

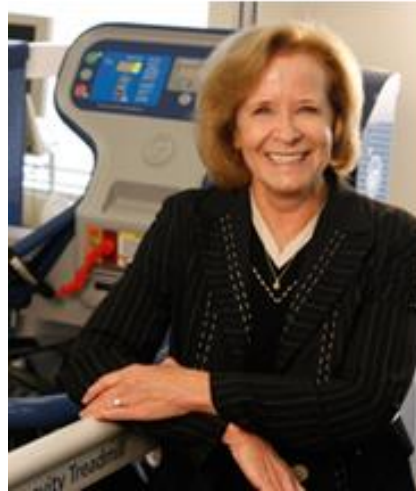
Exercise-Induced Neuroplasticity in Parkinson's Disease

Dr. Beth Fisher

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Johnson Center, Meeting Room A, 11 AM

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The brain's capacity for recovery from damage is far greater than previously recognized. Neuroplasticity can be facilitated through experience, including environmental enrichment, exercise, forced-use, and complex skills training. Most of our understanding of experience-dependent plasticity is derived from animal models of stroke and spinal cord injury, but there is now evidence that the same phenomenon occurs in animal models of Parkinson's disease (PD). Most PD physical intervention studies in the past have promoted compensation and training individuals with PD to use compensatory strategies to achieve functional outcomes, based on the assumption, there is no potential for recovery in the case of a neurodegenerative process such as PD. A significant challenge to this assumption has come with the demonstration of experience-dependent behavioral recovery and neuroplasticity in animals with basal ganglia injury that undergo intensive treadmill exercise or forced-use of the affected limb. An indication that this phenomenon of neuroplasticity and recovery extends to humans with PD has come with recent intervention studies and is turning the attention of the field on determining the potential disease-modifying effects of intensive exercise.

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