

# Exercise Benefits for People with Parkinson's Disease

## Interesting Article Excerpts

### **The Effects of Balance Training and High-Intensity Resistance Training on Persons with Idiopathic Parkinson's Disease**

“Muscle strength and balance can be improved in persons with [Parkinson's Disease] by high-intensity resistance training and balance training”

Maintaining functional ability and preventing falls in old age are determined, in part, by maintaining some optimal level of body strength. Although further study is necessary to establish the relationship between muscle strength and balance in PD, we hypothesize that a resistance and balance training program, conducted under proper supervision, is enjoyable, effective, and a relatively safe way to improve muscle strength and balance in persons with PD who fall during dynamic posturography and may reduce the likelihood of falls during balance assessment. We further postulate that a resistance and balance training program may reduce fall risk at home and in the community with enhanced likelihood of long-term independent living

*Source: Physical Medicine and Rehabilitation; Volume 84, Issue 8, Pages 1109-111; August 2003*

### **The Impact of Exercise Rehabilitation and Physical Activity on the Management of Parkinson's Disease**

The predominant strategy for medical management of the symptoms of PD is levodopa therapy (with either levodopa-replacement medications or dopamine agonists), and most symptoms are highly responsive to this treatment. It is well-established, however, that both longevity (i.e., the duration of "on" periods) and overall effectiveness (i.e., the quality of improvement demonstrated during these "on" periods) diminish with chronic levodopa usage. Furthermore, long-term utilization of levodopa may lead to an increased risk of dyskinesia, in which the patient engages in involuntary writhing movements during "on" periods. While it is unlikely that physical or cognitive treatment strategies will supplant pharmacological treatments, many such techniques have been demonstrated to show incremental improvement when combined with levodopa therapy. Furthermore, recent animal studies have suggested that exercise rehabilitation may stimulate the production of brain-derived neurotrophic factors, normalize dopamine production, and protect the nigrostriatal neurons that usually deteriorate in PD. It is plausible, therefore, that effective nonpharmacological treatment strategies might lead to lower therapeutic levels of dopaminergic medications for some patients, thereby improving the long-term prognosis.

*Source: Dr A.M. Johnson, Dr. Q.J. Almeida; Geriatrics and Aging, 2007; 10(5):318-321*

#### Our Summary from this article:

Not only does exercising with a “neurological” approach provide the direct benefit of increased strength and balance but it also makes common Parkinson's medications more effective. It allows smaller doses which allow the medications to be effective for a longer duration.

## Exercise and Parkinson's Disease: What You Need to Know

Parkinson's disease is a progressive disorder associated with the degeneration of dopamine producing neurons. By the time patients notice the symptoms or their physician suspects Parkinson's disease there is about an 80 percent decrease in dopamine production. Because the diagnosis of PD is based in part on a patient's clinical exam, it is safe to assume that any patient with early diagnosis of PD already has some degree of rigidity, slowness of movements, gait changes and possible balance troubles. Supplementation with dopamine is the basis of PD therapy, thus it could be appropriate to assume that even on day 1 of the diagnosis with PD a patient will benefit from increase of its dopamine production. And according to its physiology, exercise would increase dopamine production in patients with PD.

*By: Dr. Nina Browner, Medical Director of the NPF Center of Excellence at the University of North Carolina.*

*Source: [www.parkinson.org](http://www.parkinson.org), professional blog, March 2010*

### Our Summary from this article:

Parkinson's is a degenerative disorder of the central nervous system. It reduces dopamine producing neurons. Dopamine is a neurotransmitter that has a role in movement and cognition. Exercise has been shown to increase dopamine production, and contribute to neuroplasticity by helping the brain to maintain old connections, form new connections and restore lost connectio

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### **More Information:**

Dr. John G. Nutt says "Simply walking is not going to challenge the balance the system." Check out his video titled, "What types of exercise or exercise programs are recommended?" at [www.parkinson.org](http://www.parkinson.org) . Enter the video title in the search area to find it.



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