

April

2018 Newsletter



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Table of Contents

Pg. 2-3

Health Promotion Article

Pg. 4

Exercise of the Month

Pg. 5-6

Healthy Eating Tip

COHO Fitness Center



**Contact
US**

Phone: (202)482-0437
Email: cohofitness@teamcfw.com
Web: cohofitness.com
Corporate Fitness Works, Inc.

HEALTH

Education

The Relationship Between Exercise and Brainpower

When people think of exercise, they usually think of the physical benefits that it brings. Over the last decade, however, there has been an increasing amount of research focusing on the relationship between exercise and brainpower. Studies continue to show that different types of exercise have positive influences on memory, learning, and cognitive function. Scientists are still studying the ways by which exercise improves the brain.

A University of British Columbia study monitored the blood flow of three groups of people; a group that stood still, a group that walked, and a group that ran. The study found that those who ran had the largest increase in blood flow, while those who stood still had the smallest increase. While an increase in blood flow seems unimportant and common, it actually has multiple health benefits. In fact, an increase in blood flow helps create new brain cells and strengthens the production of BDNF (brain-derived neurotrophic factor), which helps repair and protect brain cells from degeneration. This is an important physiological benefit for part of the brain that is responsible for memory, the hippocampus. If the brain cells are not protected, the hippocampus loses about 1% of its mass each year once an individual is about 30 years of age. Studies have found that BDNF not only slows that degeneration, but can actually reverse the aging of the brain. The brain, like muscles and organs, is made up of tissue that needs stimulation to stay healthy. The study also found that although running saw the biggest increase in blood flow, walking allowed sufficient blood flow to spur the same positive responses to the body.

This study proves that even small amounts of activity have many benefits. Increased blood flow is not the only achievable benefit from physical activity. Another common benefit from almost any type of activity is an immediate boost in mood. This is triggered by the release of hormones and chemicals, such as endorphins, that are known to improve brain health.

Now that you have this knowledge, what should you do with it? If you are not currently active, start exercising! Scientists are still studying what type of exercise is most beneficial for the brain, though most studies have focused on aerobic exercise, such as walking and running. The assumption is made that other forms of exercise with similar increases in heart rate will likely yield the same results.

Want to experience how your brain is affected by exercise? Try the activity on the back! This activity is derived from the Profile of Mood States (POMS) assessment, a physiological rating scale that has been adapted to assess distinct mood states before and after exercise. There are six components to the mood profile: anger, confusion, depression, fatigue, tension, and vigor. Vigor is described as the feeling of having energy, whether it comes from a physical aspect (i.e. working out) or psychological aspect (i.e. completing an assignment).

Before your workout, fill out your mood profile based on how you are feeling at that given moment. Choosing a 1 would indicate you do not feel that particular mood at all. Whereas, choosing a 10 would mean that the mood is overpowering. The type of physical exercise that



you complete can be very basic. Try walking around your building, walking up and down the stairwell a couple times, or walking across the street to your favorite lunch spot. Keep in mind, you will want to cover the “*Before Exercise*” mood profile in order to keep the scale accurate to your current mood. Once the basic workout is complete, fill out the “*After Exercise*” mood profile without looking at the first section. After both sections are completed, compare each side to see how exercise has influenced your mood!

Profile of Mood States (POMS) Abbreviated Self-Assessment

Before Exercise:

After Exercise:

Anger

1 2 3 4 5 6 7 8 9 10

Anger

1 2 3 4 5 6 7 8 9 10

Confusion

1 2 3 4 5 6 7 8 9 10

Confusion

1 2 3 4 5 6 7 8 9 10

Depression

1 2 3 4 5 6 7 8 9 10

Depression

1 2 3 4 5 6 7 8 9 10

Fatigue

1 2 3 4 5 6 7 8 9 10

Fatigue

1 2 3 4 5 6 7 8 9 10

Tension

1 2 3 4 5 6 7 8 9 10

Tension

1 2 3 4 5 6 7 8 9 10

Vigor

1 2 3 4 5 6 7 8 9 10

Vigor

1 2 3 4 5 6 7 8 9 10

References:

<https://www.brianmac.co.uk/poms.htm>

<https://www.health.harvard.edu/blog/regular-exercise-changes-brain-improve-memory-thinking-skills-201404097110>

<http://time.com/4752846/exercise-brain-health/>

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Exercise of the Month

April 2018

Tree Pose (*Vriksasana*)

Purpose: Increase focus, concentration, and balance. This pose is named for the grace, stability, and humility of a healthy tree. Tree Pose also builds self-confidence and self-esteem to help maintain composure throughout the hectic day.

Target Muscles: Ankle Stabilizing Muscles, Calf, and Core

Assisting Muscles: Thigh, Groin, and Shoulders

Equipment Needed: None!

Start: Stand with feet hip distance apart (1 fist-width). Bring palms of hands together at chest height.

Pose: Shift your weight to your left foot. Bend your right knee, then reach down and clasp your right ankle. Use your hand to draw your right foot alongside your inner left thigh or ankle (avoid the knee). Center your pelvis directly over your left foot. Align right and left hips to the same height and into a straight line. Hold for 60 seconds coming in and out of the pose as needed.

Repeat: Complete on other side.

Modification:

Beginner: After shifting your weight into your standing foot, place the toes of your 'floating' on the floor at the instep of the standing ankle. Place the heel of your 'floating' to rest just above the standing ankle.

Advanced: Once you've placed your foot on your inner thigh, close your eyes for an added meditation and balance challenge.





Healthy Eating Tip

Boosting the Brain

When it comes to love, the brain and the heart tend to be at odds. However, when it comes to health, they could not be more on the same page. Similar to the heart, the brain relies on good blood flow and nutrition for optimal functioning. Healthy lifestyle choices, such as physical activity and good nutrition, always help keep the brain healthy with sharp memory. Furthermore, there are vitamins, minerals, and dietary patterns that have been linked to better cognitive function.

Got Brain Fog?

Try increasing these nutrients in your diet to help promote a healthy brain:

- **Omega-3 DHA fatty acids** are found in fish and shellfish, such as salmon, mackerel, herring, anchovies, and sardines, as well as maternal milk (breast milk). DHA (Docosahexaenoic acid) is particularly important for brain functioning as it plays a part in the growth and functional development of brain cells. However, it is commonly overlooked in the Western diet.
- **Lutein** is a yellow pigmented carotenoid found in egg yolk, avocado, and dark leafy greens. It is shown to aid in brain health and preserve one's memory. Studies have also shown greater improvement in brain function when lutein is combined with omega-3 DHA.
- **Vitamins (B, E, C, and D)** are found in various fruits and vegetables (i.e. dark berries, dark leafy greens, avocados, and bell peppers) as well as whole grains, nuts and seeds. All of these vitamins have been identified as playing important roles in the development of the brain by assisting with energy production, reducing oxidation, and synthesizing neurotransmitters in the brain.
- **Curcumin** is a compound that gives turmeric its yellowish color. It is shown to reduce oxidative stress and inflammation in the brain. This correlation is most evident in India, since it is a high consumer of turmeric while also having one of the lowest rates of Alzheimer's.

(continued on back)



From Corporate Fitness Works Registered Dietitian, Kelsey Cain

Healthy Eating Continued...

Savor the Memories

The risk of developing Alzheimer's and other types of dementia have increased drastically over the years, including 5 million Americans living with Alzheimer's today. These statistics have led to an increase in research on how to effectively boost brain function, even into old age. Research has shown that certain dietary patterns designed to reduce oxidative stress, inflammation, insulin resistance, and promote overall cardiac health help to reduce the risk of developing Alzheimer's and slow the rate of cognitive decline.

The Memory Preservation Nutrition Program

The MPN Program is an evidence-based program developed in 2005 that focuses on consuming whole foods in an effort to improve cognitive and emotional health, while increasing overall health. The program highlights six key strategies to target specific biological outcomes:

1. *Increase the variety of antioxidants consumed*
2. *Increase the consumption of omega-3s and healthy fats*
3. *Increase anti-inflammatory foods*
4. *Reduce insulin resistance*
5. *Reduce LDL cholesterol and intake of saturated fats*
6. *Consume adequate amounts of vitamins B, D, and E*

The program has been implemented in various long-term care facilities and has shown participants having more energy, positive moods, and more likely to engage in activities. It has also been shown to assist in the management of diabetes and slowing the progression of heart disease.

The Mediterranean Diet

The Mediterranean diet, known for being the gold standard for reducing heart disease, shares many similarities with the MPN program. It encourages the consumption of fruits, vegetables, legumes, whole grains, poultry, and healthy fats such as fish, nuts, and olive oil in combination with regular exercise. Although, this eating pattern was originally intended for a healthy heart, it provides many benefits for a healthy brain as well.

Bottom Line

What can we conclude from these dietary patterns? There are specific nutrients that play a direct role in adequate brain functioning. Additionally, if you are consuming a diet rich in fruits, vegetables, and healthy fats, it will not only lead to a healthy brain but also overall improved health.

| Include These | Limit These |
|---|--|
| <ul style="list-style-type: none">• Green leafy vegetables: every day• Other vegetables: at least once per day• Nuts: every day• Berries: at least twice per week• Beans: every other day• Whole grains: three times per day• Fish: at least once per week• Poultry: at least twice per week• Olive oil• Wine: one glass per day | <ul style="list-style-type: none">• Red meats• Butter and stick margarine: less than 1 tablespoon per day• Cheese: less than one serving per week• Pastries and sweets: limit• Fried or fast food: less than one serving per week |

<http://www.todaysdietitian.com/newarchives/090115p28.shtml>

Sources:

www.todaysdietitian.com

www.mayoclinic.org

www.brainwellness.com