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Occupational Therapy Intervention for Individuals with Parkinson's Disease

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Occupational Therapy Intervention for Individuals with Parkinson's Disease

A Scholarly Project

by

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of the

University of North Dakota

for the degree of

Master of Occupational Therapy
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CHAPTER I
INTRODUCTION

Parkinson's disease is a disorder of mobility that affects nearly 1% of the U.S. population. This disease occurs in adults from the ages of 40 to 70 years, with onset most frequently occurring after the age of 50. This disease exists in all countries and all ethnic and socioeconomic groups (Copstead, 2000).

Clinically, the disease is characterized by bradykinesia, gait difficulty, postural instability, rigidity, and tremor. Individuals experience difficulty walking. Common problems include short shuffling steps, difficulty in negotiating turns, and unexpected freezing. The muscles become tense and rigid (Duvoisin & Sage, 2001). Everyday activities once performed quickly and easily, such as washing or dressing, may take several hours.

It is helpful for individuals with Parkinson's disease to know how to help control their symptoms. Typically occupational therapy services are provided later after the illness has progressed. However occupational therapy can assist the client in coping with the illness and developing strategies to maintain independence. Gray and Hildebrand (2000) found occupational therapy treatment interventions to be effective in areas such as exercise and implementing fall prevention techniques for individuals with Parkinson's disease.

This project reviews existing literature and common problems associated with the disease progression. This information focuses on the strengths and weaknesses of implementing occupational therapy intervention for individuals with Parkinson's disease. Also, clinical examples of interventions are incorporated. The project then
describes the process of developing a resource manual for individuals recently
diagnosed with Parkinson’s disease. The manual can be found in appendix A and it
addresses the following areas: coping techniques, stress management, fall prevention,
adaptive equipment, and energy conservation.

By organizing and bringing this information together, occupational therapists
can utilize this information to better serve their clients who have been newly
diagnosed with Parkinson’s disease. By implementing interventions into their daily
life, they will be able to increase and maintain their independence and quality of life.
CHAPTER II.

Parkinson's disease is a progressive disorder of the central nervous system. According to Duvoisin and Sage (2001), over 1.5 million people in the United States are affected by this disease. Clinically, the disease is characterized by bradykinesia, gait difficulty, postural instability, rigidity, and tremor.

This literature review identifies current trends and issues in treating clients with Parkinson's disease. Areas examined include: diagnostic signs and symptoms of Parkinson's disease and psychosocial aspects of the disease, specifically anxiety and depression. Also addressed are coping techniques, fall prevention, adaptive equipment and home modifications, exercise, and energy conservation.

Clinical Definition

Parkinson's disease is a disorder of the brain characterized by tremors and difficulty with walking, movement, and coordination. Parkinson's disease is both chronic in that it persists over a long period of time and progressive in that symptoms worsen over time. The disease affects approximately 2 of every 1,000 people and most often develops after age 50. Parkinson's disease may occur in younger adults however, it is rarely seen in children. It is present worldwide and in all populations. Men have a slightly higher prevalence rate than women (Hauser & Zesiewicz, 2000).

Parkinson's disease is associated with damage to the basal ganglia and the extrapyramidal areas of the brain which are involved with movement. A group of nerve cells, called the substantia nigra, makes a chemical called dopamine. Dopamine is important for transmitting signals from one group of brain cells to
another. Deterioration of this area of the brain reduces the amount of dopamine available to the body. Insufficient dopamine disturbs the balance of neurotransmitters. The nerve cells cannot properly transmit messages without dopamine and this result in the loss of muscle function. The exact reason for deterioration of the brain cells is unknown.

Symptoms of Parkinson's start mild and develop to moderate or severe as the course of the disease progresses. The disorder may affect one or both sides of the body (Adler & Ahlskog, 2000). Symptoms include tremors, rigidity, bradykinesia, and postural instability (Duvoisin & Sage, 2001; Hauser & Zesiewicz, 2000). It is important to remember that not everyone with Parkinson's disease will experience the full range of these symptoms.

Tremor is the symptom most commonly identified with Parkinson's disease and is typically the first symptom the individual notices. A simple to and fro motion of the arm or leg may be all that is noticeable. In the later stages, the movements become more complex. The rhythmic back-and-forth motion of the thumb and forefinger is equal with a frequency of five to six beats per second. This is sometimes called "pill rolling" (Duvoisin & Sage, 2001). The tremor usually begins in a hand and then progresses to the head, neck, and face. Sometimes a foot or the jaw is affected first. The tremor is most obvious when the hand is at rest or when a person is under stress. Tremors may affect only one part or side of the body and are rarely disabling. The tremors usually disappear during sleep or improve with intentional movement.
Rigidity is increased tone or stiffness in the muscles. It is often responsible for a mask-like expression of the face. Rigidity is found mainly in the back of the neck, shoulders, back of the head and temples (Hauser & Zesiewicz, 2000).

Bradykinesia, or slowness of movement, is characterized by a delay in initiating movements. It is due to a decrease in transmission of signals from the brain to the muscle (Duvoisin & Sage, 2001). This may be the most disabling and distressing symptom of the disease because it is unpredictable. The individual cannot rapidly perform routine movements. Activities once performed quickly and easily, such as washing or dressing, may take several hours.

Postural instability is an impairment of balance and coordination. This causes people with Parkinson's disease to develop a forward or backward lean. Retropulsion or the tendency to step backwards occurs when an individual with a backwards lean starts walking (Duvoisin & Sage, 2001). Additional walking problems generally include a shortened or non-existent arm swing, short shuffling steps, difficulty in negotiating turns, and unexpected freezing spells (the inability to take the next step) (Duvoisin & Sage).

Secondary symptoms associated with Parkinson's disease include anxiety, depression, sleep disturbances, dizziness, constipation, dementia, skin changes, problems with speech, breathing, swallowing, and sexual function. Typically these result from one or more primary symptoms and are often more disabling for the individual. For example, speech difficulties are produced from the effects of rigidity, tremor and bradykinesia on the muscles of the throat and larynx used in speech.
Depression and Anxiety

Depression is a serious medical condition affecting thoughts, feelings, and the ability to function in everyday life. Approximately 40-50% of individuals diagnosed with Parkinson's disease are also diagnosed with depression (Zesiewicz, Gold, Chari, & Hauser, 1999). These individuals have a different symptom profile than those without Parkinson's disease. The Parkinson's profile includes higher rates of anxiety, sadness without guilt or self-blame, and lower suicide rates despite high rates of suicidal thoughts.

In some individuals, depression is associated with anxiety. The anxiety can be overwhelming and often takes the form of constant worry and fear. These symptoms can negatively impact a person's engagement in occupations and ability to independently function. As many as to 40% of individuals with Parkinson's disease experience clinically significant anxiety (Walsh & Bennett, 2001). This anxiety may be a psychological reaction to the stress of the illness or may be related to the neurochemical changes of the disease itself. According to a study done by Menza and Mark (1994), anxiety is significantly more prevalent in individuals with Parkinson's disease. The sample included 104 individuals with Parkinson's disease and 61 medical control subjects with similar disability for symptoms of anxiety. All participants completed the Zung self rating depression scale and the Zung self rating anxiety scale: the mean anxiety scale was 25.2 in individuals with Parkinson's disease and 20.9 in control individuals. This resulted in the finding that individuals with Parkinson’s disease scored considerably higher than control subjects did on this measure of anxiety.
Individuals with Parkinson's disease experience considerably higher levels of stress and experience social anxiety, such as being fearful of being negatively evaluated in public. Anxiety and social withdrawal may then result. Doyle Lyons and Tickle-Degnen (2003) investigated the types of challenges people with Parkinson’s disease encounter in daily occupations involving social interactions. One of the themes emerging from the data analysis was subjects experienced a disruption of flow and structure in social situations due to their Parkinson’s disease symptoms. All subjects reported this occurring when engaging in social interactions such as attending church, talking with a physician, and giving speeches. Subjects described encounters where Parkinson’s disease symptoms challenged their ability to follow a normal occupational form. These individuals identified feeling uncomfortable and anxious and also attributed similar feelings to other people in social settings. In order to more effectively cope with the situation, subjects learned to take action or adapt their attitude. One participant found he functioned best after taking his medication. Based on this, he scheduled meetings and appointments to coincide with his medication times.

Anxiety and depression commonly coexist in the same patient. The degree of comorbidity between depression and anxiety in individuals with Parkinson's disease is greater than those without Parkinson’s disease. Individuals with Parkinson’s disease have significantly higher levels of depression and anxiety. Studies have found that depression in combination with panic and/or anxiety occurred in individuals with Parkinson’s disease compared with healthy controls (Copeland,
Coping

Coping with a chronic illness like Parkinson's disease can impact an individual's ability to complete daily activities and his/her overall lifestyle. Issues of management become more complex as Parkinson's disease progresses. These issues include: maintaining independence, controlling symptoms, and managing difficulties related to long-term effects of both the treatment and the condition itself. Education, support, and stress management can assist the client with Parkinson's disease cope with the progression of this chronic illness.

Education provides the person with Parkinson's disease a sense of control. For example, education about the progression of the illness can help the person more effectively manage the impact of the illness on daily living tasks. The person who is well informed is the best advocate for appropriate care and managing his/her illness.

Many people feel isolated and withdraw from social contact. This may become more prevalent as the symptoms of Parkinson's disease become more obvious. Parkinson's support groups provide information regarding the disease, coping mechanisms, treatment options, local doctors, and support services. The support groups provide a sense of community, a shared experience, and serve as a forum to express frustration and share knowledge (Duvoisin & Sage, 2001).

The stress of having a chronic illness can have a negative impact on the symptoms of Parkinson's disease. It is important for the individual to focus on managing the stress in his/her daily life and utilizing relaxation techniques. Klink,
Blonk, Schene, and Dijk (2001) conducted a meta-analysis to determine the effectiveness of stress reducing interventions. The three interventions utilized in this analysis were cognitive behavioral approaches, relaxation techniques, and multimodal interventions. The cognitive-behavioral approaches concentrate on changing cognitions and subsequently reinforcing active coping skills. Relaxation techniques focused on physical or mental relaxation as a method to cope with stress. Multimodal interventions emphasize the acquisition of both passive and active coping skills. Forty-eight studies were used for analysis. The results of this study found using stress-reducing interventions that focused on individuals were more effective than when focused on a group. The results also found cognitive behavioral approaches are more effective than relaxation techniques and tend to be more effective than multimodal interventions. Relaxation techniques appeared to be effective when physical symptoms were induced by emotional factors (psychophysiologic) (Klink et al.).

Falls

Falling is the sixth largest cause of death in the elderly and is frequently seen in individuals diagnosed with Parkinson’s disease. Annually, approximately 30% of people 65 years and older experience falls. Gray and Hildebrand (2000) conducted a twelve week study to identify the risk factors associated with falls for participants with Parkinson’s disease. Participants were tested prior to the start of the study for activities of daily living, motor skills, stage of the illness, and symptomology to determine their baseline scores. At the end of their 12 week study, 41% of participants reported no falls, while 59% reported one or more falls (Gray &
Hildebrand). This study found the risk factors for falling included: the severity of the disease, frequent episodes of freezing, postural hypotension, needing help with activities of daily living, and alcohol intake.

Common causes of falling include postural instability, rigidity (the body is unable to correct itself when it's off balance), and decreased range of motion. Wood, Bilclough, Bowron, and Walker (2002) investigated the incidence of falls in people with Parkinson’s disease. Participants underwent a multidisciplinary assessment to determine baseline scores for mental and physical functioning, gait, balance, and stage of the disease. The study found in the span of one year, 68.3% of the subjects with Parkinson’s disease reported experiencing one fall, while 50.5% identified having at least two falls. The researchers noted there was a strong correlation between the severity of the disease and the risk of a fall. In addition, the study also found people with cognitive impairments had an increased risk of falling.

The Falls Behavioral (FaB) Scale for Older People was designed to determine behavioral factors that could potentially protect elderly people against falling (Clemson, Cumming, & Heard, 2003). The ten assessment areas were: cognitive adaptations, protective mobility, avoidance, awareness, pace, practical strategies, displacing activities, being observant, changes in level, and getting to the phone. The result of the study suggested people with a history of falling appear to make adaptations and use safer practices than those who do not have a history of falling. The FaB was found to be useful in measuring the effects of a program, focusing on reducing risky behaviors, and enhancing safe adaptations associated with fall
prevention. The FaB can be utilized by occupational therapists as an assessment and goal setting tool in clinical practice.

Adaptive Equipment and Home Modifications

Adaptive equipment and home modifications may help the person with Parkinson's disease maintain their independence and compensate for functional limitations (Low, 2002). A person with Parkinson's disease may experience more falls as the disease progresses. It may be necessary to make home modifications and implement the usage of adaptive equipment in order to prevent falls from occurring.

Occupational therapists are trained to identify environmental hazards and recommend adaptive equipment to promote independence in occupational performance components. An occupational therapist's first role is to determine what type of adaptive equipment is necessary for the client. Secondly, they evaluate the client's receptiveness to the equipment and the extent to which the device may call unnecessary attention to the client and finally the occupational therapist needs to train the client on the usage and proper care for the equipment (Kraskowsky & Finlayson, 2001).

The most commonly recommended adaptive equipment devices are walking and mobility aids, dressing and bathing devices, and personal hygiene devices. In addition, people with Parkinson's disease often need bedside commodes, bathtub benches, shower chairs, nonslip bath mats, and bathroom handrails (Kraskowsky & Finlayson, 2001). Wielandt, McKenna, Tooth, and Strong, (2001) completed a study demonstrating an overall utilization rate of 71.1% for usage of bathing adaptive equipment in elderly clients once prescribed by an occupational therapists.
Exercise

Exercise helps improve mobility, balance, range of motion, and emotional well-being. It may be helpful in diminishing or minimizing the primary and secondary symptoms associated with Parkinson's disease. Stretching and range-of-motion exercises help maintain joint and soft tissue flexibility. Strengthening exercises will improve and maintain the strength of abdominal and back muscles (Reuter & Engelhardt, 2002). Aerobic exercises can aid cardio-respiratory fitness.

The symptoms of Parkinson's disease related to movement may cause a person to reduce physical activity. Inactivity may cause a person to become fragile by causing shortening of their ligaments, stiffening or freezing of their joints, slowing of their circulation, and causing their bones to become more brittle. This can result in the decrease of strength and stamina, and make muscles more rigid (Duvoisin & Sage, 2001).

An exercise program is an important component in the overall treatment of Parkinson's disease. The exercise program should emphasize clients using their muscles through their full range of motion to promote strengthening of critical muscle groups. Baatile, Langbein, Weaver, Maloney, and Jost (2000) completed a study to determine the effects a Polestriding exercise program on cognitive skills, activity of daily living, motor function, and quality of life over the period of 8-weeks. At the end of the study, the scores for quality of life had significantly increased. All of the participants improved in their overall score and activities of daily living score. In addition to its direct physical benefits, exercise was noted to improve mood, lessens anxiety, and instills a sense of control and accomplishment (Baatile et al.).
The results of the effects of exercise on Parkinson’s disease are mixed. Individuals with Parkinson’s disease are known to have motor control problems which involve coordination and sequencing of multiple movements. Curtis, Bassile, Cote, and Gentile (2001) studied the effects exercise has on a person’s performance level. At the beginning of the 8 week study, each subject was evaluated using the SF-36 health survey, the Posture- Locomotion-Manual test (PLM), and timed walk task to determine their baseline scores. Participants attended a 1-hour weekly exercise group for people with Parkinson’s disease. At the end of the 8 week study, subjects were retested to determine changes between pre and post test scores. The PLM results showed movement time decreased post exercise for all 4 subjects. In the timed walk task, scores improved for 2 of the 4 subjects. The SF-36 health survey, which assessed quality of life, noted all four subjects saw mild to moderate improvements following the group exercise (Curtis et al.). Although the number of participants was small the researchers found participation in groups or individual exercise programs improved functional ability and motor impairments in individuals with Parkinson’s disease.

Parkinson’s disease is a progressive disease and exercise will not completely make the symptoms disappear. A study on Parkinson’s disease was done by Blackinton, Summerall, and Waguespack (2002) on postural instability, balance assessments, and exercise programs. The eight participant’s balance was tested using the single limb stance test, Function Reach test (FR), and Expanded Timed Up and Go (ETUG) test to determine their baseline score. The single limb stance test required subjects to stand on one leg for as long as they could. The FR measured the
distance the subjects upper arms could reach. The ETUG was a timed test in which the clients stand, walk, turn around, and return to sitting position. After the completion of the balance assessment, subjects were divided into either a control or an experimental group. The control group participated in a weekly support group while the experimental group completed a 6-week wellness exercise program. The exercise sessions took place 2 times a week for 6 weeks and subjects were also given home programs to follow. At the end of the 6 weeks, subjects returned to have their balance tested again. The results of the study (Blackinton, et al.) found no significant difference between the control and experimental group in the outcomes for limb stance, functional reach, and ETUG.

Energy Conservation

Energy conservation is the process of saving energy and improving distribution of energy over the time needed to use it (Yasuda, 2002). Most of the studies done on energy conservation focus on multiple sclerosis and arthritis (Brus, Van de Laar, Taal, Rasker, & Wiegman, 1998; Mathiowetz, 2003; Vanage, Gilbertson, & Mathiowetz, 2003) and at this time there was no research found describing the efficacy and effectiveness of energy conservation techniques for individuals with Parkinson’s disease. It seems logical energy conservation techniques would be beneficial to this population. The principles of energy conservation are to value rest, budget energy, utilize rest periods, use good body mechanics, separate fatiguing tasks into components, and prioritize and set standards for activities (Vanage et al).
The Role of Occupational Therapy

Occupational therapists can help people who have Parkinson’s disease by analyzing the performance areas in which deficits are experienced and work with clients to produce meaningful solutions. Occupational performance areas are defined as activities of daily living (ADL’s), instrumental activities of daily living (IADL’s), education, work, play, leisure, and social participation (American Occupational Therapy Association [AOTA], 2002). Deficits in any of these areas can cause problems for people with Parkinson’s disease.

As the disease progresses, clients may encounter more difficulty in efficiently completing daily self-care and home activities. Occupational therapists teach adaptive techniques and strategies for energy conservation, work simplification, and providing consultation on balancing responsibilities engaging in meaningful occupations. Occupational therapists can help with motor or movement problems associated with Parkinson's disease by maintaining or increasing range of motion, dexterity and coordination, and by developing and practicing safe techniques for balance. For problems affecting family, work and community roles, occupational therapy can make adaptations to handwriting or use of a computer. They can also aid the client and the family in adapting roles and tasks to promote independence, consult on modifying the home to promote safety and function, and recommend adapted equipment for performing specific tasks. For difficulty in managing leisure activities, occupational therapy can help the individual to explore new interests to replace those that cannot be continued safely, or assist in adapting or exploring new ways of doing favorite activities.
The results of a meta-analysis of studies found occupational therapy intervention to be effective in thirteen out of sixteen studies (Murphy & Tickle-Degnen, 2000). Ten of 15 studies measured outcomes classified at the capacities and abilities level showed positive effects of treatment. In 9 of 13 studies, a positive effect of occupational therapy-related treatment was found on outcomes at the activities and tasks levels. The meta-analysis results suggest there are positive effects of occupational therapy-related interventions on outcomes with clients who have Parkinson's disease (Murphy & Tickle-Degnen).

Conclusion

Parkinson's disease has a wide variety of symptoms which affect multiple areas of the client's life. Based on the information from the literature review, an educational manual concerning coping techniques, stress management, fall prevention, adaptive equipment, and energy conservation was devised. The manual incorporates techniques the client can use to increase independence and improve quality of life.
CHAPTER III.

METHODOLOGY

There are many articles and books addressing Parkinson’s disease in publication but there few written from an occupational therapy perspective on how to maintain independence and improve quality of life. A user friendly educational manual was designed to inform clients in the early stages of their disease on ways to increase their independence and quality of life.

A comprehensive literature review was completed to obtain information regarding Parkinson’s disease. Articles were collected from various medical journals, textbooks, and organizations, such as the American Parkinson’s Disease Association. This helped create a full picture of the areas that are affected by Parkinson’s disease. These areas are: depression and anxiety, coping, falls, adaptive equipment and home modifications, exercise, and energy conservation. The comprehensive literature review supports the development of the following Parkinson’s disease educational manual.

Peers critiqued the educational manual for readability. Recommendations were included in revising the manual. It was evaluated for readability and found to be at a 6-8\textsuperscript{th} grade level. The size of the text was increased to a size 14 and the font was printed in Arial because this text was found to be the easiest for people to read.

Chapter four provides a brief overview of the educational manual. It breaks down each of the seven sections and explains what each entails. The full manual can be found in Appendix A.
CHAPTER IV.

PRODUCT

The patient education manual was devised to help people with Parkinson's disease increase their independence and improve quality of life. The manual is divided into seven sections. Each section provides helpful hints to utilize in everyday life.

The first section explains the clinical signs and symptoms of the disease. It includes definitions of common terms associated with Parkinson’s disease. Section two contains coping techniques the client can use to help manage and cope with the disease. Areas addressed include exercise and support systems. Section three includes stress management techniques used to reduce the amount of stress by promoting relaxation techniques. Examples of tapes and books were listed as well as where they can be purchased. Section four contains fall prevention techniques. The recommendations can be used in daily life to prevent or reduce the chance of falling. Suggestions such as installing hand railings and use a shower chair were made. Section five provides suggestions on how to make the home safer. This section analyzes what can be done in the kitchen, bathroom, and bedroom to increase independence and safety. The sixth section is on energy conservation techniques. They can be implemented to help reduce the amount of energy used by prioritizing and analyzing the activities. The last section is on resources. This section will help clients find additional information on Parkinson’s disease.
CHAPTER V.
LIMITATIONS, RECOMMENDATION, & CONCLUSION

Parkinson's disease affects over 1.5 million people in the United States (Duvoisin & Sage, 2001). Consequently there is a need for information on how individuals can increase and maintain their independence and quality of life in both the early and later stages of the disease.

The results of a meta-analysis of studies found occupational therapy intervention to be effective in thirteen out of sixteen studies. These results suggest there are positive effects of occupational therapy-related interventions on outcomes with clients who have Parkinson's disease (Murphy & Tickle-Degnen, 2000).

Even though there is research that supports the positive outcomes of using occupational therapy intervention, there are a variety of limitations noted in the studies. Medication scheduling and routines were not taken into consideration. It was not noted if medications played a part in the client's reactions or responses. The limited number of subjects and the limited duration of studies may have hindered the results of each study.

Many of the studies using exercise consisted of sample groups of 5-10 participants (Baatile, Langbein, Weaver, Maloney, & Jost, 2000). A further study may be done using larger sample size for effectiveness of exercise in Parkinson's disease clients to determine the effectiveness on a larger population.

An area of limited research for Parkinson's disease was energy conservation techniques. The current studies on energy conservation have been completed on individuals with arthritis and multiple sclerosis to demonstrate its effectiveness.
Therefore additional research is needed to support the usage of energy conservation techniques with Parkinson's disease.

Research has demonstrated the effectiveness of clients implementing each section of the educational manual with Parkinson's disease. However there is no research currently on how a cumulative educational manual covering areas concerning coping techniques, stress management, fall prevention, adaptive equipment, and energy conservation will affects clients. It is recommended that this manual be implemented in a hospital setting with follow up data collected on effectiveness. Areas needing additional information could be revised based on the effectiveness of its implementation and client satisfaction level.

Individuals with Parkinson's disease have a wide variety of symptoms which affect multiple areas of the client's life. Therefore implementing an educational manual will help them increase and maintain their independence and quality of life especially in the early stages of the disease.
References:


Copeland, J., Davidson, I., & Dewey, M. (1992). The prevalence and outcome of anxious depression in elderly people aged 65 and over living in the


Vanage, S., Gilbertson, K., & Mathiowetz, V. (2003). Effects of an energy


APPENDIX A
The patient education manual is devised to help people with Parkinson's disease increase their independence and improve quality of life. Each section gives helpful hints you can utilize in your every day life. The section on resources will help you find additional information on Parkinson's disease.

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Definition of Parkinson’s disease

Parkinson's disease is a serious disorder that affects nerve cells (neurons) in the part of the brain that controls muscle movement and coordination. Nearly one million Americans currently live with Parkinson's disease. Parkinson's disease is chronic, which means you will have it your entire life and progressive, which means the symptoms will grow worse over time. Parkinson's disease may eventually become disabling. The disease often progresses slowly, and most people have many years of productive living after a diagnosis.

Symptoms
1. Shaking (tremor)
2. Stiff muscles (rigidity)
3. Slow movement (bradykinesia)
4. Poor balance
5. Decreased coordination
6. Speech problems
7. Problems with balance or walking

Common terms associated with Parkinson’s disease:

Dopamine- It is a chemical produced by the brain; it assists in the effective transmission of messages from one nerve cell to the next. It facilitates the actions of movement, balance and walking.

Levodopa- also referred to as L-Dopa. Levodopa is converted to dopamine in the brain to improve the symptoms of Parkinson's disease. It is the most commonly prescribed medication for Parkinson's disease.

Neurotransmitter- A specialized chemical produced in nerve cells that permits the transmission of information between nerve cells. Dopamine is one example.
Coping Techniques

Living with any chronic illness can be difficult. It is normal to feel anxious, depressed or discouraged at times. Parkinson's disease can cause chemical changes in your brain that can make you feel anxious or depressed. Medications used to treat the disease can also cause depression and other mental changes. Parkinson's disease can be very frustrating, especially in the later stages when ordinary activities take longer to accomplish and when walking becomes more difficult. Some of the following suggestions may help you deal with the anxiety and stress of having Parkinson's disease:

1. **Learn all you can about your illness.** Find out how the disease progresses, your prognosis, and your treatment options and possible side effects. The more you know, the more active you can be in your own care. In addition to talking to your health care team, look for books, magazines, and information on the Internet, including the Web sites of various Parkinson's disease organizations.
   - Parkinson's Disease Foundation- [www.pdf.org](http://www.pdf.org)
   - American Parkinson Disease Association- [www.apdaparkinson.com](http://www.apdaparkinson.com)

2. **Be proactive.** Although you may often feel anxious or discouraged, don't let others — including your family and your doctors — make important decisions for you. Take an active role in your treatment.

3. **Maintain good communication with your partner & family.** It's extremely important for couples and families to be open about their feelings, especially when it comes to living with Parkinson's disease. The disease may change your life and the lives of your loved ones in a number of ways. It's best if you can talk honestly about these changes. For instance, if you're no longer able to work full time, there may be financial issues that need to be taken care of. The
amount of care a person with Parkinson's disease needs is also often an issue. As the illness progresses, the more help an individual will need. Because it may take you longer to do ordinary tasks, your family might want to help. Most people with Parkinson's disease like to remain as independent as possible. You'll need to let your family know when you need help and when you don't.

4. **Maintain a strong support system.** More and more studies show that strong relationships are important in dealing with chronic illnesses. Although friends and family can be your best allies, the understanding of people who know what you're going through can be especially helpful. Support groups aren't for everyone, but for many, they can be a good resource for practical information about Parkinson's disease. You may also find that you develop lasting friendships with people who are going through the same experiences as you. Support groups also exist for the families of people with Parkinson's disease. To learn about support groups in your community, talk to your doctor, a social worker or a local public health nurse or contact the National Parkinson Foundation at:

- Toll free phone number: 1-800-327-4545
- Internet site at www.parkinson.org

5. **Exercise.** Exercise and physical activity improve general health and emotional well-being. The symptoms of Parkinson's disease may cause you to reduce physical activity. This can decrease strength and stamina, and make muscles more rigid. An exercise program is an important part of your treatment for Parkinson's disease because it can help you manage your symptoms and increase your independence level. The following list contains the benefits of exercise and ideas for you to increase your physical activity level.
Benefits of Exercise:
• Puts muscles through their full range of motion
• Maintains mobility
• Increases balance
• Strengthens your muscle
• Increases strength and stamina
• Decreases the stiffness of joints
• Improves general health
• Improves emotional well-being
• Has a positive effect on mood
• Reduces stress

Plan activities that keep you busy, involved, and moving such as:
• Walking
• Gardening
• Swimming
• Cleaning
Stress Management

Stress can have a very negative impact on the symptoms of Parkinson's disease, so it is important to focus on managing the stress in your daily life and finding some relaxation. The following are some stress management techniques you may want to incorporate into your life. Start by finding a quiet place free from distractions. You may want to lay in bed or sit in a comfortable chair.

Keep in Mind:
- Not all techniques work for everyone.
- You have to experiment to find something that works for you.
- Try more than one technique, and then commit to regular use.
- Remember that the key to successful stress management is practice.

Deep Breathing
Take slow, deep breaths from the diaphragm. Breathe in through the nose and out through the mouth. Count to five as you breathe in and five as you breathe out. Do this several times until you begin to feel more relaxed.

Progressive Relaxation
Get in a comfortable position, close your eyes and slowly focus on relaxing different parts of your body, one at a time. Often it starts from the head and works down to your feet. There are many different books or relaxation tapes that can guide you.

Massage
Massage can be very helpful in relieving muscle tightness, but it is also extremely relaxing to body and mind.

Relaxation Tapes/CDs/Books
There are many different relaxation materials available in bookstores and over the internet. Try looking in a bookstore under the section titled self help. Music stores usually have a section on relaxation.
To find the books/tape/CDs needed to do these activities, looking on the internet at www.barnesandnoble.com or www.amazon.com. Also try looking in the yellow pages of your phone book for a local books store. Here are some examples of books and CD that you could buy:

**On Compact Disc**
- For People Experiencing Stress: A Guided Imagery CD by Belleruth Naparstek and Steven Mark Kohn
- Effortless Relaxation (1991) by Steven Halpern

**Books**
- Relaxation/Affirmation Techniques by Nancy Hopps
- Guided Relaxation and Breathing by Rolf Psy. Sovik
- Learn to Relax: A Practical Guide to Easing Tension and Conquering Stress by Mike George
Fall Prevention Techniques

Parkinson's disease is a disorder that affects your movement resulting in frequent falls. Falls are often caused by unsteadiness in balance and the body is unable to correct itself when it's off balance. Here are some tips you can use in your daily life to prevent falls from occurring:

- Do not walk and talk at the same time. Focus on walking and continue the conversation after you've reached your destination.
- Wear appropriate footwear. Shoes should fit well and be comfortable. Nonslip shoes are best when walking long distances or in unfamiliar areas.
- Arrange furniture so that it creates plenty of room to walk freely. If you use a cane or walker, make sure that doorways and hallways are large enough to get through.
- Install railings in hallways and grab bars in the bathroom and shower to prevent slipping.
- Use bright lighting throughout your home.
- Install night lights in hallways.
- Install nonslip strips or a rubber mat on the floor of the tub or shower.
- Remove throw rugs or secure them firmly to the floor.
- Use a nightlight when getting out of bed at night.
- Stay active to maintain your overall strength and endurance.
- Know your limitations. If there is a task you cannot complete with ease, do not risk a fall by trying to do it.
- If your feet feel frozen or "glued to the floor" when trying to move, several physical methods can break the pattern to prevent a fall from occurring.
  - Step over an imaginary line in your path to continue forward motion.
  - Rock from side-to-side
  - Do not have a companion pull you forward or urge you to "hurry up", this will often prolong the freezing episode.
Adapting Your Home

The symptoms of Parkinson's disease may interfere with the way you move around in your home and take care of yourself. By making changes in your home, you will be able to increase your independence and safety. The following is a list of suggestions, in addition to those listed under fall prevention, you can use in your home.

In the Kitchen

• Replace glasses with paper cups or plastic to reduce the amount of dishes you need to wash.
• Put dishes, pots, and silverware within easy reach.
• Keep a sturdy step stool handy to reach higher items.
• Use a long-handled broom, mop and vacuum to avoid bending over.
• Keep a pot stabilizer by the stove to hold while cooking.

In the Bathroom

• Use a chair or stool in the shower to prevent falling.
• Install grab bars in the shower and bathtub so you have something secure to hold on to.
• Use an electric razor, toothbrush, and water pick to reduce the amount of energy needed to complete these activities.
• Use a long handled sponge in the shower so you don’t have to bend down.
• Install non skid decals or strips to attach to the bottom of the bath tub or shower.
• Use a raised toilet seat to make getting on and off the toilet easier.

In the Bedroom

• Adjust the height of your bed to make getting in and out easier. Bed adjusters can be purchased at healthcare stores.
• Keep a phone next to your bed so you don’t have to rush to the phone when you are lying down.
• Use a reacher to pick clothes off the floor or to get clothes down from the top shelf of your closet.

Other Recommendations
• Make sure walkways are level.
• Don’t clutter hallways. Leave yourself enough room to move around.
• Use a telephone with big push buttons.
• Use sofas and chairs with firm cushions. They are easier to get out of.
• Use a door knob turner. It will build up the handle of a small door knob making it easier to turn.
Energy Conservation Tips

It is important to learn how to use your energy as efficiently as possible, mainly when completing the activities that are a necessary part of your day. Energy conservation means looking at your daily routines to find ways to reduce the amount of effort you will need to perform certain tasks and eliminate other tasks. By using your energy wisely, you will have more energy left for the things that you enjoy. Some of the following suggestions may help you.

1. Prioritize
   Decide if it is necessary to do the activity.
   YES- Simplify or break into smaller steps.
   NO- Ask family to do it or hire someone to help with household duties. (i.e. lawn care or cleaning service)

2. Analyze the conditions of your activity
   - Sit or adjust the work surface to reduce bending.
   - Sit in a comfortable chair that is at the proper height.
   - Position materials within easy reach.
   - Adapt the activity easier to make it as easy as possible.

3. Plan ahead
   - Give yourself enough time to complete the task at a comfortable pace.
   - Gather all of your supplies before you start a task.
   - Schedule activities and appointments when you usually feel your best (i.e. afternoon or following medications).
   - Plan rest times during activities. Take a break before you get tired.

4. Consider the effects of emotions on performance
   - Irritation, frustration, worry and competition cause you to use extra energy you need.
   - Use your relaxation techniques and controlled breathing techniques to deal with the stress.
   - Stop what you are doing before you become frustrated and give yourself time to think and relax.
5. Use good body mechanics
- Are you remembering your breathing methods? Always breathe out during the hardest part of an activity.
- Use two hands at a task whenever possible.
- Bend your knees rather than your back when reaching for items on a low surface/floor.
- Slide rather than lift objects, or transport items on a wheeled cart.
- Push rather than pull objects.
- When lifting, hold items as close to your body as possible to reduce strain.
Resources


