



The terms "dementia" and "Alzheimer's" are often used interchangeably, but they are not the same. Alzheimer's is a specific and common type of dementia, but there are many other types and causes of dementia.

"Dementia" is the loss of brain cells, either slowly or quickly, at any age. In "Alzheimer's Disease" or "Alzheimer's dementia" brain cells are killed by a specific protein named "tau". The accumulation of tau protein normally occurs with aging but can begin early in the 30's. Alzheimer's is diagnosed "by exclusion", meaning that it is assigned after other known causes are ruled out. A direct diagnosis requires a brain biopsy to look for the tau protein, which is rarely indicated.

"Senility" occurs with aging--a dementia without cause and without the label of disease since it's "normal". In "encephalopathy", the brain mis-functions without structural changes.

Loss of brain function is a great fear for all of us, which is why it is always material for comedy. Memory is what connects us to our heritage and legacy; without it we never existed (see separate article on Memory).

Brain Functions

"Mind" can be envisioned as the set of functions of the brain. If so, the mind is like a calculator with several buttons, where the "user" is our consciousness. The various functions, and their dys-functions, are illustrated (but not definitive) in the center table. These functions are used separately or in combination to perform tasks.

Assigning a particular function to a particular region of the brain has limits, since most functions require the coordination of several regions of the brain. Therefore it is rare for one dysfunction to occur in a totally isolated manner. For example, sleep disturbance, anxiety and stress intolerance often go hand-in-hand. Autism often involves several autonomic dysfunctions as well as the predominant social dysfunction.

Evaluating Dementia

By the time dementia has become evident, it has usually been developing for years. However, some types are rapid and others take decades.

Conventional testing for dementia involves an MRI of the brain, blood tests for thyroid, vitamin B12, and syphilis, Lyme, lead, and other causes based on age, history or other data. If the lab tests show a reversible cause, there can be some improvement, limited by the extent and duration of the problem.

The MRI focuses on structure and will often show shrinkage, or "atrophy" of various regions of the brain.

Atrophy correlates with loss of nerve cells.

Holistic medicine considers the gut-brain connection in the evaluation of dementia, and will look for food allergies, celiac disease, gut infections, and malabsorption of nutrients as potential factors. In addition, special labs offer more extensive testing for infections, toxins, genetics and chemistries that might uncover a reversible, hidden cause.

System	Symptom/ Dysfunction/ Aging
Attention/ Concentration	Fog, Distractibility, ADD
Impulse Control	Impulsive Acts, Irritability, ADHD
Mood (Set Point)	Anxiety, Depression, (as well as secondary to other conditions such as ADD)
Emotion	Instability Bipolar Loss of range Obsessions/Compulsions
Stress Adaptation	Intolerable emotions and/or inability to think with increased external and/or internal stressors
Perception	Certain Pain Syndromes Loss of Vision, Hearing, Proprioception Hallucinations
Memory	Loss of ability to retain and recall information from past experience (see separate article); several sub-types
Abstraction and Problem Solving	Inability to assess risk and safety, to drive, to adapt to new environments, to manage finances; to interpret (paranoia, delusions)
Language and Communication	Disability in formulating, sending, receiving and decoding signals through language, images and other means.
Social Function	Inability to respond to cues from others, to understand contexts, hierarchies, boundaries, humor
Autonomic Functions	Heart Rate, Blood Pressure Gastro-Intestinal Tract Temperature Regulation Fluid Regulation Hormones Sex Drive and Function Immune Functions
Sleep-Wake	While autonomic functions, these functions are under partial conscious control and are central to health
Breath Pattern	

Treating Dementia

Treating a reversible cause, such as Lyme or lead toxicity can be helpful if only to slow progression. Some pharmaceutical agents can help with mood, attention, impulsivity, and memory, but with limited effectiveness as well as side effects and cost.

Not long ago, it was believed that lost neurons are gone forever. However, recent data shows that there are regions of the brain that generate new neurons. These neurons can migrate throughout the brain. Certain agents (such as alcohol) are known to damage this area, and therefore not only kill neurons, but their ability to regenerate. However, there also are agents (some called Nerve Growth Factors) that promote brain and nerve cell healing and regeneration. Addressing lifestyle factors such as sleep, diet, exercise, stress management, and modalities such as acupuncture and biofeedback have a strong track record.

Preventing Dementia

Preventing dementia is better and cheaper than treatment, and requires "brain hygiene"-- taking care of the brain. It needs stimulation, rest, exercise, good nutrients, oxygen and an environment that is free of chemical and spiritual toxins.

IMPORTANT NOTES:

1. **This educational material may not be used to influence medical care without supervision by a licensed practitioner.**
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3. Dr. Cheikin's website has related articles such as "Memory", "Gut-Brain", "Neurotransmitters" and others.

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