

Understanding Alzheimer's

From *Alzheimer's: The Macrobiotic Approach*, IMI Press

By Edward Esko

The brain, heart, and small intestine are located along the body's central chakra line. They govern the generation and distribution of life energy in the upper, middle, and lower body. As modern medicine is now discovering, they are intertwined and interrelated. The health and function of any one of these chakra centers profoundly influences the health and function of all. When one is out of balance, all are affected.

Food is broken down and absorbed by the digestive system. Absorption takes place within the small intestine. Nutrients are absorbed into the bloodstream and distributed by the heart and circulatory system throughout the body; thus, oxygen, glucose, and other nutrients are provided to the brain and nervous system. Waste products are picked up and discharged from the body.

These systems are nourished from the outside by food. Food first comes into contact with the digestive tract, is digested, and then absorbed by the circulatory vessels. The digestive system is the first to encounter food from the outside world. Next is the circulatory system, and finally the nervous system and brain. Thus we see that, due to a poor diet, degenerative changes such as those in Parkinson's first appearing in the enteric nervous system.

Next to be affected is the circulatory system, for example by the buildup of plaque in the arteries and blood vessels. Last to be affected is the brain itself, located deep within the body at the antipode of the small intestine, the site of nutrient absorption.

Food -> intestine -> blood (circulatory) -> brain

The circulatory and nervous systems are both examples of fractal formation and patterning. Fractals are repeating patterns that self-duplicate from the largest forms in nature, such as galaxies, to the smallest, such as individual cells, and to all of the forms in-between. The circulatory and nervous systems are streaming fractals. They mirror the fractal patterns found in nature, including geological features like mountain ranges and river systems, as well as the structure of plants.

There are two key points in the health of these systems. The first, more yang aspect, is structural integrity—the neuron networks and blood vessels, from large down to small, need to be structurally sound and able to perform their functions without breaking down. That integrity must be maintained throughout life. The second, more yin aspect, is smooth and uninterrupted flow. Blood, in the case of the circulatory system, and nervous impulses in the case of the nervous system, must flow actively, smoothly, and without blockage or impediment. These yin and yang dimensions are maintained throughout life by diet and activity. Diet and activity impact these systems either negatively or positively, depending upon the quality of foods we consume and the type of movement and activity we pursue.

The nervous system functions like a spiral staircase. Spirals are perfect examples of fractal patterning. Impulses originate from the outside, for example from stimulation received through the five senses. These impulses move like a person at the top of the staircase descending step by step toward the ground, or the center of the spiral. Input from the peripheral nerves converges toward the central midbrain. Upon receipt and processing, signals are dispatched back out to the peripheral nerves for the appropriate response. When you touch a hot stove, for example, the sensation of heat is instantaneously transmitted to the midbrain, which signals the brain's motion centers to send the message to remove your finger. The response occurs instantaneously and without conscious involvement. In our spiral staircase model, it is the equivalent of someone descending to the bottom and then reversing direction and going back up the stairs. This in and out, yang and yin movement within a spiral is but one representation of a universally occurring pattern.

From the nervous system as a whole, we can project that fractal pattern out to the largest scale, so that we see a similar pattern in the formation of spiral galaxies. We can also project it down to the smallest scale, in the structure and function of each of the 86 billion individual neurons, or nerve cells, that comprise the human brain.

In each neuron, the more yang cell body receives input from the peripheral dendrites in the way the brain receives sensory input. Upon processing and integration by the yang nucleus, the signal is transmitted out along the axon cable to the dendrites of the next neuron in the chain, and so on across the length of the circuit. The fractal function of the nervous system is thus duplicated at the level of each individual neuron. Electrical signals carrying messages are continually transmitted in an incoming (yang) and outgoing (yin) pattern across the entire nervous system. In the condition known as Alzheimer's, this basic pattern is disrupted.

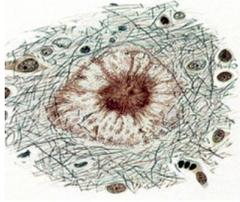
That disruption is due to degenerative changes that occur in the cell body of the neurons, as well as in the connecting cables, or axons. These changes progress as the disease escalates from preclinical to mild, from mild to moderate, and from moderate to severe.

1. *Amyloid beta plaques* – These more yang accumulations, sometimes known as senile plaques, are formed through a process that is similar to the formation of plaques in the blood vessels. Intake of meat and other animal foods high in protein and saturated fat is a primary cause. Amyloid plaques form between the neurons in the brain when amyloid proteins, which normally break down and are discharged, instead accumulate, clump together, and form hard plaques. The plaques clog the delicate circuitry and interfere with the normal signaling between neurons.

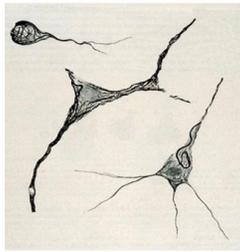
2. *Neurofibrillary tangles* – Structures known as microtubules support the flow of nutrients and molecules through the axons, or skeleton, between neurons.

A protein known as tau protein normally binds with the microtubules and stabilizes their structure, holding them together and keeping them intact. In Alzheimer's, the tau proteins detach from the microtubules (yin), causing the tubules to come apart, and the skeleton to disintegrate and collapse (yin.) Defective tau proteins then assemble to form tangles in the neuron that eventually lead to the death of the neuron. Strong yin refined carbohydrates and simple sugars, especially refined sugar (sucrose), are the primary cause of these yin symptoms.

Amyloid plaque



Neurofibrillary tangle



Amyloid plaques are yang; neurofibrillary tangles, leading to disassociation and collapse of neurons, are yin

Refined sugar is increasingly recognized as a risk factor in Alzheimer's. Like coffee, which can have beneficial effects, sugar is a product of the equatorial zones. However, unlike coffee, sugar is highly refined and processed. Plants that grow in these areas are strongly charged with earth's upward and expansive energy. However, in the case of sugar, the naturally yin sugarcane plant is "refined." In this process, minerals, fiber, and chlorophyll are extracted, and the end product is an extremely yin residue known as sucrose. Sucrose is a simple sugar as opposed to a complex sugar, or complex carbohydrate. Sucrose is made up of one molecule of glucose and one molecule of sucrose. It is the concentrated yin essence of the sugarcane plant. Sugar is then sold throughout the world in climates where sugarcane doesn't grow. Refined sugar is linked with many illnesses, notably the modern epidemic of obesity and diabetes, both of which are yin or expansive conditions.

In the case of Alzheimer's, the strongly yin energy of refined sugar promotes loosening and separation of the tau proteins that hold the microtubules together, leading to their collapse and to the formation of tangles. Studies link obesity and diabetes with increased incidence of Alzheimer's disease. Because of their predominately yin cause, neurofibrillary tangles initially form in the more yang hippocampus, the processing center for short term memory. From there they migrate outward and upward in a yin direction, eventually appearing in all regions of the brain, affecting long term memory and other cognitive functions.

At the same time, a high intake of meat and dairy food is linked with increased risk of dementia, while a diet high in whole grains, vegetables, fruits, and fish is associated with a lower risk:

In a 2006 study that followed more than 2,200 people in New York for four years, researchers found that people who adhered to a Mediterranean diet—full of whole grains, fruit and vegetables, fish and olive oil—had an up to 40% lower risk of dementia than people who ate more dairy products and meat. —*Nature*

Animal foods are at the opposite end of the spectrum from refined sugar. They are extremely dense, contracted, and solid. Red meat and eggs are especially yang, followed by cheese, poultry, and seafood. Animal foods that are highest in dense, saturated fat are especially linked to Alzheimer's. As we have studied, the health of the circulatory system is essential to brain health. Patients with Alzheimer's frequently suffer from diet-caused cardiovascular conditions such as beta amyloid deposits in brain arteries, hardening of the arteries (atherosclerosis), and mini-strokes.

Population studies support a connection between high consumption of red meat and other animal foods and the development of Alzheimer's. In a study entitled, "Using multicountry ecological and observational studies to determine dietary risk factors for Alzheimer's disease," published in the *Journal of the American College of Nutrition*, author William B. Grant states:

The most important risk factors seem to be linked to diet. When Japan made the nutrition transition from the traditional Japanese diet to the Western diet, AD rates rose from 1% in 1985 to 7% in 2008. Foods protective against AD include fruits, vegetables, grains, low-fat dairy products, legumes, and fish, whereas risk factors include meat, sweets, and high-fat dairy products...A new ecological study was conducted using AD prevalence from 10 countries (Brazil, Chile, Cuba, Egypt, India, Mongolia, Nigeria, Republic of Korea, Sri Lanka, and the United States) along with dietary supply data 5, 10, and 15 years before the prevalence data. Dietary supply of meat or animal products less milk 5 years before AD prevalence had the highest correlations with AD prevalence in this study. Thus, reducing meat consumption could significantly reduce the risk of AD as well as of several cancers, diabetes mellitus type 2, stroke, and, likely, chronic kidney disease...Diets high in grains, fruits, vegetables, and fish are associated with reduced risk of AD, but these factors cannot counter the effects of meat, eggs, and high-fat dairy.

A high-meat, high-sugar diet is a primary cause of neurodegenerative disease. Identifying diet as a primary cause offers hope that Alzheimer's and other forms of dementia are preventable. A whole food plant-based diet may be the most direct way to ensure that old people stay healthy so as to enjoy their most precious memories.