

ROCK STEADY BOXING CLINICAL RESULTS

Various studies in the 1980s and 1990s supported the notion that rigorous exercise, emphasizing gross motor movement, balance, core strength, and rhythm, could favorably impact range of motion, flexibility, posture, gait, and activities of daily living. More recent studies, most notably at Cleveland Clinic, focus on the concept of intense “forced” exercise, and have begun to suggest that certain kinds of exercise may be neuro-protective, i.e., actually slowing disease progression.

The research studies listed below provide early validation of the effects of forced or intense exercise. The study conducted by Dr. Stephanie Combs-Miller and colleagues from the University of Indianapolis specifically studied participants in the Rock Steady Boxing program.

- Combs, Stephanie A., Diehl, M. Dyer, Staples, William H., Conn, Lindsay, Davis, Kendra, Lewis, Nicole, Schaneman, Katie. Boxing Training for Patients With Parkinson’s Disease: A Case Series. *Physical Therapy*, Vol. 91 – No. 1, pp.1-11, January 2011. This is an observational study of Rock Steady Boxing training in six participants. After 12 weeks of training there were measurable improvements in gait, balance, and quality of life. Participants with milder Parkinson’s improved sooner than patients with more severe Parkinson’s symptoms.
- Hirsch, M. A., Farley, B.G. Exercise and neuroplasticity in persons living with Parkinson’s disease. *European Journal of Physical and Rehabilitation*, Vol.45 – No. 2, pp.215-228, June 2009.
- Ahlskog, Ph.D. M.D. J. Eric. Does vigorous exercise have a neuroprotective effect in Parkinson disease? *American*

Academy of Neurology, Neurology 2011, pp 288-294, July 27, 2011. Two excellent reviews of the of the human and animal research which shows the impact of exercise on brain function in PD. Both reviews focus on the importance of vigorous or high intensity exercise for Parkinson's disease.

- Ridgel, Angela L., Vitek, Jerrold L., Alberts, Jay L. Forced, Not Voluntary, Exercise Improves Motor Function in Parkinson's Disease Patients. Neurorehabilitation and Neural Repair, vol. 23 – No. 6, pp 600-608, July/August, 2009. Tandem bicycle study in which subjects either rode at their chosen rate, or rode a rate higher than their chosen rate. Tension was adjusted and oxygen consumption measured so that both groups expended the same amount of energy. However, the group that rode at the higher rate had greater improvements in PD symptoms.
- A study completed by the University of Indianapolis, “A Longitudinal Analysis of Impairment, Activities and Participation in Persons with Parkinson's Disease” led by Dr. Stephanie Combs-Miller will be released soon. This is a 2 year study that followed 88 people with Parkinson's and studied their exercise habits and how that affects their symptoms. While the print version of this study is not yet released, Dr. Combs-Miller's video presentation on her study can be seen above.