



Lecture 77:

Nutritional Approach To Common Neurological Disorders

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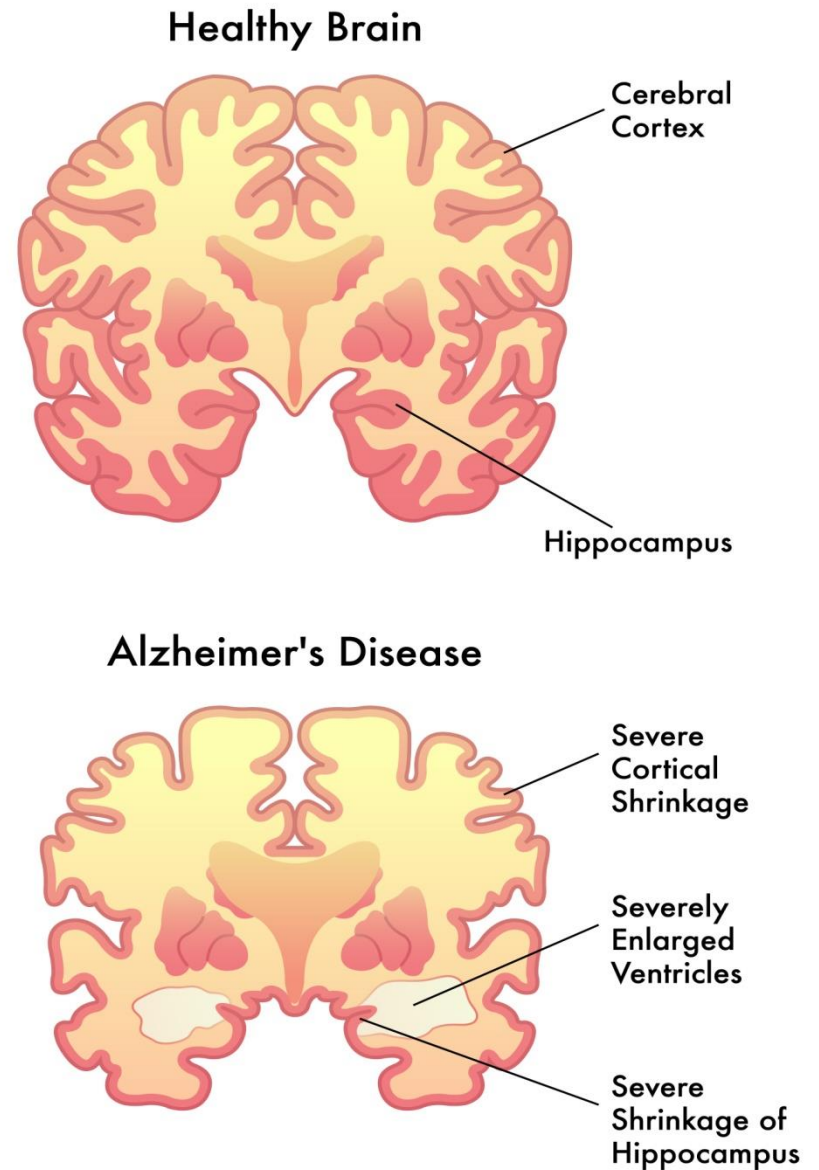
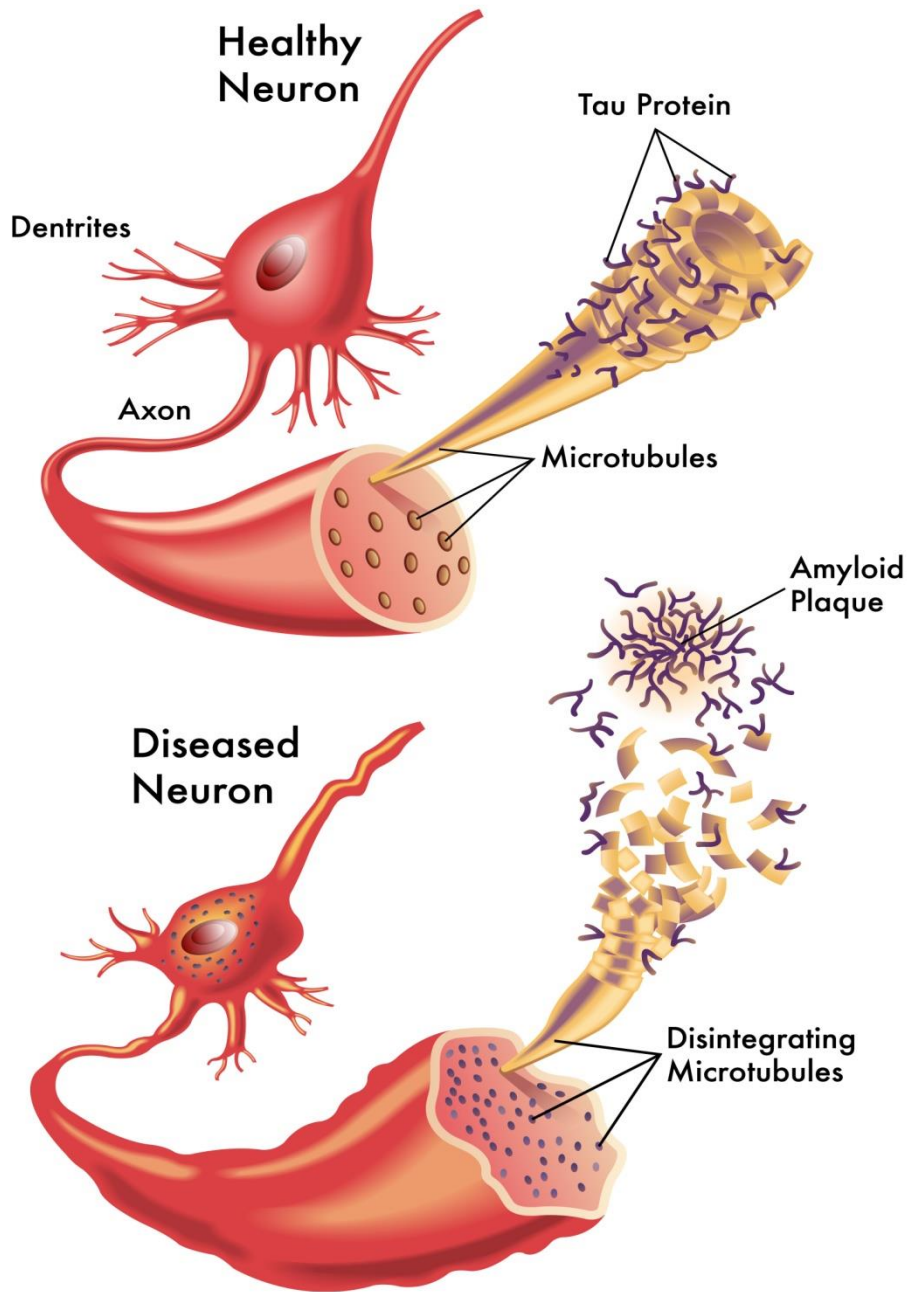
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The Three Common Disorders:

- **Alzheimer`s Disease.**
- **Migraine.**
- **Tension Headaches.**

Alzheimer`s Disease:

- Alzheimer`s disease (AD) is the most common cause of dementia.
- Dementia is a progressive mental disorder characterized by compromised cognition.
- **Cognitive functions** include memory, judgement, abstract thinking, and problem solving ability.



ALZHEIMER'S

TOP 10 EARLY SIGNS



MEMORY LOSS



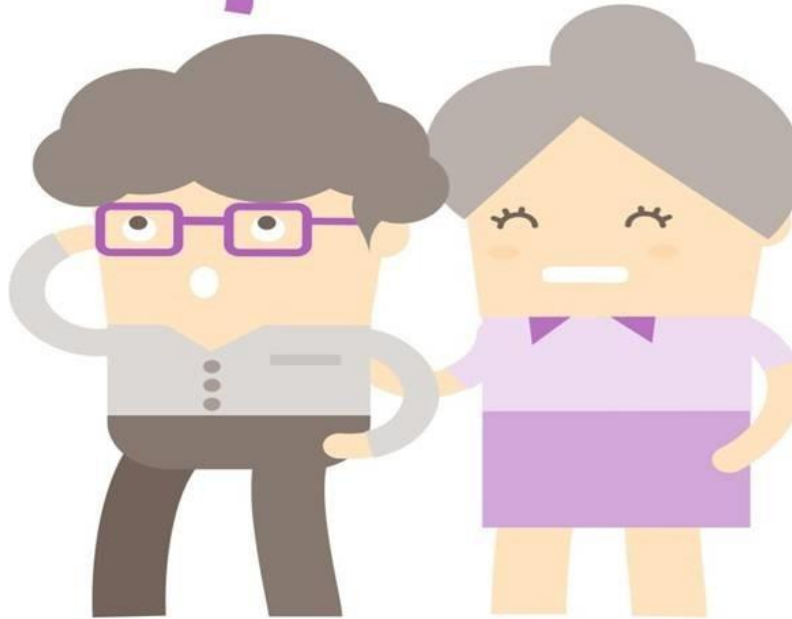
**CHANGES
IN MOOD**



**MISPLACING
BELONGINGS**



**HARD TO COMPLETE
FAMILIAR TASK**



**CONFUSION OF
TIME AND PLACE**



**SOCIAL
WITHDRAWAL**



**POOR
JUDGEMENT**



**STRUGGLING TO
COMMUNICATE**



**CHANGES IN
VISION**



Memory problem is a cardinal symptom of Alzheimer's disease.

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- It is estimated that 60% - 80% of demented people have AD.
- **Occurrence increases with age:** 2% at age 65 years old and then doubles every 5 years.
- People with AD may complain of memory problems, poor judgement, poor abstract thinking, depressed moods, confusion, and inability to manage basic tasks.

Potential risk factors are:

- **Aging.**
- **Head trauma.**
- **Genetic and family history.**
- **Gender: females more than males.**
- **Cardiovascular diseases (for example, high blood pressure).**
- **Low function thyroid.**
- **Diabetes.**

- Down syndrome.
- Toxicity with **aluminium** and **mercury**.
- Stroke.
- Nutritional deficiencies (particularly **B12** and **B9**).
- Free radicals.

Restricted Foods:

- **Processed foods.**
- **Fried foods.**
- **Foods high in trans-fat.**
- **Additives and preservatives.**
- **Foods cooked in aluminum pans.**
- **Foods stored in aluminum containers.**
- **Alcohol.**

Recommended Foods:

- **Drink plenty of water: 2 liters a day.**
- **Whole grains.**
- **Beans.**
- **Fresh fruits and vegetables.**
- **Fruits high in bioflavonoid: berries.**
- **Red grapes.**
- **Foods high in Omega-3: fish, flaxseeds, chia, hemp seeds, and walnuts.**

- **Spices: turmeric and sumac. Turmeric contains curcumin, which is a powerful antioxidant and improves cognition, and sumac is very high in antioxidants that fight free radicals.**
- **Coconut and Coconut oil. They contain MCTs (medium – chain triglycerides), which slow down the progression of the disease.**

Recommended Supplements:

- **Omega – 3 fatty acids:** 1 – 3 grams a day (if you are taking ginkgo biloba, you should take low dose of omega-3, maximum 1-1.5 grams a day).
- **Curcumin:** 400 – 800 mg a day. This product is a powerful antioxidant and can improve cognition and neurologic function.

- **L-Carnitine:** 2000 – 3000 mg a day. This amino acid may improve cognition and slow down the progression of the disease.
- **Huperzine A:** 200 – 400 mcg a day. An extract from *huperzia serrata* that increases acetylcholine in the brain.

- **Vinpocetine:** 20 – 40 mg a day. It improves blood circulation of the brain. For a better absorption, it should be taken with meals.
- **Ginkgo biloba:** 120 – 240 mg a day. It may improve blood circulation of the brain and mental alertness.
- **Vitamin B12:** 1000 mcg a day.

- **Vitamin E:** 400 – 800 IU. It may slow down progression of the disease.
- **French Maritime Pine Bark Extract:** 100 - 200 mg a day. It is a phytonutrient with strong antioxidant activity and also can improve microcirculation.
- **Grape seed extract:** 50 -100 mg a day.
- **Phosphatidylserine:** 300 mg a day.
- A high-potency multivitamin.

Migraine:

- **Migraine is one of the three most common headaches, affecting about 15% of women and 8% of men.**



Migraine is a common headache and should be differentiated from "tension headache" and "cluster headache".

Image: Copyright©Depositphotos.com /Stanislav Daranuta

- **It is a periodic headache, which is associated with neurological, gastrointestinal and autonomic symptoms.**
- **The headache is typically pounding, one-sided, and along with loss of appetite, nausea and vomiting.**

- **Migraine occurs mainly at late teenage years and early adulthood.**
- **Some people may experience some neurological symptoms prior to headaches which is called “*aura*”.**
- **The person with migraine may complain of photophobia (increased sensitivity to light), phonophobia (increased sensitivity to sound) and osmophobia (increased sensitivity to odor).**

Potential triggering factors:

- **Genetics.**
- **Emotional stress.**
- **Food allergies. According to few studies, the foods that most frequently trigger symptoms of migraine were wheat, orange, egg, peanuts, tea and coffee, chocolate, cow`s milk, beef, corn, tomato, cane sugar, yeast, mushrooms, and peas.**

- **Weather changes. Storms, changes in altitude, and gloomy weather might initiate migraine episode.**
- **Excessive sodium intake.**
- **Lack of sleep.**
- **Fatigue.**
- **Skipping meals. It leads to low blood sugar level, which may trigger migraine.**

- **Menstruation.**
- **Hormonal changes.**
- **Caffeine. Excessive caffeine consumption or withdrawal from caffeine could trigger migraine headaches.**
- **Mitral valve prolapse (MVP). It has been linked to migraine.**

- **Nutritional deficiencies** (especially magnesium, calcium, vitamins B2 and B6).
- **Low levels of serotonin.**
- **Foods additives (MSG, aspartame, and nitrates).**
- **Medications (sublingual nitroglycerin, Isordil).**
- **Intense physical exertions.**

Restricted Foods:

- Foods high in “*tyramine*”: aged cheese, yogurt, smoked, cured or pickled meat or fish, red wine, and soy products (tofu, miso, and tempeh).
- Foods high in “*phenylethylamine*”: citrus fruits, red wine, cocoa, chocolate, yellow cheeses, and cheesecake.

- Foods high in “*phenylalanine*”: beef, pork, fish, poultry, egg, yogurt, cheese, soy products, chickpeas, lentils, peanut butter, walnuts, and aspartame.
- Foods high in “*histamine*”: bananas, beef, beer, citrus fruits, pineapple, eggplant, tomato, tomato sauce, tomato paste, tofu, miso, tempeh, tamari, fish and yellow cheeses.

- **Processed meats.**
- **Cold cuts.**
- **Hot dogs.**
- **Soft drinks.**
- **Excessive intake of salt.**
- **Salty snacks and foods.**
- **Foods that contain monosodium glutamate (MSG), sodium caseinate, and hydrolyzed proteins: commercial soups, soy sauce, and salad dressings.**

Recommended Foods:

- **Drinking plenty of water: least 2 liters a day, as dehydration may trigger migraine headaches.**
- **Foods high in fiber.**
- **Flaxseeds.**
- **Fresh fruits and vegetables, except the ones that have been discovered as triggering agents.**

- **Fruits high in flavonoids: berries.**
- **Cayenne pepper.**
- **Foods with anti-platelet activities: ginger, garlic, and onions. One of the theories about migraine is an increased tendency to platelet aggregation.**

Recommended Supplements:

- **Magnesium:** 200 – 400 mg a day. This mineral promotes relaxation and comfort in both migraine and tension headaches. It is especially effective in preventing migraine. Also it has been shown that magnesium may prevent migraine by preventing MVP (mitral valve prolapse).



- **Co – Enzyme Q10:** 300 mg a day. It is a powerful antioxidant and very helpful in decreasing the frequencies of migraine.
- **5 – HTP (5 – hydroxytryptophan):** 50 – 100 mg a day. This amino acid is effective in alleviating migraine by increasing serotonin levels.
- **Vitamin B2 (riboflavin):** 400 mg a day. This vitamin is effective in preventing migraine.

- **Feverfew:** 250 – 500 mcg a day. The active ingredient in feverfew is “*parthenolide*”, which prevents platelet aggregation and inhibits the release of inflammatory mediators, leading to a decrease in the severity and frequency of migraine.
- **Grape seed extract:** 50 -100 mg a day. It contains bioflavonoids that help preventing migraine.

- **French Maritime Pine Bark Extract:** 100 – 200 mg a day. It is a powerful antioxidant with ability to improve microcirculation. It is effective in preventing migraine.
- **Omega – 3 fatty acids:** 1 – 3 grams a day. Omega – 3 fatty acids have been shown to decrease frequency, duration, and severity of migraine.

- **Vitamin B6:** 50 – 100 mg a day. This vitamin is important in the production of serotonin and the breakdown of histamine. Hence, vitamin B6 deficiency may trigger migraine attacks.
- **Ginkgo Biloba:** 120 – 240 mg a day. It inhibits platelet aggregation followed by decreasing the incidence of migraine attacks.

Miscellaneous Suggestions:

- **Maintaining a balanced blood sugar level by frequently eating foods high in fiber and low in glycemic index.**
- **Liver detoxification.**
- **Colon cleansing.**
- **Acupuncture.**
- **Massage of the neck and upper back.**
- **Meditation.**
- **Yoga.**

Tension Headache:

- **Tension headache is the most common type of headaches, 90% of all.**
- **Headache starts from the front or more commonly back of the head and increases gradually in intensity.**
- **Headache is caused by continuous contractions of the muscles of the neck and scalp.**

- It is described as a steady, squeezing, dull and non-throbbing pain.
- The patient feels pressure, tension, and tightness in the head.



Tension headache is the most common type of headaches.
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- **Contrary to migraine, tension headache is not usually associated with nauseous feeling and sensitivity to light and sound.**
- **It may last for days.**
- **Tension headache must be differentiated from migraine and cluster headaches.**

Potential triggering factors:

- **Stress.**
- **Sleep deprivation.**
- **Dehydration.**
- **Withdrawing from caffeine.**
- **Skipping meals or snacks.**
- **Eyestrain.**



- **Poor posture.**
- **Fatigue and tiredness.**
- **Magnesium deficiency.**
- **Premenstrual syndrome.**
- **Having sex (coital headache).**
- **Monosodium Glutamate (MSG).**

Restricted Foods:

- **Processed foods.**
- **Additives.**
- **Preservatives.**
- **Grapefruit and garlic. They may lower blood pressure, prompting headache.**
- **Alcohol.**
- **Very cold foods or drinks, for example, ice cream (**Ice Cream Headache**).**

Recommended Foods:

- **Small frequent meals. Skipping meals and leaving long gaps between meals lower blood sugar, which may trigger tension headache.**
- **Whole grains.**
- **Water: Drinking at least 2 liters a day keeps the body fully hydrated, preventing tension headache.**
- **Green leafy vegetables.**
- **Beans.**

Recommended Supplements:

- **Magnesium:** 200 – 400 mg a day.
- **Melatonin:** 3 – 6 mg a day.
- **5-HTP:** 50 – 100 mg a day.
- **Chamomile:** as a tea 3 – 4 times a day, as a tablet or capsule 2 – 3 a day, or as a tincture 5 ml 3 times a day .It has calming effect and should be taken between meals.

- **Passion flower:** as a tea 1 – 2 grams 3 times a day, as a tablet or capsule 4 – 8 grams a day, or as a tincture 5 – 10 ml 3 – 4 times a day. Passion flower promotes muscle relaxation.
- **French Maritime Pine Bark Extract:** 100 – 200 mg a day.
- **White willow bark:** 60 – 120 mg a day. It contains salicin, from which salicylic acid is derived and has a pain alleviating effect.

Miscellaneous Suggestions:

- **Maintaining a balanced blood sugar level by frequently eating foods high in fiber and low in glycemic index.**
- **Stretches.**
- **Acupuncture.**
- **Massage of the neck and upper back.**
- **Meditation.**
- **Yoga.**

Homework:

- **1) Describe the foods that may trigger migraine headaches.**
- **2) Describe briefly the top three supplements that may help people with Alzheimer`s disease.**

