

## BETTER BRAIN HEALTH AND BALANCE

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*Dr. Beth Templin is the owner of HouseFit Physical Therapy & Fitness, which specializes in helping aging adults and people living with PD to stay active and independent and enjoy life fully.*

We know that intense exercise is one of the best ways to improve and maintain your physical fitness with a Parkinson's diagnosis. Just as important is maintaining good brain health. When you take a deeper look into brain health, there are several recommendations including: participating in regular physical activity, getting a good night sleep, engaging in mentally stimulating activities, eating a brain healthy diet, managing your health, and staying socially engaged.

**Today we're going to focus on two of these recommendations, physical activity and mentally stimulating activities.** We know that exercise increases blood flow to the brain, helping to bring in nutrients and carry away wastes, promoting healthy brain tissue. **Physical activity** also stimulates the production of Brain-Derived Neurotrophic Factor (BDNF), which helps support the growth and survival of new brain cells.

**Mentally stimulating activities** can range from playing brain games to learning new hobbies. By challenging your brain and continuing to learn new information, you strengthen your brain, making it easier to think faster, focus and remember more. When you overlap these two activities and perform cognitive challenges while exercising, you amplify the benefits of both for your brain health.

The combination of moving and thinking at the same time requires more concentration and is known as **dual tasking**. Typically, when you dual task, one or both of the activities suffer, meaning they are not performed as effectively. People living with PD often demonstrate larger gaps in performance compared to older adults living without PD. This can affect activities like walking and lead to increased fall risk or loss of independence. The good news is research shows dual tasking can be improved in people living with PD with practice.

There is an app called **Clock Yourself** that you can install on smart phones or tablets that can help you perform these activities at the same time. This specific app works on reactive stepping or stepping in different directions randomly. Performing reactive step training has been shown to be an important part of balance training and reducing fall risk. Since people living with Parkinson's are at a higher risk of falls than the normal population, I think it's a perfect activity to practice regularly.

Inside the app are several different dual tasking options from which to choose. We recommend starting with the **Simple Colours**, which is the easiest level. This activity will start by having you imagine standing in the "middle" of 4 colors. The app will call out a color and the objective is to step on that color with one foot, while the other stays in place. In between each color, you will want to return both feet to the center. The activity will have you stepping in 4 different directions: forward, backward, left and right. You can set the speed of how fast the colors will be called out. I'd recommend starting with 40-50 steps per minute





Once this level feels easy, you can choose to increase the physical challenge by increasing speed of steps by increasing the SPM or you can increase the cognitive load by moving onto the next level. The second level is the **Simple Clock**. In this level you will imagine yourself standing in the middle of a clock face. The 12 in front of you, the 6 behind you, the 3 to your right and the 9 to your left and so on for a full clock face. Again, start at a slow speed of 40-50 SPM until you feel confident stepping in all 12 directions. Then continue to increase your speed as you feel comfortable.

When you're ready for a bigger challenge, you can move onto their **Brain Games**. These challenges add another layer of thinking into the mix. For example, months of

the year will call out a month like March. You need to figure out that March is the third month of the year and then step towards the 3 on the clock.

We love this app because it can be customized to many different levels of speed of movement, direction of movement and complexity of thinking. It also requires no special equipment or much space to successfully complete the workouts. When you're just starting out 2 minutes may feel exhausting, but as your body gets used to and better at dual tasking, you may be able to increase to 5 minutes/session. Plus, you get the added benefit of working on your balance recovery strategies, while will decrease your fall risk.

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