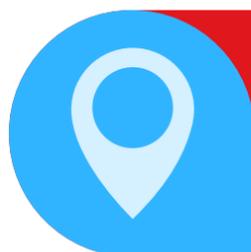


# NUTRITION AND YOUR BRAIN



## BRAIN AND WELLNESS

A balanced diet that is full of whole grains, fruits, vegetables, high-quality meat and fish, and low in processed foods and saturated fat can keep your brain healthy!



Keep your memory sharp and your brain on alert with flavonoids found in tea (black, green, oolong), citrus fruits (grapefruit, orange, lemons), and berries (blueberries, blackberries, raspberries)

## VITAMINS & YOUR BRAIN

### MAGNESIUM

- Improves focus, memory, and sleep
- Fights stress and depression
- Food Sources: leafy greens, nuts, legumes, seafood, and grains



### VITAMIN E

- Helps preserve brain function
- Protects against neuronal degeneration
- Food Sources: seeds, nuts, wheat germ

### VITAMIN B1

- May increase energy & improve ability to control mood & stress
- Used for memory loss and maintaining a positive attitude
- Food Sources: pork, grains, legumes, nuts, fish, poultry

### B6

- Important for normal brain development and for keeping the nervous system and immune system healthy
- Food Sources: meat, fish, poultry, legumes, fruits, whole grains, soy, vegetables

### B12

- Plays a role in producing brain chemicals that affect mood and other brain functions
- Food Sources: fish, seafood, milk, eggs, meat, & poultry

## MENTAL WELLNESS

### Omega-3's

Highly concentrated in the cerebral cortex, the area of the brain responsible for **memory, language, creativity, and attention**



salmon, seaweed, herring, sardines, and walnuts

### Complex Carbs

Glucose, which comes from carbohydrates, is the brain's primary source of energy. Simple carbs worsen mood by creating spikes in blood sugar and may have effects on the brain similar to drug abuse. Complex carbs keep us full longer and **provide a steady source of fuel for the brain**

whole wheat bread, pasta, oats, brown rice, sweet potato, beans, and lentils



### Lean Proteins

Amino acids create and release certain chemicals into the brain such as serotonin, which is associated with **improved mood**, and dopamine & norepinephrine, which make you feel **more alert, attentive, and energetic**



fish, turkey, chicken, eggs, and beans

### Monounsaturated Fats

Increased intake of these fats have been linked to **improved cognitive memory and other cognitive functions**. They also increase and release acetylcholine, which is associated with **memory and learning**

olive oil, canola oil, sunflower oil, avocado, and nuts



### Dark Chocolate

Stimulate blood flow to the brain to aid **memory, attention span, reaction time, and problem-solving**



# BEVERAGES AND YOUR BRAIN



## WATER & THE BRAIN

The brain is typically 73% water! It only takes a 2% dehydration to weaken your memory, attention, and other cognitive skills!

Mild dehydration affects short-term memory, concentration, and alertness!



### HOW MUCH DO I NEED?

Typically, the average male needs about 13 cups of water a day, and the average female needs about 9 cups of water a day. You need more if you are active!

## CAFFEINE & THE BRAIN

Caffeine can upgrade memory, mood, focus, and productivity. However, too much can leave you irritable, sleepless, and anxious!



### SOURCES OF CAFFEINE

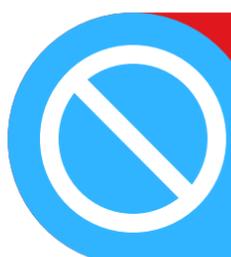
#### the good:

Traditional brews of coffee and various teas (green tea, black tea, Oolong tea) have antioxidants, flavonoids, & other beneficial nutrients that can nourish your brain and body.

#### the bad:

Caffeinated sodas and energy drinks can be loaded with added sugars and chemicals that can have negative effects.

Up to 400 milligrams (mg) of caffeine a day appears to be safe for most healthy adults. That's equal to 2 cups of coffee (or a Grande) from Starbucks!



### NO MORE AFTER 4

Reducing caffeine intake late in the day may help improve sleep patterns. Studies suggest to refrain from caffeine consumption 6 hours prior to bedtime.

## ALCOHOL & THE BRAIN

Occasional and even moderate drinkers can experience memory impairment, blackouts, recklessness, and impaired decision making.

A moderate drinker is a person who consume one drink (applies to women) or two drink (applies to men) a day, which is the dietary guidelines for Americans!

In occasional drinkers, alcohol can produce short-term effects after one or more drinks. Memory impairment can begin after a few drinks, and can worsen as the consumption increases.



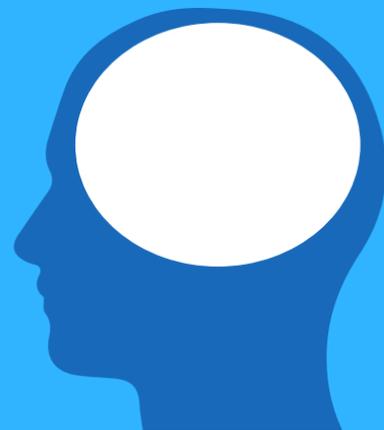
### TOO YOUNG FOR YOU, BRO

The brain is not fully formed until around 25 years of age. Excessive drinking can make young adults vulnerable to memory loss and cognitive impairment.



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# PHYSICAL ACTIVITY AND YOUR BRAIN



## BENEFITS OF PHYSICAL ACTIVITY

1. Exercise reduces stress
2. Exercise releases endorphins, which create feelings of happiness and euphoria
3. Exercise improves self-confidence
4. Vitamin D acquired from soaking up the sun during outdoor activities can lessen the likelihood of experiencing depressive symptoms
5. Working out, especially between age 25 and 45, boosts the chemicals in the brain that support and prevent degeneration
6. Chemicals released during and after exercise can help people with anxiety calm down
7. Cardiovascular exercise can create new brain cells (aka neurogenesis) and improve overall brain performance
8. People who take time for exercise on a regular basis are more productive and have more energy than their more sedentary peers
9. Physical Activity increases relaxation
10. Regular physical activity boosts memory and the ability to learn new things



## HOW MUCH EXERCISE DO I NEED?

For adults, the American Heart Association recommends 30 minutes of moderate-intense activity for at least 5 days a week. Avoiding inactivity is important for good health. Any physical activity is better than none!

### Examples of moderate-intense activity include:

- Walking briskly (3 miles per hour or faster)
- Water aerobics
- Bicycling slower than 10 miles per hour

In general, if you're doing moderate-intensity activity you should be able to talk, but not sing, during the activity!



### HIT THE TRAILS!

Research suggests that 30 minutes of running in undergrads can result in faster reaction time and vocabulary learning!



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# SLEEP AND YOUR BRAIN



## SLEEP & YOUR BRAIN

Getting enough sleep is as important for good health as nutrition and physical activity! It is estimated that adults 18+ get 7-9 hours of sleep every night. Getting less than what's needed can have negative effects such as:

### SLURRED SPEECH

The temporal lobe, associated with language processing, is **highly active** while well-rested & inactive in people who are exhausted and have trouble enunciating words correctly

### IMPAIRED WIT

Lack of sleep **affects cognitive processes** like divergent thinking, which helps us switch topics quickly during conversations

### RISKY DECISIONS

Sleep deprivation can affect competent decision-making when engaging in financial decisions, such as gambling, elevating the expectations of gains and making light on losses after risky decisions.

### BINGES

Sleep loss **decreases activity in the frontal lobe** (which controls decision-making) and **increases activity in the amygdala** (involved in experiencing emotions). These two changes can dull judgment and stir up desire- the ideal mindset for binge eating!

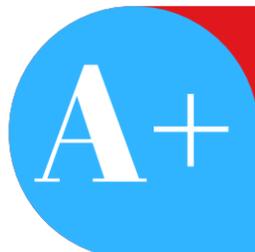
### FALSE MEMORIES

A sleep-deprived brain may **fail to encode memories** successfully. One study found that people are more likely to incorporate misinformation into memories of events observed after a night without sleep!

## SLEEP & PERFORMANCE

Sleep problems have been associated with:

1. Shortages in attention & academic performance
2. Drowsy driving
3. Risk-taking behavior and depression
4. Impaired social relationships
5. Worse health altogether



### DO IT FOR THE GRADES

Students who got more sleep before school or work, and those who reported more consistent sleep schedules had higher grades!

### WHAT'S YOUR GPA?

- Getting less sleep and having inconsistent bedtimes predict a lower GPA
- Those who reported no sleep disorder had a higher GPA than those who reported a sleep disorder
- Self-identified 'morning people' had a higher GPA than did 'evening people'



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