

Huntington's Disease Aerobic and Resistance Training Fact Sheet

Physiotherapists should prescribe aerobic exercise paired with upper and lower body strengthening to improve fitness and to stabilize or improve motor function. (Grade A recommendation)

Types of people with HD who would most benefit from the intervention

Studies have predominantly been conducted on individuals with early-mid stage HD

For those with balance deficits:

- Stationary cycling should be considered to minimize falls while still allowing for moderate-intense aerobic training.
- Resistance training may need to be adapted or supervised by an exercise professional or trained care partner to ensure safety.

Aerobic and resistance training may also benefit individuals with pre-manifest HD.

Assessment Tools

VO₂ Max, Predicted VO₂ max, 6 minute walk test, UHDRS-TMS, UHDRS-modified TMS, Physical Performance Test, Gait Speed, Physical activity measured by pedometer or International Physical Activity Questionnaire, Lorig Self-Efficacy for Exercise

Additional Information

- Persons with HD may benefit from long-duration aerobic and resistance training programs. Some studies evaluated benefits of programs as long as 9 months in both center-based and home-based environments.
- Early engagement in a regular aerobic and resistance training program should be a goal when the treatment focus is on prevention of future movement system impairments, even in the pre-manifest stage.
- Therapists should follow appropriate screening procedures to ensure safe engagement in moderate to high intensity exercise.
- Take appropriate precautions to prevent falls (harness system and/or gait belt).

- Monitor vital sign response in clinic to ensure safety with engagement in aerobic training in the home or community.
- Explore community-based resources to ensure long-term sustainability of a prescribed aerobic/resistance training program if the patient does not have access to needed equipment (example: stationary bike) at home.
- If calculation of exercise intensity with % of HRMax is not possible, a Rate of Perceived Exertion (RPE) scale is recommended to determine exercise intensity.

How to perform the intervention

Type of Training	Frequency, Intensity, Time, Type (FITT)	What it improves
Aerobic	<p>Frequency: 3-5x/week</p> <p>Intensity: moderate-high (55-90% of heart rate maximum)</p> <p>Time: 30-45 minutes/session</p> <p>Type: Stationary cycling, treadmill walking, overground walking, arm cycling</p>	Cardiovascular fitness Motor Function Physical Activity Self-efficacy for Exercise
Resistance	<p>Frequency: 3-4x/week for a minimum of 12 weeks</p> <p>Intensity: progressive resistance training as tolerated with good form</p> <p>Time: 30-60 minutes per session</p> <p>Type: All major muscle groups -- can use weight machines or body-weight-based functional exercises with free weights and/or resistance bands</p>	Exercise

Resources

ACTIVE-HD YouTube Channel includes some examples of home resistance training exercises:

https://www.youtube.com/channel/UCH7_ed2_mkzXNWPZqVlosw

Clinical Recommendations for Physiotherapy in HD:

<https://pubmed.ncbi.nlm.nih.gov/31907286/>

Podcast on physiotherapy care in HD by Lori Quinn: <https://www.neuropt.org/special-interest-groups/degenerative-diseases/podcasts> (search 4D Episode 10)

A resource for physiotherapists working in HD (<http://www.ehdn.org/physiotherapy-wg/>) with links to resources on seating, footwear, etc. also available here:

<http://www.ehdn.org/wp-content/uploads/2020/07/Clinical-Tips-for-physiotherapists.pdf>