

**ON WITH LIFE**  
BRAIN INJURY + STROKE + NEURO

## Therapeutic Interventions & Why They Work

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SMALL STEPS. GIANT STRIDES.

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### Objectives

- Name at least 5 therapeutic interventions of benefit to individuals with Parkinson's Disease
- Describe the benefit of therapeutic intervention in delaying the symptoms of Parkinson's Disease
- Discover resources for various therapeutic interventions

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### Cycling

Riding an indoor, stationary bicycle has been shown to reduce Parkinson's motor symptoms by as much as 35%.


Dr. Jay Alberts, neuroscientist and researcher, has studied Parkinson's Disease and cycling.

Noticed improvement in symptoms after riding a tandem bike at RAGBRAI in 2003 with a PwP.

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<https://www.pedalingforparkinsons.org/>



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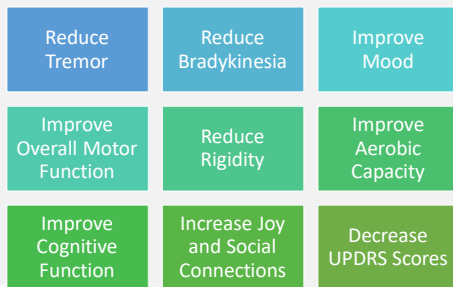
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## Cycling



<https://drexelparkinsonfoundation.org/what-you-need-to-know-about-cycling-with-parkinsons/>

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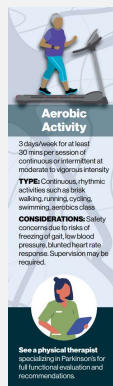
## Cycling

*"Exercise needs to move from a recommendation to a prescription for people with Parkinson's."*

- Dr. Jay Alberts, Department of Biomedical Engineering, Cleveland Clinic

The Pedaling For Parkinson's program is a form of "Forced Exercise" on a bicycle. Participants ride for 1 hour:

- 10 minute warm up at 60 RPMs
- 40 minutes at 80 RPMs
- 10 minute cool down at 60 RPMs.



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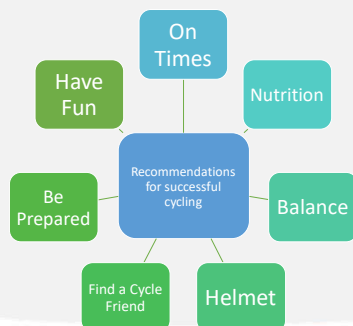
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## Cycling



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## Cycling - Let's Practice!



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## Boxing

What?

- Non-combat workout often using gloves and targets



Who?

- Estimated 3,000 people in North America are participating in boxing for PD



Why?

- Can help improve hand/eye coordination, endurance, speed of movement, agility, strength

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## Boxing

What is the research saying?

- Few studies completed at this time
- Involvement in boxing with PD has increased much faster than the research
- Suggests benefits include:

### Mobility

- Balance
- Gait
- Movement patterns

### Mental State

- Mood
- Sense of purpose
- Hope

### Social

- Connections
- Motivation
- Accountability

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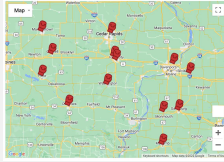
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## Boxing

Resources:

- Rock Steady Boxing
  - <https://rocksteadyboxing.org/find-a-class/>
- parkinsonfoundation.org
  - Online boxing and other wellness classes
- One-on-one boxing with a therapist or personal trainer



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## Boxing – Let's Practice!



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## Music and Singing

Music is an arrangement of sounds that produce a rhythm with various melodies and harmonies.



Also described as a form of art that can please individuals and provides a source of expression or communication without utilizing words.

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## Music and Singing

- Can change physical, cognitive, emotional, and communicative difficulties.
- Music can stimulate the brain and lessens symptoms by taking different routes or connections and avoiding areas affected by the disease.
- Targets different areas of the brain. Music is on the Right side of the brain verse speech is on the Left side.



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## Music and Singing Resources

ParkinSingers - Cedar Rapids

Music Therapy for People with Parkinson's - Ames

- Iowa State Kinesiology department
- <https://kin.hs.iastate.edu/outreach/outreach-programs/music-therapy-for-persons-with-parkinsons-disease/>
- Wellness Programs through PD Foundation
  - <https://www.parkinson.org/pdhealth>

Community Symphony

Community Choir

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## Music - Let's Practice!



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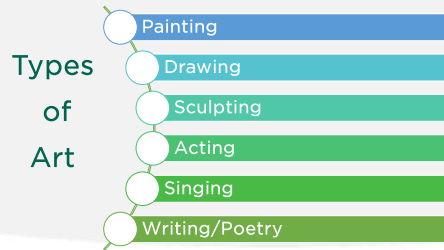
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## Art

Art is a form of expression or application of human creativity. Includes utilizing skills and imagination.



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## Art

Research is saying...



Individuals with PD can have difficulties with visual cognitive functioning, fine motor, flat affect, mood changes, and mobility.

Significant improvements noted for functional connectivity between the visual and cognitive functions of the brain. Also with improvement in dexterity, mood, self expression, and overall quality of life.

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## Art - Resources

Attend local art classes

- DSM Art Center  
<https://desmoinesartcenter.org/classes/>
- Renee's Ceramic Café - Iowa City  
• [reneesceramiccafe.org](http://reneesceramiccafe.org)
- Wellness Programs through PD Foundation  
• <https://www.parkinson.org/pdhealth>

Local Library

Clay Shops

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## Acting

What?

Acting is a performing art that includes movement, gestures, changes in tone and communication.

Can be completed by someone on a stage. Also can be completed by someone explaining what they saw or witnessed during a conversation.

Can help to improve:

- Speech
- Communication
- Movement
- Volume
- Weight shifting
- Emotions
- Expressions
- Processing
- Spatial Awareness
- Act and React
- Cognition

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## Acting

Why incorporate acting?

- Actors perform with intention
- They utilize their voice to project for the audience
- Cognition is targeted with recall of script
- Emotions – Need to invite others into the actor's world for understanding
- New learning promotes neuroplasticity

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## Acting - Principles

Mental Imagery

Visualization

Mindfulness

Movement Exercise

Dual tasking

Rhythm

Social interactions

Building confidence



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## Acting - Resources

- Parkinson's Art of Expression (PARTE) – On With Life
- Wellness Programs through PD Foundation
  - <https://www.parkinson.org/pdhealth>
- Community Theatres

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## Acting - Let's Practice!



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## Yoga

- Yoga combines physical postures, breathing techniques, and relaxation or meditation
- Low impact exercise for body and mind
- Adaptable based on physical mobility
- Can practice alone or in group setting



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## Yoga

Benefits	Considerations	ACSM/PD Foundation Recommendation
<ul style="list-style-type: none"> <li>Improve breath control</li> <li>Reduce tremor</li> <li>Improve stability/balance</li> <li>Reduce rigidity</li> <li>Improve flexibility</li> <li>Reduce anxiety</li> <li>Relaxation</li> </ul>	<ul style="list-style-type: none"> <li>Positioning</li> <li>Seated vs. standing</li> <li>Assistive devices such as blocks, straps, etc.</li> <li>Use of music or voicing</li> </ul>	 <p><b>Balance, Agility &amp; Multitasking</b></p> <p>2-3 days/week with daily integration if possible</p> <p><b>TYPE:</b> Multi-directional stepping, weightlifting, dynamic balance activities, large movements, multitasking such as yoga, tai chi, dance, boxing</p>

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## Yoga

Resources:

- APDA virtual yoga classes
  - <https://www.apdaparkinson.org/?s=yoga>
- Yoga for PD YouTube channel
  - <https://www.youtube.com/playlist?list=PLUaOe8pflm1NEXMaccvW7Zm3Un65a6lrs>
- Parkinson Foundation
- Cedar Rapids Metro Parkinson's Association
  - <https://crmetroparkinsons.com/our-programs>
- Local wellness centers
- One-on-one with therapist or personal trainer

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## Yoga - Let's Practice!

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## Strength Training

- Exercise training with use of body weight, resistance bands, or weights to increase muscle strength
- Improves balance, stability, and confidence
- Can improve dopamine efficiency by increasing receptors and providing a protective factor



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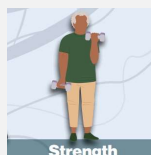
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## Strength Training

### Recommendations:

- Focus on form
- Target 5 major muscle groups
  - Chest, back, legs, arms, core
- Pay special attention to extensor muscle groups
  - Back and hips
- Build your program and progress slowly
- Hydrate
- Combine with functional mobility training



### Strength Training

2-3 non-consecutive days/week for at least 30 mins per session of 10-15 reps for major muscle groups, resistance, speed or power focus

**TYPE:** Major muscle groups of upper/lower extremities such as using weight machines, resistance bands, light/moderate handheld weights or body weight

**CONSIDERATIONS:** Muscle stiffness or postural instability may hinder full range of motion.

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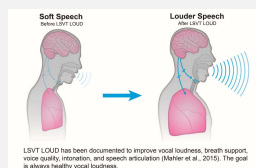
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## LSVT - LOUD

### What is LSVT-LOUD?



LSVT LOUD has been documented to improve vocal loudness, breath support, voice quality, intonation, and speech articulation (Moller et al., 2015). The goal is always healthy vocal loudness.

- Intensive voice program to target the mismatched perception of systems within the body
- LARGE amplitude principles
- Helps to "recalibrate" voice loudness and strength
- Improves other areas of speech:
  - Articulation and facial expressions.

<https://www.lsvtglobal.com/LSVTLOUD#loudimprovesection>

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## LSVT - LOUD

### Intensity

- 4 days a week for 4 weeks
- 1-hour sessions
- One-on-one with a certified speech therapist

### Hierarchy of tasks:

- Sustained vowels at different pitches
- Word level
- Phrase levels
- Reading paragraphs
- Conversation
- Homework is sent for carryover of tasks and daily "challenges"

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## LSVT - BIG

### What is LSVT BIG?

- Created based on LSVT LOUD principles
- Standardized exercise protocol
- Goal = normalize movement patterns through recalibration of the sensory system
- Exercises and cues are specific to PD deficits including bradykinesia, hypokinesia, and kinesthetic awareness

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## LSVT - BIG

### How is it delivered?

- Administered by a certified physical or occupational therapist
- Intensity
  - 4 days a week for 4 weeks
  - 1-hour sessions
  - One-on-one with therapist
- "Think BIG"



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## Lee Silverman Voice Treatment

Who	How	When
<ul style="list-style-type: none"> <li>• Early to mid stages of PD</li> <li>• Late stages PD</li> <li>• Atypical PD</li> <li>• Other neurological conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Search for a LSVT certified clinician near you</li> <li>• Physician order for therapy</li> <li>• Insurance coverage</li> </ul>	<ul style="list-style-type: none"> <li>• ASAP</li> <li>• Homework during and after program</li> <li>• Tune-ups</li> </ul>

HOW I LIVE • HOW I THINK • HOW I FEEL  
 Find a LSVT Clinician • What is LSVT? • Practice & Family • Therapies & Professionals • Research & Practice

**Locate an LSVT Certified Clinician**  
 LSVT Certified Clinicians have attended LSVT Training and Certification courses and have passed a certification exam.

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## LSVT - Resources

BIG Check Ins

- On With Life has monthly “check -ins”
- In person or virtually

LOUD for LIFE – through LSVT website

- Community based exercise class for those that have completed LOUD.

Homework helper videos

- LSVT website has videos
- On With Life Outpatient has videos if past PS– reach out to a therapist for access

Regular Tune Ups with therapy

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## Summary

- There are several therapeutic interventions and options that can be beneficial with PD
- Therapeutic interventions can improve both motor and non-motor symptoms experienced and delay the progression of PD by building new neuron connections
- Explore the options you are interested in and have fun doing so!

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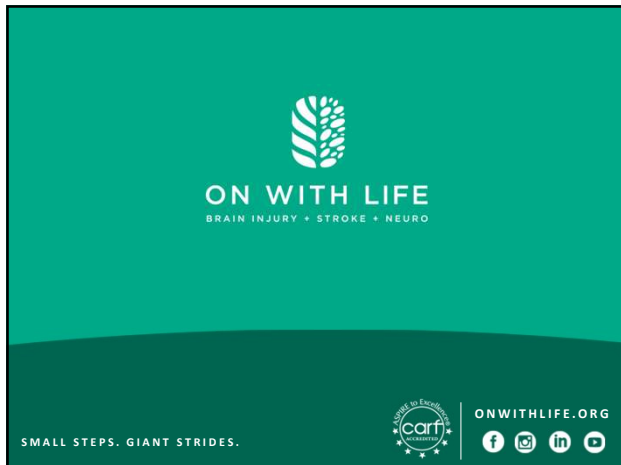
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