

Exercising Muscles with Giant Motor Units

Where There is Partial Paralysis from Polio

Guidelines for exercise if you have Late Effects of Polio or Post-Polio Syndrome:

- As a polio survivor you should exercise to get the physical and mental health benefits.
- The exercise goal you focus on: *To keep moving and to be able to function as I get older.*
- The exercises you do should be prescribed and monitored by an exercise professional.
- The professional helping you should know about post-polio muscle paralysis and function.
- Your post-polio weakness can be stabilised or slowed, but it can never be normalised.
- The exercises you get should not make any of your fatigue, pain or weakness feel worse.
- Think about the safety risks in each type of exercise you do (falls, fractures, getting cold).
- When starting exercise programs think: low-stress, slow, careful and with enough rests.
- When continuing exercise programs think: find a sweet spot that avoids worse symptoms.
- Avoid 'extra' stress and strain on all muscle groups - in any activity you choose to do.
- Mild exercise on a regular basis helps you to avoid being weak from not using muscles.

STRENGTHENING: Muscle power, how reliable muscles are

- Polio-affected muscles are very different: They work harder but slower, are smaller and have less fibres, they have less nerve cells firing them, and their blood supply may not be sufficient. These factors can be a part of your weakness, pain and fatigue symptoms.
- Use low weight (load), do low counts of quality repetitions, and take frequent rest breaks.
- If any strength gains are made, they will be slow and gradual (think months, not weeks).
- If told you have a muscle that is "less than a 4 out of 5" then use it but don't exercise it.

CARDIOVASCULAR: Fitness, your tolerance of repeating movements

- Fitness exercise uses multiple limbs or your whole body, so protect your weaker limbs.
- Fitness modes that support your weak limbs should be done if possible (e.g. aquatics).
- Land fitness modes should allow you to use any usual callipers or braces that you need.
- It may be a habit for you to over exert (too fast, too long or too much), so take it easy.
- Your body may get tired more quickly when exerting a low effort – respect your limits.
- Brief, mild to moderate efforts with rest breaks will help you to avoid getting too tired.
- Plan your exercise and clothing so you don't lose body heat after (by cooling too quickly).

STRETCHING: Joint movement and muscle length

- Stretching must respect your surgery history, weaknesses, and any limb bracing you use.
- Prescribed stretching can reduce pain, improve symmetry, and stabilise your posture.
- Stretching hard can affect how you sense muscles, and can make your mobility unsteady.

BALANCE AND CONTROL: Your ability to avoid falling

- Skill or balance activities of any type or for any reason should not worsen your symptoms.
- Reducing your fall risk is very important – the factors you work on are unique to you.