

WRAP Update

Newsletter of the Wisconsin Registry for Alzheimer's Prevention

A Message From Your Principal Investigator

The WRAP study is uncovering new knowledge about the reasons for AD. This is because of the tremendous partnership between you, our volunteer participants, and the team of scientists at UW-Madison and beyond. WRAP functions both as a longitudinal study in its own right, and as a registry of participants who may be contacted for linked studies. This is an efficient and integrated way of doing things that will lead to answers faster! We are fortunate to have recently been awarded several grants from the National Institutes of Health as well as from foundations and private donors for new or continuing linked studies.

We need your help! This issue contains brief descriptions of some of the studies that need WRAP participants, WRAP participant family members, or new participants. I encourage you to consider participating in one or more of these studies so that together we can produce new knowledge about AD.

Participating in a linked study 'leverages' your existing WRAP data so that it becomes ever more valuable and useful. As you learn about linked studies we encourage you to consider participating.

Remember, all research participation is voluntary. You may continue in WRAP no matter what decision you make about linked research studies. We are so grateful for all you do. Thank you!

—Sterling Johnson, Ph.D.



GeneRations of WRAP

From Professor Corinne Engelman, Principal Investigator: “With new NIH funding we are seeking more knowledge about the hereditary components of AD. We are recruiting additional family members of WRAP participants. If you have a biological family member who developed Alzheimer’s by the age of 75, they may be eligible to participate in GROW, which can be done via phone and mail. After their participation, we would like to ‘grow-your family’ by inviting additional family members to participate in WRAP/GROW.”

The GROW study has started to contact WRAP families by mail and telephone. Examples of participation by other family include obtaining a saliva sample from a parent with AD or enrolling a participant’s adult child in WRAP.

Imaging to PREDICT AD

This study is a centerpiece of the WRAP project. Family history of AD only roughly predicts risk. A better alternative uses direct ‘biomarkers’ of the major culprits: the amyloid plaques and the neurofibrillary tangles of tau protein.

The PREDICT-2 study, which recently won NIH funding, recruits WRAP participants for positron emission tomography (PET) scans that measure plaques and tangles, and magnetic resonance imaging (MRI) to measure brain atrophy. The study will cross-reference the level of plaques and tangles seen on imaging with actual protein levels in the fluid that bathes the brain (called cerebrospinal fluid, or CSF for short) obtained through lumbar puncture (LP).

If you are contacted regarding PREDICT2, Study Coordinators Jennifer Poetter and Leah Sanson can assist you with coordinating a WRAP study visit along with these important imaging studies.

African-Americans Fighting Alzheimer's in Midlife

Aimed at increasing AD research participation by African Americans, this study will primarily recruit participants in Milwaukee, according to Principal Investigator Carey Gleason. Through this project we aim to double the number of African Americans participating in WRAP. This project has funding to conduct MRI and CSF biomarkers in existing and newly recruited African American participants.

Participants will be given the option to receive wrap-around services that can provide tailored recommendations specific to their needs based on findings from their participation in the study. Using a person-centered care approach and outreach program model through WAI’s Regional Milwaukee Office, we hope to increase self-empowerment through health promotion and access to community resources that can help to stave off signs and symptoms of Alzheimer’s disease.

CSF Reveals AD Culprits

Major culprits for AD are amyloid plaques and neurofibrillary tangles. WRAP scientists studying risk and prevention of AD want to measure plaques and tangles in WRAP participants. Researchers measure the levels of plaques and tangles by collecting cerebrospinal fluid (CSF). Until now, CSF, which is obtained through lumbar puncture, has only been collected through some of WRAP’s linked studies and so has only been done on about 15% of the entire study group.

Now, with a generous gift from a private donor and with federal funding, we will collect CSF on all willing participants more routinely. This valuable fluid will help us address critical questions: How early in life do plaques and tangles show up?; Do plaques and tangles predict future cognitive symptoms?; Are there genetic or lifestyle factors (such as activity levels, diet, sleep or stress) related to plaques and tangles?; Are there things you can do to lower your levels?

These are truly central questions with very high scientific importance. CSF collection through lumbar puncture is an optional add-on procedure that WRAP researchers will discuss with you around the time of your next visit. We hope you will consider CSF donation.

Spotlight on WRAP Study Participants

Microbiome in Alzheimer's Risk Study "MARS" began in 2015 and expects to present its first results this summer, reports Principal Investigator Dr. Barbara Bendlin. Read health news lately? You may have heard the term "microbiome". This is the bacteria, viruses, fungi and other microorganisms making their home in or on your body. Some that live in your gut do helpful things like digest food and fight off the harmful bacteria, while others just find it a comfy place to live. WRAP participants are helping researchers learn whether these microbes may influence the brain.

Since the gut contents inevitably get flushed down the toilet, providing stool samples to science helps investigators determine whether gut microbes play a role in memory function, or whether microbes might be associated with the development of amyloid plaques and neurofibrillary tangles.

The idea that gut microbes may play a role in brain disease actually goes back more than hundred years. Nobel laureate Elie Metchnikoff (1845–1916) suggested that bacteria in the colon contribute to what was then called "senility". The idea may not be completely far-fetched, as recent studies have shown that people with Parkinson's disease have a different composition of gut microbiota compared to those without Parkinson's. Recent studies in mice also suggest that gut microbes may influence the accumulation of amyloid plaques in the brain.

Thanks to the participants who provided samples for science so far... and stay tuned for more!

International AD Conference Recognizes WRAP participants

Life stress, insulin resistance, and poor sleep may be precursors to Alzheimer's disease, according to University of Wisconsin-Madison research presented at the 2016 Alzheimer's Association International Conference (AAIC) in Toronto. WRAP participants' study data provided researchers with over 30 papers to present at AAIC. The WRAP study was also the focus of a special session at the conference.

For more information see: <http://www.medicine.wisc.edu/news/alzheimers-research-takes-center-stage>

Anesthesia Study Asks WRAP Participants' Permission to Review Post-2008 Surgical Records

Recruitment will continue for the Surgical Trajectories Alzheimer's Association Records Review Study (STAARRS), funded through the Alzheimer's Association, Principal Investigator Lisa Bratzke, reports.

The WRAP team wants to understand all potential factors that may contribute to cognitive health as we age. Scientific literature has shown that in some instances, surgery and anesthesia cause changes in cognition. While much remains unknown about these post-operative cognitive changes, our team will explore whether these changes in cognition are primarily short-term or have long-term implications. Our study team will examine whether factors related to surgery and

anesthesia (for example, factors such as the duration of anesthesia, exposure to certain types of anesthesia, or pre-operative health status) influence cognition years after the surgical procedure. Participation is simple and involves signing a medical record release form for the records pertaining only to the single surgical procedure you identify.

If you had a surgical procedure after 2008 and are already participating in the study – thank you so much for your support. If you had a surgical procedure after 2008 and our study team has NOT been in touch with you, please contact Professor Bratzke at 608-263-5277 for more information about the study.

New WRAP Program Manager Shawn Bolin Takes Study to "Wave 6" and Beyond...



Just as a large number of WRAP participants will embark on their SIXTH study visit, WAI is happy to announce that Shawn Bolin (pictured left) will take over as WRAP Program Manager from Amy Hawley.

Many participants know Mr. Bolin as a veteran WRAP study coordinator; he joined WAI in 2009. Since that time he has conducted over 830 study visits.

He earned his Master of Science degree from the University of Wisconsin and his Bachelor of Science from the University of Illinois. He

has worked as laboratory manager at both the Human Perception and Performance Lab at Beckman Institute, University of Illinois at Urbana-Champaign, and at the Human Memory Lab at the University of California-Davis. The father of two young boys, he is married to fellow UW researcher Jennifer Bolin.

"Continued participation in WRAP, as demonstrated by the start of the 'wave' of sixth study visits, enhances the value of this data to researchers," Mr. Bolin said. "I take great satisfaction in helping WRAP participants understand the importance of their contribution."

Ms. Hawley will continue to oversee AD research for both WAI and its sister organization, ADRC, working closely with WRAP Principal Investigator Sterling Johnson.



608-265-4000

Not yet signed up for brain donation?

Call WBDP or talk to your WRAP study coordinator at your next study visit.

The Wisconsin Brain Donor Program welcomes newly-enrolled WRAP participants to its registry! We will send occasional reminders to update your contact information via newsletters or other donor communications.

Keep us informed if you move or have other changes occur:

- dropping land-line telephones;
- adding cell phone numbers;
- other information about you or your primary contacts changes;
- new telephone or email for family members or friends

WRAP Update A newsletter of the Wisconsin Registry for Alzheimer's Prevention (WRAP), published by the Wisconsin Alzheimer's Institute of the University of Wisconsin School of Medicine & Public Health. Funding for WRAP is provided by the National Institute of Aging and the University of Wisconsin School of Medicine and Public Health. This research was supported by the NIA grant R01AG27161 (Wisconsin Registry for Alzheimer Prevention: Biomarkers of Preclinical AD), Helen Bader Foundation, Northwestern Mutual Foundation, Extencicare Foundation and State of Wisconsin.

ADDRESS: Wisconsin Alzheimer's Institute, WARF Building
610 Walnut Street, Madison, WI 53726
PHONE: 608-263-2862 **FAX:** 608-265-9122
EMAIL: waimail@mailplus.wisc.edu
WEB: www.wai.wisc.edu



Wisconsin Alzheimer's Institute
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH
Home of WRAP-Wisconsin Registry for Alzheimer's Prevention