



aging news

NEWSLETTER OF THE INSTITUTE ON AGING (IOA) | UNIVERSITY OF WISCONSIN-MADISON



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The Benefits of Volunteering in Later Life

Studies have shown that older adults are more likely to volunteer or make donations than younger adults, and that volunteering is linked to lower levels of depression. In this MIDUS study (see p. 6), researchers explored whether volunteering is also linked to higher levels of psychological well-being in older adults. It was also the first known study to explore whether donating money, as well as time, may be beneficial to mental health.

Researchers compared time spent volunteering and charitable donations given in 1995-96 during the first wave of MIDUS (Time 1 or T1), to reports of psychological well-being nine years later at Time 2 (T2). The sample consisted of 917 people, aged 55-84, for whom data was available at both T1 & T2. Participants reported how many hours they volunteered each month and the total of monthly monetary donations they made. Results showed that 36% of older adults at T1 volunteered their time, and that 69% of them were still doing so at T2. Charitable contributions were made by 69% of people at T1, and

83% continued to donate at T2. Among donors at T1, 23% gave to political groups, 74% gave to religious groups, and 71% gave to other types of groups.

A well-being questionnaire assessed positive aspects of mental health at T2, such as self-acceptance, personal growth, life satisfaction, positive relations with others, and having a sense of

purpose. As expected, results showed that volunteering from one to ten hours a month at T1 had a significantly positive effect on psychological well-being at T2, compared to no volunteering. However, volunteering more than 10 hours had no positive effect, perhaps because intensive volunteering

may create stress due to increased responsibilities and time commitments.

In addition, the study showed that giving monetary donations was also good for psychological well-being. Donations of over \$100 a month showed a more positive effect than those under \$100, but giving any amount had a greater positive effect on psychological well-being than any amount of volunteering. Researchers reported this result with caution, due



*Volunteering
10 or less hours a month,
but not more, had a positive
effect on well-being.*



Donating to one's church may promote well-being by reinforcing social bonds within the congregation.

Continued from previous page...

to the lack of other evidence supporting this unexpected finding.

Why might volunteering be beneficial to well-being in older adults? When experiencing loss of significant life roles through retirement, widowhood, or

empty nest issues, volunteering may provide older adults with viable new roles that sustain self-identity. Volunteers may also gain a sense of meaning, purpose, control, or increased self-esteem from perceiving the positive effects of their activities for others. Volunteering may also increase social support networks through interaction with other volunteers.

Positive social bonds can also be involved in monetary giving. Many make donations based on their networks of face-to-face relationships, such as religious donors who are part of a congregation. Giving tends to reinforce the social bonds among members.

Finally, for older adults developing physical limitations that curtail volunteering, donating money may be another way to stay involved and connected. Further studies that include an examination of the method of donating (mail, online, in person) may give further insight into whether all types of charitable donations are good for mental health.

Source: Choi, N., & Kim, J. (2011). *The effect of time volunteering and charitable donations in later life on psychological wellbeing.* *Ageing and Society*, 31(4), 590-611. doi:10.1017/144686X10001224

welcome new IOA trainees

We recently welcomed two new trainees to the IOA's Biology of Aging and Age Related Diseases Training Grant (see: biologyofaging.wisc.edu), both of whom are working in Dr. Barry Ganetzky's genetics lab using fruit flies (*Drosophila melanogaster*) to study nerve cells and aging.

Lisa Sudmeier

Lisa Sudmeier, a pre-doctoral trainee, is using *Drosophila* to study synapse development and degeneration. Synapses are structures in the nervous system that allow nerve cells to communicate with each other. She works with the larval neuromuscular junction (NMJ) of the fruit fly, which is where a motor neuron communicates with a muscle cell to control muscle contractions. The Ganetzky lab has shown that *Drosophila* collected from nature show great diversity in NMJ form and structure. Using genetic mapping techniques, the genes responsible for some of these differences have been identified. Lisa is using the same techniques in populations of African *Drosophila* to characterize more pathways involved in synapse development. She will also use a long-lived model of *Drosophila* to study synapse degeneration with age. Knowing the genes involved in shaping synapses will help predict which pathways may be important for synapse maintenance during aging.

Carin Loewen

Carin Loewen, a post-doctoral trainee, is also examining synaptic function at the *Drosophila* neuromuscular junction in larva that express proteins involved with human, aging-associated, neurodegenerative diseases such as Alzheimer's. Her first objective is to utilize *Drosophila* to identify new genes, proteins, and cellular pathways involved in age-dependent neuroprotection (processes that protect nerves cells from age-related decline). When neuroprotective genes are mutated, they can cause neurodegenerative diseases. She is screening a collection of mutant flies in the Ganetzky lab for any that exhibit age-dependent neurodegeneration. Once she has identified a neurodegeneration mutant, she will identify the gene mutation that is causing the neurodegeneration and characterize the cellular function of its protein product, thus identifying the cellular machinery that would be neuroprotective if the genes were healthy. Her second objective is to characterize the cellular and molecular mechanisms that underlie synaptic dysfunction and/or loss in neurodegenerative diseases including tauopathies (e.g., Alzheimer's), synucleinopathies (e.g., Parkinson's), and triplet repeat disorders (e.g., Huntington's).



Fruit flies for research.

Another Successful IOA Colloquium on Aging

aging.wisc.edu/outreach/colloquium.php

ON-LINE EVENT RESOURCES

VIEW VIDEOS of PRESENTATIONS:

*Anytime Anywhere Any Device:
Automatically Changing into a Form
I Can Understand and Use- The GPII*
Gregg C. Vanderheiden, PhD

*Meditation & Exercise for Preventing
Acute Respiratory Infection*
Bruce Barrett, MD, PhD

*The Benefits of an Active Lifestyle on
Health & Wellbeing in Later Life*
Dorothy Farrar-Edwards, PhD

Reducing Your Risk of Alzheimer's
David Bennett, MD

LOCAL AGING ORGANIZATIONS:

Find descriptions of 45 local organizations offering resources for positive aging.

AGING RESEARCH POSTERS:

See the "Highlighted Posters" section on our home page for posters from the event.

Given to UW-Madison students or advanced trainees, these awards recognize outstanding achievement in aging research.

In BIOMEDICAL Research:



Karl Miller

Poster:
*PGC-1 α Pathway as a
Potential Target for
Cancer Treatment*

In CLINICAL/APPLIED Research:



Jacqueline K. Limberg

Poster:
*Changes in Blood Flow
Patterns with Participa-
tion in a Diet & Exercise
Program in Adults
with Pre-Diabetes*

In PSYCHOSOCIAL Research:



Hong-Min Ahn

Poster:
*Social Relationships
& Mortality in
Older Men
& Women*

NEW INVESTIGATOR AWARD WINNERS



We are pleased that our annual event has a large following (550 people registered). We thank the following, whose donations help us offer this free event:

- Gail Bliss
- Hope Conley
- Claire Culbertson
- Compassion & Choices
- Patricia Evans
- Rob & Pat Fessenden
- Donna Fox
- Howard Ganther
- Jeanne & Albert Grover
- Sally Haveman
- Susan Heidrich
- Kay Heggstad
- Audrey Hindman
- Marynell Mally
- Peggy McEvelly
- Ellen Meister
- Pat Mueller
- Jim Moore
- Lisa Rader
- Everett & Maureen Rice
- Kay Smith
- Sarellen Schuh
- Lois & Orin Thompto
- Ruth Tsotsis
- Lucy Wall



Donations can be made via our website any time during the year.

The 24th annual Colloquium on Aging will be held at Monona Terrace in Madison, WI on

**Tuesday
October 2, 2012**

Registration will open next July. If you are not on our mailing list to receive event news, join via our website, or contact: aging@ssc.wisc.edu • (608) 262-1818

DONATION THANK YOUS

JOIN US NEXT YEAR

affiliate news

For more information on the work of IOA Affiliated Faculty and Researchers at UW-Madison, see: www.aging.wisc.edu/research/affilindex.php

AGING NEWS
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AGING NEWS
EDITING & LAYOUT
Theresa Berrie

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Understanding New Medicare Benefits

IOA Affiliate **Roberta Riportella** (Prof., Consumer Science, UW-Madison; & Health Policy Specialist, UW Extension) is spending the Fall semester of 2011/12 in Washington, DC, working to develop comprehensive educational materials regarding the Affordable Care Act (ACA) passed into law in March of 2011. It is the most sweeping, comprehensive package of reforms since Medicare and Medicaid were passed in the mid-1960s. While most are familiar with the ACA's goal of increasing the number of people covered by private or public health insurance, it has other facets, including an effort to improve quality of care. For example, it includes mandated coverage of preventive health care for Seniors insured through Medicare.

Prof. Riportella is working to develop an educational program targeting Medicare beneficiaries by reviving a partnership between the Centers for Medicare and Medicaid Services and the National Institute for Food and Agriculture (the USDA's research arm). Rather than simply write informational pamphlets for individuals to read on their own, Prof. Riportella is helping create comprehensive supportive materials for the state and county network of Extension faculty to use with local groups of Medicare beneficiaries and their families. This educational effort

should provide a more thorough understanding among Seniors of how the ACA will affect their benefits.

For more information about the ACA, its impact, and Prof. Riportella's health care reform blog, see: fyi.uwex.edu/healthreform/



Age-Related Decline in Ability to Identify Odors

A recent study by IOA Affiliates **Karen Cruickshanks, Barbara Klein, and Ronald Klein** (Professors, Ophthalmology & Visual Sciences), along with other researchers at the UW-Madison EpiSense Research Program, have found that one in every eight participants in the Epidemiology of Hearing Loss Study experienced a decline in their ability to identify odors over a 5-year period. A poor sense of smell is significant because it may affect a person's food choices and thus nutrition, as well as the ability to detect smoke or other immediate dangers in the environment.

In this study of 1556 people aged 53 to 91, older participants were more likely than younger participants to develop problems with their sense of smell. People with a history of nasal polyps (abnormal growths in the nose) or a deviated septum (a displacement of the bone/cartilage between the nostrils), were also more likely to develop difficulty identifying odors, perhaps because these conditions may cause obstruction of the nasal passages. Those who reported a history of heavy drinking were also more likely to develop difficulty identifying odors, possibly due to changes in the brain in areas that are related to smell. On a positive note, people who reported taking corticosteroids (given for a number of health problems) or cholesterol lowering medications, and people who exercised at least once a week, were less likely to develop



ACA mandates coverage of preventive health care, including annual check-ups and some screenings, for Medicare recipients.



People who exercised at least once a week were less likely to develop problems with their sense of smell.

problems identifying odors, suggesting that some impairment in the sense of smell may be preventable.

Source: Schubert, C. R., Cruickshanks, K. J., Klein, B. E. K., Klein, R., & Nondahl, D. M. (2011). Olfactory impairment in older adults: Five-year incidence and risk factors. *The Laryngoscope*, 121(4), 873-878. doi:10.1002/lary.21416

Identifying Causes of Functional Limitations in Older Adults

IOA Affiliates **Kelli Koltyn**, **Lisa Colbert** (Kinesiology, UW-Madison), and **Jane Mahoney** (Geriatrics, UW-Madison), along with Kelly Beisenstein-Weiss, completed analyses of a pilot study examining a newly developed Physical Function Perception Scale (PFPS) intended for use with older adults. The PFPS assesses functional limitation in 20 areas, including upper body activities (e.g., reaching and placing objects overhead, carrying groceries, or opening jars) and lower body activities (e.g., getting up out of a bed or chair, going up several flight of stairs, or walking for 10 minutes). In addition, the PFPS asks older adults to report what they perceive to be the cause of their limitations (e.g., poor health, pain, fatigue, or balance problems), which is typically not measured in other tests of functional limitation.

The 32 participants in the study were older, long-term colorectal cancer survivors, with



Older adults reported that the primary reasons their activities were limited was due to pain, balance problems, and fatigue.

a mean age of 78 years. They were assessed in the laboratory for functional limitations and balance, using standardized tests in addition to being administered the new PFPS. Results presented at the 2011 Annual Meeting of the American College of Sports Medicine showed that the PFPS provided valid measurements when compared with the other standard tests administered.

The primary reasons given by older adults for experiencing limitations in the activities measured by the PFPS were pain (43%), followed by balance problems (23%), and fatigue (22%). Health issues and other reasons were given less than 1% of the time. These results increase understanding of why older adults limit their performance of daily activities, which is an essential step in developing effective interventions to prevent or delay disability in older adults.

AGING FACTS

From 1992 to 2007, there was a 7% decrease in the percentage of those over 65 who reported having a functional limitation, such as difficulty preparing meals. In 2007, 42% reported a functional limitation, including 47% of women, but only 35% of men.

— Older Americans 2010: Key Indicators of Well-being at agingstats.gov



welcome new IOA affiliate

David Pagliarini • Assist. Prof., Dept of Biochemistry

Prof. Pagliarini's research focus is on understanding the role of mitochondrial energy metabolism and its significance for aging and aging-related diseases. He was recently one of 25 scientists from across the nation selected to receive the 2011 Glenn Award. The \$60,000 award recognizes his ongoing contributions to research in the biological mechanisms of aging.

new findings from MIDUS

Funded by the National Institute on Aging
(P01 AG020166)

MIDUS

Midlife in the United States

MIDUS studies aging as a long-term journey involving multiple factors (psychological, social, biological). It began in 1995 with over 7000 participants, aged 25-74. Over 360 publications have utilized MIDUS data. Most are archived at: midus.wisc.edu/findings

Black women were more likely to have higher bone turnover rates that are associated with fractures.



Social Status & Race Can Affect Bone Health

Socioeconomic status is rarely the central focus of osteoporosis research, but MIDUS investigators have found that social status and race can play a significant role in bone turnover (or rebuilding) rates. Bone turnover is a lifelong process whereby bone tissue is removed from the skeleton and replaced by new tissue. The process allows for repair of normal bone wear and tear due to daily life or injury. In postmenopausal women and older men, however, high bone turnover rates are an important determinant of bone fragility and increased risk of fracture.

This study included 940 people (491 men and 449 women) from whom fasting blood samples were taken to measure three chemical markers that indicate bone turnover rate: SBAP (serum bone-specific alkaline phosphatase), PINP (procollagen type 1 N-terminal propeptide), and Ntx (N-telopeptide). Socioeconomic status was measured by highest level of education achieved, household income (including earnings, pension, Social Security, and government assistance from all household members), and a measure of income relative to poverty levels and adjusted for family size, the FPIR or family-adjusted poverty-to-income ratio.

Results differed for men and women. Among men, increased bone turnover was associated with a low income adjusted to family size (FPIR), but there was no association with education or race. Among women, there were no associations between bone turnover

and socioeconomic status on any of the three measures (education, income, or FPIR), but being Black was significantly associated with high bone turnover rates. The observed differences were comparable to the effects of some osteoporosis therapies, as well as the effects of menopause.

These findings add to the growing list of adverse health outcomes associated with lower socioeconomic status and/or minority status. Gender differences in socioeconomic status and health are often observed and thought to be the result of underlying biological differences (such as responses to stress), social coping mechanisms, or access to resources. These results are consistent with the view that chronic stresses faced by disadvantaged individuals can lead to harmful changes in physiology, ultimately contributing to adverse health outcomes. Further research is needed to explore whether high levels of the stress hormone cortisol, as well as high levels of inflammation, such as observed in those experiencing depression, may be partly responsible for the association between socioeconomic status, minority status, and bone health.

Source: Crandall, C., Miller-Martinez, D., Greendale, G., Binkley, N., Seeman, T., & Karlamangla, A. (2011). Socioeconomic status, race, and bone turnover in the Midlife in the US Study. *Osteoporosis International*, 1-10. Advance online publication. doi:10.1007/s00198-011-1736-5.

Childhood Abuse Can Affect Sleep in Adulthood

Poor sleep is linked to a wide range of problems, including a reduced quality of life, work absenteeism, increased accidents, and depression. Stress is considered to be one of the biggest contributors to poor sleep. MIDUS investigators used a life course perspective to study whether stress in child-





Adults who experienced any type of childhood abuse were more likely to experience sleep disturbances, such as bad dreams.

hood, in the form of abuse, can affect sleep in adulthood. Unfortunately, 15.8% of respondents in the first wave of MIDUS reported a parent beating, biting, choking, kicking, scalding, hitting, or trying to hit them.

Sleep quality was measured on 835 adults by a global sleep pathology score that combined seven components: overall sleep quality, sleep latency (how long it takes to get to sleep), duration of sleep (number of hours in a typical night), sleep efficiency (the portion of time spent in bed actually sleeping), sleep disturbances (e.g., waking during the night), use of sleeping medications, and daytime dysfunction (e.g., having trouble staying awake while driving). Occurrence and frequency of childhood abuse was measured by self-reports of experiencing three types of abuse: sexual, physical (e.g., hitting or choking), and emotional (e.g., insults or swearing).

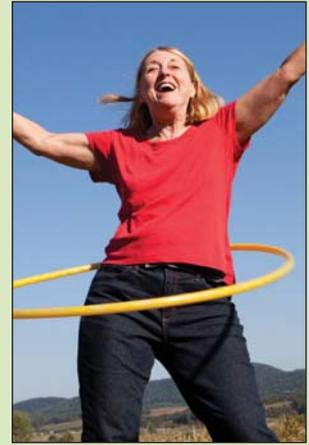
Results showed an elevated risk of poor sleep among adults with histories of childhood abuse. For example, those who reported frequent physical and emotional abuse were 200% more likely to have clinically significant levels of sleep pathology than those who reported experiencing no abuse. Those who experienced the three more extreme types of abuse (frequent physical and emotional abuse, either with or without sexual abuse; and occasional physical and emotional abuse, but with frequent sexual abuse) were also associated with having worse global sleep pathology.

In addition, there were significant associations between certain types of abuse and particular types of sleep problems. For example, the types of abuse associated with a worse global sleep pathology score were associated with each of the seven types of sleep problems that comprised the overall score, with one exception. They were not associated with sleep duration. This suggests that childhood abuse may affect the *quality* of sleep more so than its *quantity*.

Other results showed that sleep disturbances (e.g., pain during the night, feeling too hot or too cold, or having bad dreams) appeared to be the most sensitive to having any history of abuse. The most extreme class of abuse (frequent physical and emotional abuse with sexual abuse) was associated with experiencing the largest amount of sleep disturbance.

The research underscores the importance of encouraging health care professionals to inquire about histories of child abuse and sleep problems, including sleep quality, not just sleep duration. More research is needed to understand how childhood abuse can affect sleep in adulthood. Does it fundamentally alter the normal sleep/arousal system, or does it affect long-term mental health in such a way as to promote insomnia?

Source: Greenfield, E., Lee, C., Friedman, E., & Springer, K. (2011). Childhood abuse as a risk factor for sleep problems in adulthood: Evidence from a US national study. *Annals of Behavioral Medicine*, 42(2), 245-256. doi:10.1007/s12160-011-9285-x.



You spend 90% of your adult life hoping for a long rest and the last 10% trying to convince the Lord that you're actually not that tired.

—Robert Brault



The most recent MIDUS newsletter on *The Long Reach of Childhood Experiences* can be viewed at the MIDUS website (below). Although adult survivors of childhood abuse may suffer from emotional and/or physical difficulties, certain factors can also shield them from these problems, such as having a strong sense of community, receiving support from caring relatives, or believing they are in control of their own lives.



www.midus.wisc.edu/newsletter

female state workers save less for retirement

IOA Affiliate **Karen Holden** (Prof. Emeritus, Consumer Science & Public Affairs, UW-Madison) co-authored a study analyzing state employee participation in the Wisconsin Deferred Compensation Program (WDC), a voluntary 457 tax-deferred savings plan. It was funded by a Social Security Administration grant awarded to the UW Center for Financial Security.



Analysis of the 2006-2010 WDC administrative data showed:

- \$ Male & female employees were equally likely to participate, but, on average, women contributed less & had lower balances.
- \$ Women's lower salaries played an important role in their lower contributions, but even after considering earning differences, women saved less of their salaries than men.
- \$ Women were less likely to make the maximum allowed contribution, even if they earned a higher salary.
- \$ Women were more likely to interrupt contributions at a younger age, thus lowering their savings totals due to the effects of compound interest.
- \$ Women were more likely to make financial hardship withdrawals and to withdraw the same amount as men did, in spite of having lower account balances.

These gender differences held even when accounting for age, salary, and marital status of employees.

Testimony from four focus groups of women participating in the WDC revealed that:

- \$ Many delayed opening accounts because they were overwhelmed by the amount of benefit information given to new employees.
- \$ Most became aware of the program via co-workers & many chose their investment options based on what co-workers did.
- \$ Women were often able to increase savings by applying part of a pay raise to their monthly contributions.
- \$ Some women anticipated having to decrease contributions if increased employee payments to the mandatory retirement system & larger health insurance premiums became a reality (focus groups were held before these changes became law).

Results suggested ways in which the WDC or similar retirement savings programs could improve financial literacy and participation among eligible contributors. Many women acknowledged a lack of financial knowledge and said they would appreciate opportunities to educate themselves about their investment options. See more at: cfs.wisc.edu/publicationlibraryyear1projects/CFS1.aspx

2010 average account balances were \$60,000 for men and \$42,000 for women.

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ADDRESS SERVICE REQUESTED



*The elderly don't drive that badly;
they're just the only ones with time
to do the speed limit.*

—Jason Love