New Delirium Severity Measure Developed, Tested

A new method for measuring delirium severity in older adults has been developed by researchers from Harvard University, Brown University, and the University of Massachusetts. The new scoring system, CAM-S, is based on the Confusion Assessment Method (CAM) and standardizes the measurement of delirium severity for both clinical and research uses. Details are published in the *Annals of Internal Medicine*.

The team developed and validated the CAM-S in two groups of patients. The first was a group of 300 patients 70 and older who were scheduled for major surgery as part of the Successful Aging after Elective Surgery study. The second group was part of the Project Recovery study and included 919 older adults (70 and older) who were admitted to the hospital on the medical service. Researchers developed the CAM-S from the 4-item short form and 10-item long form versions of the CAM and examined the impact of the CAM-S scores on hospital and post-hospital clinical outcomes.

CAM-S scores displayed a strong association with all clinical outcomes, including length of hospital stay, nursing home placement, functional and cognitive decline, death, and hospital and post-hospital costs. The study found that length of hospital stay increases with the degree of delirium severity measured by the CAM-S short form from 7 days for no delirium symptoms to 13 days for patients with severe delirium; the CAM-S long form showed similar increases in length of stay from 6 days to 12 days between no and severe symptom groups.

Additionally, mean hospital costs increase with the degree of delirium severity measured by the CAM-S short form from $5,100 for patients without delirium symptoms to $13,200 for those with severe symptoms. Similar results were seen across all levels of the CAM-S long-form scores with mean costs increasing from $4,200 to $11,400 across delirium symptom groups ranging from none to severe.

The findings demonstrate that the CAM-S provides a new standardized severity measure with high

Researcher Uses Grant Money to Teach Adults How to Avoid Falling

Clive Pai, a professor of physical therapy at the University of Illinois at Chicago will use a 5-year, $1-million grant from the National Institute of Aging (NIA) to develop a computerized treadmill program that could be used in physical therapy offices to prevent falls and fall-related injuries in older adults.

Pai has been studying how people fall for more than 20 years. Everyone falls in a unique way—because it is unlearned and unexpected. His research led him to a remarkable discovery—people can be trained relatively quickly and easily how not to fall.

In a recent study, Pai enlisted adults ages 65 to nearly 90 who live independently. The participants, who trod a special walkway in his laboratory and were strapped safely into a harness, were never told when or how they might fall. Suddenly, like stepping on a banana peel, the footing surface slid out from under them.

“For the first time, the second time, and maybe the third time, they experienced falling. And then, all of sudden, they stopped falling,” Pai said. “They were so quick to adapt—that was the real fascination to me.”

The quickness with which his study participants (young and old) adapted and learned not to fall as the rug was pulled out from under them was unlike any other motor learning Pai had seen.

Pai also discovered that his participants retained what they had learned for as long as 12 months. Not only were they less likely to fall when they returned to the laboratory 6 months to 1 year later, in their daily lives they were 50% less likely to fall in the year after training than in the year before.

Pai’s team also found that the tests and training can be safe even for people with reduced bone density, and he hopes it will prove safe even for people with osteoporosis, the most severe bone thinning, and the group most at risk for a poor outcome following a fall.

Because Pai’s set-up is too bulky for the typical physical therapy office, he developed a computer-controlled treadmill program that replicates the training device in his laboratory. The new NIA grant will allow him to see if the treadmill training can be as effective.

Animal-Assisted Activities Boost Older Adults’ Esteem

Given the proven ability of animal interaction to improve self-esteem and quality of life, research recently published in *Activities, Adaptation & Aging* set out to examine how animal-assisted activities (AAAs) can positively affect older adults’ self-esteem, feelings of empowerment, and communication with others.

Although previous studies had explored the association between animal interaction and self-esteem, research on its relationship with empowerment and communication with caregivers is lacking. Additionally, prior research has focused on animal-assisted therapy, in which animal interaction was worked into clinical treatment programs; AAA is distinct in its focus on informal human-animal interaction.

A total of 10 animal-assisted residents from Ottawa-area retirement homes were interviewed regarding the ways in which AAAs impact their feelings of empowerment, self-esteem, and communication with caregivers. Responses were analyzed through content analysis, which allowed for the construction of a grid based on specific indicators appearing in transcripts.

Results indicated a high level of participation in AAAs among aging pet owners, and that AAAs make a positive contribution to the lives of older adults within retirement homes. Participants displayed indicators of high self-esteem and emotional empowerment, including acceptance of physical and mental limitations related to aging. Pets were a common topic of conversation between nursing home residents and caregivers, although certain communication problems still persisted. AAAs should not be viewed as a replacement for human interaction, but rather a useful tool in improving quality of life for older nursing home residents.


New Trial Discloses Alzheimer’s Risk, Tests Early Interventions

A new clinical trial will soon begin testing whether early medical intervention in people at risk for Alzheimer’s disease (AD) can slow progression of disease pathology before symptoms emerge, as outlined in *Science Translational Medicine*. For the first time, people with no AD symptoms will be told of their risk status before being asked to join the randomized controlled trial. As part of the overall prevention trial, Penn Medicine neurodegenerative ethics experts will monitor how learning about their risk of developing AD affects trial participants.

To ethically conduct a study where patients will learn they have a greater chance of developing AD dementia, the researchers have integrated continual assessments of potential participants throughout the process, to ensure that they are ready to receive information about their amyloid status and are not experiencing any adverse reactions after finding out.

The trial requires that patients enrolled must have one of the pathologies typically seen in AD dementia, which will be assessed using a brain positron emission tomography scan that measures amyloid. Given that studies have shown that approximately one third of clinically normal older individuals have evidence of amyloid plaque accumulation but may not develop any cognitive symptoms within their lifetime, the patients who are enrolled in the trial based on positive amyloid results may or may not go on to develop AD dementia.

In addition to the study’s primary aims—looking at whether early treatment can slow cognitive decline—the researchers will carefully measure how disclosure influences cognitive test performance, the perception of cognitive symptoms, quality of life, and perceived risk of AD in participants with and without evidence of amyloid accumulation.

For more information on the Anti-Amyloid Treatment in Asymptomatic Alzheimer’s Disease trial, visit http://www.adcs.org/Studies/A4.aspx.


Clinical Definition of Sarcopenia Sought

Scientists from Harvard Medical School–affiliated Hebrew SeniorLife Institute for Aging Research took part in a collaborative effort by U.S.
researchers to develop criteria for diagnosing sarcopenia—a common and disabling condition of low muscle mass and weakness in older adults. Findings from the Foundation for the National Institutes of Health Biomarkers Consortium Sarcopenia Project are published in The Journals of Gerontology and suggest that evidence-based cut-off points of grip strength and lean mass could be used to identify sarcopenia in older adults.

Although the term sarcopenia is widely used to describe age-related loss of muscle mass and strength, there is no consensus clinical definition for this condition that may place up to 50% of older adults at greater risk for disability. Experts agree that sarcopenia should be identified based on indicators of low muscle mass and weakness, yet previously suggested cut-off points were chosen arbitrarily and are not necessarily clinically meaningful.

Researchers used data from nine studies: Age, Gene and Environment Susceptibility–Reykjavik Study; Boston Puerto Rican Health Study; Framingham Heart Study; Health, Aging, and Body Composition Study; Invecchiare in Chianti; Osteoporotic Fractures in Men Study; Rancho Bernardo Study; Study of Osteoporotic Fractures; and a series of six clinical trials from the University of Connecticut. Measures of appendicular lean mass (ALM), which includes arm and leg muscles, grip strength, gait speed, and body mass index (BMI) were available from 26,625 community-dwelling older individuals with a mean age of 75 for men and 79 for women.

Based on their analyses, the investigators recommend that weakness be defined as grip strength less than 26 kg (57 lb) for men and 16 kg (35 lb) or less in women, and low muscle mass defined as an ALM-to-BMI ratio of less than 0.789 for men and 0.512 for women. Both of these criteria were associated with increased risk of developing mobility impairment over 3 years of follow up. Weakness also increased the likelihood of reduced mobility regardless of low lean mass.


Surrogate Decision Makers Needed for Community-Dwelling Adults with Dementia

More than 70% of older Medicare beneficiaries experience cognitive impairment or severe dementia near the end of life and may need surrogate decision makers for health care decisions. Advance care planning for older adults with dementia may be particularly important for individuals who do not reside in a nursing home or a long-term care facility, according to an article published in Health Affairs.

Researchers at the Johns Hopkins Bloomberg School of Public Health reviewed data from the Health and Retirement Study linked to Medicare claims to identify the differences between the type of care given to dementia patients in nursing homes and those who remain in the community. Cognitive impairment was common among older adults living in nursing homes and among those remaining in the community.

Researchers found that more than half of older adults living in the last year of life were cognitively impaired. These patients were treated much more aggressively than similar patients who lived in nursing homes, potentially because their memory impairment was not known to emergency health care providers and/or their preferences for care were not known or clear to the family members, caregivers, or surrogate decision makers.

The findings are believed to be the first to estimate the prevalence of cognitive impairment and dementia at the end of life and examine the associated health care costs and utilization for community dwellers.

The research indicates an important difference in the relationship between advance directive use and end-of-life care between patients in the community compared to nursing home patients. Memory-impaired patients without advance directives received aggressive end-of-life care and potentially inappropriate care, especially if they did not reside in a health care facility.

The study results suggest that advance directives may have a more important role on treatment decisions for patients living in the community with severe dementia, who likely lack the capacity to participate in medical decision making than for those living in nursing homes. Efforts to engage patients and family members in advance care planning when cognitive impairment is first diagnosed and patients are still living in the community can help ensure that a surrogate decision maker is identified and alerted to the patient’s preferences while these conversations are possible.


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