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Alzheimer's Is Now a Leading Cause of Death

Analysis by Dr. Joseph Mercola | April 06, 2024

STORY AT-A-GLANCE

- Alzheimer's disease, a severe form of dementia, affected an estimated 6.7 million Americans in 2023, and deaths from Alzheimer's more than doubled between 2000 and 2019
- Previous U.S. data placed the number dying from Alzheimer's disease around 83,000 in 2010. By 2014, research suggested the true number was well over half a million per year — more than six times higher than previously thought. Today, 1 in 3 seniors dies with Alzheimer's or some other dementia, and the death toll exceeds that of breast- and prostate cancer combined
- Since there's no conventional cure, prevention is crucial if you want to avoid becoming a statistic. Two key strategies are lowering your linoleic acid (LA) intake and avoiding estrogen and estrogenic compounds
- Advances in diagnosis are being made. For example, researchers have created a blood test that predicts Alzheimer's with great accuracy. There's also a peanut butter smell test, and a free 15-minute at-home test called Self-Administered Gerocognitive Examination (SAGE) that can facilitate early diagnosis

Alzheimer's disease, a severe form of dementia, affected an estimated 6.7 million Americans in 2023.[1] It is not pretty to lose your mind, as many of you know from firsthand experience with relatives or friends. This devastating degenerative brain disease develops slowly over time and tends to be lethal in its final stages.

As a general guideline, tell-tale symptoms of Alzheimer's include a decline in memory along with a decline in at least one of the following cognitive abilities:

1. Speaking coherently or understanding spoken or written language
2. Recognizing or identifying objects
3. Ability to perform motor activities
4. Abstract thinking and ability to make sound judgments
5. Planning and carrying out complex tasks

Alzheimer's Deaths Outpace Breast- and Prostate Cancer

Deaths from Alzheimer's more than doubled between 2000 and 2019.[2] In 2014, research suggested the actual death toll may be well over half a million per year,[3] which would put Alzheimer's in the top three killer diseases in the U.S., right behind heart disease and cancer.

Officially, it's the sixth-leading cause of death in the United States as of 2019,[4] and with a total of 121,499 recorded deaths that year, Alzheimer's claimed more lives than breast- and prostate cancer combined.[5]

However, it seems the 2014 study was onto something, because while Alzheimer's was listed on 121,499 death certificates in 2019, underlying causes like AD are typically left off. As explained by Bryan James, an epidemiologist at the Rush Alzheimer's Disease Center in Chicago and lead author of the 2014 study:[6]

> *"Death certificates are well known to underreport deaths from Alzheimer's and other types of dementia. The more immediate causes of death, such as pneumonia or heart attack, are usually listed, and the underlying causes of death are usually left off."*

Alzheimer Death Toll May Be Six Times Higher Than Previously Thought

The 2014 study, published in the journal Neurology,[7] followed 2,566 seniors aged 65 and over for eight years. In that time, close to one-quarter of them developed Alzheimer's. Four hundred of them died from the disease.

Using statistic extrapolation, the researchers came up with an estimated annual Alzheimer's death toll in excess of 503,000 — more than six times higher than previous estimates. According to Dallas Anderson,[8] an overseer of population studies relating to Alzheimer's and dementia at the National Institute on Aging (NIA):

> *"People who I think are knowledgeable about the death registration system in the U.S. would not be surprised that the official number is low, but it is somewhat of a surprise to see that kind of a difference ... It's just another reminder that Alzheimer's is really an important public health problem, and we need to work on it."*

Indeed, and since there's no conventional cure, the issue of prevention is crucial if you want to avoid becoming a statistic here. There are also few if any successful medical treatments available once Alzheimer's sets in.

For example, memantine (sold under the brand name Namenda) is approved for moderate to severe cases of Alzheimer's, but doctors also prescribe it off-label for mild cases. Unfortunately, the drug has been found to be useless for mild to moderate Alzheimer's.

A 2011 analysis of data[9] from three clinical trials showed that patients with mild Alzheimer's who took Namenda had no improvement in mental function or their ability to perform everyday tasks when compared to placebo. Even among moderate to severe Alzheimer's patients, for which the drug is approved to treat, the researchers found only "meager" improvements.

Other go-to drugs for the treatment of Alzheimer's include cholinesterase inhibitor drugs such as Aricept, Exelon and Reminyl. These too may do more harm than good as they provoke slower heart rates, significantly increasing your chances of getting a permanent pacemaker. They also raise your risk of hip fracture.

So, what can you do? The good news is that two key prevention strategies (which virtually no one is talking about) are relatively easy to implement, namely minimizing your linoleic acid (LA) consumption and estrogen exposure.

High Serotonin Levels Linked to Dementia

In September 2023, research[10,11] linked high serotonin to dementia. Disturbingly, media outlets completely misrepresented the findings by confusing serotonin with serotonin transporter (SERT). What the researchers found was that having low levels of SERT is linked to problems with memory and thinking skills, which can eventually lead to dementia or Alzheimer's disease.

Media, however, reported that "low serotonin" was linked to dementia, which is the converse of what they actually found. SERT is like a "clean-up crew" in the brain. It helps remove excess serotonin, which is a chemical messenger in the brain. When there's not enough SERT around to do its job, serotonin levels outside of brain cells can rise too high. This excess serotonin floating around can cause trouble and contribute to problems with memory and thinking.

So, when the study talks about "low SERT" being associated with cognitive problems, it really means that having less of this clean-up crew leads to higher levels of serotonin outside brain cells. And higher levels of serotonin outside brain cells are linked to dementia. As noted by bioenergetic researcher Georgi Dinkov:[12]

> *"STUDY: high serotonin linked to dementia; MEDIA: low serotonin linked to dementia.[13,14] Once again, a level of misreporting that I am much more included to ascribe to malice than incompetence simply because most of the popular*

press outlets covering a specific scientific study get the study authors to proof-read the press article before publishing.

So, for patently false press articles like that to appear is most likely due to an attempt to preserve the status of serotonin as the 'happy hormone,' as well as to delay/prevent the avalanche of lawsuit for iatrogenic dementia from all people taking SSRI and other serotonergic drugs.

In summary, the actual study found that low levels of the serotonin transporter (SERT) — the sodium-dependent protein responsible for uptake and deactivation of serotonin — were associated with cognitive impairment (which usually develops into full-blown dementia/Alzheimer with age).

In other words, higher extracellular serotonin levels were associated with dementia. The press articles state the exact opposite — that lower levels of the 'happiness' hormone serotonin were associated with dementia ...

[The] study also suggests the prevention of dementia/Alzheimer may be as simple as eating some extra salt (providing the required sodium co-factor of SERT), or using a serotonin antagonist.

Air ionizers, which also tend to decrease extracellular serotonin may be helpful too and can provide benefit 24×7 without any conscious effort on behalf of the person/people using them."

How to Address Elevated Serotonin

Considering that high extracellular serotonin can contribute to dementia, you'd be wise to keep your serotonin level as low as possible. One way to do that is by increasing **GABA**, which is available as a supplement. GABA increases the degradation rate of serotonin, so you cannot have high levels of both.

> **“People with high GABA/low serotonin are typically calm and gregarious, whereas GABA deficiency and elevated serotonin is associated with anxiety, fear, depression, short temper, phobias, impulsiveness and disorganization.”**

People who have high GABA levels usually have low serotonin, and vice-versa. People with high GABA/low serotonin are typically calm and gregarious, whereas GABA deficiency and elevated serotonin is associated with anxiety, fear, depression, short temper, phobias, impulsiveness and disorganization.

Another important strategy is to address your gut health. When complex carbs that aren’t digested in your stomach travel down to your intestine, they end up feeding gram-negative bacteria that produce endotoxin, also known as LPS (lipopolysaccharide).

Endotoxin catalyzes a series of metabolic reactions that converts tryptophan in your gut to serotonin. So, to inhibit serotonin production in your gut (which is where most of the serotonin in your body is produced), you want to prevent endotoxin production, which means you need to balance your gut microbiome. Here are a few strategies to do that:

Pre- and probiotics — Eat prebiotic foods such as onions, garlic, leeks, asparagus and bananas, and probiotic fermented foods like yogurt, kefir, kimchi and sauerkraut. Alternatively, take a probiotic supplement. Beneficial bacteria such as Bifidobacteria and Lactobacillus, and beneficial yeast like Saccharomyces boulardii, can all help rein in the endotoxin production through competitive inhibition.

Limit sugar and refined carbohydrates — High intake of sugar and refined carbohydrates can feed harmful bacteria in the gut and promote inflammation, potentially increasing endotoxin production.

Avoid resistant starches — Other carbs to avoid would be resistant starches from legumes, beans, lentils, most grains, green bananas, sushi rice and pasta. Oatmeal

can also cause trouble for many. You'll know it's incompatible with you if you get gas and/or constipation, or if it slows your digestion. Oatmeal is also high in linoleic acid (LA), which is why I avoid it.

If you have small intestinal bacterial overgrowth (SIBO), you may also need to avoid starches like rice and cooked potatoes, as you have inhibited ability to break down the starch into glucose. As a result, these kinds of starches may impede your recovery.

Eat plenty of antioxidant-rich whole foods — Foods rich in antioxidants, such as berries, leafy greens, and other colorful fruits and vegetables, can help reduce oxidative stress and inflammation in the gut, thereby supporting gut health and reducing endotoxin production.

Choose healthy fats such as those found in avocados, coconut oil, organic grass fed butter and ghee to help reduce gut inflammation.

Optimize your omega-3 level — Consuming omega-3 fats from sources like fatty fish (salmon, mackerel, sardines) may help reduce gut inflammation and promote a healthy gut microbiome.

Prolonged Estrogen Exposure Linked to Alzheimer's Severity

Other research,[15] published in October 2021, linked prolonged estrogen exposure to Alzheimer's severity in women. This is particularly notable considering nearly two-thirds of Alzheimer's patients are women.[16] Estrogen is also a known carcinogen.[17] As reported by Dinkov:[18]

> *"The study is pretty straightforward in its claim that longer exposure to endogenous estrogen was associated with exacerbated/higher biomarkers of Alzheimer disease (AD), as well as lower glucose metabolism and smaller brain volume in women.*

Another interesting link the study mentions, which is relevant for both sexes, is that lower testosterone levels are also associated with exacerbated/higher biomarkers of AD. The earlier puberty and earlier menopause associations also mean shorter exposure to progesterone. As such, the study can be summarized with the simple statement that estrogen is detrimental while progesterone and testosterone are protective against AD."

There are two key ways to lower your estrogen:

1. Avoiding estrogen replacement therapy and minimizing exposure to estrogenic compounds found in hundreds of consumer products.[19] Opt for natural and organic personal care products, including makeup, skin care, and hair care items, to reduce exposure to synthetic chemicals like parabens and phthalates, which have estrogenic properties.

   Ditto for household cleaning products, laundry detergents and air fresheners, many of which contain chemicals with estrogenic properties. Swap them out for natural, nontoxic alternatives or make your own cleaning solutions using vinegar, baking soda and essential oils instead.

   Also minimize your use of plastic containers and food packaging, which can leach estrogenic compounds into food and beverages. Instead, opt for glass or stainless steel containers for food storage and water bottles.

2. Taking natural progesterone. Most formulations are not effective as they are oral or transdermal. Ideally, pure progesterone powder should be dissolved in a high-quality vitamin E with MCT oil and rubbed on your gums. Typical doses are 25 to 50 mg once or twice a day.

In my view, what mature women really need are progesterone and pregnenolone, not estrogen. In practical terms, you'll want to make sure your levels of progesterone and pregnenolone are within healthy limits (the levels you'd have in your 20s), which is around 30 mg a day.

Mitochondrial Dysfunction Is at the Heart of Alzheimer's

Nearly a quarter century ago, the late Ray Peat, a biologist and "father" of bioenergetic medicine, argued that Alzheimer's and aging are two examples of what happens when you have poor mitochondrial function, resulting in declining energy production. He presented this hypothesis in two extensive articles.[20,21]

In the second article, he specifically addressed the role of estrogen and polyunsaturated fats (PUFAs) like LA, as well as the protective influence of progesterone. He wrote, in part:[22]

> *"Estrogen stimulates cell division, but can also increase the rate of cell death. Unsaturated fatty acids can also stimulate or kill … Besides increasing the free fatty acid concentration, estrogen possibly depresses the level of cholesterol, both of which are changes seen in the senile brain.*
>
> *Estrogen causes massive alterations of extracellular matrix, and seems to promote dissolution of microtubules (Nemetschek-Gannsler), as calcium does. Unsaturated fats increase calcium uptake by at least some brain cells (H. Katsuki and S. Okuda, 1995.)*
>
> *Unsaturated fats, like estrogen, increase the permeability of blood vessels. The unsaturated fat causes edema of the brain, inhibits choline uptake, blocking acetylcholine production.*
>
> *Progesterone is a nerve growth factor, produced by glial cells (oligodendrocytes). It promotes the production of myelin, protects against seizures, and protects cells against free radicals. It protects before conception, during gestation, during growth and puberty, and during aging. It promotes regeneration. Its production is blocked by stress, lipid peroxidation, and an excess of estrogen and iron ...*
>
> *A 'deficiency' of polyunsaturated fatty acids leads to altered rates of cellular regeneration and differentiation, a larger brain at birth, improved function of the*

immune system, decreased inflammation, decreased mortality from endotoxin poisoning, lower susceptibility to lipid peroxidation, increased basal metabolic rate and respiration, increased thyroid function, later puberty and decreases other signs of estrogen dominance.

When dietary PUFA are not available, the body produces a small amount of unsaturated fatty acid (Mead acids), but these do not activate cell systems in the same way that plant-derived PUFAs do, and they are the precursors for an entirely different group of prostaglandins."

Interestingly, a near-identical argument was laid out in an October 2020 article by Vijay Pande, Ph.D., and Kristen Fortney, titled "The Cure for Aging Might be the Cure for Alzheimer's:"[23]

"What we are only now beginning to understand is that the diseases that ultimately kill us are inseparable from the aging process itself. Aging is the root cause. This means that studying these diseases without taking aging into account could be dangerously misleading ... and worst of all, impede real progress ...

The biggest risk factor for Alzheimer's isn't your APOE status; it's your age. People in their twenties don't get Alzheimer's. But after you hit the age of 65, your risk of Alzheimer's doubles every five years, with your risk reaching nearly one out of three by the time you're 85.

What if going after this one biggest risk factor is the best vector of attack? Maybe even the only way to truly address it? This isn't about the vanity of staying younger, about holding on to your good looks or your ability to run an 8 minute mile. It's about the only concrete possibility we have to cure these diseases."

How to Optimize Your Mitochondrial Function Through Diet

To optimize your mitochondrial function, you need to address your diet, as the foods you eat are the substrate from which cellular energy is produced. **LA wreaks havoc** with your cellular machinery and needs to be limited to 5 grams or less per day.

To reach that goal, you need to ditch all processed foods, fast foods and most restaurant foods, as they're all loaded with or cooked in LA-rich seed oils. Focus on whole and minimally processed foods.

Your macronutrient ratios also matter. As explained in previous articles, including "**A Surprising Reason Why You May Need More Carbs in Your Diet**," ideally, you want to burn glucose in the electron transport chain of your mitochondria, and to ensure that, you need to eat enough healthy carbs, and get no more than 35% or so of your daily calories from fat.

If your fat intake is too high, you'll prevent glucose from being burned in the mitochondria and force it into glycolysis instead, which is a highly inefficient way to produce energy.

Advances Made in Alzheimer's Diagnosis

While there are few options available once Alzheimer's sets in, advances in diagnosis are being made. Early diagnosis may at least give you a chance to implement strategies that might slow down its progression, or in an ideal scenario perhaps even reverse it to some degree. Diagnostic tools include:

- A blood test that measures the patterns of 10 specific lipids associated with the plaques found in the brains of people with Alzheimer's disease. These 10 lipids are highly predictive of whether or not you will suffer cognitive impairment.[24]
- A blood test that measures "a molecular precursor in the blood that can cause proteins to irregularly fold and clump in the brain, ultimately forming amyloid beta plaques."[25]

- A peanut butter smell test — In tests, patients diagnosed with early stage Alzheimer's experienced a significant difference in their ability to detect the smell of peanut butter between their right and left nostrils.

  The left nostril tends to be impaired in those with Alzheimer's, whereas those with other kinds of dementia experience either no differences in odor detection between the two nostrils, or the right nostril is worse for detecting the smell compared to the left one.

- A 15-minute at-home test called SAGE, which stands for Self-Administered Gerocognitive Examination, can help you assess your risk of Alzheimer's and dementia.[26] If taken at intervals over time, it can also serve as an early warning, if your scores begin to decline. The test can also be used to monitor the condition in those already diagnosed with Alzheimer's. You can download the **SAGE test** from the Ohio State University's website.[27]

Additional Alzheimer's Prevention Guidelines

In addition to optimizing your mitochondrial function and avoiding things that raise your serotonin and estrogen, other helpful prevention strategies include:

Avoid gluten and casein (primarily wheat and pasteurized dairy, but not dairy fat, such as butter) — Research shows that your blood-brain barrier is negatively affected by gluten. Gluten also makes your gut more permeable, which allows proteins to get into your bloodstream, where they don't belong. That then sensitizes your immune system and promotes inflammation and autoimmunity, both of which play a role in the development of Alzheimer's.

Optimize your gut flora by regularly eating fermented foods or taking a high potency and high-quality probiotic supplement.

Make sure you're getting enough animal-based omega-3 fats, such as krill oil. High intake of the omega-3 fats EPA and DHA help by preventing cell damage caused by

Alzheimer's disease, thereby slowing down its progression and lowering your risk of developing the disorder.

Optimize your vitamin D level with safe sun exposure — Strong links between low levels of vitamin D in Alzheimer's patients and poor outcomes on cognitive tests have been revealed. In one 2023 study, **vitamin D reduced dementia risk by 40%**.

Keep your fasting insulin levels below 3.

Eat a nutritious diet, rich in folate — Vegetables, without question, are your best form of folate, and we should all eat plenty of fresh raw veggies every day. Avoid supplements like folic acid, which is the inferior synthetic version of folate.

Avoid and eliminate mercury and aluminum from your body — Dental amalgam fillings, which are 50% mercury by weight, are one of the major sources of heavy metal toxicity. Make sure you use a biological dentist to have your amalgams removed. Sources of aluminum include antiperspirants, non-stick cookware and vaccine adjuvants.

Make sure your iron isn't elevated and donate blood if it is — Studies show that **iron accumulations in the brain tend to concentrate in areas most affected by Alzheimer's**, namely the frontal cortex and hippocampus. Magnetic resonance imaging tests have also revealed elevated iron in brains affected by Alzheimer's.

Exercise regularly — It's been suggested that exercise can trigger a change in the way the amyloid precursor protein is metabolized,[28] thus slowing down the onset and progression of Alzheimer's. In one study, **women with the highest cardiovascular fitness had an 88% lower risk of dementia** than those with moderate fitness.

Eat blueberries and other antioxidant-rich foods — Wild blueberries, which have high anthocyanin and antioxidant content, are known to guard against neurological diseases.

Challenge your mind daily — Mental stimulation, especially learning something new, such as learning to play an instrument or a new language, is associated with a decreased risk of Alzheimer's.

Avoid anticholinergics and statin drugs — Drugs that block acetylcholine, a nervous system neurotransmitter, have been shown to increase your risk of dementia. These drugs include certain nighttime pain relievers, antihistamines, sleep aids, certain antidepressants, medications to control incontinence, and certain narcotic pain relievers.

Statin drugs are particularly problematic because they suppress the synthesis of cholesterol, deplete your brain of CoQ10 and neurotransmitter precursors, and prevent adequate delivery of essential fatty acids and fat-soluble antioxidants to your brain by inhibiting the production of the indispensable carrier biomolecule known as low-density lipoprotein.

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