

DEMENTIA - A DEVASTATING EPIDEMIC

Dementia is not a specific disease. It's an overall term that describes a group of symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer's Disease accounts for 60 to 80 percent of cases. Vascular Dementia, which occurs after a stroke, is the second most common dementia type. But there are many other conditions that can cause symptoms of dementia, including some that are reversible, such as thyroid problems and vitamin deficiencies.

Dementia is often incorrectly referred to as "senility" or "senile dementia," which reflects the formerly widespread but incorrect belief that serious mental decline is a normal part of aging.

Memory loss and other symptoms of dementia

While **symptoms of dementia can vary greatly**, at least two of the following core mental functions must be significantly impaired to be considered dementia:

- Memory
- Communication and language
- Ability to focus and pay attention
- Reasoning and judgment
- Visual perception

People with dementia may have problems with short-term memory, keeping track of a purse or wallet, paying bills, planning and preparing meals, remembering appointments or traveling out of the neighborhood. Many dementias are progressive, meaning symptoms start out slowly and gradually get worse.

Dementia is caused by damage to brain cells. This damage interferes with the ability of brain cells to communicate with each other. When brain cells cannot communicate normally, thinking, behavior and feelings can be affected.

The brain has many distinct regions, each of which is responsible for different functions (for example, memory, judgment and movement). When cells in a particular region are damaged, that region cannot carry out its functions normally.

Different types of dementia are associated with particular types of brain cell damage in particular regions of the brain. For example, in Alzheimer's disease, high levels of certain proteins (amyloid) inside and outside brain cells make it hard for brain cells to stay healthy and to communicate with each other. The brain region called the hippocampus is the center of learning and memory in the brain, and the brain cells in this region are often the first to be damaged. That's why memory loss is often one of the earliest symptoms of Alzheimer's. While most changes in the brain that cause dementia are permanent and worsen over time, thinking and memory problems caused by the following conditions may improve when the condition is treated or addressed:

- Depression
- Medication side effects
- Excess use of alcohol
- Thyroid problems
- Vitamin deficiencies

Dementia is the fastest growing epidemic facing us right now. The numbers of cases is predicted to triple in the next 15-20 years and overwhelm our healthcare system unless some major interventions are started now.

Just like all other chronic diseases, all forms of dementia are mostly lifestyle related, even if you have a genetic predisposition (which only involves 5% of cases anyway). 90% of Alzheimer's cases can be prevented. Right now, after the age of 65, 10% of the population has dementia. Every decade thereafter, the percentage doubles, especially Alzheimer's dementia. At 85, more than 50% of the population has some form of dementia. Women are affected to a greater degree than men (by 2/3rds) for as yet unclear reasons although hormones are thought to play a role. Women in their 60s are twice as likely to develop Alzheimer's dementia than breast cancer. Minorities, specifically Hispanics and African Americans are 2-3x more likely to develop dementia than the rest of the population. Some minority communities have a staggering 50% of their communities affected by dementia.

Dementia is also now referred to as Type 3 diabetes. Blood sugar deregulation has a huge impact on development and progression of all forms of dementia. Brain cells, especially neurons, use glucose as fuel. They need a steady flow of glucose for normal function. When excessive amounts of glucose are present, the receptors for glucose start to malfunction and internalize. Too much sugar overwhelms the system. In addition, high glucose levels result in high insulin secretion. High insulin levels down regulate an enzyme called Insulin Degrading Enzyme (IDE). As its name suggests, it breaks down insulin but it also breaks down amyloid, a protein that is normally produced in the brain. It is thought to be a protective protein, which is produced in response to some inflammatory process like metal exposure, abnormal sugar levels, elevated cholesterol levels... If it builds up too much in the brain, Alzheimer's Disease develops. Amyloid is normally cleared by IDE while we sleep. This is partly why good quality sleep is so important for good health including brain health. So high blood sugar is problematic on many levels.

Although many lifestyle changes help, healthy eating habits are by far the most important. Without question, the more plants you eat and the less animal products you eat, the better your chances of not getting, delaying or in some cases reversing dementia. Meat (including chicken and fish) pose the greatest increased risk (50%!) followed by eggs and then dairy. Whereas increasing fruit and vegetable intake is associated with a proportional decreased risk. Plenty of studies show how animal products significantly increase the risk of dementia and more plant-based diets are protective. Not one study has ever shown that animal products are even remotely protective.

TOP BRAIN NOURISHING FOODS

- Avocados
- Beans
- Blueberries
- Broccoli
- Coffee
 - One study indicated that those who consumed 3-5 cups of coffee a day had a 65% decrease in dementia. However all the benefits of coffee are negated by adding dairy and/or sweeteners. Plant-based milks like soy or almond are fine.
- Dark Chocolate
 - But not chocolates that have dairy or sweeteners though. Dark chocolate is full of flavonoids, antioxidants and minerals, which increase dopamine and serotonin in the brain. It also decreases the risk of strokes by relaxing arteries and decreasing inflammation
- Herbs
- Leafy Greens
- Mushrooms. All kinds including regular button and portobello.
- Nuts & Seeds (Chia, Sunflower, Flax). Great sources of Omega 3, Vitamin E and Selenium
- Omega-3 Fatty Acids (Algae)

- Spices like Turmeric
- Sweet Potato
- Tea, Herbal (mint, lemon balm, Hibiscus) and Green Tea
- Whole Grains like Quinoa

TOP 10 FOODS TO AVOID

1. Sugar
2. Processed Food - high in saturated fat and sugar
3. Processed Meat - Considered a class 1 carcinogen (same as tobacco, asbestos, and plutonium)
4. Red Meat - class 2a carcinogen (means it probably causes cancer)
5. Chicken - It's The main source of cholesterol in American diet. It has 3x more fat than protein
6. Butter and Margarine - high in saturated and trans fat
7. Fried and Fast Food - High in trans fat
8. Cheese - High in saturated fat
9. Pastries and Sweets - High in sugar. Causes inflammation.
10. Alcohol excess - neurotoxin and damages brain cells directly

Skip the supplements unless you are actually deficient. They do not work.

SOME TIPS AND TRICKS TO PREVENT DEMENTIA

1. Learn something new. Learn a language, a new hobby, a new subject, a new exercise regimen... Keep learning and engaging your brain.
2. Drink alcohol moderately. A little is OK but too much is toxic.
3. The best diet for brain health is full of whole foods like greens, legumes, berries, nuts, seeds and whole grains and is very low in animal fats, saturated fats and salt. Limit or eliminate all dairy, even yogurt.
4. Reduce stress. Chronic stress has a devastating impact on brain health. Meditate, practice mindfulness, join a religion... All helpful at combating stress.
5. Use your non-dominant hand. The left and right sides of your brain are responsible for different functions and by using you other hand for routine tasks, you force both sides to communicate better. This creates newer and stronger neural pathways.
6. Change your routines. Routines, if done often enough, become reflexes. By changing things up, you are forced to focus more. Something as simple as driving home a different way is an example of changing up a routine. Changing exercise routines is another.
7. Sleep better. Different stages of sleep are responsible for different aspects of both physical and psychological recovery. BDNF (Brain-Derived Neurotrophic Factor) and Insulin Degrading Enzyme (IDE) are both produced and function during sleep and are affected by poor sleep. They repair the brain at night. Both neurons and their supportive cells regenerate during sleep. Lack of sleep impacts on brain volume and function. People who sleep better spend less time in doctors' offices and have less chronic disease including dementia. Quantity (shoot for 7-8 hours) and quantity of sleep are equally important. Some tips to improve quality are:
 - a. Stop looking at any screen (TV, Kindle, Nook, Ipad, Smartphones... at least 1 hour before sleep. The light halts melatonin (the sleep hormone) production and disrupts sleep/wake cycles. Reading a paper book is fine though.
 - b. Do not eat or drink anything within 2-3 hours of sleep. First of all, it can cause reflux which disrupts sleep by causing heartburn. Second, the body needs to rest, not spend energy and resources digesting and moving food through your small and large intestine.
 - c. Do not exercise within 2 hours of sleep. The increased adrenaline disrupts sleep.

- d. No caffeine after noon. Caffeine does not only prevent you from getting to sleep, it also disrupts sleep/wake cycles, even if you fall asleep easily. Caffeine clears the body slowly. It's half life is 6-8 hours so even a small amount of caffeine-free coffee or tea (which still has 5-10 mg of caffeine which is enough to cause problems) at 3 pm will significantly impact on sleep quality.
 - e. Avoid alcohol. It's breakdown product acetaldehyde negatively affects sleep/wake cycles and it causes reflux. It also dehydrates the brain, which is what causes hangover headaches.
 - f. Avoid sleeping pills. They create artificial sleep with abnormal/poor sleep cycles.
 - g. Keep your sleeping schedule regular, even on weekends.
 - h. Keep the bedroom as dark and quiet as possible.
 - i. Keep the temperature cool. Under 68 degrees. Cooler temperatures improve sleep quality.
8. Less TV. Although some TV (½ hour or less) can stimulate the brain, the more you watch, the worse it impacts on brain function, not to mention the fact that it prevents you from doing other brain-healthy activities.
 9. Read.
 10. Recite, Repeat and Teach out loud. Activating the vocal center of the brain helps to reinforce memories. Teaching reinforces these memories as well and stimulates the brain.
 11. Play games. Board games, cards.... The positive impact of these games is improved exponentially when you play games with other people as well.
 12. Dance.