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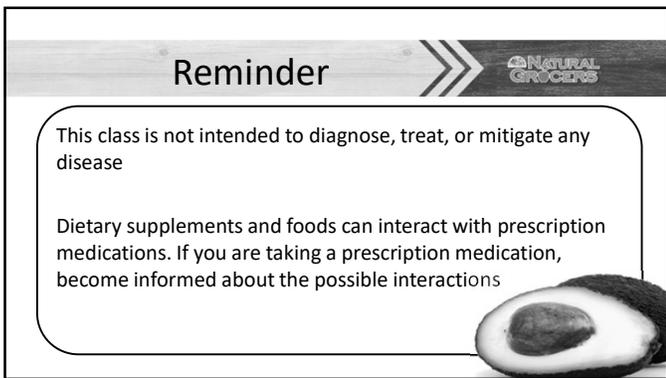
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**Memory & Brain Health** 

What methods or habits do you employ to support your brain?

Do you take any supplements specifically to support your brain?

93% of Americans believe maintaining brain health is extremely important  
**However, few are aware of the many holistic approaches available to do so**



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**Age-Related Cognitive Decline** 

Eventually all humans develop some degree of decline in cognitive function, usually including the following symptoms:

- **Forgetfulness**
- **Decreased ability to maintain focus**
- **Reduced problem-solving capacity**



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**Causes of Age-Related Cognitive Decline** 

Cognitive decline does not affect everyone equally; clear connections exist between the rate and severity of cognitive decline and a variety of factors, including:

- **Oxidative stress**
- **Chronic inflammation**
- **Insulin resistance**
- **Suboptimal nutrition**
- **High stress**

Fortunately, many of these factors are modifiable, and proactive lifestyle changes, cognitive training, and nutritional interventions have been shown to decrease the rate of cognitive decline.



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**The Aging Brain** 

Aging causes deterioration of brain cell membranes, which leads to impaired neuronal function.

**Steep age-related declines in neurotransmitter synthesis and signaling combined with reductions in brain cell density and plasticity make the brain increasingly less efficient with age.**

Age-related cognitive decline occurs in tandem with the physical decline of brain structure. Thus, maintaining cognition into late life requires **early and aggressive intervention** to preserve the brain in its youthful physical and functional state.

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**Memory Loss is *Not* an Inevitable Part of Aging** 

The brain is capable of producing new brain cells at any age, so significant memory loss is *not* an inevitable result of aging

Whatever your age, there are many ways you can improve your cognitive skills, prevent memory loss, & protect your gray matter

But just as it is with muscle strength, you have to use it or lose it



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**Outline** 

**Instigators of Memory Loss**

- Oxidative Stress
- Inflammation
- Insulin Resistance
- Suboptimal Nutrition
- Stress

**Supplements that Support Memory**

- EPA & DHA
- Phosphatidylserine
- B Vitamins
- Lutein
- Polyphenols and Anthocyanins

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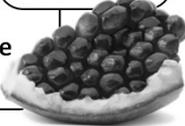
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**Oxidative Stress** 

It is believed that long-term oxidative stress and damage are big players in Age-Related Cognitive Decline.

**The brain is particularly vulnerable to oxidative damage since it consumes roughly 20% of the oxygen used by the entire body.**

Overtime, oxidative damage leads to the death of brain cells.



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**Inflammation** 

Inflammation in the brain is unique in that the Blood Brain Barrier (BBB, tight layer of cells that separates the brain from regular circulation), during healthy conditions, blocks inflammatory agents and allows only select nutrients into the brain.

Chronic inflammation triggered by poor diet and stress compromises the BBB, allowing inflammatory agents to enter the brain.

Inside the brain, inflammation impairs neurogenesis, the process by which new neurons are generated.



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**Insulin Resistance** 

Due to the high metabolic demand for energy in the brain, even small disturbances in glucose metabolism can noticeably impact cognitive performance.

**Diabetes (hyperglycemia) has been linked with lower levels of neuronal growth factors, decreased brain volume, and higher incidence of all types of dementia.**



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## Suboptimal Nutrition

In laboratories, when animals are fed the **SAD (Standard American Diet)** it results in **abnormalities of the hippocampus** – the area of the brain crucial for memory.

In **human studies**, consumption of a **SAD** in both *young and old populations* is associated with **impaired memory** or increased risk of Alzheimer's disease.



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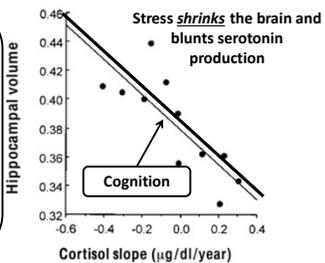
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## Stress

**Studies have repeatedly shown that excessive stress leads to cognitive dysfunction.**

Intensity and duration of stress are both inversely related with memory and cognition.



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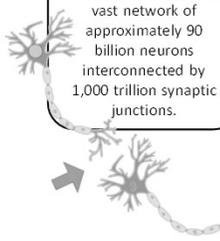
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## Mechanism of Memory

The brain consists of a vast network of approximately 90 billion neurons interconnected by 1,000 trillion synaptic junctions.



Each mental and physical task that we perform stimulates this massive network in a unique way.

Regular stimulation by engaging in a wide range of mentally and physically challenging activities supports our ability to learn by enhancing synaptic plasticity, and initiating the process of neurogenesis.

**Neural plasticity allows the structure and function of the adult human brain to change significantly as a result of new experiences.**

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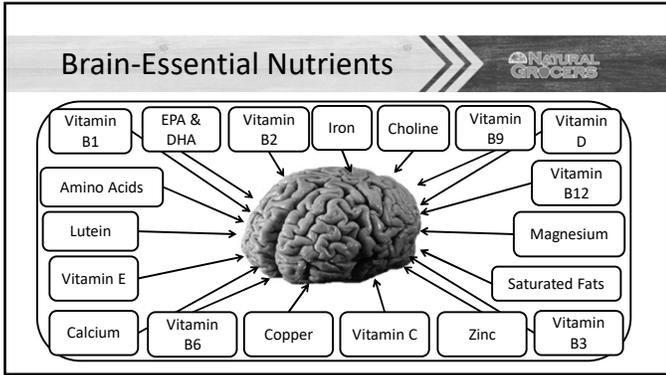
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### The Meal Wheel

Because the brain requires so many nutrients, it is critical to set a **foundation of whole, quality foods** – and then supplement to boost our brain health naturally!

NATURAL GROCERS' REGENOVORE MEAL WHEEL

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### Nutrients to Support Memory

NATURAL GROCERS

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**EPA & DHA** 

Memory requires that brain cells are able to communicate with each other

**EPA and DHA support efficient and effective brain cell communication and therefore support memory**

Increasing EPA & DHA consumption increases omega-3 levels in brain cell membranes supporting memory and cognition at all ages



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**EPA+DHA & Memory** 

EPA & DHA support the brain in numerous ways:

- Support healthy brain cell membranes
- Support the brain's waste-disposal system
- Supports healthy inflammation in the brain
- Supports healthy blood sugar balance
- Supports a healthy stress response

Studies show that EPA & DHA supplementation supports problem solving and memory in aging adults.

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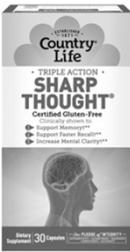
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**PS** 

**Studies show PS supplementation supports memory & cognition**

- Protects the brain from stress
- Supports cell membrane fluidity
- Maintains the normal communication between nerve cells
- Conserves brain cell number, area and diameter



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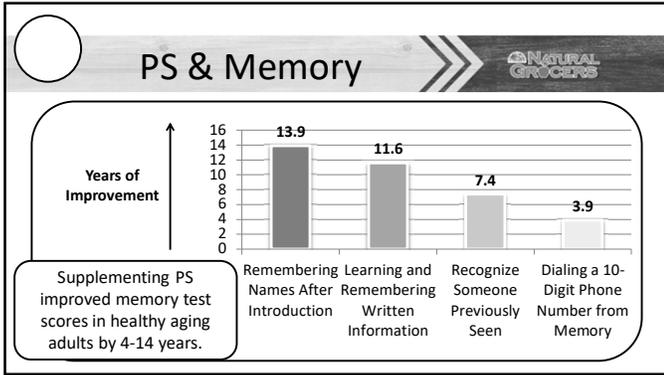
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**B Vitamins**

The brain is the first organ affected by insufficient intakes of various B-vitamins.

These nutrients are important players in the process that generates energy.

**Since the brain produces more energy per pound than any other organ in the body, when the B vitamins are deficient, neurotransmitter synthesis and cognition can be impaired.**

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**B Vitamins**

Studies show high doses of B vitamins can support the retention of brain volume with age.

**Maintaining levels of B vitamins via optimum intakes and supplementation is the best way to support memory and healthy brain aging.**

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**Lutein** 

- The brain has many regions, each responsible for different aspects of how your body & mind operate
- As we age, many of the cells in our brain turn over faster than we can develop them, resulting in cognitive decline
- Lutein is a dominant carotenoid found in the brain and has been shown to have a strong connection with cognitive function

Macular pigment optical density (ie., lutein accumulated in the retina)

➡

Lutein in the brain (protects from oxidative stress)

➡

Performance on multiple cognitive outcome assessments

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**Lutein** 

Kale, collards, & spinach are lutein powerhouses. But you can also find it in broccoli, eggs, and avocados among other places.



The brain absorbs more lutein than it does other carotenoids (including lycopene and beta-carotene).

**One study found that having a lutein-rich brain was associated with cognition, language, learning, and memory support.**

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**Polyphenols and Anthocyanins** 

**This is a category of micronutrients that act as free radical scavengers in our bodies.**

They have been known to support healthy inflammation levels, and maintain healthy nerve cells.

Some particularly good food sources for supporting the brain include resveratrol from grapes, EGCG from green tea, and anthocyanins from blueberries!

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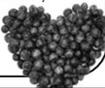
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**Polyphenols and Anthocyanins** 

<p><b>Resveratrol</b></p> <p>Several studies indicate that a moderate consumption of resveratrol is associated with healthy memory and healthy aging.</p> 	<p><b>EGCG</b></p> <p>Green tea supplementation has been shown to support healthy brain aging and preserve cognition regardless of age.</p> 	<p><b>Anthocyanins</b></p> <p>Anthocyanins have been shown to support memory and learning but also to stimulate neurogenesis in the hippocampus, the region of the brain chiefly important in memory.</p> 
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**Lifestyle** 



- Exercise
- Diet
- Sleep
- Brain Training
- Social Networks
- Stress

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**Questions?** 

The brain is the most important organ in the human body.....  
.....according to the brain.



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Resources 



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**AMERICA'S HEALTH EDUCATION EXPERT**



- Schedule a 1:1 coaching session
- Invite your NHC to speak at your next event
- Check out our upcoming classes



**SCAN ME**

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