

Exercise Therapy for Huntington's Disease

Michael Sterken, PT, DPT, NCS

ALL STAGES

- Consult with a physical therapist who is familiar with HD to assist with designing, implementing, progressing, and adapting activity programs to optimize health, function, and safety.
- Consider meeting with a certified personal trainer to ensure exercises and activities are performed correctly.
- Stop activity and consult with a physical therapist or your physician if any activity or exercise you do results in pain or injury.
- Remember that physical therapists also teach caregivers how to safely engage in patient handling, recommend environmental modifications to improve functional mobility/safety, and suggest adaptive equipment to help you and your loved ones to maintain safety and mobility.

EARLY STAGE (PRE-MANIFEST/STAGE 1)—PREVENTATIVE ACTIVITY

Cardio!!! (Power walking, jogging, cycling, rowing, stairs, elliptical, yard work, etc.)

- Find something you enjoy and recruit other people to do it with you to increase your compliance.
- How often: 3-5X/week
- How long: 30-60 minutes per session
- How intense: 60-80% of heart rate max; should have to take a breath if trying to speak a sentence
 - $220 - \text{your age} = \text{your heart rate max.}$ (HR max X 0.6 = 60% of your HR max)
- Why: Intensity & duration of cardio correlates with increased levels of Brain-Derived Neurotrophic Factor (BDNF).
 - BDNF is a protein that supports differentiation, maturation, and survival of neurons in the nervous system and stimulates and controls growth of new neurons from neural stem cells (neurogenesis). BDNF may provide neuroprotective effect against the neurodegenerative effects of Huntington's Disease.
- What? *Cardio may slow progression of the disease and preserve functional independence longer.*

EARLY-MIDDLE (STAGE 2)—RESTORATIVE ACTIVITY

Continue Cardio!!

- See information for Stage 1 above for examples of cardio activities/exercises, frequency and intensity.

Strength Training (Pushing, Pulling, Rising/Lowering, and Abdominals)

- How often: 2-3X/week
- How long: approximately 20-30 minutes
- How much: 2-3 sets of 8-12 repetitions of at least 4 exercises with approximately 1-minute rest between sets

- **How intense:** Muscle should fatigue by the end of 8-12 reps without loss of proper form/posture
- **Why?** Muscle weakness is common in later stages of HD and may contribute to loss of function

Balance Training (Tai Chi, Yoga, Pilates, Single leg standing, slow marching, tandem walking, etc.)

- **How often:** 2-3X/week
- **How long:** 10-30 minutes
- **How intense:** Exercises that challenge your stability, requiring concentration, but not so hard you fall
- **Why:** Balance worsens over time without practice = Falls = Injury = Loss of independence

MIDDLE-LATE (STAGES 3-4)—RESTORATIVE/COMPENSATORY ACTIVITY

Continue Cardio by modifying what you do in order to stay safe while being active.

- Engage in a walking program using an assistive device (a 4-wheel walker or platform U-step walker)
- If you can't walk safely consider propelling a wheelchair or riding a recumbent bike with safety straps

Continue Strength training by modifying exercises to accommodate motor symptoms.

- Machines and body weight exercises tend to be more accommodating than free weights.
- Seated or in-bed exercises tend to be more accommodating than standing exercises.

Continue Balance training by modifying exercises to minimize the risk of falling.

- Focus on static/stationary balance over dynamic/moving balance & avoid multi-tasking.

Flexibility training (stretching only tight muscles)

- **How often:** 2-7 days/week
- **How long:** 30-60 seconds per muscle group
- **How intense:** Holding end-range should be mildly uncomfortable, but NOT painful
- **Why:** As HD progresses people tend to get less active, more muscle tightness, and reduced joint motion

LATE (STAGE 5)—COMPENSATORY/PALLIATIVE ACTIVITY

This stage is when care providers are responsible for assisting the HD person in effort to maintain active movement.

Continue assisting with Flexibility training (See Middle-Late stage above)

- Focus on positioning the person with HD to minimize pressure and friction over bony prominences
- Use support pads/straps to help the person with HD be comfortable and move, if able