

ALZHEIMER'S SCIENCE NEWS

SPRING 2024



MODIFIED DRUG COULD REDUCE ALZHEIMER'S RISK FOLLOWING TRAUMATIC BRAIN INJURY

A study funded by Alzheimer's Disease Research has identified a drug that shows great promise in treating repetitive mild traumatic brain injuries and could reduce risk for later neurodegeneration leading to dementia.

Traumatic brain injuries, or TBIs, result from a physical injury to the brain or a violent blow to the head. TBIs cause headaches, nausea and vomiting, dizziness, and fainting. People who experience them can be up to five times more likely to develop dementia.

Even when these injuries leave no outward marks, they can still cause damage that results in brain shrinkage patterns similar to Alzheimer's.

The researchers in this study modified a drug that targets mitochondria, where energy is packaged for cells to use. The repurposed version of the drug, called MP201, may restore the function of damaged mitochondria. This can help reduce inflammation and increase cell repair functions.



Scientists are researching a drug that could reduce the risk of Alzheimer's.

MP201 could become a staple to reduce the risk of neurodegenerative diseases following TBI, including diseases related to dementia.

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PRESIDENT'S CORNER

I'm excited about the progress being made against Alzheimer's. Your generosity fuels critical discoveries that bring hope to people with this mind-stealing disease, as well as those who love them.

As you'll see in this newsletter, scientists we fund have developed a potential way to reduce the risk for Alzheimer's following a traumatic brain injury. They're also discovering ways to help prevent this disease by using the body's own exercise-induced hormones. Plus, on page 3 you'll find helpful stress-management tips for caregivers.

Thank you for supporting breakthrough research and helping provide mind-saving information to the public. Together, we will stop this disease!

Stacy Pagos Haller

EXERCISE-INDUCED HORMONE COULD TREAT ALZHEIMER'S DISEASE

Researchers at Massachusetts General Hospital have made important advances in understanding how exercise may impact Alzheimer's disease.

Alzheimer's Disease Research grantee Eunhee Kim, PhD, was part of a team that used a 3D brain cell culture model to explore the effects of irisin, a hormone produced during exercise, on Alzheimer's-related amyloid beta plaque.

The team found that irisin prompted astrocytes, a type of brain cell, to increase the production of neprilysin, an enzyme that breaks down amyloid beta. They also observed a remarkable reduction in amyloid beta levels with irisin treatment.

Previous studies in mouse models have shown that irisin injected into the blood stream can make its way to the brain, which means it could be useful as a therapeutic approach.

By understanding how irisin influences neprilysin production and reduces amyloid beta, the researchers will open the door to a potential target pathway for preventing and treating Alzheimer's.

This study could lead to innovative irisin-based treatments to help combat this heartbreaking disease.



Exercise might delay cognitive decline by reducing proteins in the brain linked to Alzheimer's.

RESEARCHER SPOTLIGHT: ARIEL GILAD, PHD

Alzheimer's disease changes how different regions of the brain connect and communicate. These changes can vary from person to person, calling for individualized therapies.

With funding from Alzheimer's Disease Research, Ariel Gilad, PhD, of Hebrew University of Jerusalem, is working to identify brain-wide changes in neural networks that contribute to Alzheimer's. He will then use this knowledge to better inform deep brain stimulation therapies, where



Ariel Gilad, PhD

electrodes are implanted into specific brain areas for stimulation.

Using lab models of Alzheimer's, Dr. Gilad and his colleagues will record brain network activity during cognitive tasks. They will follow these patterns throughout each subject's lifespan to learn more about how individual traits affect these networks. Ultimately, this could help them target regions for deep brain stimulation and lead to individualized treatments for this disease.

TIPS FOR MANAGING CAREGIVER STRESS

Caring for a loved one with Alzheimer's is demanding, both emotionally and physically. Without regular support, caregivers risk exhaustion, illness, and depression.

Warning Signs

It's important to recognize the warning signs of stress, including:

- Feelings of denial, depression, irritability, anger, and anxiety
- Physical symptoms such as trouble sleeping, exhaustion, and health problems

Reducing Stress

Some ways to reduce stress include:

- Take time out to relax
- Engage in an enjoyable pastime
- Do one thing at a time
- Keep a list of tasks
- Write in a journal
- Maintain a sense of humor
- Eat right
- Exercise
- Get proper rest



Caregivers should give themselves credit for doing the best they can in very trying circumstances.

Learning more about Alzheimer's can help you cope more effectively. For example:

- Learn to recognize the things that can be changed and accept those that cannot
- Identify sources of help
- Let go of unrealistic expectations
- Adapt to your loved one's changing needs
- Understand that a positive attitude can change a bad day into a better one

To learn more, visit [brightfocus.org/managing-stress](https://www.brightfocus.org/managing-stress).

Zoom In on Dementia & Alzheimer's

Sign up for our FREE monthly virtual discussion series with experts to keep you informed about the latest findings—from treatments and genetics to risk reduction, supplements, and more! You can also ask questions during a live Q&A. All sessions are recorded and available to watch on demand.

To register and catch up on previous episodes, visit:
brightfocus.org/ADRzoom

HELP FIGHT ALZHEIMER'S THROUGH A WILL OR BEQUEST

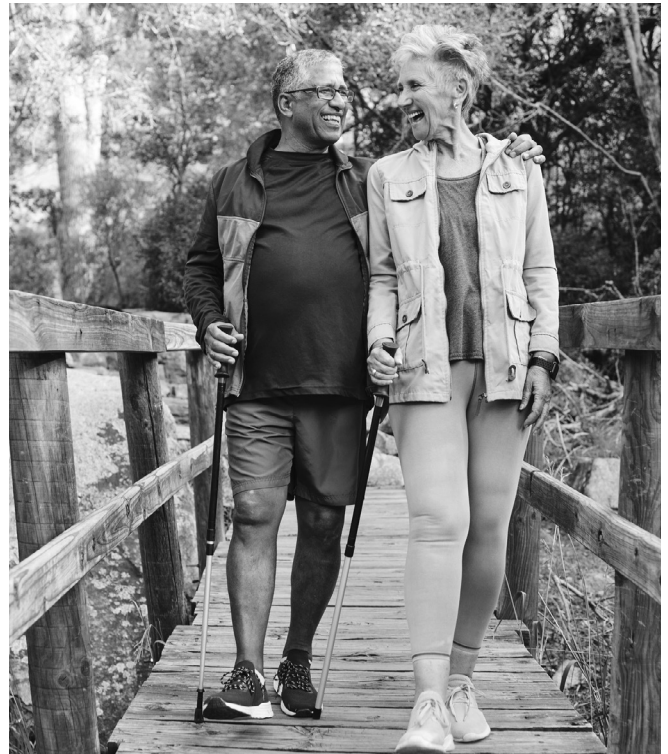
Would you like to help defeat Alzheimer's while benefiting from estate tax savings? If so, consider supporting Alzheimer's Disease Research through a will or bequest.

It's one of the easiest gifts to make. With the help of an advisor, you can include language in your will or trust specifying that a gift be made to our organization as part of your estate plan.

A bequest can be made in several ways. You can:

- Gift a specific dollar amount or asset
- Gift a percentage of your estate
- Gift from the balance or residue of your estate
- Designate certain assets, such as appreciated securities

To learn more about wills or bequests, contact Charlie Thomas, Planned Giving Manager, at 301-556-9362 or plannedgiving@brightfocus.org.



Leave a lasting legacy to be remembered
through a will or bequest.



brightfocus.org/stopAD

Please share this newsletter with someone you know who might be interested in learning about some of the latest advancements in research to diagnose, prevent, treat, and cure Alzheimer's disease.

This newsletter is published by Alzheimer's Disease Research, a program of BrightFocus Foundation.

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