Ph.D., professor of psychology and director of the Institute for Successful Longevity, is a member of the new center's research team.

"This is a truly interdisciplinary effort. To solve these challenges, psychologists, clinicians, and engineers all need to be involved."

The objectives of the ENHANCE center are to:

- Understand the challenges older adults with cognitive impairment encounter with living activities, how these vary according to type of cognitive impairment, and needed areas of and preferences for support.
- Identify, develop, and evaluate potential technology solutions.
- Disseminate findings to multiple stakeholders.
- Advance new knowledge in the aging, cognitive disability, and technology space.

"Our center includes research projects that will uncover the needs and challenges faced by older adults living with cognitive impairment and those who care for them, and development projects that will engineer adaptive and personalized technology solutions," Boot said. "A one-size-fits-all approach can't work because of the varying needs of individuals and how those needs change with time."

Boot will co-direct the center with Sara J. Czaja, Ph.D., professor of gerontology at Weill Cornell Medicine. Wendy A. Rogers, Ph.D., director of the Human Factors & Aging Laboratory at the University of Illinois, is also part of the center's

research team.

"This is a truly interdisciplinary effort," Boot said. "To solve these challenges, psychologists, clinicians, and engineers all need to be involved. Across all three sites of the ENHANCE center, we've been able to build a team with all of the skills to tackle these difficult problems."

ENHANCE is part of a network of Rehabilitation Engineering Research Centers supported by the national institute. The centers conduct advanced engineering research and development of innovative technologies designed to solve particular rehabilitation problems or remove environmental barriers.

The Rehabilitation Engineering Research Centers also demonstrate and evaluate technologies, facilitate changes to service delivery systems, stimulate the production and distribution of equipment in the private sector, and provide training opportunities to enable individuals, including individuals with disabilities, to become researchers and practitioners of rehabilitation technology.

The ENHANCE center is Boot's second major research award this year. In August, the National Institute on Aging awarded Boot a $2.9-million R01 grant to lead a project to promote early detection and treatment of age-related cognitive decline and dementia.

Virginia Tech aging expert talks on elder abuse

Karen A. Roberto of Virginia Tech, an expert on aging, spoke on a serious but often overlooked problem facing some seniors in her talk, "Elder Abuse and the Opioid Crisis," in November. Her address was the latest in the ISL Speaker Series, which brings experts on aging to the FSU campus in the fall and spring semesters.

Roberto, who holds a doctorate in human development from Texas Tech University, is director of Virginia Tech's Institute for Society, Culture and Environment. She is a University Distinguished Professor in the Department of Human Development and Family Sciences and Senior Fellow at the Center for Gerontology.

Her research interests include the psychological aspects of aging, older women and chronic health conditions, family relationships and caregiving, rural elders and elder abuse.

Roberto also joined other aging experts in a community dialogue on older individuals and the risk of neglect and abuse, held at Killearn United Methodist Church in Tallahassee.

Joining Roberto on the discussion panel were:

- Alice Pomidor, physician and professor in FSU's College of Medicine.
- Lauchlin T. Waldoch, a Tallahassee elder-law attorney.
- Neil Charness, director of the Institute for Successful Longevity.

Karen A. Roberto, Ph.D., is director of the Instute for Society, Culture and Environment at Virginia Tech.

These events were co-sponsored by the Department of Geriatrics in the FSU College of Medicine, the Pepper Institute on Aging and Public Policy, the OLLI and the Tallahassee Senior Center.

NIH grant supports Amy L. Ai's study of role character strengths play in heart-surgery survival

Amy L. Ai, Ph.D., professor in Florida State University's College of Social Work and a Faculty Affiliate with the Institute for Successful Longevity, has received a grant from the National Institutes of Health to study resilience of older patients with advanced heart diseases undergoing open-heart surgery.

Working with Ai will be Yaacov Petscher, Ph.D., associate professor in FSU's College of Social Work and associate director of the Florida Center for Reading Research; and Susan S. Smyth, M.D., Ph.D., chief and professor of cardiovascular medicine at the University of Kentucky. The team will evaluate the long-term survival effect of psychological character strengths in an existing cohort of older patients, assessed before open-heart surgery over 16 years ago.

"Health providers typically pay little attention to patient psychological strengths that could be harnessed to improve the patient-provider collaborative care," said Professor Ai. "Recent studies, however, mostly in general populations, have found health benefits of certain character strengths; especially notable is the survival effect of optimism and spirituality indicators."

In their interdisciplinary study, Ai and her research team will address three novel research questions:

- Do any character strengths predict long-term survival (over one decade) in patients following open-heart surgery?
- Are there sex differences in the effects of character strengths on open-heart-surgery survival?
- How does a character strength mitigate the detrimental effect of depression as a known heart-disease mortality risk?

"To date, no information is available about the role of character strengths in post-open-heart-surgery survival," Ai said. "Further, women may fare worse after heart surgery. My earlier work indicates that there are sex/gender differences in certain character strengths such as reverence and private prayer coping and that some character strengths and comorbidities could explain sex differences in short-term recovery from surgery."

Amy L. Ai, Ph.D., is a professor in FSU's College of Social Work and a Faculty Affiliate of the Institute for Successful Longevity,

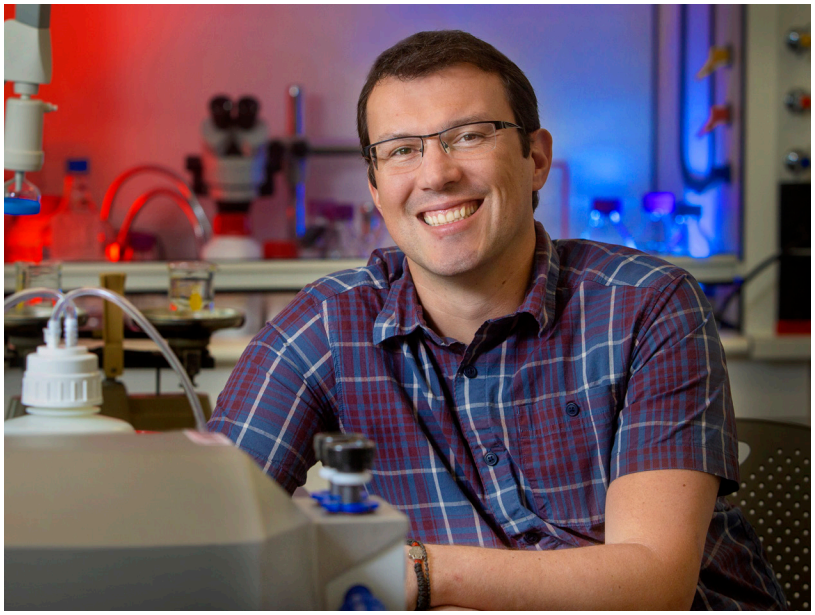
The team will perform multivariate analyses of the combined National Index of Death records, existing interdisciplinary information obtained from prospective surveys, and patient-level information from the Society of Thoracic Surgeons' national database, as well as some stress-sensitive biomarkers.

The study will be the first of its kind, comprehensive analysis of long-term survival benefits of psychological strengths in older patients undergoing open-heart surgery adjusting for appropriate medical confounders used by all U.S. cardiac surgeons.

"By combining information from multiple data sources," Ai said, "we will create a well-characterized cohort that will provide a unique opportunity to address methodological challenges in existing literature and fill important gaps." ■

NIH awards ISL researcher $2.9 million to examine peripheral artery disease

Panagiotis Koutakis, Ph.D., assistant professor of Nutrition, Food and Exercise Sciences and a Faculty Affiliate of the Institute for Successful Longevity, has received a $2.9-million grant from the National Institutes of Health to develop a more effective treatment and diagnosis process for peripheral artery disease (PAD), a condition that afflicts 8.5 million people in the United States.



Panagiotis Koutakis, Ph.D., is an assistant professor of Nutrition, Food and Exercise Sciences in FSU's College of Human Sciences.

"At the end of the day, can we do something to help these patients? That's what's driving me," said Koutakis. "Treatments for PAD are limited right now. Exercise is more of a preventive measure."

Peripheral artery disease is a circulatory problem that results in reduced blood flow to the limbs. Plaque builds up in the artery, making it difficult for blood to reach the limbs — typically the legs — which causes pain while walking. As the condition worsens, the legs don't receive enough blood flow to keep up with demand, and chronic disuse can lead to several problems. In very serious cases, it results in leg amputation.

Though lifestyle interventions can be effective early on, patients with peripheral artery disease often go to the doctor when the disease is already at an advanced stage where there are fewer options.

"The idea is either to prevent or try to figure out the underlying molecular mechanism and see if we can either reverse the damage or just stop it there," said Koutakis. "A lot of patients live with PAD but they don't have any symptoms. However, the moment you start having symptoms, your mortality rate goes up to 64 percent."

Current treatments involve either inserting a stent or doing an open bypass. The bypass often results in complications and an adverse event. The stent procedure is also more of a stopgap and typically needs to be repeated after a few years.

Koutakis has partnered with vascular surgeons at Capital Regional Medical Center in Tallahassee and Baylor Scott and White Medical Center in Temple, Texas, to study patients who have peripheral artery disease and catalog common factors that could lead to early diagnosis and intervention. Ultimately, Koutakis hopes to identify a biomarker for the disease so that doctors will be able to catch the warning signs with a routine blood test.

"We want to create some blood biomarkers to identify this disease early on," said Koutakis. "We've done a lot of research on that, and I think we're almost ready for a breakthrough, hopefully, so we can implement that in all the tests if you're, like, at the age of 40."

In previous studies, Koutakis found that patients with peripheral artery disease experienced increased oxidative stress production by the mitochondria. In this project, Koutakis and his collaborators plan to focus on a type of protein that helps regulate mitochondrial function and oxidative stress in the skeletal muscle.

Lucinda Graven named Fellow of American Heart Association

Lucinda Graven, Ph.D., a Faculty Affiliate of the Institute for Successful Longevity and an assistant professor in the College of Nursing, has been elected a Fellow of the American Heart Association.

Lucinda Graven, Ph.D., is an assistant professor in FSU's College of Nursing and a Faculty Affiliate of the Institute for Successful Longevity.

"It's a great honor to know that I'm thought of highly by my peers in the field of cardiovascular research and in the nursing profession," Graven said. "Receiving this fellowship signifies that my peers recognize my research as innovative and important to the field of heart failure research and patient care."

Graven is an advanced practice registered nurse with more than 20 years of cardiovascular nursing experience. She's published more than 20 peer-reviewed publications that examine outcomes in heart-failure patients and their informal caregivers, including important and innovative intervention research, in well-known nursing and interdisciplinary journals. Her research focuses on improving outcomes in heart-failure patients through the development and testing of cognitive-behavioral interventions. Recognizing the importance of caregivers, Graven's research also focuses on caregiver self-care as a means to improve self-care of heart-failure patients.

"Currently, my research involves developing an intervention for heart failure patients and their family caregivers to promote collaborative problem-solving for daily problems related to heart failure," Graven said. "I'm hoping that this intervention will help improve heart-failure self-care and decrease health-care utilization."

In August, Graven was granted a courtesy appointment in FSU's College of Medicine in the Department of Behavioral Sciences and Social Medicine.

GSA honors Charness, Boot for "Designing for Older Adults"

Neil Charness, Ph.D., director of the Institute for Successful Longevity, and ISL Faculty Affiliate Walter Boot, Ph.D., have received the Gerontological Society of America's Richard Kalish Innovative Publication Award.

Honored at GSA'S Annual Science Meeting in Austin, Texas, were, from left, co-authors Sara J. Czaja, Walter Boot, Neil Charness and Wendy A. Rogers.

Charness and Boot, both professors in the Psychology Department, and co-authors Sara J. Czaja, Ph.D., of Weill Cornell Medicine and Wendy A. Rogers, Ph.D., of the University of Illinois at Urbana-Champaign were honored for their book, "Designing for Older Adults: Principles and Creative Human Factors Approaches."

The book, now in a new third edition, provides guidelines for practitioners in the design community for older adults. The authors are principal investigators with CREATE — the Center for Research and Education on Aging and Technology Enhancement — a multidisciplinary and collaborative center that involves researchers at FSU, the Weill Cornell Medical College, the University of Illinois at Urbana-Champaign, the University of Miami and Georgia Tech. The center works to ensure that the benefits of technology can be realized by older adults.