

AU InforMed

Volume 21 Number 4 (Issue 330)

Friday, July 14, 2023

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WORLD BRAIN DAY

Brain Health and Disability



Key Inforbits

- What is World Brain Day?
- Alzheimer's Disease
- New Drugs in Alzheimer's Disease
- Mental Health
- New drugs in Alzheimer's and Depression
- Non-pharmacological treatment

World Brain Day, July 22nd

What is World Brain Day?¹⁻⁴

- World Brain Day was established by the World Federation of Neurology in 2014 in hopes to bring public awareness and promote advocacy related to brain health.
- World Brain Day is held on July 22nd every year.
- The theme for this year's World Brain Day is "Leave No One Behind", a focus on Brain Health and Disability.
- The goal of this day is to spread awareness, help prevent brain disabilities, encourage more access to health care resources for these disabilities, and provide more education and advocate for those living with brain disabilities. Brain disabilities would include disorders like Alzheimer's Disease, dementia, brain cancer, epilepsy and seizure disorders, mental disorders, Parkinson's Disease and movement disorders, along with disabilities caused by strokes or TIAs.



Alzheimer's Disease⁵⁻¹⁴

Alzheimer's Disease is the most common type of dementia that involves the parts of the brain that control language, thought, and memory. An estimated 6.7 million Americans age 65 and older are living with Alzheimer's as of 2023. This disease is progressive and begins with mild memory loss and may lead to the loss of ability to communicate and respond to the environment. The exact cause of this disease is currently unknown but there are different theories on whether or not there is a genetic or environmental connection. The common symptoms could include memory loss, aphasia (unable to speak or understand those that are speaking), apraxia (unable to carry out coordinated movements), agnosia (unable to identify something or someone), disorientation, impaired executive function, depression, psychotic symptoms like hallucinations or delusions, behavioral disturbances, or inability to care for yourself.

Did you know there is a new drug for Alzheimer's Disease?

- **What drug?** lecanemab (Leqembi)
- **What is their role/why are these different or important?**



<https://www.eisai.com/news/2022/news202285.ht>

As of July 6th, 2023, lecanemab (Leqembi) has received full FDA approval for use in those with mild cognitive impairment or in the mild dementia stage of Alzheimer's Disease. Lecanemab works by selectively binding and eliminating amyloid-beta aggregates that are believed to contribute to the neurodegenerative process of Alzheimer's Disease. The drug's manufacturer, Eisai, presented evidence from their phase 3 Clarity AD Trial showing that this medication can slow the mental decline of the patient by 27% in comparison to placebo in an 18-month period. Lecanemab works differently in

comparison to other monoclonal antibodies for Alzheimer's Disease, like aducanumab (Aduhelm). Lecanemab mainly targets A β protofibrils, while aducanumab and other monoclonal antibodies favor highly aggregated forms of A β . Lecanemab's side effects include infusion reactions, amyloid-related imaging abnormalities (ARIA) including ARIA-H (focusing on hemorrhages) and ARIA-E (focusing on edema/effusions), headaches and risk of falling. The approval of this medication comes with a black box warning for brain bleeding or swelling, and the FDA suggests using this medication with caution with those taking anticoagulants or have risk factors for intracranial hemorrhage. Lecanemab also causes fewer incidences of amyloid-related imaging abnormalities and hemorrhages in comparison to aducanumab. This is likely due to the different mechanisms of action for these drugs.

Ways to Prevent or Lower Your Risk of Alzheimer's Disease:

Control your blood pressure
Eat a healthy, balanced diet
Be active (at least 150 minutes/week of moderate-intensity exercise)
Avoid excessive drinking
Get enough sleep
Maintain an active social life (avoiding social isolation)
Learning to play a musical instrument

Control your blood sugar
Maintain a healthy weight
Quit smoking
Prevent or correct hearing loss
Reading
Treating your depression
Learning a new language

Mental Health¹⁵⁻²⁰



<https://scooneews.com/news/importance-of-mental-health-awareness-in-school/?noamp=mobile>

- **New drug options:**

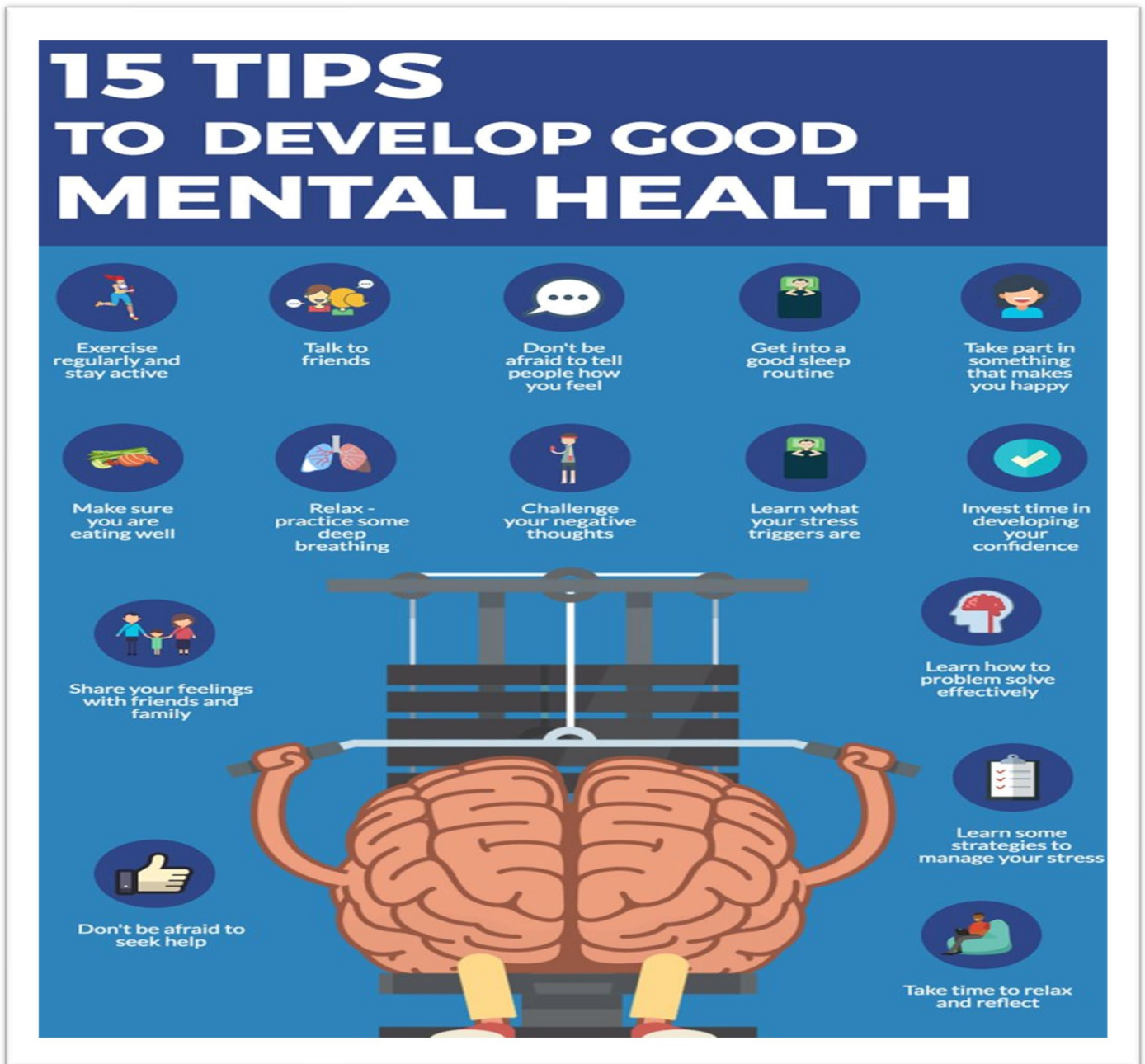
- Within the past year, a new combination called Auvelity (dextromethorphan and bupropion) was released. This is the first NMDA receptor antagonist for major depressive disorder. The NMDA antagonism of dextromethorphan helps modulate glutamate neurotransmission by affecting the inhibitory tone on interneurons and having a direct action on the postsynaptic NMDA receptor. The sigma-1 receptor agonism of dextromethorphan may help modulate glutamate and monoamine signaling. Bupropion is used to help extend the plasma concentrations of dextromethorphan. In the GEMINI and ASCEND study, Auvelity twice daily decreased the patients' depression rating scores and had significant symptom improvement by week 6 of use.
- Biogen and Sage are currently pursuing FDA approval for a new drug called zuranolone. It is a new 14-day treatment regimen for major depressive disorder and postpartum depression. Zuranolone is a new neuroactive steroid that acts as a positive allosteric modulator of GABA-A receptors. This drug specifically targets brain connections that regulate mood, arousal, behavior, and cognition.

- **Non-pharmacological treatment**

- Lifestyle factors: exercise, healthy eating, limiting or eliminating smoking and drinking alcohol
- A recent guideline on the acute phase of major depressive disorder discusses different nonpharmacologic therapy options that could be used as second-line therapy or add-on therapy to a patient's regimen. The nonpharmacologic therapy options that are available include psychotherapy, CAM (complementary and alternative medicine), St. John's Wort, and exercise. The different psychotherapy options include cognitive behavioral therapy, which includes cognitive therapy, rational emotive behavioral therapy, problem-solving therapy, integrative therapy, psychodynamic therapies, third-wave cognitive behavioral therapy (CBT), behavior therapy, behavior modification, and humanistic therapy.

- **New crisis hotline**
 - In 2022, a new crisis hotline was created to deliver support to anyone who is experiencing a crisis. Those in crisis can call or text **988** or chat online 24/7 at 988lifeline.org and be connected to a trained specialist who can aid in de-escalating situations and provide free, confidential support to people in suicidal crisis or emotional distress.

Tips to Develop Good Mental Health



<https://twitter.com/BelievePHQ/status/915305749152137216>



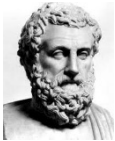
The last “dose” ...



FUN FACT: UP TO TWO THIRDS OF THE TOTAL WEIGHT OF A SHARK'S BRAIN IS DEDICATED TO SMELL. MAKE SURE TO TUNE IN FOR SHARK WEEK WITH JASON MOMOA STARTING ON JULY 23RD ON DISCOVERY!

“It is during our darkest moments that we must focus to see the light”

-Aristotle [384 to 322 BC; Greek philosopher]



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