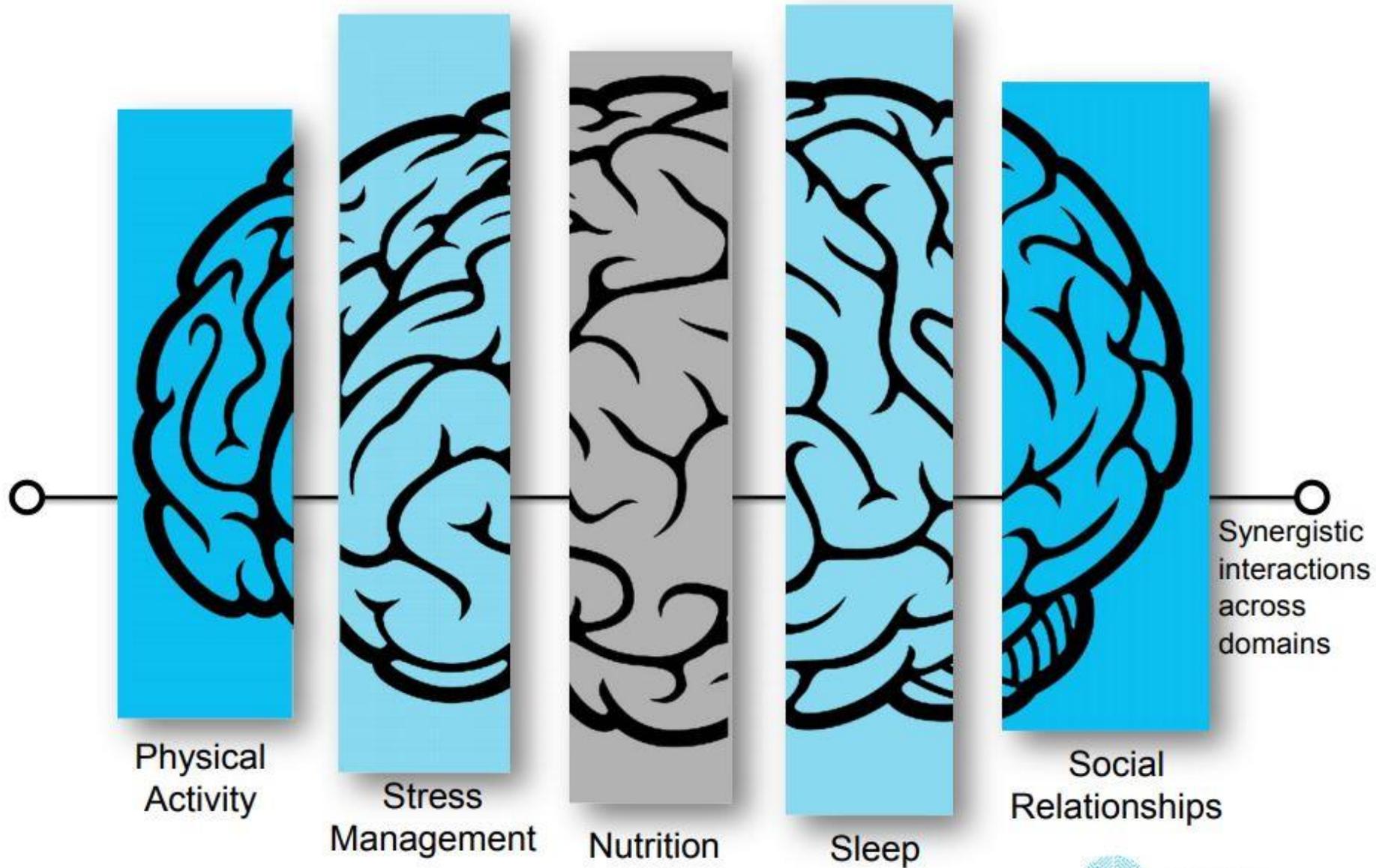
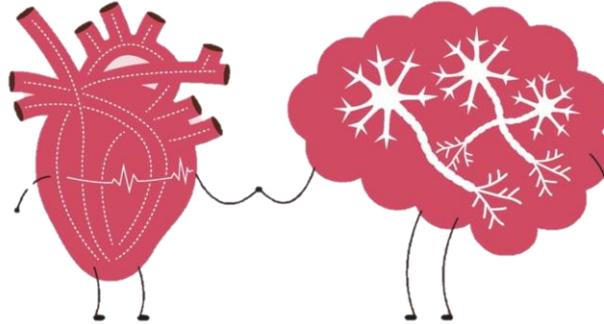


Brain Health

HOLISTIC DOMAINS OF BRAIN HEALTH



Regular Exercise Improves Learning, Memory, & Thinking



Aerobic (cardio) exercise improves cognitive functioning:

- Increased heart rate and harder faster breathing increases blood flow and therefore increases oxygen delivery to the brain. This leads to neurogenesis (the production of neurons) in the hippocampus prefrontal cortex and medial temporal cortex, areas of the brain that control learning, memory and thinking.
- Exercise promotes the production of neurotrophins, which are proteins that protect and repair neurons from injury and degeneration.
- Exercise also results in increased serotonin and norepinephrine in the brain, which boost information processing and mood.

Exercise also tends to improve sleep, and reduce stress and anxiety, which can indirectly improve cognitive functioning.

Stress Affects Your Brain

Anxiety-Stress-Cortisol Loop

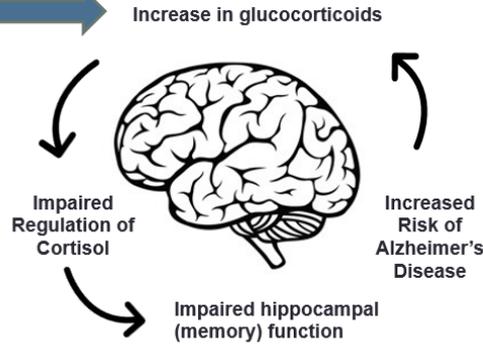
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Chronic Stress Signs

- Disrupted Sleep Pattern
- Emotional Distress
- Poor Eating Habits

Stress-Related Cognitive Problems With:

- Attention & Focus
- Learning & Recall
- Short Term Memory
- Word Finding



Learn to manage your stress



Change Your Mind(set)



-Don't think of STRESS as

- a threat
- a demoralizer
- pressure
- overwhelming
- debilitating

-Don't focus on problems

-Don't fight stress



+Do think of STRESS as

- a challenge
- a motivator
- an opportunity
- manageable
- energizing

+Do focus on possibilities

+Do embrace stress

- Self-Care
- Relaxation Strategies
- Mindful Practices
- Seeking Social Supports
- Exercise
- Reframe What's Stressing You

Self-Care Is Key to Stress Management



At least occasionally disengaging and “unplugging” from the constant stream of “news” can help maintain your energy and stay engaged for the long-term.

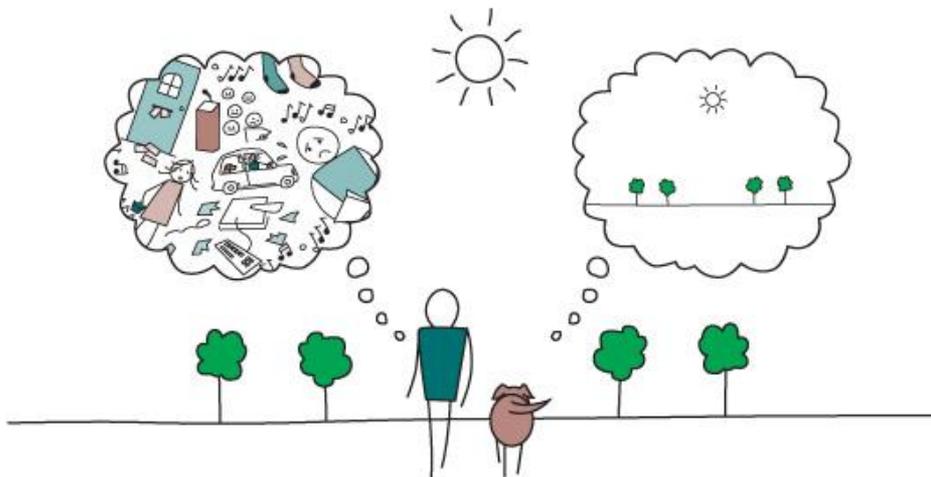
Connecting with friends and others with similar experiences and values is validating and helps us re-energize.

Connecting with nature can help you recharge and feel grounded.

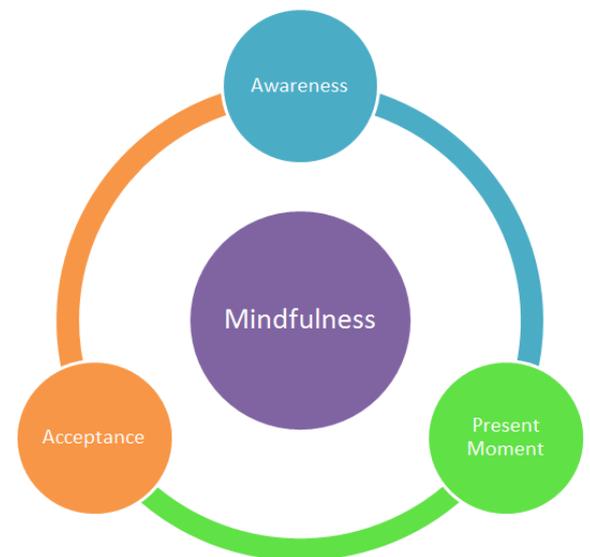
Ben Franklin said, “Games lubricate the body and the mind.” Play is an important part of self-care.

Many people say that spiritual practices reduce stress, and help them live with a greater sense of gratefulness and trust in the unknown.

Self-care doesn’t have take a long time, but it is important to do regularly. Making sure to engage with activities that bring you pleasure and joy can help get you through difficult times.



Mind Full, or Mindful?





Feed Your Brain!



Fatty Fish like salmon, trout and sardines are great sources of **Omega-3 Fatty Acids**, which are essential for learning and memory, and also allow neurogenesis (production of new neurons).



Nuts contain healthy fats, anti-oxidants and **Vitamin E**, all of which help protect brain cells. Walnuts also deliver **Omega-3 Fatty Acids** (see above).



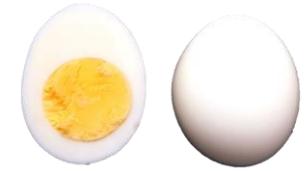
Broccoli and leafy greens are packed with numerous compounds that have brain cell protective **Anti-inflammatory** and **Anti-oxidant** effects, as well as **Vitamin K**, which is needed to create the type of fat that creates the insulating myelin sheath around neurons.



Whole grains, such as oats, barley, and quinoa are rich in many of the **B vitamins** that work to reduce inflammation of the brain, potentially preserving your memory.



Feed Your Brain!



The protein and vitamins B, D and E in eggs and egg yolks may help to improve memory.



Tea and coffee. The caffeine in your morning cup of coffee or tea might offer more than just a short-term concentration boost; caffeine may help solidify new memories.



Blueberries & other deeply colored berries are great sources of Anti-oxidants which help protect the brain against stress and inflammation, and also appear to improve communication between brain cells.



Dark chocolate contains flavonoids, which are strong antioxidants. They potentially improve blood flow to the brain and reduce inflammation. Unsweetened cocoa powder offers the greatest benefit, followed by dark chocolate with at least 72 percent cocoa solids.



Rapid Eye Movement (REM) Sleep is the BRAIN STAGE of SLEEP.

**It occurs about 5 times during 8 hours of sleep,
with increasing length and frequency as morning approaches.**

Here's what happens in your brain during this stage of sleep:

- **brain repair and restoration (toxins are removed and neurons are healed)**
 - **organization of long-term memory**
 - **integration of new information**



Face-to-face contact with other people releases a cascade of neurotransmitters which

- Improves memory formation and recall
- Protects the brain from neurodegenerative diseases
- Reduces cortisol (stress hormone) levels
- Enhances intellectual stimulation
- Increases trust through the release of oxytocin
- Reduces pain (and makes you feel good!)
- Provides support
- Combats depression

Facts About Concussion



A concussion is a type of traumatic brain injury (TBI) caused by a bump, blow or jolt to the head. Concussions can also occur from a fall or an impact to the body that causes the head and brain to move quickly back and forth. Although many people describe concussions as “mild” brain injury because they are not usually life-threatening, their effects can be serious.¹

Risks for Concussion

Participating in High-Risk Sports. CC students are often very active and participate in a variety of recreational and athletic activities, which can sometimes lead to injuries, including concussion. Although concussion can occur in many sports, they are more common in high-speed contact sports. The American Academy of Neurology reports that there is strong evidence that football, rugby, hockey and soccer pose the greatest risk for concussion.² But any sports activity, even when contact with other people or things is not intended, can cause concussion (e.g., skiing, rock-climbing, ultimate frisbee, mountain biking).

Accidents. Any accident that causes a blow or jolt to the head, or a rapid acceleration or deceleration of the head (which causes the brain to strike the inside of the skull) can result in concussion.

Having a History of Concussion. Those who have had concussions in the past are at increased risk for future brain injury. Recovery can often be slower with a second concussion.²

Concussion Signs and Symptoms ^{1, 2}

Most people with concussions recover fully, but the speed of recovery depends on many factors including the severity of the concussion, age, general health, and post-concussion care. Early identification and appropriate care are very important. Signs and symptoms of concussion include:

Cognitive:

- Difficulty thinking clearly
- Feeling slowed down
- Difficulty concentrating
- Difficulty remembering new information
- Confusion
- Feeling hazy or groggy
- Disorientation (confusion about time, date, location)
- Memory loss
- Loss of consciousness



Emotional/Mood:

- Irritability
- Sadness
- Difficulty controlling emotions
- Nervousness or anxiety
- Behavior or personality changes



Physical:

- Headache
- Fuzzy or blurry vision
- Nausea or vomiting (early on)
- Dizziness
- Balance problems
- Sensitivity to light or noise
- Feeling tired, fatigued
- Changes to balance, coordination, reaction time



Sleep:

- Sleeping more than usual
- Sleeping less than usual
- Trouble falling asleep



What To Do If a Concussion Occurs

Get a medical evaluation.

Getting medical help soon after a brain injury can speed recovery, and your medical provider may also refer you to specialists if needed for further evaluation or rehabilitation.

Your medical providers might do a scan of your brain to rule out other problems, or they might do cognitive tests to try to identify the effects of a concussion. However, even if a concussion does not show up in these tests, you may still have a concussion. ¹

Rest is very important.

In order for the brain to heal following an injury, it needs rest. This means

- Avoid activities that are physically demanding, like recreational sports, athletics, heavy housecleaning, and working out.
- Avoid activities that are cognitively demanding or require a lot of concentration, like classroom work, reading, working on computers, and activities like text messaging or playing video games.
- Your Athletic Trainers, Residential Life Staff, and Student Health Center Medical Provider can contact your faculty member and inform them that you have received a concussion and need to refrain from cognitively demanding activities until all symptoms have cleared.
- The Accessibility Resources Office can provide support and assistance for students who experience temporary disabilities like concussions.
- Avoid activities that could lead to another concussion.
- Get plenty of sleep at night.
- Rest and nap during the day as you need to.

Not resting can prolong the length of your recovery and can even worsen symptoms. ¹

Self-care and returning to regular activities.

- When your health care provider clears you to return to regular activities, do so gradually.
 - If your symptoms return or new symptoms emerge, this is a sign that you are pushing yourself too hard, too fast. STOP activities and take more time to rest and recover.
- Take only medications that your health care provider has approved.
- Avoid alcohol until your health care provider says you are well enough.
- Avoid sustained computer use (including games) early in the recovery process. ¹

Sources used in creating this document include

- 1 Centers for Disease Control www.cdc.gov/concussion
- 2 American Academy of Neurology www.aan.com/concussion

