LETTER TO THE EDITOR

Polio and ageing: comment on article by Sorenson et al.

Dear Editor,

I am concerned that in the article "Electrophysiological findings in a cohort of old polio survivors" *(Sorenson et al., 2006)*, the authors seem to have inaccurately cited a study *(Doherty et al., 2003)* and argued that the rate of motor unit loss in a cohort of polio survivors, which they found to be 2.9% annually over 15 years, is equal to normal ageing. They describe the Doherty *et al. (2003)* results as "a decline in the thenar MUNE counts from a mean of 288 to 139 between the ages of 40 and 60 years. This represents approximately a 50% decline, or 2–3% per year" *(Sorenson et al., 2006, p 244)*.

The Doherty *et al. (2003)* reference for this quotation is a supplement to the *Journal of Clinical Neurophysiology*, which is not referenced on Medline, is not published online and is unobtainable in the UK through the British Library or medical libraries. However, the article refers back to Doherty and Brown *(1993)*. In the 1993 study, the subjects with a mean thenar MUNE of 288 were 20–40 years, and the older group with a mean count of 139 were 63–81 years. Doherty and Brown *(1993, p 364)* make clear that their subjects are not between 40 and 60, writing that "on average, subjects in their *seventh and eighth* decades of life had about 50% fewer thenar MUs then younger subjects between 20 and 40 years of age."

In the Doherty and Brown study, the mean age of the younger group is 30, and the mean age of the older group is 72. The age gap is 42 years. Sorenson *et al.* used an erroneous age gap of 20 years (40–60 years), selecting the upper and lower end of the age groups. This was divided into the percentage lost (51.7%), obtaining a 2–3% loss per year, which was similar to the polio loss of 2.9% per year. Using the gap of 42 years, the loss per year is 1.2% per year. A loss of 1.2% is similar to that found in other studies, such as Galea *(1996)*, who found very little increase in the rate of loss until after age 70 when it rose to 1.9%. To lessen the effect of ageing, examining the first 5 years of the polio study, the rate of thenar loss is actually higher at 3.7% per year.

Separately examining the symptomatic postpolio group (82% of the sample) in the Sorenson *et al.* study and continuing to use their method of calculation, the mean composite MUNE loss was 60.9% in 15 years (4.1% per year). The loss in the asymptomatic group was 22.2% (1.5% per year). Because of the small sample, this difference was not statistically significant, but, nevertheless, the symptomatic group lost nearly three times the number of motor units as the asymptomatic group, whose loss was similar to ageing, i.e., 1.2% per year. This suggests that there may indeed be accelerated motor unit loss in polio survivors who develop new weakness and other symptoms.

This long-term study from the Mayo Clinic has had a significant effect on postpolio patients and their treatment, especially in the UK, and it is important that the Sorenson *et al.* result of 2.9% per year MUNE loss and its relationship to other studies of age-related motor unit loss is clarified.

Sincerely,

Dr. Ruth Bridgens
School of Social Sciences
Cardiff University, UK

References

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Address correspondence to: Dr. Ruth Bridgens, 66 High St., Marshfield, Chippenham, Wiltshire SN14 8LP, UK.