

## Muscle Weakness

New muscle weakness, with or without associated muscle atrophy, can involve both previously affected muscles which were partially or fully recovered, or muscles that appeared to be unaffected by the original polio infection. New weakness is characteristically asymmetrical and is often most prominent in those muscles that were involved in the acute illness and then showed good recovery. New weakness is also commonly found in the “good” limb that was thought to be spared by the poliovirus, but which, in fact, may have had subclinical polio and has overworked over the years to compensate for the more affected limb. Other signs relating to new muscular involvement include fasciculations, muscle cramps, atrophy and elevation of muscle enzymes in the blood.<sup>75</sup>

Surveys of post-polio subjects have reported the following frequencies of new muscular symptoms:

- New weakness in previously affected muscles 60%<sup>71</sup> - 87%<sup>70</sup>
- New weakness in previously unaffected muscles 37%<sup>71</sup> - 77%<sup>70</sup>
- New muscle atrophy 17%<sup>73</sup> - 28%<sup>50</sup>
- Muscle twitching or fasciculations 39%<sup>50</sup> - 41%<sup>73</sup>
- Muscle cramps 43%<sup>50</sup> - 48%<sup>73</sup>

Recent research on the course of muscle strength over time in the normal population over the age of 50 has shown a normal average decline of one percent per year, yet for post-polio individuals the rate was two percent per year.<sup>76</sup>

It is important to realise that people with a history of paralytic polio may have significant denervation of muscle fibres even when muscle strength appears normal on clinical assessment. A study by Perry and Fleming (1985)<sup>77</sup> demonstrated that post-polio muscles that appeared normal (Grade 5) or good (Grade 4) clinically, as evaluated by a manual muscle assessment, may in fact have significant

denervation when tested with EMG. These results were further supported by previous research by Beasley (1961)<sup>78</sup> who reported that the number of functioning motor fibres in polio survivors with a given muscle test grade is significantly less than would be expected from simple percentage calculations. As a result, recommendations for exercise and activity must be correlated with this reduced number of muscle fibres.

Refer to aetiology of post-polio syndrome for possible causes of muscle weakness in the post-polio individual.