

WRAP Update

Winter 2026

Newsletter of the Wisconsin Registry for Alzheimer's Prevention

WRAP celebrates 25 years – because of you

By Sterling Johnson, PhD, Multi-Principal Investigator, WRAP Study

Dear WRAP participants,
As WRAP marks its 25th year, I find myself reflecting not on how much has changed, but on what has remained constant: you.

For years, you have shown up. You have come in for study visits, completed testing, often provided blood samples and even spinal fluid samples, undergone imaging, answered detailed questionnaires, and stayed engaged with our team. You have done this not for public recognition or personal benefit, but to help future generations. That kind of steady dedication—quiet, consistent, and generous—has helped reshape the field of Alzheimer's science. You inspire me and my team on a daily basis.

Longitudinal research only works if people stay the course. The true power of WRAP lies not in a single visit, but in the consistency of many visits over many years. Every follow-up visit strengthens the science. Every completed appointment sharpens our understanding of how brain health changes over time. When you remain active in the study, as many of you have for many years, you multiply the value of everything you have already contributed.

Since I took over leading the study in 2014, WRAP participants have completed 5,034 study visits across our three sites. Together, you have contributed to more than 411 scientific publications. In 2025 alone, WRAP data were included in 62 publications. These papers represent insights about a variety of topics such as early detection, resilience, risk, and prevention—work that is influencing and shaping how we think about brain health worldwide.

Our findings are contributing to solutions—such as the first FDA-approved blood test, better screening methods, insights into brain changes with aging, and factors that confer resilience to cognitive decline.

As we celebrate this milestone 25th year, we are also entering a new chapter in WRAP's leadership.

After twelve years serving as the study Principal Investigator (PI), I have transitioned to a shared leadership model with Dr. Jessica Caldwell and Dr. Nathaniel Chin. Dr. Caldwell now serves as contact PI and will be our overall leader of this landmark project going forward. Dr. Chin will continue supporting WRAP in his essential role as our medical director. I remain fully engaged on the leadership team and will continue working closely with the entire WRAP team.



*Sterling Johnson, PhD
m-PI WRAP Study*

The progress we have made over 25 years is a direct result of your commitment. There is nothing flashy about long-term research participation. It requires reliability, patience, and trust. But it has had a profound effect on the field. Because of you, we have the ability to detect this disease decades before symptoms, and we have better prevention strategies and more personalized approaches to brain health than ever before. On behalf of our entire research team, it is my sincere honor to thank you again for being a vital part of this work. *Thank you.* ☞



Then & Now

Photo 1: An early photo of the WRAP team, looking to the future with new PI Dr. Johnson. Photo 2: The most WRAP recent team photo. A special thank you to staff from both teams: Caite Artz, Ian Canovi, Celena Ramsey, and Diane Wilkinson.

News Briefs



L-R: Dr. Kolb, Dr. Johnson and Dr. Zetterberg

Top researchers join UW

This July, two of the world's leading dementia researchers joined our campus faculty to help identify what may be the earliest signs of cognitive decline. Welcome Henrik Zetterberg, a Swedish scientist who studies biomarkers, and Hartmuth Kolb, a German-born chemist and expert in imaging technology. Their goal is to identify chemicals in blood or spinal fluid that show the likelihood of a person developing dementia.



Postcards from the caregiving journey

Wisconsin caregivers were invited to send anonymous postcards describing their experience of caring for a loved one. The cards are now part of the *In Care Of* art exhibit on the UW campus and online. One card aptly describes how caregiving can feel like, "Living on a different year to year schedule than the world." Read the cards, and find caregiving resources, on the UW-Madison School of Human Ecology website (scan QR code for direct link).



in-care-of.humanecology.wisc.edu

WRAP participant data in action

WRAP participants' research contributions are impacting science around the world. One of our program's goals is to strengthen research everywhere, and to do that we work carefully to share de-identified data with approved researchers here and abroad. In the last year, more than 60 papers and preprints were published citing the WRAP study. Here are some examples of these influential findings published with input from WRAP data.

Lifestyle and biomarker-informed risk of cognitive impairment

This paper by WRAP investigators examined whether mid-life lifestyle health modifies risk of incident cognitive impairment (ICI) in the presence of genetic or biomarker risk. Over a median 8 years of follow-up, individuals with less healthy lifestyles had significantly higher risk of ICI, independent of their genetic risk. Elevated p-Tau217 was associated with increased risk, but lifestyle did not exaggerate this effect. These results highlight the general protective role of healthy lifestyle behaviors, but also point out these modifiable factors likely do not impact Alzheimer's biomarker onset age or trajectory.

Title: "Lifestyle, genetic risk, plasma p-Tau217, and incident cognitive impairment in WRAP"

Journal: *Alzheimer's & Dementia*

Amyloid and cerebrovascular disease risk

A publication led by Lianlian Du, PhD at Rush University, and including UW-Madison investigators, examined the relationship between cerebrovascular disease and amyloid buildup. By analyzing long-term imaging data from mostly cognitively

healthy adults, researchers estimated when each process likely began. They found that although both conditions become more common with age, they occur and progress independently, each following a predictable pattern once it starts. Using primary data from WRAP and a replication sample from the Wisconsin Alzheimer's Disease Research Center, the study also showed that people who had both amyloid buildup and vascular changes experienced the fastest cognitive decline. Among the two, having amyloid for a longer period was the stronger predictor of worsening cognition.

Title: "Onset ages of cerebrovascular disease and amyloid and effects on cognition in risk-enriched cohorts"

Journal: *Brain*

Validating a blood test for Alzheimer's diagnosis

This publication validated the blood test measuring phosphorylated tau-217 (p-tau217) to detect the brain changes linked to Alzheimer's disease. Using data from 786 participants from three research cohorts, including WRAP, the researchers found that blood plasma p-tau217 levels strongly matched both amyloid and tau pathology measured by PET imaging and cerebrospinal fluid tests, with diagnostic accuracy above 90%.

Title: "Diagnostic accuracy of a plasma phosphorylated tau-217 immunoassay for Alzheimer disease pathology"

Journal: *JAMA Neurology*

Find list of links to recent studies utilizing WRAP data on our website at wrap.wisc.edu/publications

A growing team and busy calendar

Updates from the WAI Regional Milwaukee Office

Our Wisconsin Alzheimer's Institute Regional Milwaukee Office team is excited to welcome a dedicated nurse practitioner to our team, to help manage study visit protocols and meet with participants. Ashley LaRock, MSN, APNP, AGPCNP-BC is an accomplished NP with more than 12 years of healthcare experience, bringing a strong background in adult and geriatric primary care, chronic



Ashley LaRock
APNP, AGPCNP-BC

disease management, and patient education.

Ashley earned a Master of Science in Nursing from Concordia University and a Bachelor of Science in Nursing

from Marquette University. She is certified as an Adult-Gerontology Primary Care Nurse Practitioner and licensed as an Advanced Practice Nurse Prescriber in the state of Wisconsin. She most recently worked as an Internal Medicine Primary Care Nurse Practitioner with Froedtert & the Medical College of Wisconsin-Community Physicians in West Bend, where she provided evi-

dence-based care and partnered closely with interdisciplinary teams to deliver patient-centered outcomes. We're thrilled to have her join us and look forward to the expertise and energy she brings to our team. Welcome, Ashley!

Join us and break the silence

All are welcome to the 12th Annual Breaking the Silence: Addressing Dementia in High-Risk Populations event. Each year, our office hosts this community event to address the impact dementia has on our communities. Started in 2014, it became the first annual event in Wisconsin to focus on dementia as a public health issue.

This year's event is April 17, 2026 at the Italian Conference Center in Milwaukee, WI. The program will include a discussion continuing the dialogue we began last year with Know Your Numbers - Centering Black Men's Health and Wellness PART 2 - a powerful conversation centered on awareness, care, and advocacy. The event will include presentations by experts in the field, a Q&A segment, community resources, and performance by The Amazing Grace Chorus®. Register today at wai.wisc.edu/breakthesilence. ☞

The Amyloid Clock

How WRAP is building a timeline of Alzheimer's progression

Alzheimer's disease is strongly linked to buildup of Amyloid-beta, a sticky protein that forms plaques in the brain. These plaques disrupt communication between brain cells and lead to the processes that eventually lead to memory loss and cognitive decline. For years, researchers could detect amyloid - a discovery built on WRAP contributions - but needed a standard method to track disease progression. That's where the Amyloid Clock comes in.

Developed by research led by Assistant Professor Tobey Betthausen, PhD, the biomarker clock theory uses long-term brain imaging data to estimate the starting point of amyloid buildup in an individual's brain. Instead of just identifying the presence of amyloid, the clock creates a timeline that can stretch back 20 years or more, showing

how long the disease progression has been underway. By knowing when the clock started and when symptoms appeared, scientists can better predict who is at risk of developing dementia and when symptoms might emerge. This model could guide clinical interventions, similar to cancer staging, where treatment before symptoms begin leads to better outcomes. Incorporating the amyloid clock into clinical practice and building a method to simultaneously track tau progression is a primary focus of our research programs. ☞



Tobey Betthausen, PhD
WRAP Investigator

Research Opportunity

Wisconsin Brain Donor Program

WRAP participants can make a lasting impact by enrolling in the Wisconsin Brain Donor Program.

Brain donation is a generous gift that serves as a legacy to support research for many studies. Examining the brain after death is a definitive way to determine causes of dementia and to validate brain imaging and blood-based tests. A post-mortem exam also provides information to families and loved ones via an individual postmortem report. Related costs are covered for accepted donors.

Participation is voluntary, and individuals may withdraw at any time. Program enrollment is prioritized to participants in Wisconsin ADRC-affiliated research studies; however, contact us for the most current enrollment information. Phone: 608-265-4000, ext. 2, and leave a message. Email: brainbank@medicine.wisc.edu Web: adrc.wisc.edu/brain-donation

Welcome new WRAP leader

Jessica Caldwell, PhD

In November, WRAP welcomed Jessica Caldwell, PhD, to co-lead our study. Dr. Caldwell is a neuropsychologist and a UW–Madison alum with many years' experience leading a dementia prevention clinic and an Alzheimer's research program. We are thrilled to welcome her to WRAP! Here's a brief introduction to Dr. Caldwell and her work:

Q: Tell us about where you're from & your professional background

I'm from a small town called Negaunee, in Michigan's Upper Peninsula. The winters are rough, but I don't know a better place to spend the summer. I completed my undergrad in psychology with a minor in creative writing at Princeton, and my PhD in clinical psychology with a neuroscience minor at UW–Madison. I am a board-certified neuropsychologist, and I've balanced working in clinic, research, and administration throughout my career.

Q: We'd love to hear about your areas of expertise and how you entered this field

My areas of expertise are dementia prevention and sex and gender influences on Alzheimer's disease risk and resilience—for example, how hormones and socially-determined gender roles impact risk for developing Alzheimer's. My scientific journey has not been a straight path. As a grad student working with Dr. Marilyn Essex and Dr. Richie Davidson, I studied differences between adolescent boys' and girls' psychopathology and neural structure and function. In contrast, my clinical training focused on memory problems in older adults. I always saw parallels between adolescence and aging, with both life stages characterized by neural and social change. However, my clinical

and research interests stayed separate until 10 years ago, when I was awarded a grant to study sex differences

in Alzheimer's disease. This line of research showed that women had different patterns of risk and resilience than men did, due to both biological sex and socially-constructed gender roles. As my research program grew, the findings led me to develop a clinic for women to learn to reduce their dementia risks and boost their resilience.

Q: What attracted you to working with WRAP?

I knew of WRAP from my time as a graduate student at UW, so when I designed my intervention clinic, WRAP was one of the key studies I looked to for inspiration and guidance. Joining the leadership of WRAP is an incredible honor, and feels like coming full-circle in my academic career.

Q: What hobbies do you have?

I write poetry and fiction and enjoy being near water and spending time with my family. I was an avid runner as a grad student, although today I'm a walker rather than a marathoner!

Q: Can you share an interesting fact from your research to help us sound clever at parties?

Your brain's memory system is full of estrogen receptors! This may be part of why, on average, girls and women have better verbal memory than boys and men. 🌀



Jessica Caldwell, PhD
WRAP mPI

WRAP Update

A newsletter of the Wisconsin Registry for Alzheimer's Prevention (WRAP). WRAP is conducted at the University of Wisconsin School of Medicine and Public Health.

Funding for WRAP is provided by the National Institutes of Health and the University of Wisconsin School of Medicine and Public Health.

WRAP PHONE: 608-265-5834

WRAP FAX: 608-890-3705

EMAIL: wrap@medicine.wisc.edu

WEB: wrap.wisc.edu



**Wisconsin Registry
for Alzheimer's Prevention**
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH



A podcast about Alzheimer's disease and other causes of dementia.

Hosted by
Nathaniel Chin, MD

Tune in on your favorite
podcast app or listen
online at

adrc.wisc.edu/podcast