

Advancements in Alzheimer's Disease Detection and Risk Assessment

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By Dr. Mercola

This is part of a much longer article which has been posted on the club's website, in the Vetrin Healthline section. It has been written by Dr Mercola for the US market.

Opinions expressed here are those of the writer and should are not necessarily endorsed by the club or the editor of Vetrin.

VW

Mercola often advises supplements - which I don't swallow. Eat fresh unprocessed fruit and veg with a vengeance! However, his advice on nutrition is generally good in his many dementia articles.

John Bell

RECENT Alzheimer's research suggests pre-clinical signs of Alzheimer's disease may be evident as early as 20 years before the disease actually sets in, allowing for much earlier intervention.

By the time your memory begins to noticeably deteriorate, about 40-50 percent of your brain cells have already been damaged or destroyed.

Early detection is all the more crucial considering estimates suggest Alzheimer's diagnoses may triple by 2050, reaching nearly 14 million in the US, and 115 million worldwide.

My Alzheimer's prevention strategies

Because there are so few treatments for Alzheimer's, and no available cure, you're really left with just *one* solid solution, and that is to prevent it from happening to you in the first place.

Diet is part and parcel of a successful prevention plan, and my [optimized nutrition plan](#) can set you on the right path in this regard. Remember that swapping out processed fare for whole foods is an important if not KEY part of the equation, as GE sugar, corn, and grains are now pervasive in most processed foods sold in the US.

In terms of your diet and other lifestyle factors, the following suggestions may be among the most important for Alzheimer's prevention:

Real food

Eat real food. Avoid as many processed foods in boxes and cans as you can.

You, your spouse, or someone you employ needs to spend time in the kitchen to

prepare your own food. Avoid eating foods from industrial kitchens that can put any one of tens of thousands of chemicals into your food.

Avoid sugar and refined fructose. Ideally, you'll want to keep your sugar levels to a minimum and your total fructose below 25 grams per day, or as low as 15 grams per day if you have insulin/leptin resistance or any related disorders.

Gluten

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 pro-biotic supplement.

Increase consumption of all healthy fats, including animal-based omega-

Healthy fats

Healthy fats your brain needs for optimal function include organically-raised grass-fed meats, [coconut oil](#), olives and olive oil, avocado, nuts, organic pastured egg yolks, and butter made from raw grass-fed milk.

High intake of the omega-3 fats EPA and DHA are also helpful for preventing cell damage caused by Alzheimer's disease, thereby slowing down its progression, and lowering your risk of developing the disorder.

Reduce your overall calorie consumption, and/or intermittently fast.

Ketones are mobilized when you replace carbs with coconut oil and other sources of healthy fats. Intermittent fasting is a powerful tool to jumpstart your body into remembering how to burn fat and repair the insulin/leptin resistance that is a primary contributing factor for Alzheimer's.

Magnesium

Improve your magnesium levels. Preliminary research strongly suggests a decrease in Alzheimer symptoms with increased levels of magnesium in the brain. Unfortunately most magnesium supplements do not pass the blood brain levels, but a new one, magnesium threonate, appears to and holds some promise for the future for treating this condition and may be superior to other forms.

Eat a nutritious diet, rich in folate.

Vegetables

Vegetables, without question, are your best form of folate, and we should all eat plenty of fresh raw veggies every day.

Exercise regularly.

It's been suggested that exercise can trigger a change in the way the amyloid precursor protein is metabolized, thus, slowing down the onset and progression of Alzheimer's. Exercise also increases levels of the protein PGC-1alpha. Research has shown that people with Alzheimer's have less PGC-1alpha in their brains and cells that contain more of the protein produce less of the toxic amyloid protein associated with Alzheimer's. I would strongly recommend reviewing the Peak Fitness Technique for my specific recommendations.

Optimize your vitamin D levels with safe sun exposure. Sufficient vitamin D is imperative for proper functioning of your immune system to combat inflammation that is also associated with Alzheimer's.

Avoid and eliminate mercury from your body.

Dental amalgam fillings, which are 50 percent mercury by weight, are one of the major sources of heavy metal toxicity. However, you should be healthy prior to having them removed. Once you have adjusted to following the diet described in my optimized nutrition plan, you can follow the mercury detox protocol and then find a biological dentist to have your amalgams removed.

Avoid and eliminate aluminum from your body. Sources of aluminum include antiperspirants, non-stick cookware, [vaccine adjuvants](#), etc. For tips on how to detox aluminum, please see my article, "First Case Study to Show Direct Link between Alzheimer's and Aluminum Toxicity."

Flu vaccinations

Avoid flu vaccinations as most contain both mercury and aluminium, well-known neurotoxic and immunotoxic agents.

Avoid anti-cholinergics and statin drugs. Drugs that block acetylcholine, a nervous system neurotransmitter, have been shown to increase your risk of dementia. These drugs include certain night-time 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 coenzyme Q10, vitamin K2, 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 bio-molecule known as low-density lipoprotein.

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. Researchers suspect that mental challenge helps to build up your brain, making it less susceptible to the lesions associated with Alzheimer's disease.

(Ends article as used in Vetrin, April 2017 //)

Original article by Dr Mercola continues:

As reported by *Time Magazine*:[4](#)

"For 18 years, Kumar Rajan, associate professor of internal medicine at Rush University Medical Center, and his colleagues followed 2,125 elderly people with an average age of 73 and who did not [have] dementia.

Every three years, the researchers gave the volunteers mental skills tests, and then compared these results over time.

When they looked at the group that went on to receive an Alzheimer's diagnosis, they found that these people showed lower scores on their tests throughout the study period.

In fact, their scores steadily declined with each test. For each unit that the scores dropped on the cognitive tests, the risk of future Alzheimer's increased by 85 percent."

Self-Administered Test May Predict Your Risk for Dementia

Previous research found similar correlations, which led to the development of the Self-Administered Gerocognitive Examination (SAGE) test. It's a 15-minute at-home test developed by Douglas Scharre, M.D., of the Division of Cognitive Neurology at Ohio State University's Wexner Medical Center.

You can download the [SAGE test](#) from the University's website.

According to Dr. Scharre, this simple test correlates very well to more comprehensive cognitive tests, and is an excellent way to get an early assessment of your cognitive function. If taken at intervals over time, it can also serve as an early warning, if your scores begin to decline.

Brain scans and various biomarkers may also one day be used to detect deterioration associated with Alzheimer's.

Blood Proteins and Other Biomarkers May Allow for Earlier Diagnosis of Alzheimer's

According to recent research,[5](#),[6](#) long before clear signs of Alzheimer's develop, brain proteins called lysosomal proteins can be detected in a patient's blood.

Lysosomal proteins help remove material from damaged nerve cells, and elevations in these proteins appear to be predictive of Alzheimer's up to 10 years before the disease develops. According to lead author Dr. Edward Goetzl:

"These proteins are in very tiny nerve cell-derived blood particles called exosomes. Abnormal levels of the proteins may be useful [signals] that could help us study early treatments to limit or reverse the damage to brain cells and even prevent the development of the full-blown disease.

The results also show us that there are major abnormalities in how these proteins function in brain cells, which could potentially provide a new target for treatments."

Another study,[7](#) published last year, identified a set of 10 blood-based biomarkers for Alzheimer's.

Using these biomarkers, the researchers claim to be able to predict the disease within a two to three-year timeframe with over 90 percent accuracy, concluding that: *"This biomarker panel, reflecting cell membrane integrity, may be sensitive to early neurodegeneration of preclinical Alzheimer's disease."*

Brain Scans and Eye Tests May Also Reveal Future Alzheimer's Risk

According to Dr. Daniel Kraft, MD,[8,9](#) a Stanford and Harvard trained physician, inventor, entrepreneur, and faculty chair for the Medicine and Exponential Medicine program at Singularity University:

"We're on the cusp of having imaging modality so you can pick up the plaques in a patient's brain 10 or 20 years before they're showing any clinical signs of Alzheimer's.

We'll be able to give them interventions, whether that's mind games, or exercise, or other therapeutics that fits under not just personalized medicine but this idea of precision medicine to participatory medicine."

Using PET scans with a radioactive tracer, researchers have demonstrated they can detect the accumulation of beta-amyloid plaque in the brain associated with Alzheimer's.[10](#) According to Murali Doraiswamy, M.D., a professor of psychiatry and director of the neurocognitive disorders program at Duke University:

"Our research found that healthy adults and those with mild memory loss who have a positive scan for these plaques have a much faster rate of decline on memory, language, and reasoning over three years."

Interestingly, researchers have found that beta-amyloid plaques also accumulate in the retina, and this buildup closely matches the buildup found in the brain. As reported by CNN[11](#) last year:

"Based on that finding, the research team developed a noninvasive test to check the retina for the telltale beta amyloid plaques. They're now conducting a clinical trial to see if the test can identify patients who are starting to develop Alzheimer's but don't show symptoms yet..."

A reliable eye test 'would be a very important contribution,' says Maria Carrillo, the Vice-President of Medical and Scientific Relations at the Alzheimer's Association.

'People tend to go to the ophthalmologist more frequently as we age. If you could add a quick test to see if neurogenic pathology is going on the brain, it would be really helpful.'"

Can Alzheimer's Be Prevented?

Some medical professionals have raised questions about the psychological impact of learning you're on your way toward developing Alzheimer's, saying that having that knowledge may be counterproductive unless or until there's an effective treatment.

What they fail to realize is that while there's no pharmaceutical cure, you do have a significant degree of control over the situation if you make the appropriate diet and lifestyle corrections. So getting a 20-year early warning could likely make a tremendous difference, provided patients are given accurate diet and lifestyle instructions.

Two key instructions are:

Avoid processed foods of all kinds, as they contain a number of ingredients harmful to your brain, including refined sugar, processed fructose, grains (particularly gluten), genetically engineered (GE) ingredients, and pesticides like glyphosate (an herbicide thought to be *worse* than DDT, and [DDT has already been linked to the development of Alzheimer's](#))

Optimize your gut flora by avoiding processed foods (sugar, GE ingredients, pesticides and various food additives all discourage healthy bacteria in your gut), antibiotics and antibacterial products, fluoridated and chlorinated water, and by regularly eating traditionally fermented and cultured foods, along with a high quality probiotic if needed

Dr. David Perlmutter, a board-certified neurologist and a Fellow of the American College of Nutrition (FACN) has explored these important concepts in his books, [Grain Brain](#), and [Brain Maker: The Power of Gut Microbes to Heal and Protect Your Brain for Life](#).

Both of them are excellent handbooks on how to take control of your health and prevent and/or treat many diseases that are considered "incurable" from the conventional point of view, including Alzheimer's disease. From his research, Dr. Perlmutter has concluded that Alzheimer's disease is primarily predicated on lifestyle choices, and that *it is preventable*—a fact that very few health professionals are talking about.

"We interact with our genome every moment of our lives, and we can do so very, very positively," Dr. Perlmutter says. *"Keeping your blood sugar low is very positive in terms of allowing the genes to express reduced inflammation, which increase the production of life-giving antioxidants. So that's rule number one: You can change your genetic destiny. Rule number two: you can change your genetic destiny to grow new brain cells, specifically in the hippocampus... Your brain's memory center regenerates. You are constantly growing new brain cells into your 50s, 60s, 80s, and 90s – throughout your lifetime – through a process called neurogenesis. That said, these two ideas come together because you can turn on your genes through lifestyle choices that enhance neurogenesis and that enhance regrowth of cells and expansion of your brain's memory*

center. This was proven by researchers recently. They demonstrated that there are factors under our control that can make that happen."

How to Regrow Brain Cells

Lifestyle strategies that promote neurogenesis and regrowth of brain cells include the following. All of these strategies target a specific gene pathway called brain-derived neurotrophic factor (BDNF), which promotes brain cell growth and connectivity as demonstrated on MRI scans.

Exercise. In one year-long study, individuals who engaged in exercise were actually growing and expanding the brain's memory center one to two percent per year, where typically that center would have continued to decline in size.

Reducing overall calorie consumption

Reducing carbohydrate consumption

Increasing healthy fat consumption. Coconut oil is ideal, as it contains 66 percent medium-chain triglycerides (MCT)—a primary source of [ketone bodies](#), which is the preferred fuel for your brain. There's even evidence suggesting that ketone bodies may help *restore and renew* neurons and nerve function in your brain, even after damage has set in. Therapeutic levels of MCTs have been studied at 20 grams per day, which is equivalent to just over two tablespoons. [Intermittent fasting](#) also boosts ketone production

Increasing your [omega-3 fat intake](#) and reducing consumption of damaged omega-6 fats (think processed vegetable oils) in order to balance your omega-3 to omega-6 ratio. I prefer krill oil to fish oil here, as krill oil also contains [astaxanthin](#), which appears to be particularly beneficial for brain health. It belongs to the class of carotenoids, and is very "focused" on reducing free radical-mediated damage to fat, and your brain is 60 or 70 percent fat

Alzheimer's—A Slow-Acting Form of Mad Cow Disease?

Mounting research also shows there's a compelling link between a particular kind of brain protein and neurodegenerative diseases such as Alzheimer's, Parkinson's, and Lou Gehrig's disease. This protein, called TDP-43, behaves like toxic and infectious proteins known as prions, which are responsible for the brain destruction that occurs in [Mad Cow and Chronic Wasting Disease](#); [12](#) two types of bovine spongiform encephalopathy (BSE). As explained in *Scientific American*: [13](#)

"Prions are misshapen yet durable versions of proteins normally present in nerve cells that cause like proteins to misfold and clump together, starting a chain reaction that eventually consumes entire brain regions. In the past 15 years scientists have learned that such a process may be at work not only in mad cow and other exotic diseases but also in major neurodegenerative disorders...."

According to research [14](#) published in 2011, TDP-43 pathology is detected in 25-50 percent of Alzheimer's patients, particularly in those with hippocampal sclerosis, characterized by selective loss of neurons in the hippocampus, which is associated with memory loss. Research presented at the 2014 Alzheimer's

Association International Conference (AAIC) also revealed Alzheimer's patients with TDP-43 were 10 times more likely to have been cognitively impaired at death than those without it.[15,16](#)

The question is, how do you end up with TDP-43? The common denominator between Mad Cow and Chronic Wasting Disease[17](#) is forcing natural herbivores to eat animal parts—a more or less routine practice in the factory farm model—so the possibility has been raised that humans might get infected with TDP-43 via contaminated meats...

A 2005 study[18](#) published in the journal *Medical Hypotheses*, titled: "Thinking the unthinkable: Alzheimer's, Creutzfeldt-Jakob and Mad Cow disease: the age-related reemergence of virulent, foodborne, bovine tuberculosis or losing your mind for the sake of a shake or burger," states:

*"In the opinion of experts, ample justification exists for considering a similar pathogenesis for Alzheimer's, Creutzfeldt-Jakob and the other spongiform encephalopathies such as Mad Cow disease. In fact, **Creutzfeldt-Jakob and Alzheimer's often coexist and at this point are thought to differ merely by time-dependent physical changes.** A recent study links up to 13 percent of all 'Alzheimer's' victims as really having Creutzfeldt-Jakob disease."* [Emphasis mine]

The researchers also note that bovine tuberculosis serves as a vector for human Mad Cow Disease (aka Creutzfeldt-Jakob disease). Bovine tuberculosis is one of the most prevalent disease threats in American CAFOs, and the researchers quote USDA data suggesting that anywhere from 20-40 percent of American dairy herds are infected at any given time. The evidence is certainly suggestive, and from my perspective, it's one more reason to avoid all meats from livestock raised in confined animal feeding operations (CAFOs). And remember, meat sold in grocery stores and served in restaurants are from CAFO animals unless specifically labelled as grass-fed and organic.

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