

Physical activity and exercise is important for general health and well-being. Although exercise prescription for people with HD may have similarities with what is known in other neurological conditions, it is important to remember that HD is a progressive disease. This along with the triad of cognitive, motor and behavioural symptoms means that skilful progression of exercises within the limitations of the involved individual is required.

### Specific Recommendations

Following the American College of Sports Medicine (ACSM) Guidelines (1), we recommend that people with HD should aim to do:

- *up to 30 minutes of moderate intensity aerobic activity at least 3 times per week and to perform*
- *strength training exercise for major muscle groups approximately 2 times per week.*

If a person is unable to do 30 minutes of continuous exercise, then 15 minutes 5 times per week is recommended. By moderate exercise, we mean exercising hard enough to be breathing fast and feeling warm. Aerobic exercise, such as cycling on a stationary bicycle, has been found to be feasible and safe in people with early-mid stage HD, and may provide some benefits, but further research in this area is needed (2).



### Supporting Exercise

It is important to consider long-term delivery issues when supporting people with HD to exercise, particularly as exercise prescription in this population may be further complicated by apathy or other behavioural issues. Specific considerations should be given to the most appropriate setting of intervention (i.e. in a gym or clinic or home-based) and the structure of the intervention (i.e. group based vs. individual). Gym staff or class instructors / coaches may often not be able to meet the needs of the person with HD, who may not be aware of when to progress exercise, when to request help, or is unaware of poor technique. Careful instruction of exercises is therefore often required to ensure safety. Individualised support may be required.

In some cases, the mode of delivery may need to be completely altered, where impairments such as cognitive, behavioural or motor issues prevent the current mode of delivery. The impact of any cognitive impairment and fatigue on the timing of an intervention during the day and the content of the intervention, i.e. amount of physical activity/advice/education given should also be considered.

## Personal Profiling

Any person with HD who is considering participation in an exercise programme should have a personalised fitness profile created that considers their medical presentation, their social situation and focuses on what they need or want to be able to achieve. These factors will inform the exact form of prescribed exercises, specifically frequency, duration, intensity, timing of sessions and mode of exercise, (e.g. swimming, walking etc. ), all of which will depend on the fitness of the individual, their goals and other commitments.

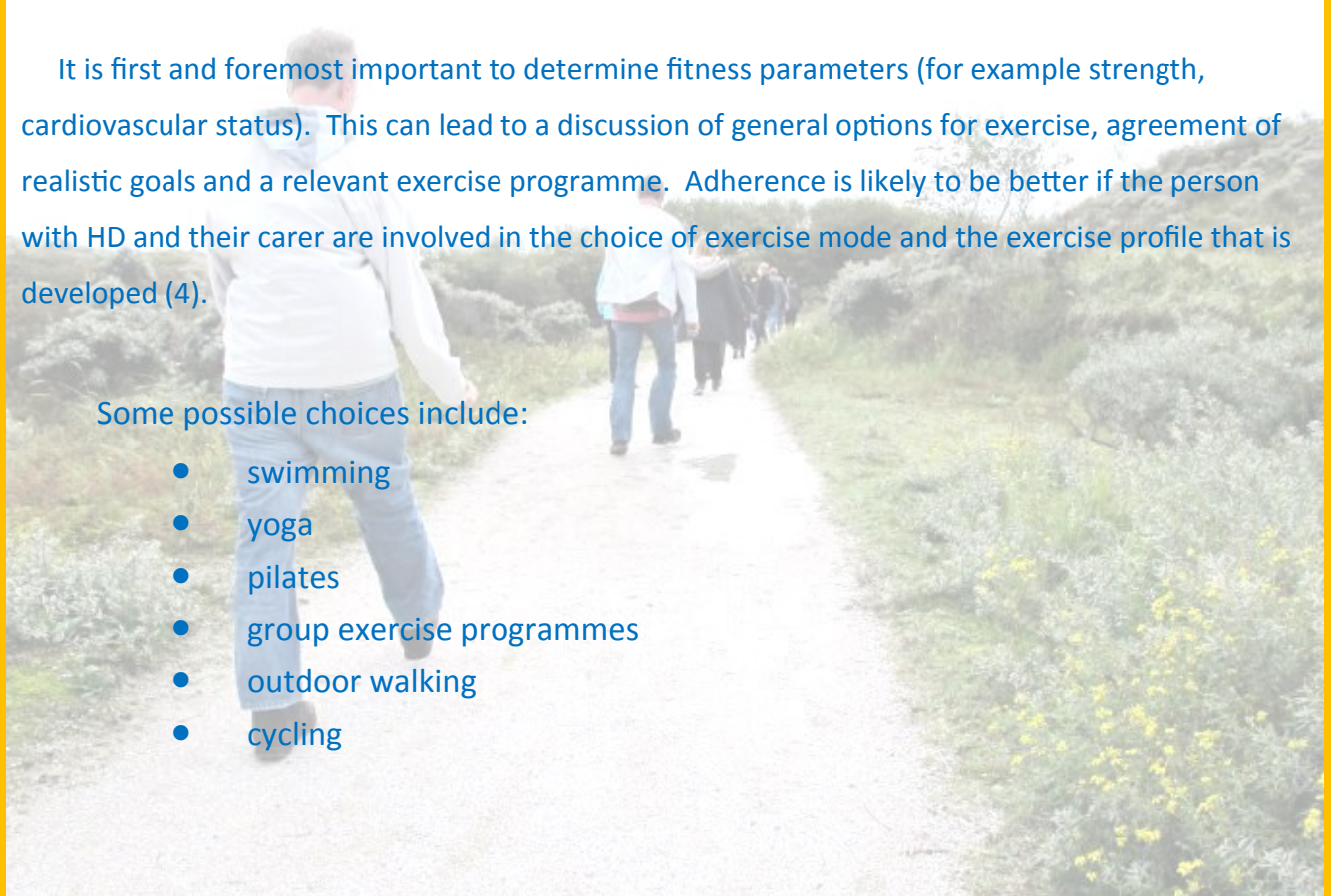
Overall areas to consider include:

- assessment of safety to initiate exercise (PAR-Q) (3)
- medical history
- social history
- exercise history
- present condition (cognitive and physical status)
- person goals.

It is first and foremost important to determine fitness parameters (for example strength, cardiovascular status). This can lead to a discussion of general options for exercise, agreement of realistic goals and a relevant exercise programme. Adherence is likely to be better if the person with HD and their carer are involved in the choice of exercise mode and the exercise profile that is developed (4).

Some possible choices include:

- swimming
- yoga
- pilates
- group exercise programmes
- outdoor walking
- cycling



## Exercise Component

The components of exercise that need to be trained should be considered. This can include general exercise training focused on cardiovascular benefit, muscle strength and endurance. Balance and coordination training can be more a specific target.

Often a functional activity exercise mode may be the optimal approach. This focuses on training the specific skills that the person with HD wants to improve, i.e. hand exercises, sit to stand exercises or walking exercises. Balance skills can also be trained during strengthening or endurance activities in a gym by using free weights or pulleys (low resistance). Limitations of the condition may necessitate the use of specific or adapted equipment. Adaptations will have to be made that consider a person's medical and social situation as well as personal preference relating to exercise.

The muscles and joints that are required to do the movement need to be specifically targeted and the length of time an exercise is performed or repeated should be related to the requirements of the functional activity. For example, if training for walking to the shops then it is important to train for the appropriate walking time (endurance) as well as considering speed in terms of requirements in the community for walking and crossing roads. A warm-up and cool-down should be incorporated into all programmes and as in other populations, careful baseline testing should be carried out prior to prescription.

## Monitoring

Current recommendations are to utilise the ACSM guidelines for exercise prescription in apparently healthy individuals. It is essential to review the response and employ careful monitoring throughout. Vital signs, symptoms of exertion such as dyspnoea, excessive fatigue, pallor and dizziness, and signs and symptoms specific to HD should be monitored and documented, at rest, during and after exercise. The Borg Rating of Perceived Exertion (RPE) Scale (5) should be used to objectively record perceived exertion.

### References:

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4. QUINN L, Busse M, Khalil H, Richardson S, Rosser A, Morris H. Client and therapist views on exercise programmes for early-mid stage Parkinson's disease and Huntington's disease. *Disability and Rehabilitation.* 2010; 32(11): 917-28.
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### Acknowledgements:

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