

LETTER TO THE EDITOR

Response to comments

Dear Editor,

We thank the correspondents for their comments on our article (Sorenson *et al.*, 2006) and respond with the following points. In response to Dr. Matheson, we modeled the MUNE decline using linear and proportional models. These models used baseline data and 5-year data to predict a 15-year value for each subject. Each predicted value was compared to the corresponding observed value. Each model was then assessed to determine, which most closely approximated the observed data. We thank Dr. Matheson for identifying the error in the formula as it appears in the text. This error occurred as we simplified the calculations for the purposes of the manuscript. The correct equation is $\ln(\text{MUNE}_5/\text{MUNE}_0) = (-kT)$. After checking and repeating the calculations, the data as presented are correct. However, we did not use the models to compare rates of decline as Dr. Matheson has suggested. Neither the proportional nor the linear model was a strong fit with the data. In our opinion, the strength of the model is not sufficient to perform the comparisons that Dr. Matheson has suggested.

We do acknowledge that the symptomatic and asymptomatic groups may differ in their true rates of decline and we may not have sufficient power to detect this. This point is acknowledged in the Discussion where we review the limitations of our study. In our study group, however, the strongest predictor of symptomatic change was not the rate of decline but rather the magnitude of their residual weakness; suggesting that this variable is more relevant to symptomatic progression later in life. To our knowledge, there is only one other large, long-term follow-up study on polio survivors, and our data remain consistent with their reported results (Nollet *et al.*, 2003).

Both correspondents raise the concern that we have overestimated the decline in motor units over

time in the normal aging population. The point of the cited article was not to perform a statistical comparison but rather to demonstrate that normal subjects also undergo loss of motor neurons as they age. There are methodological differences between the cited study and ours, as we pointed out, precluding any explicit comparisons. As pointed out in the article, we did not include a normal aging control group and without such a control group one cannot reliably compare the changes in the polio group to that in a normal aging population. To our knowledge, no one has performed a long-term prospective cohort study on the effects of normal aging on MUNE or CMAP amplitudes. We do acknowledge that it remains theoretical that that MUNE declines in polio survivors commensurate with normal aging. This hypothesis cannot be confirmed or excluded without a prospective study of polio survivors, including normal age- and gender-matched controls, which has not been done to date.

Sincerely,

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References

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