NIA Director's Update

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National Institute on Aging

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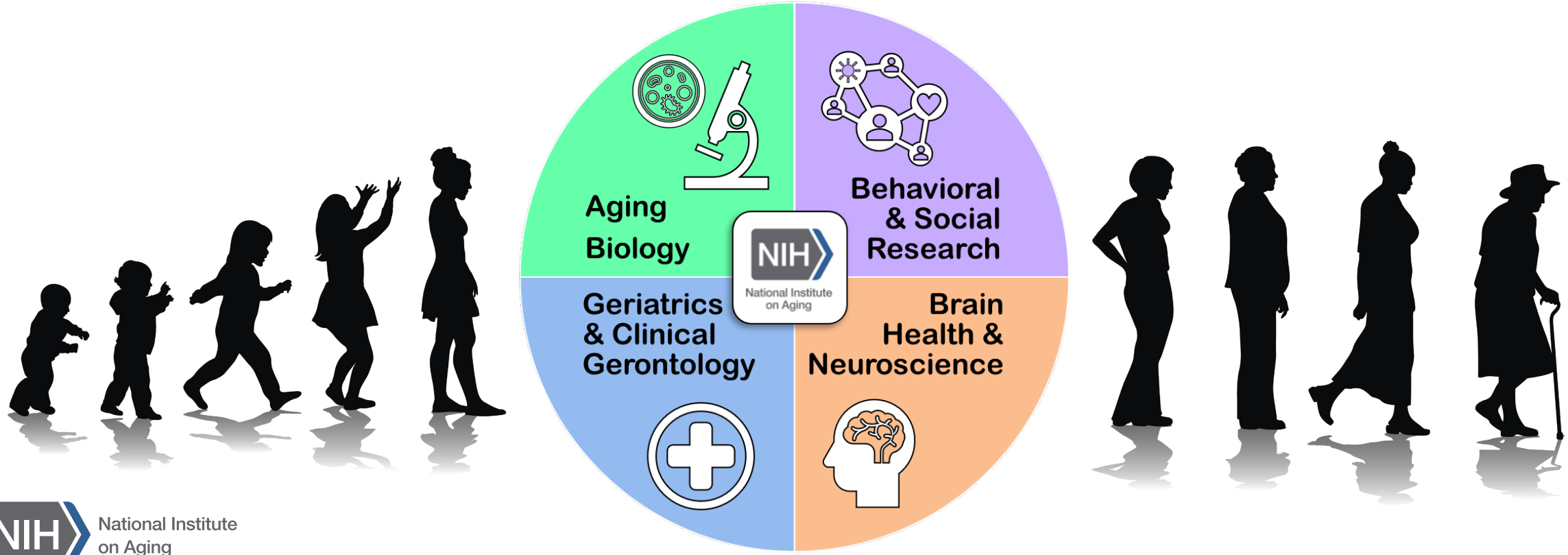
An Overview of NIA

National Institute on Aging (NIA) Mission

Since its establishment in 1974, NIA has funded research to understand the nature of aging and to prevent and treat diseases associated with aging in order to extend the healthy, active years of life.



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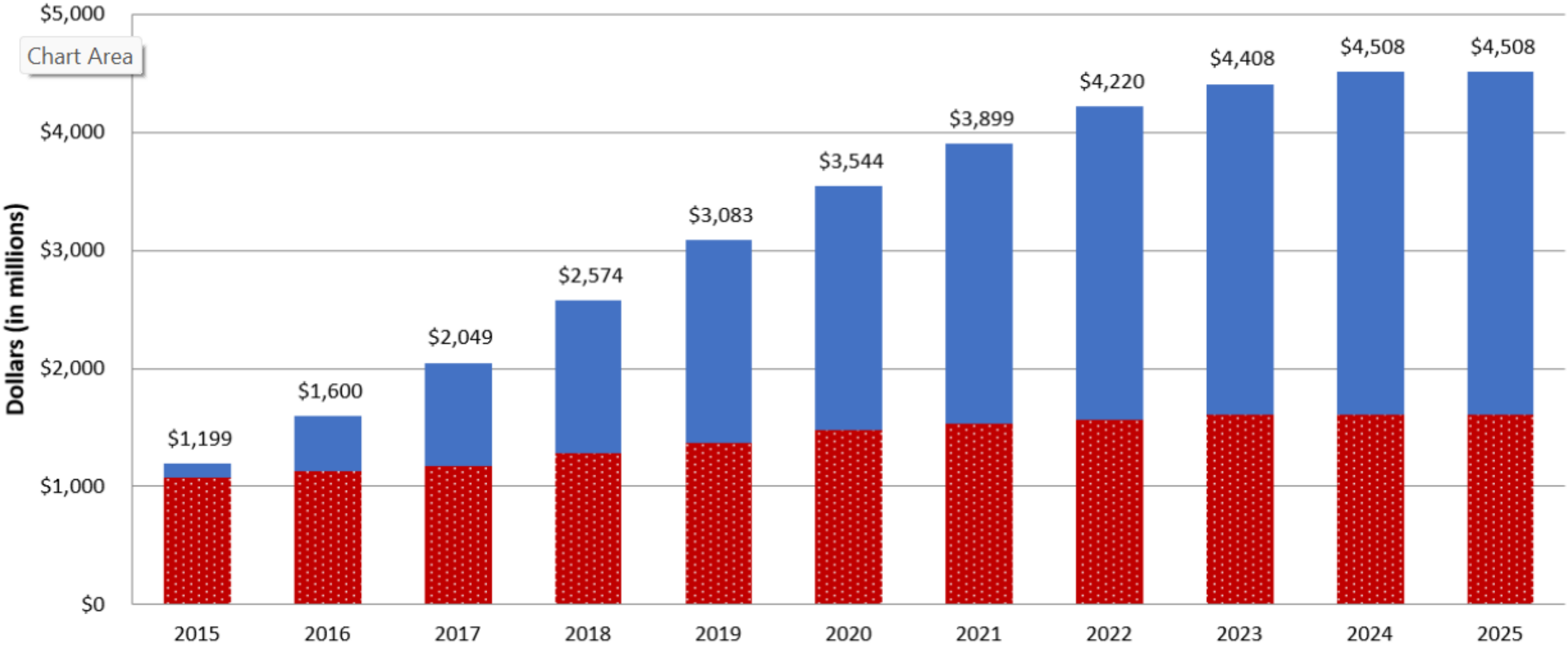
NIA Leads Federal Research on Alzheimer's Disease



Increased Congressional appropriations over the past decade have fueled scientific discovery and led to significant research progress.

NIA Organizational Structure (as of Dec. 2025)

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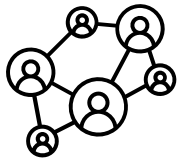
Extramural Research at NIA

Division of Aging Biology - Supports research on the mechanisms of aging, and how these mechanisms contribute to functional changes.

Division of Neuroscience - Supports basic, translational, clinical, and epidemiological research on age-related changes in the nervous system.

Division of Geriatrics and Clinical Gerontology - Supports clinical and translational research on health and disease in older populations and across the lifespan.



Division of Behavioral and Social Research - Supports research examining the social, psychological, economic, and behavioral factors that affect health and aging.

Intramural Research at NIA

NIA has intramural labs in Bethesda and Baltimore conducting multi-disciplinary aging and dementia research, including:

- Research to understand the many **factors that influence aging and disease**, from biology to cultural factors.
- **Translational and clinical research** aiming to prevent or delay the onset of functional decline and disease.
- Research to uncover mechanisms that can **maximize health span and active life expectancy**.

The NIH Center for Alzheimer's and Related Dementias (CARD) is a collaborative initiative of NIA and NINDS that **aims to accelerate dementia research and collaboration**.

- Works across disciplines to drive basic, preclinical, and clinical research.
- Develops resources for the research community.

Baltimore

Biomedical Research Center (BRC) located on the John's Hopkins Bayview campus

Bethesda

Porter Neuroscience Research Center (Bldg. 35)

Roy Blunt Center for Alzheimer's Disease and Related Dementias Research

https://www.nia.nih.gov/research/labs
https://card.nih.gov/

NIA's Lifecourse Approach Presents Opportunities for Collaborations with NICHD

Down Syndrome Research

- INCLUDE
- ABC-DS

Research on Women's Health

- SWAN
- Menopause

Longitudinal Studies of Health across the lifespan

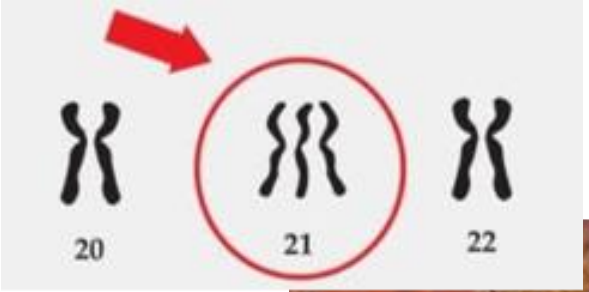
- Add Health
- The National Survey of Families and Households
- Great Smoky Mountains Study (GSMS)

ASCENT Palliative Care Research Consortium

Centers for AIDS Research (CFAR)

Down Syndrome Research at NIA

People with Down Syndrome are at High Risk of Developing Alzheimer's Disease



- Chromosome 21 carries the gene that encodes Amyloid Precursor Protein (APP), which is known to be involved in Alzheimer’s disease.
- By age 40, most people with Down syndrome have abnormal accumulation of amyloid beta and tau proteins in their brains – two hallmarks of Alzheimer's.
- It's estimated that 70% or more of those with Down syndrome will develop dementia due to Alzheimer’s disease as they age.

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Research on Down Syndrome is a Priority for NIA

Ongoing NIA research aims to:

- Understand how Alzheimer's disease begins and progresses in people with Down syndrome
- Understand why some people with DS develop AD and others do not
- Improve Alzheimer's diagnosis in people with Down Syndrome
- Evaluate new approaches to treating and preventing Alzheimer's in people with Down Syndrome

These studies may help develop treatments that can stop, delay, or even prevent Alzheimer's in people with and without Down Syndrome.

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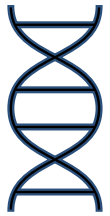
Major NIA Down Syndrome Research Initiatives

- Participates in the NIH-wide **INCLUDE initiative (INvestigation of Co-occurring conditions across the Lifespan to Understand Down syndromE)** to better understand how DS is related to other conditions, including AD.
- Co-funds the **Alzheimer's Biomarker Consortium-Down Syndrome (ABC-DS)** with NICHD to discover AD biomarkers in people with DS to better diagnose AD and inform treatment and care.
- Supports the **Trial Ready-Cohort for Down syndrome (TRC-DS)** to establish a community of potential clinical trial participants with DS to be quickly matched to AD clinical trials.
- **Supports numerous AD Clinical Trials in people with DS.** For example:
  - **Amyloid Lowering for Alzheimer's in Down Syndrome With Donanemab Investigation (ALADDIN)** is evaluating the use of donanemab, an FDA-approved treatment for early AD, in people with DS.
  - **Testing a potential therapeutic targeting the protein homeostasis pathway** to address three co-occurring conditions in DS (cognitive performance, sleep disturbances, and metabolic dysfunction).

Examples of Recent NIA-Funded Down Syndrome Research Advances

Brain Changes: People living with DS and AD had twice as much iron and more signs of cellular damage in their brains. https://pubmed.ncbi.nlm.nih.gov/40536124/



Genetic Signatures: In contrast to the general population, the *APOE4* gene variant had only a modest association with dementia in people with DS. https://pubmed.ncbi.nlm.nih.gov/40667715/

AD Resilience: Researchers identified an individual with DS who remained cognitively stable into her 60s despite having high levels of AD biomarkers. https://pubmed.ncbi.nlm.nih.gov/39868632/

- Continued research from this case study may help us better understand the mechanisms underlying cognitive resilience in people with and without DS.

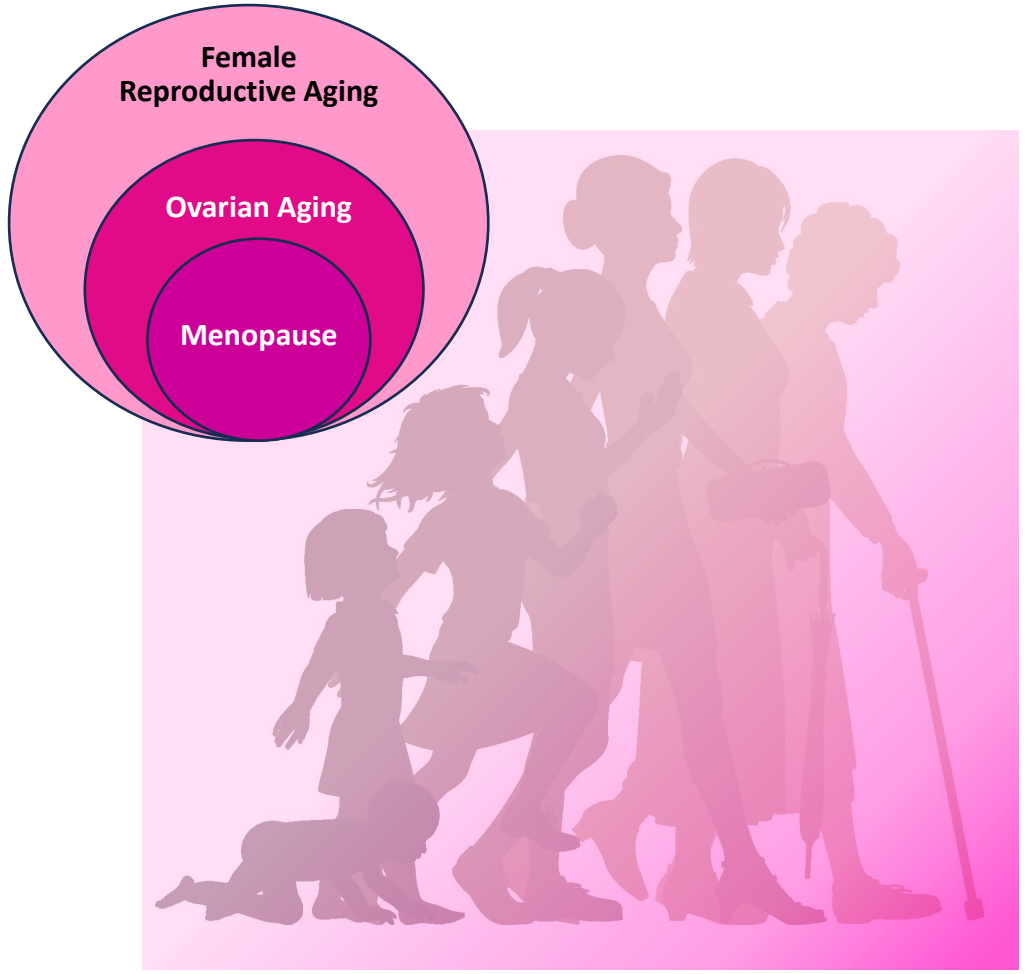
Menopause Research at NIA

NIH Research on Midlife Health and Menopause

- **NIA prioritizes the study of midlife health and the menopausal transition.**

- NIA-funded menopause research includes:
  - Studies of how sex and gender impact aging processes and outcomes
  - Topics uniquely relevant to the health of older women and the continuum of reproductive aging, including menopause

- Because all women will experience menopause with aging, **NIA serves as NIH lead for menopause research**.



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Menopause Research Spans Multiple Disciplines & Emphasizes a Lifecourse Approach

nature aging

Resource

A single-cell atlas of the aging mouse ovary

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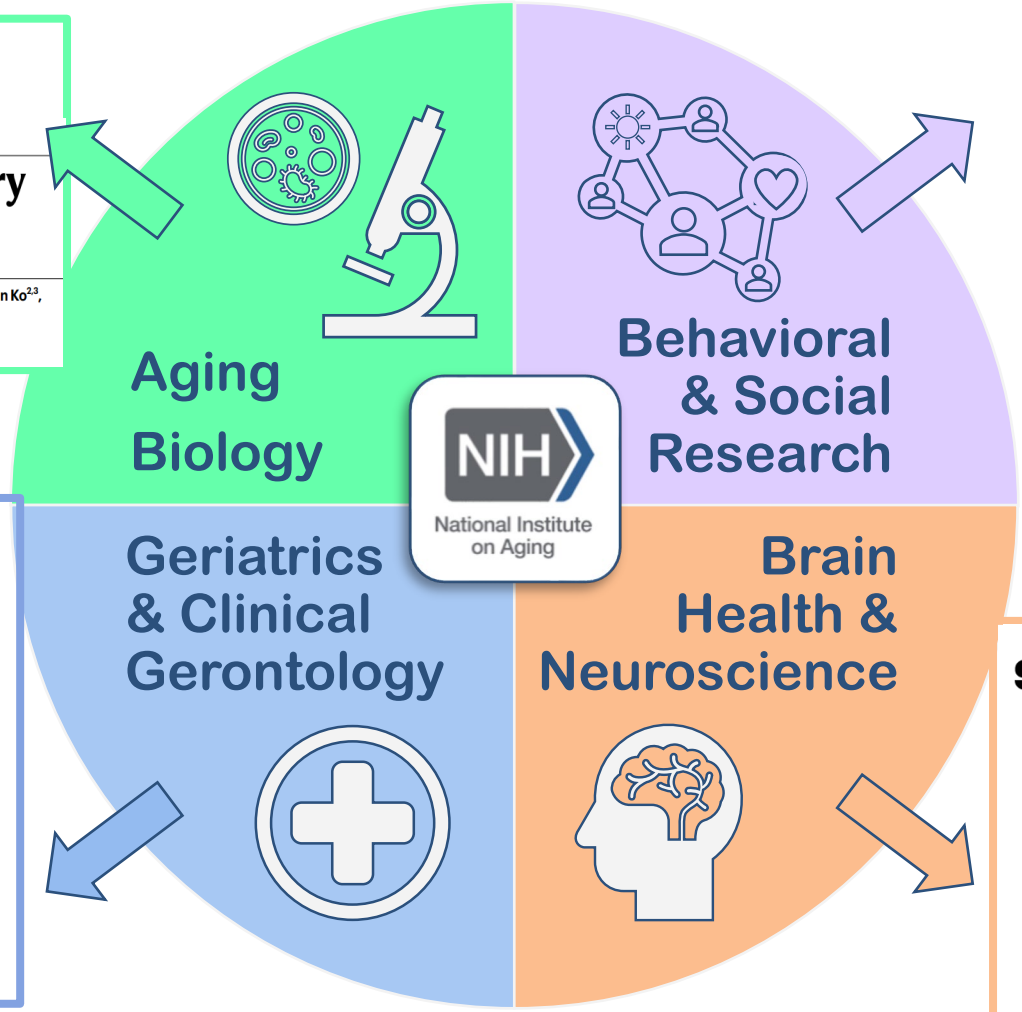
José V. V. Isola[1,8], Sarah R. Ocañas[2,3,4,5,8], Chase R. Hubbart[1], Sunghwan Ko[2,3], Samim Ali Mondal[1], Jessica D. Hense[1,6], Hannah N. C. Carter[7], Augusto Schneider[6], Susan Kovats[7], José Alberola-Ila[7], Willard M. Freeman[2,5] & Michael B. Stout[1,5]



MIDUS
Midlife in the United States
A National Study of Health & Well-Being

Since its initiation in 1995, MIDUS has generated **1,750+ publications in 450+ scientific journals** and is used by **26,000+ researchers worldwide**.

SWAN
Study of Women's Health Across the Nation

Now in its 30th year, the multi-ethnic SWAN cohort has illuminated **differences in the experience of menopause across women of diverse racial and ethnic backgrounds**.

scientific reports

OPEN

Menopause impacts human brain structure, connectivity, energy metabolism, and amyloid-beta deposition

Lisa Mosconi[1,2,3], Valentina Berti[4], Jonathan Dyke[2], Eva Schelbaum[1], Steven Jett[1], Lacey Loughlin[1], Grace Jang[1], Aneela Rahman[1], Hollie Hristov[1], Silky Pahlajani[1,2], Randolph Andrews[5], Dawn Matthews[5], Orli Etingin[6], Christine Ganzer[7], Mony de Leon[2], Richard Isaacson[1] & Roberta Diaz Brinton[8]

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Isola, J.V.V., et al. (2024). *Nat Aging, 4*(1):145-162.

swanstudy.org

midus.wisc.edu

Mosconi L., et al. (2021). Sci Rep, 11(1):10867.

The Study of Women Across the Nation (SWAN)

- The Study of Women Across the Nation (SWAN) is a large, multiethnic, ongoing NIA study which enrolled premenopausal women in 1996—1997.
- SWAN has followed participants regularly since then to study menopausal and post-menopausal symptoms and health conditions.

Swan
Study of Women's Health Across the Nation

https://www.swanstudy.org/

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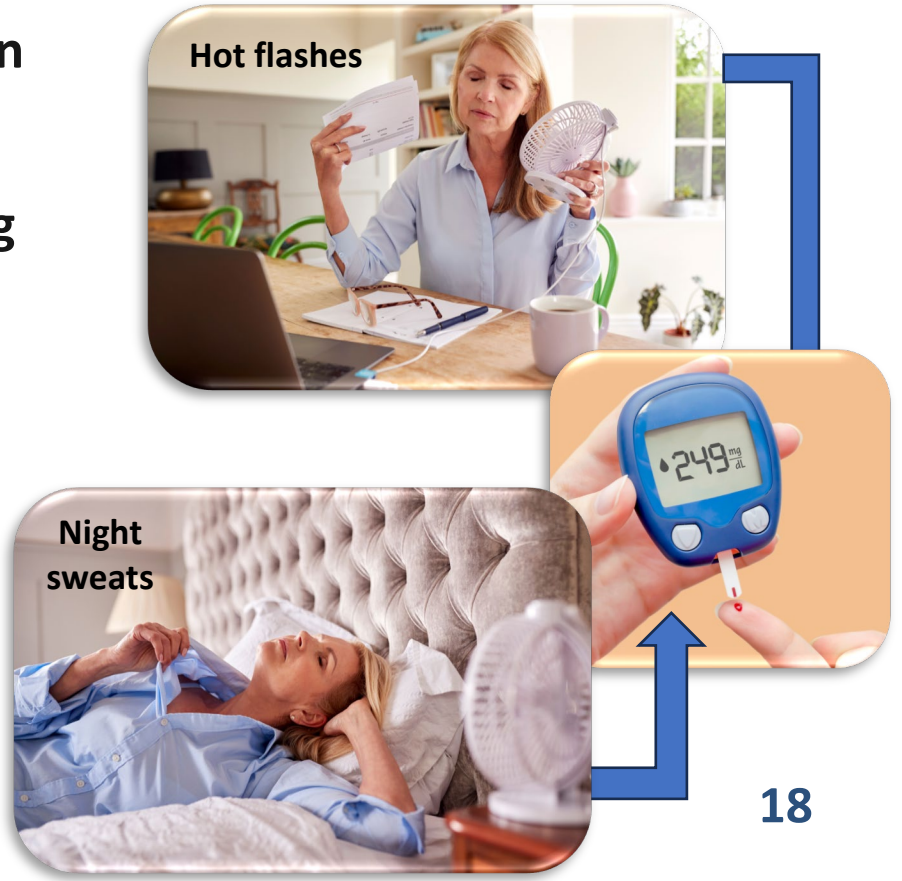
Frequent and Persistent Menopause Symptoms Associated with 50% Increased Risk of Diabetes

- Hot flashes and night sweats, also known as **vasomotor symptoms (VMS)**, are commonly experienced across the menopausal transition.
- Using data from SWAN, **investigators assessed associations between VMS symptoms and diabetes risk among 2700+ women**.
- **Women with either frequent VMS or severe, long-term VMS during and after the menopause transition had a 50% increased risk of developing diabetes** compared with those with no VMS or consistently low VMS.
- These findings suggest that **VMS may impact women's cardiometabolic health**, particularly when VMS are experienced frequently or persistently over time.

Swan
Study of Women's Health Across the Nation



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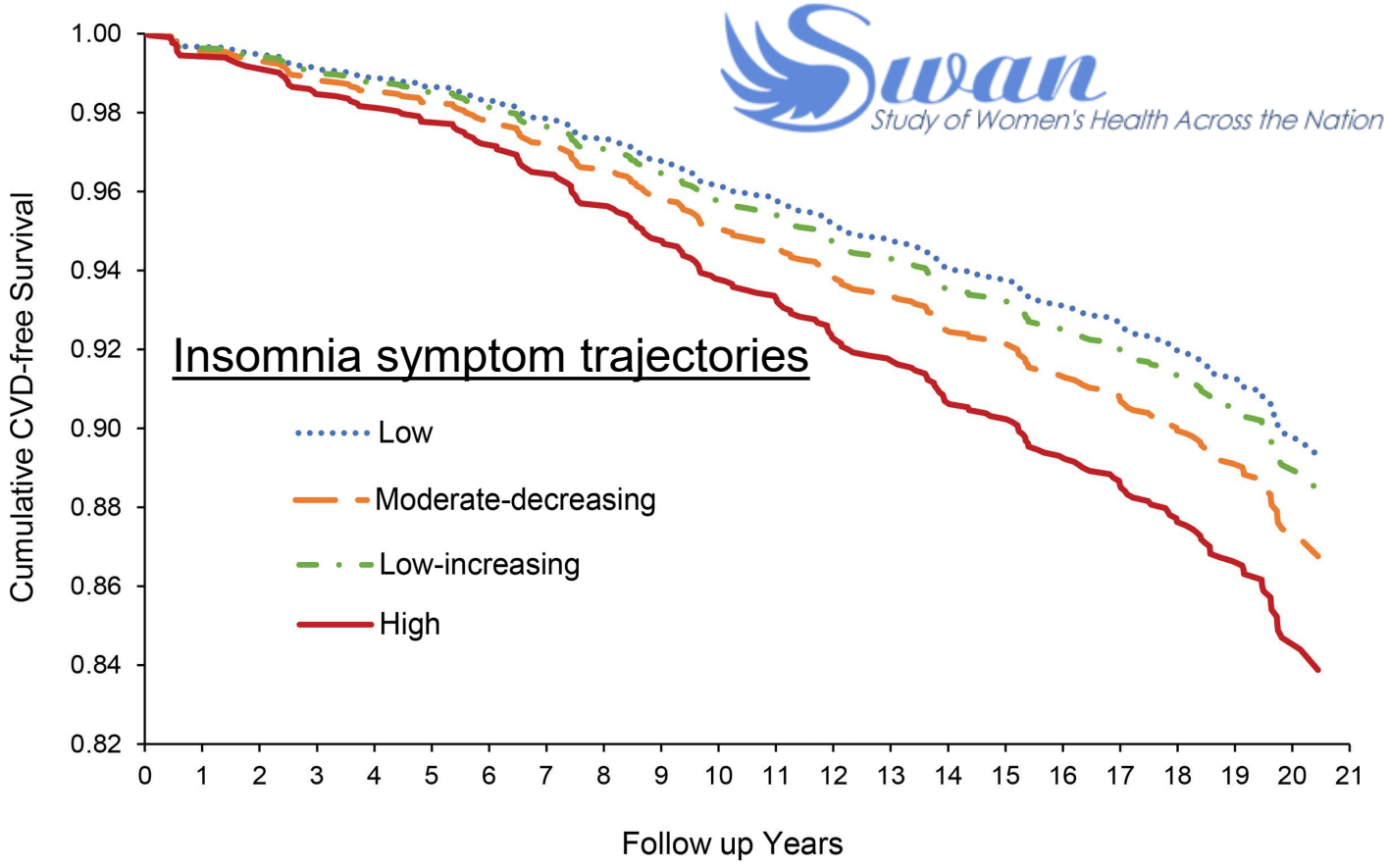
Hedderson, M. M., et al. (2024).
JAMA Network Open, 7(10):e2443546.

Persistent Insomnia Among Midlife Women Predicts Higher Cardiovascular Disease Risk

- **Almost a quarter (23%) of SWAN participants reported persistent insomnia symptoms** over 20 years, which was associated with a **70% increased risk of later life cardiovascular events** (e.g. heart attacks, strokes, and heart failure)

- These results point to the **importance of sleep in understanding and addressing cardiovascular health risks in women during midlife and beyond**.



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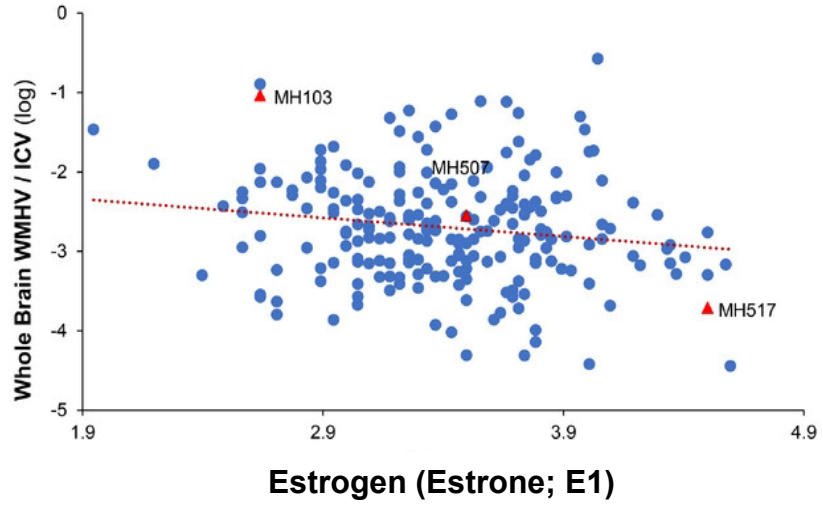
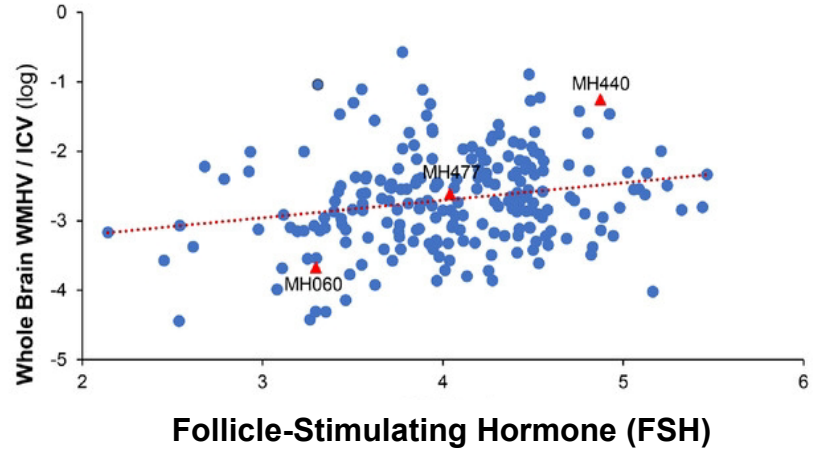
Thurston, R. C., et al. (2024). *Circulation*, *149*(7), 545–555.

Levels of Female Reproductive Hormones Predict White Matter Hyperintensities in Postmenopausal Women

- High white matter hyperintensity volume (WMHV) is indicative of poor cerebrovascular health, as well as future cognitive decline, dementia, and mortality risk.
- Researchers evaluated a link between hormone concentrations and **MRI-measured WMHV** in 200+ midlife women, the majority of whom were postmenopausal. Results showed that:
  - **Higher estrone (E1)** was associated with **lower brain WMHV.**
  - **Higher Follicle Stimulating Hormone** was associated with **higher brain WMHV**.
- Results suggest that reproductive hormones may be critical determinants of midlife women's brain health.





Thurston, R. C., et al. (2024). *Alz Dement, 20*(9):6161-6169.

Managing Menopause Symptoms With MyMenoplan

- MyMenoplan is **an online tool that helps women develop a personalized menopause management plan** in conjunction with their health care provider.

- NIA-funded investigators with the **Study of Women's Health Across the Lifespan (SWAN)** and the **Menopause Strategies: Finding Lasting Answers for Symptoms and Health (MsFLASH) Study** collaborated to launch MyMenoplan.

- Features include **trackers for hot flashes, mood, sleep, and other symptoms**; as well as research-backed information about **a wide variety of menopause treatments**, from antidepressants to exercise to cognitive behavioral therapy.

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MyMenoplan.org

Upcoming Events

NIA Summits & Workshops

February 10, 2026: Using the Understanding Cohort Effects on Stroke, VCID, and Cognition After Major Epidemiologic Transitions – CMS Linked Data

The LINKAGE Webinar Series will present "Using the Understanding Cohort Effects on Stroke, VCID, and Cognition After Major Epidemiologic Transitions – CMS Linked Data"

March 9, 2026: Using the National Dementia Workforce Study – CMS Linked Data

The LINKAGE Webinar Series will present "Using the National Dementia Workforce Study – CMS Linked Data" on.

https://www.nia.nih.gov/news/workshops

Thank you!

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www.nia.nih.gov