October 2024 | Newsletter

Updates and Announcements

Hello Banner Neuro Wellness Community! We have officially kissed goodbye to 100° weather and are now approaching "fall" days.

Updates

- We will **no longer** be having coffee talk being hosted on zoom for the East Valley location.
  - Coffee talk will only be held in person due to lack of attendance on zoom. The West Valley location holds zoom-only coffee talks on the 1st and 3rd Fridays of the month at 10a. See last page of newsletter for details!
- Friday Yoga—
  - Lisa will no longer be teaching yoga on **Fridays only**. Leading yoga will be Annette or a staff member, so class is **not** canceled, just a different instructor.
- New Fine Motor class!
  - On Tuesdays from 2:30-3:20pm, our Occupational Therapist, Emily will be hosting a fine motor course start on October 1st! If you are interested in this course let a staff member and we can schedule you in! Unfortunately, it is currently at capacity we can no longer fit more people into the class. But keep checking to see if there is a spot available.

Dates

- Dance: there are **NO** classes on October 9th and 30th
- Women's Group: meeting October 14th and 28th at 12:30p
- Grief Support: meeting October 1st from 2:30p-4:30p
- MS Support: Meeting October 17th from 12p-2p on the clinic side
- Book Club: meeting on Thursday, September 19th at 2:30p and will be discussing *Finding Me* by Viola Davis

Coffee Talk

- October 4th—Mike Smith discussing open enrollment.
- October 18th—Emily McFadden OT

Halloween Social

- October calls for our annual Halloween social! We hope you join us at Joes Barbecue on Thursday, October 24th from 4:00-6:00p. Costumes not required but they are fun and prizes available for the best costumes 😊! Thank you NWCO for sponsoring!
  - Dinner will be served buffet style on the patio. We are asking $25 per person attending cash or check made out to NWCO (Neuro Wellness Charitable Organization) to cover your cost of food. Pick up a flyer at the front desk and return it with the information asked by Friday, October 18th.

Things are subject to change, upon entering the center, check the TV screen for any updates and announcements that is updated daily!

Birthdays

Mark S.—10/1	Kristie S.—10/17	Tom F.—10/25	Mike H. 10/27
Walt F.—10/2	Jim P.—10/21	Gerald S.—10/25	

The Benefits of Exercise and Learning New Skills

Professor Julien Doyon with the Department of Psychology at the University of Montreal discussing the effects of aerobic exercise training with or without preferred rhythms on learning new motor skills in patients with Parkinson's Disease.

Pilot Project

The conventional wisdom surrounding people with neurodegenerative diseases such as Parkinson's is that they can't learn new motor skills after the death of a critical mass of their brain cells that produce the chemical dopamine.

Dopamine is the key chemical that helps cells initiate movement, and its loss results in the rigidity, tremors and slowness that are Parkinson's hallmarks. But what if something as simple as regular aerobic exercise could defy that conventional wisdom, and help people learn new movements?

At the University of Montreal, neuroscientist Julien Doyon uses brain imaging to investigate whether listening to music with rhythms they enjoy while exercising will enable people with Parkinson's to learn new motor skills, like a sequence of finger movements. He's also investigating whether listening to the same music later – even without exercising – will trigger the same regions of the brain that workouts affect.

In this pilot project study, Doyon and his colleagues will have 12 people with Parkinson's exercise three times a week on stationary bicycles, for 12 weeks. Six of those people will listen to music they have chosen to motivate themselves, and six will listen to calming background sounds. Before they begin their exercise regime, Doyon will use functional Magnetic Resonance Imaging (fMRI) to scan the participants' brains. He will then scan their brains after exercise and while they perform a series of finger movements in the scanner, to see which regions of the brain the combination of exercise and movement activates.

Finally, Doyon and his team will scan the participants' brains when they have stopped exercising but are still listening to their preferred music or sounds. He wants to see if music alone activates the same areas of the brain that exercise and finger movements trigger.

"It's a kind of conditioning we are looking for," Doyon explains, "an auditory cue that activates the same regions in the brain that would either help them to learn or would compensate through other brain systems."

Researchers already know exercise can improve the cognitive functions and reduce the motor symptoms in people with Parkinson's disease. Until now, what they haven't known is how to make those improvements last. Using music as an auditory clue might improve people's quality of life by retaining the benefits of exercise, and it would defy conventional wisdom by showing that people with Parkinson's can learn new skills.

The Latest on Neuroplasticity and Parkinson's

by The Davis Phinney Foundation

Your brain and its many networks and pathways are constantly changing throughout your life. As you learn and experience new things, your brain adapts. New connections (or synapses) are formed. Your brain reorganizes itself. And research continues to show that this brain growth, development, and reorganization are not simply automatic processes but ones that can be encouraged and stimulated. For everyone, including people with Parkinson's, that offers much hope. In this post, we'll explore why neuroplasticity is of particular interest to the Parkinson's community, what it means, and how to promote it so you can boost your brain health and live well today and for many years to come.

What is Neuroplasticity?

Neuroplasticity is the ability of networks and pathways in your brain to change, adapt, and form new connections. Neuroplasticity, sometimes called brain plasticity, can be structural or functional. **Structural neuroplasticity** refers to changes in the strength of the connections between neurons (nerve cells). **Functional neuroplasticity** refers to the permanent synapse changes due to learning, experience, and development.

How Can the Process of Neuroplasticity Help Me Live Well with Parkinson's?

Neuroplasticity, a process beneficial to everyone, has great potential to help people with Parkinson's live well as their Parkinson's progresses. How? Because in addition to creating new connections in your brain, it also enables neurons to compensate for injury and disease. It helps explain why people with speech problems can

sometimes sing to communicate or why people who have difficulty walking can sometimes dance or march with little problem.

To explore how neuroplasticity can help you live well with Parkinson's now and in the future, we first need to dig into some brain basics.

In Parkinson's, the part your brain impacted is called the basal ganglia. Part of your basal ganglia is the substantia nigra, which consists of two components—the pars compacta and the pars reticulata. The substantia nigra pars compacta (SNpc) comprise dopamine-producing neurons. These are the neurons that Parkinson's causes to degenerate, and the death of these neurons leads to declining dopamine levels. Declining dopamine levels impair the nigrostriatal pathway, which links the substantia nigra and the caudate and putamen (parts of the basal ganglia). And this results in the motor symptoms commonly associated with Parkinson's.

So, where does neuroplasticity come into the picture? Through it, your brain can compensate for damaged neurons—like those that produce dopamine in the SNpc—by reorganizing and forming new connections between undamaged neurons. In other words, your brain can disconnect old wires that are no longer functioning correctly and connect new wires to make different pathways.

Even more encouragingly, research shows that you can protect your residual nigrostriatal dopamine neurons—and perhaps even restore the dysfunctional cortico-basal ganglia motor control circuit. (In other words, you can take action to protect the neurons that you still have and, possibly, reverse some of the damage Parkinson's causes on your motor control circuit.) When your brain creates new and alternative brain pathways, you may be able to perform activities or tasks you have had trouble doing during your time with Parkinson's. This can help you stay independent for longer, and it can help you maintain a high quality of life as new symptoms emerge.

How Can You Encourage Neuroplasticity

While neuroplasticity happens automatically in response to learning and experience, you can encourage the process by acting. For example, studies show that synaptic plasticity—the ability to make experience-dependent, long-lasting changes in the strength of neuronal connections—can be positively influenced by several things, including exercise (which studies have found to be most effective), your environment, learning and practicing new skills, and more.

Aerobic Exercise

Numerous research studies, some in animal and some in human models, have shown the potential benefits of physical exercise on brain function and neuroplasticity. This is also the area most researched regarding Parkinson's and neuroplasticity; a very high percentage of studies about neuroplasticity and Parkinson's symptoms are all about exercise and its positive impacts. Many of these studies suggest that exercise triggers neuroplasticity in several ways in the brains of people with Parkinson's and that a regular aerobic exercise routine is essential to maintaining and strengthening brain health in Parkinson's.

Exercise can help strengthen your brain because it increases molecular targets like the brain-derived neurotrophic factor (BDNF). This leads to the formation of new synapses that affect learning and memory. Exercise has also been found to increase brain volume in several brain regions, including the prefrontal and temporal cortex and the hippocampus. It may also spur higher gray and white matter cluster concentrations in the subgyrus, cuneus, and precuneus regions of the brain.

What does this mean in terms of neuroplasticity? Researchers believe that the increase in brain regional volume and activity "may reflect an alteration in the number of neurons, synapses, and axonal and dendritic arbors." In other words, the improvement may be due to neuroplasticity. Other studies have shown that exercise leads to "pre-synaptic remodeling," enhancing the length and complexity of dendrites and increasing the dendritic spine density of neurons. (You guessed it; this again means exercise promotes neuroplasticity.)

It's important to know that intensity is critical to stimulate neuroplasticity through exercise. Vigorous exercise causes physiological responses that promote new synapses in your brain. These new synapses can help your brain become more efficient or increase your ability to do new tasks. As a guideline, Jay Alberts, PhD, who has been researching exercise's effects on Parkinson's symptoms and progression for almost two decades, recommends that people living with Parkinson's perform aerobic exercise in the following dose (after

consulting with their healthcare teams and getting clearance to begin an aerobic exercise regimen of this intensity):

- Three times per week
    - 30–40 minutes for the main exercise set
    - 5-10 minutes for a warm-up period
    - 5-10 minutes for a cool-down period

60–80% of heart rate reserve or 70–85% of heart rate max (Instead of heart rate, you can also achieve an intensity of 14–17 on a 20-point rate of perceived exertion RPE scale. You should be able to answer questions while exercising, but you should not be able to have a conversation.)

Lower-Intensity Exercise Practices

more High-intensity physical exercise is crucial for stimulating neuroplasticity, but several other lower-intensity exercises may also help rewire your brain. Studies have shown that tai chi is a powerful way to encourage neuroplasticity, as are yoga, dance (which can also be a high-intensity exercise depending on its form), balance exercises, and even juggling, which can help your brain form new connections and help you find new ways to move.

Meditation

more Research has found that regular meditation can induce neuroplasticity and improve attention, working memory, spatial abilities, and long-term memory. Some studies have shown that as you meditate, your brain connectivity changes, while others have found that constant meditation leads to widespread, long-term changes in structural connectivity in the brain.

Music

more Listening to and/or performing music may lead to structural and functional changes in the brain. For example, in a 2010 study, researchers stated that "the cognitive enhancement effects of musical training, the result of neuroplastic processes, might be due to a combination of skills required by music study, such as decoding visual information into motor activity, memorizing extended passages of music, learning music structures and rules, learning to make fine auditory spectral and temporal discriminations and learning to perform skilled bimanual finger movements." (Music and music therapy can help you live well with Parkinson's in many other ways, as well!)

Skill Acquisition and Repetition

more Learning and practicing new skills result in new brain connections, too. Research has shown a strong connection between acquiring motor skills and the central nervous system's neuroplasticity at cortical and subcortical levels. As mentioned above, this helps explain why learning to play a musical instrument may promote neuroplasticity or why practicing sports not only builds expertise but also changes brain volumes in many athletes. Learning a new language is also a powerful way to rewire your brain, and practicing something as seemingly simple as handwriting can encourage neuroplasticity.

As anyone who has learned (or relearned) a skill knows, practice is how you improve. Studies show that practice and repetition lead to structural changes in grey and white matter in the brain.

New and Novel Experiences

more Finally, it has long been supported that "experience induces measurable, morphological changes in cells of the brain…and in their connections with one another." Research using animal and human models has shown that environmental stimulation is critical for enhancing and maintaining cognitive function. So, too, are novelty, focused attention, and challenge. So, to stimulate neuroplasticity, you should seek out experiences and environments that are wholly new to you, that challenge you (physically, mentally, and/or emotionally), and that demand your focus and attention.

Although neuroplasticity is a complex process, you don't have to understand the neuroscience behind it to reap its benefits. Try out a few of the suggestions above to start building and reconnecting wires in your brain today.

Welcoming a Six-Week Grief Recovery Program

The journey of grief can affect our health, happiness, and quality of life. If you are coping with the loss of someone close in your life and are ready to move on from your grief, we would like to invite you to attend our six-week Grief Recovery Program to be held at Banner Neuro Wellness in Gilbert.

Each week there will be a specific topic of discussion as well as an opportunity for everyone to share their stories. By working through our grief, we can find new meaning, peace, and happiness that will lead us on a path of renewal to achieve our "new normal". With Thanksgiving and Christmas quickly approaching, we will be dedicating one weekly session to "Handling the Holidays".

The Grief Recovery Program will be held Tuesdays from 1:00pm-3:00pm. Scheduled dates are:

- 10/1
- 10/8
- 10/15
- 10/22
- 10/29
- 11/5

For those of you attending our monthly Grief Support Group, our 10/1 and 11/5 meetings will be combined with the six-week program.

The Banner Neuro Wellness Center is located at 207 N Gilbert Rd, Suite 201, Gilbert, AZ.

If you are interested in attending or have questions, please contact us at 480-827-5800 to put you in contact with Bobbie Dragel for more information!

Book Club

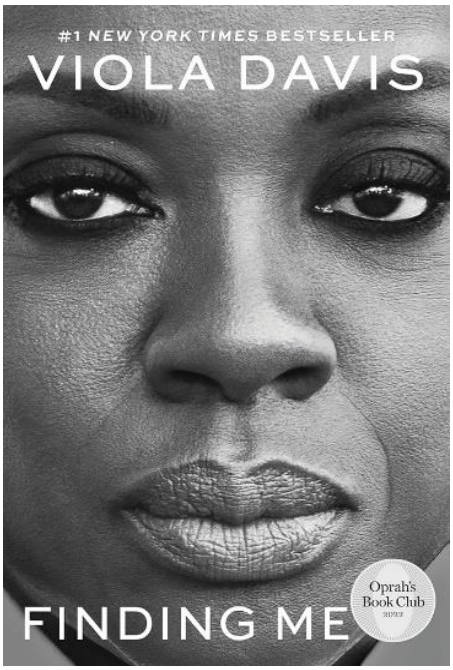
Discussing ***Finding Me*** by Viola Davis on Thursday September 19 at 1:30p

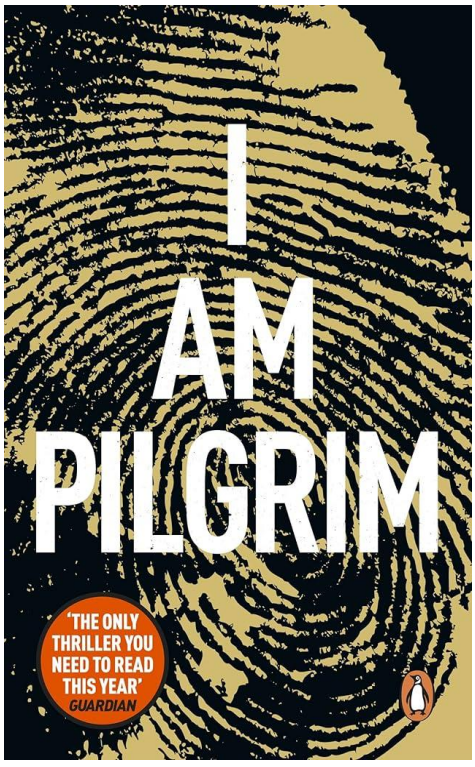
Synopsis

In my book, you will meet a little girl named Viola who ran from her past until she made a life-changing decision to stop running forever. This is my story, from a crumbling apartment in Central Falls, Rhode Island, to the stage in New York City, and beyond. This is the path I took to finding my purpose but also my voice in a world that didn't always see me.

As I wrote Finding Me, my eyes were open to the truth of how our stories are often not given close examination. We are forced to reinvent them to fit into a crazy, competitive, judgmental world. So, I wrote this for anyone running through life untethered, desperate, and clawing their way through murky memories, trying to get to some form of self-love. For anyone who needs reminding that a life worth living can only be born from radical honesty and the courage to shed facades and be . . . you.

Finding Me is a deep reflection, a promise, and a love letter of sorts to self. My hope is that my story will inspire you to light up your own life with creative expression and rediscover who you were before the world put a label on you.





Starting ***I Am Pilgrim*** by **Terry Hayes** and Discussing on Thursday October 21 at 1:30p

Synopsis

A breakneck race against time...and an implacable enemy.

An anonymous young woman murdered in a run-down hotel, all identifying characteristics dissolved by acid.

A father publicly beheaded in the blistering heat of a Saudi Arabian public square.

A notorious Syrian biotech expert found eyeless in a Damascus junkyard.

Smoldering human remains on a remote mountainside in Afghanistan.

A flawless plot to commit an appalling crime against humanity.

One path links them all, and only one man can make the journey.

Pilgrim.

Support Groups

As we know, isolation is detrimental to a human's emotional health and well-being. We have various resources here at BNW that can fit everyone's needs and interests. Having a community around you is beneficial in navigating this marathon called Parkinson's disease. If you are looking for support and comprehension in your journey, try one of the links below!

Care Partners support group— Mondays at 10am

- https://us06web.zoom.us/j/98783463027?pwd=UFJEUTU0MFk4Mlo1alVpQ2ZqUlE0dz09
- Meeting ID: 987 8346 3027
- Passcode: CareP

Grief Support Group—Tuesday, October 1st at 2:30p

- https://bannerhealth.zoom.us/j/95625400296

Women's group—2nd and 4th Monday at 12:30pm

- https://zoom.us/j/91519308340?pwd=VXh3YkxTUnFFWnVxcU5jOXRrSmRNdz09
- Meeting ID: 915-1930-8340
- Password: BNWwomen

Men's group—Tuesdays at 3:30 pm

- https://zoom.us/j/93417635850?pwd=Y1ZIcmtMV2ZoMGRodjZ0cW5vYUg0QT09
- Meeting ID: 934-1763-5850
- Password: BNWmen

Book Club—Thursday, October 17th

- https://zoom.us/j/93907185327?pwd=b0NZQXRGRnhIWnRKZjNZRHNvdGZzQT09
- Meeting ID: 939 0718 5327
- Passcode: BNWbook

Music Therapy—Mondays at 3:30pm

- https://zoom.us/j/93979633223?pwd=QUhCL21JU1lGRzdhVWxuODlRU2JuQT09
- Meeting ID: 939 7963 3223
- Password: BNW

Speaking Group—Wednesdays at 1:00pm

- https://zoom.us/j/94403796007?pwd=VjVxOGh6bVZRcXpUcDdrUi8rY1E3Zz09
- Meeting ID: 944 0379 6007
- Password: BNWspeech

Dance—Wednesdays at 9am

- https://zoom.us/j/94495633104?pwd=bVl4R3pIMGY3amFsZm9JSlJ3ZTFHZz09
- Meeting ID: 944 9563 3104
- Passcode: BNWdance

West Coffee Talk—Fridays at 10a (October 11th and 25th)

- https://zoom.us/j/91976339867?pwd=bGpxSkxqNVh3dWpmR0RRRHhFK1h5QT09
- Meeting ID: 919 7633 9867
- Password: Bu2HqZ

Workout Links

- Standing workout— https://youtu.be/5Qu2G5WGuko
- Standing workout with Weights- https://youtu.be/677hxtWi7p8
- Seated yoga-- https://www.youtube.com/watch?v=z7P7vKvqC1g
- Seated workout-- https://youtu.be/xqA7JJxNBC8