Combining Exercise with Yoga Postures, Breathing, and Meditation to Help Manage the Symptoms of Parkinson’s Disease

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Abstract

Current estimates indicate that 1.5 million Americans have Parkinson’s disease (PD), and 60,000 new cases are diagnosed each year. Having PD can interfere with the ability to do everyday activities and hobbies, and generally increases one’s tendency to fall. Since there is currently no cure for the disease, treatment is aimed at managing symptoms, working to maintain independent function, and as much as possible reducing PD-related disability. The following article provides an overview of a program offered to those with PD that combines education in body mechanics, fall prevention, low impact aerobics, strength training, and Yoga postures, breathing, and meditation as a way to help manage symptoms and maintain independence.

Introduction

Parkinson’s disease (PD) is a neurological disorder first described in 1817 by Dr. James Parkinson. It is characterized by tremor or shaking of the limbs, slower movements, rigidity or stiffness especially in the trunk of the body, and loss of balance. For those with PD, everyday activities may become more difficult to perform. Signs and symptoms can include small, cramped handwriting, absence of facial expression, shuffling of feet when walking, speech becoming softer and more difficult for others to hear, depression, and a forward stooping posture. These changes in posture and gait can increase one’s tendency to fall. The types of symptoms present and the rate at which this disease progresses can vary greatly from person to person.

PD results when nerve cells in the substantia nigra area of the brain are damaged. These cells are responsible for producing dopamine, a neurotransmitter necessary for coordinating smooth and balanced muscle movement. As these cells become impaired and less dopamine is available, nerve cells fire out of control causing tremors or difficulty initiating movement. PD is difficult to diagnose because there are no specific X-rays or blood tests to determine its presence. It can be diagnosed only through observation and thorough examination.

Current estimates indicate that 1.5 million Americans have PD, and 60,000 new cases are diagnosed each year. It affects both men and women equally and does not appear to affect a particular social, ethnic, economic, or geographical group. The average age of onset is the early 60s, although approximately 10 percent of those diagnosed experience onset at age 40 or younger.

Since there is currently no cure for the disease, treatment is aimed at managing the symptoms, working to maintain independent function, and as much as possible...
reduce disability from the disease. Treatment can include medication, surgery, and adopting healthy lifestyle habits, including daily exercise. While exercise cannot cure the disease, many participants in our program experience improved lung capacity, muscle strength, flexibility, balance, gait, and ability to initiate movement.

The Sacred Space Health Center Inc. (SSHC)

SSHC was formed in 1996 in Chatham, Massachusetts, with a primary mission to provide programs for those with chronic and life-threatening illnesses. These programs aim to provide participants with information on both Western and Eastern approaches to disease management.

For the last three years we have been offering a twice-weekly program for those with PD. This class offers attendees a blend of education in body mechanics, fall prevention, balance training, low impact aerobics, strength training, T’ai Chi, and Yoga postures, breathing, and meditation/stress management techniques. The goal of this program is to introduce participants to a wide variety of techniques that can help them remain independent with as high a quality of life as possible. In addition, since this is a group program, participants have the opportunity to connect with others in the PD community to provide support to each other and discuss difficulties, medication, current research, and other issues pertinent to their situation.

The program is unique in that it is condition specific; i.e., everyone in the class has PD. This allows the instructor to tailor the program to meet the specific needs and challenges of this particular population. This also provides a feeling of safety for participants who often report feeling uncomfortable in traditional classes where symptoms of tremors or freezing may draw attention. Since everyone in the program is dealing with PD, participants feel less self-conscious when symptoms occur, knowing that others in the class are having the same experience.

The Benefit of Combining Exercise and Yoga Postures, Breathing, and Meditation for Those with Chronic Illness

Many chronic illnesses such as PD present a multitude of symptoms and can make everyday tasks challenging. A top priority for many of our participants is the ability to remain independent in their homes for as long as possible and to be able to perform their activities of daily living (ADLs) independently. ADLs include eating, dressing, bathing, sleeping, toileting, walking, or moving about in general. PD can affect each of these. Some symptoms of PD (tremor, stiffness, slow movement, and balance problems) may worsen over time and can make it more difficult to do such things as get in and out of a car, stand up from a chair, walk, and dress. While participating in a regular Yoga class or exercise class can certainly help, many of these programs do not address body mechanics or fall prevention techniques, or work on specific needs such as gait training.

If participants are attending a Yoga class or exercise class, yet return home and continue to use body mechanics that put them at risk for a fall, they may lose the independence they were attempting to retain through exercise. In addition, traditional aerobics and strength training programs do not always address the mind-body connection so vital to a Yoga posture, breathing, and meditation practice. On the other hand, Yoga, which can address the mind-body connection, does not fully address aerobic conditioning and strength training. In addition, since the majority of Yoga postures are static, they only partially address balance. They do not challenge the body to move and shift weight in a variety of directions, such as moving forward, backward, and sideways.

Combining all these activities in one program can help to address the variety of needs presented by those with PD. Teaching participants deep diaphragmatic breathing exercises combined with a body scan and mindful movements develops the mind-body connection and the ability to be aware of changes and sensations in the body. Taking this knowledge and applying it while performing aerobic and strength training activities can help participants perform their exercise and daily activities with more consciousness. Combining these techniques can aid in reducing the risk of falls or injuries, as participants begin to think about their actions with a calmer mind and thereby make safer choices.

Applying the Techniques in a Class Setting: Body Mechanics Training

Body mechanics refers to the way we perform ADLs and other tasks we do on a regular basis. It includes activities such as grooming, eating, house and yard work,
and activities required by jobs and hobbies. Using correct body mechanics helps to protect the joints from injury and reduces the risk of falls and other accidents. Body mechanics education often can be combined with performing exercises or postures during a class. Following are some examples:

Getting into and out of a chair: Many accidents happen when transitioning from various positions. This can include standing up from a seated position, sitting down in a chair, getting into or out of a car, getting into or out of the shower, or getting up from or down to the floor. For example, one very common and unsafe habit of someone with PD is crashing down into a chair when sitting. This is often the cause of injuries, as moving in this way can cause a person to lose his or her balance and either miss the chair entirely, or cause the chair to slide or tip over from the force of landing in it. This can be addressed through performing squats and chair pose. They are done by placing a chair behind the participant and having him or her lower to just the edge of the chair or sit just on the edge and then stand back up. This helps to strengthen the quadriceps muscle (the large muscle on the top front of the thigh) and teach the participant to both sit down and rise up with control. As a participant is practicing this movement the instructor can take the opportunity to educate him or her about the harm that can be done by crashing down into chairs.

Getting up from the floor: If you have fallen and are in the middle of a room, crawl or scoot yourself to a sturdy chair or piece of furniture.

1) Roll onto your back.

2) Roll over onto one side and use your arms to press yourself up onto one hip.

3) Come to your hands and knees.

4) Bring one foot forward so you are on one knee using the chair for support.

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Falling while alone is the leading reason many persons with Parkinson's disease are transitioned into a nursing home by family members, and it is the number one reason for loss of independence. After a fall, many try to get up in a way that is difficult for them. After a few failed attempts, some may end up waiting hours or even days before neighbors or family realize something is wrong and help arrives.

If participants are taught during class how to get up from and down to the floor in a manner that is safer and easier, they are more likely to be able to get back up on their own if they fall. Many new enrollees to our program report past experiences of falling and having to wait for help or having to call an ambulance for assistance. By practicing mindful movements, they learn to stop, take a deep breath, relax, and think their way through the situation. Since they have rehearsed getting up and down in the class, they are able to calmly get up on their own. Many have reported this as the most valuable information they have taken from the class, as they no longer need to rely on assistance from others after a fall. This is the leading positive comment we receive from class participants.
5) Keeping the back straight, push on the seat of the chair and come up to standing.

Aerobic Exercise

It is common for those with PD to experience difficulty with walking and balance. When walking, a person with PD is likely to use small, shuffling steps with the feet close together, and to have trouble turning around, resulting in frequent falls. In addition, one of the most common early signs of PD is reduced arm swing when walking. Many with PD also having difficulty initiating movements and experience trouble with freezing.

Participating in regular aerobic exercise can help lessen these symptoms. Our aerobic movements are kept simple, with emphasis placed on picking the feet up completely off of the floor and striking with the heel first with the toes lifted. This helps participants learn to combat a shuffling step and avoid tripping over the toes while walking. Equal emphasis is placed on swinging the opposite arm to leg, again to help participants become aware of the tendency to hold the arms stiff. The aerobic exercises are basic low impact movements such as marching, leg kicks, and side stepping that help to improve balance and reflexes as participants work to move their body in a variety of directions. Once able to initiate a movement such as marching in place, we then travel the movement forward, backward, and sideways to further improve mobility. In addition, if the yogic concept of mindful movement is combined with the aerobic exercise, participants learn to move with more confidence and are less likely to fall or place themselves in compromising situations.

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Participating in aerobics can be challenging for those with PD due to freezing (being unable to initiate movement). Following are some common techniques our students find helpful:

- Quickly lifting up the toes of both feet or swinging both arms up to shoulder height. This may jolt the body into moving.
- Counting or speaking out loud, saying “1, 2, 3, 4” or “step, step, step.” Speaking out loud creates a rhythm that sometimes gets the body moving again.
- Using music during the aerobic routine. Music provides a beat for the body to follow.

Using music during the aerobic routine seems to be the most useful technique. Using simple songs with a steady beat that participants know and can sing along to helps keep them in a regular rhythm of movement. (At one point in our program we experimented with using a metronome as a source of rhythm, but this did not provide as effective results as actual music.)

Strength Training

In our program we also incorporate strength training exercises using hand and ankle weights. These are specific exercises designed to target the major muscle groups. These movements are also combined with yogic deep diaphragmatic breathing and mind-body awareness to help participants learn to exercise with control and at the right level.

While Yoga *asana* can strengthen the muscles as participants hold specific postures, as with any static exercise they are strengthening the muscles isometrically. Isometric exercises involve contracting muscles against other muscles or an immovable object, such as the floor. This is different from exercises in which the muscle is moved through its full range of motion against some kind of resistance, such as a weight.

In addition, with isometric exercise the muscles only gain strength at the angle at which the joint is being held. For example, chair pose can help with strength, control, and balance as the participant works to stay in the posture. When holding the pose with the knees bent at a 45-degree angle, however, the quadriceps muscle is only becoming stronger at this particular angle. Thus if a person wants to work with the quadriceps to make it easier to rise from a chair, performing chair pose would clearly help, but it would not fully strengthen the muscle. Sitting down requires the knees to bend further (generally to a 90-degree angle), and performing squats accomplishes the full range of required motion. During a squat, a person moves from standing upright to a 90-degree bend and back again.
several times. This strengthens the muscle fully, as the participant is moving the muscle through its full range of motion, rather than holding still at a specific joint angle.

This provides an example where combining Yoga and strength training helps to provide a well-rounded program. We often have participants perform eight to twelve squats to move the joint and muscle through the full range of motion and finish by holding chair pose for a few breaths. This helps to provide both joint range of motion and static control.

Yoga Postures, Breathing, and Meditation

The final component of our program is instruction in Yoga postures, breathing, and meditation. Yoga is unique in its emphasis on mindfulness, a concept that most Western exercise programs lack.

In many traditional exercise programs, the class is held in a large, brightly lit room with loud music playing, and participants primarily do their best to keep up with the rest of the class. In contrast, a traditional Yoga class is usually held in a quieter atmosphere in which participants are encouraged to work at their own pace and honor their body’s needs regardless of what anyone else in the room is doing.

Practicing Yoga postures has helped our students improve balance, flexibility, and joint range of motion, and enhance body awareness. Since rigidity of the muscles is common for those with PD, a gentle asana practice allows participants to move and explore their body while becoming aware of its needs.

All of our PD classes begin with 15 minutes of posture and breathing practices. We begin with deep diaphragmatic breathing and a body scan to allow participants to settle in and check in on how they feel. Participants are then guided through a series of gentle movements designed to increase joint range of motion. Due to the rigidity and stiffness that occurs, those with PD can find it challenging to jump right into a traditional class, especially in classes that begin on the floor. Having participants begin each class seated in a chair as they do a Yoga-based warm-up allows them to slowly get the body moving. It also provides an opportunity to become aware of how their body feels at that moment. Starting each class with a Yoga-based warm-up prepares participants to go into the aerobic and strength training segments with awareness and acceptance.

Our class ends with a Yoga-based segment to help stretch muscles that might have become tight from more vigorous exercise and to practice static balance postures.

Many of the postures we teach in our PD class are adapted. They allow participants to hold on to, or sit in, a chair based on how they are feeling in any given class.

Examples of adapted postures:

Tree pose:

Along with Yoga posture practice, a regular practice of meditation can help those with PD. Stress is a normal part of life, and it can become even more of an issue when living with a chronic disabling disease. The latter is often accompanied by feelings of losing control of one’s life and of being separated from activities that once brought joy, as well as by fear of the unknown. Not knowing
how one’s life will be affected, not knowing exactly how the disease will express itself in the body, while at the same time knowing there currently is no cure, can bring on feelings of helplessness and hopelessness. As one must constantly adapt to the changes occurring in one’s body, the fight or flight response may continually be activated. Having a chronic condition also can create the need to make changes in one’s hobbies, lifestyle, family roles, finances, work situation, and housing arrangements.

Our students have commented that participating in a regular program of exercise or in a Yoga class not only helps combat physical symptoms but also provides an opportunity to connect with peers. The latter helps to decrease feelings of depression and the tendency to isolate oneself.

A program of stress management is really essential for PD, as all symptoms can worsen under stress. In some cases, stressful events may accelerate the disease’s progression. Practicing meditation and relaxation techniques helps those with PD to learn skills for better dealing with stress, anger, pain, depression, insomnia, and other problems associated with illnesses and medical/surgical procedures. It helps them learn to remain calm.

In addition to reducing stress and depression, meditation and relaxation techniques may help to:

- dramatically decrease pain and the need for pain medication
- decrease side effects and complications of medical procedures
- shorten hospital stays and reduce recovery time
- enhance sleep
- strengthen the immune system and enhance the ability to heal
- increase self-confidence and self-control

Some of our participants also have discovered that meditation can help to control their tremors. When a tremor starts, a common reaction is to become upset or self-conscious, and these feelings can often exacerbate the condition. Some of our participants find that if instead of reacting to a tremor they begin to meditate, the nervous system calms and the tremor stops. Meditation can include techniques such as focusing on the movement of the breath, guided imagery, and a form of mindfulness meditation.

In summary, our experience has been that combining Western approaches to exercise with Eastern techniques offers our clients a more comprehensive and effective program than offering just one of them alone. While the programs at our center are still a work in progress, I hope this information is helpful to other teachers, health care providers, and those who are living with Parkinson’s disease.

I would like to thank the International Association of Yoga Therapists for their kind invitation to share my experiences in working with the PD community in cooperation with other instructors. I welcome feedback and dialogue from other practitioners who have suggestions or information to share on this topic. I also would like to thank the many local health care providers and community leaders who help to make these types of programs available, and the National Parkinson’s Foundation for their continued support of our programs.

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