



Role of Exercise and Activity

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Knowledge · Experience · Innovation

Pathophysiology of post-polio

- Denervation exceeding reinnervation – maintenance of new sprouts in healthy motor neurons
- Motor neuronal loss due to reactivation of latent virus
- Inflammatory response – perivascular and interstitial cells. Activated T cells and immunoglobulin antibodies
- Muscle atrophy – site of new/ exacerbated symptoms?
- Other stresses – ageing? Weight gain?

Post-polio symptoms

- Central fatigue – chronic pain, mood disorders, sleep issues
- Peripheral fatigue – motor units, NM junctions, scarred/loss of motor neurons
- Weakness: disuse, overuse, chronic weakness, weight?
- Pain – myofascial pain syndrome/ fibromyalgia
- Changes in gait due to above symptoms.

Exercise and post-polio



The general principles for exercise are:

- A low to moderate intensity (50 to 70% of capacity/ RPE= 4 to 5)
- Slow progression of increasing intensity, duration and frequency (particularly in affected or de-conditioned muscles)
- The incorporation of pacing and spacing (rests are to be taken every few minutes)
- Rotate the types of exercise across the session and week

Exercise and post-polio



Exercise can be best defined using the FITT Principle:

- Frequency – how often per day or across the week are you aiming to exercise?
- Intensity – how intense is the exercise that you are aiming to carry out? E.g. interval based methods c.f. endurance
- Type – what type of exercise will you carry out? E.g. resistance versus aerobic... range of motion
- Time – what amount of time will you spend doing exercise?

Exercise frequency and post-polio



Frequency of exercise across the day/ week:

- Maximising opportunities to be physically active
- Pace and space across the day and week: E.g. gym and bowls on different days
- Adopt periodization methods across the week – ensure rest/recovery days
- Rest day is light activity not complete bed-rest

Exercise intensity and post-polio



Intensity of exercise:

- Methods of measuring intensity: RPE; Talk test
- Low to moderate intensity: RPE 3-4 / 10; able to talk with ease
- Heart rate?
- External methods, e.g. duration, km walked or weight lifted.

Exercise type and post-polio



Type of exercise:

- General recommendations indicate concurrent methods (aerobic and resistance)
- Post-polio considerations: metabolic systems and motor units...
- Incorporate modes of exercise that are fun!
- Consider the advantages of exercise vs physical activity.

Exercise time and post-polio



Time for exercise:

- General recommendations indicate 50 minutes 5 x a week aerobic and strength 2-3 x per week
- Those with post-polio should aim for the same...
- How? Little and often....
- Seek specialised exercise professionals (physios/AEPs).

Exercise professionals & post-polio



- University trained with postgraduate specialisation in exercise
- Accredited and registered with credible governing bodies (AHPRA - APA/ ESSA)
- Seek safe, individualised interventions – one to one vs group
- Clinical exercise prescription for complex medical risk factors/conditions

Exercise professionals & post-polio



Useful Links:

- <http://exerciseismedicine.org.au/>
- <https://www.essa.org.au/>
- <https://www.healthshare.com.au/directory/find-a-exercise-physiologist/>