Appendix

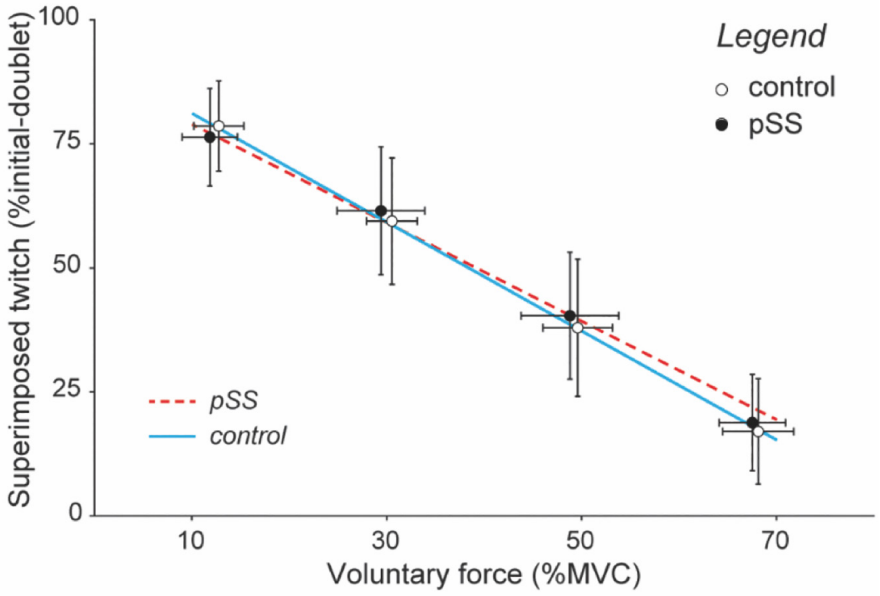
Submaximal contractions

During task 2, participants performed six sets (3 per hand) consisting of four muscle contractions at 10, 30, 50, and 70% MVC (10s duration followed by 40s rest). Force levels were pseudorandomised within each set. Superimposed twitches were evoked during at least two sets with the right hand.

Multilevel regression was used to model the relationship between superimposed twitch amplitude and voluntary force. Superimposed twitches were expressed as a percentage of the largest doublet during task 1 (initial-doublet) and voluntary force at the time of stimulation was normalised to %MVC. In the multilevel model, random intercepts and random slopes for force were included per participant. Next, fixed-effects (and interactions) were included. At each step, the more complex model survived if it explained significantly more variance (*i.e.*, the Akaike information criterion decreased significantly). Model residuals were graphically inspected for normality and heteroscedasticity. To test robustness of the models, final models were re-estimated on a trimmed dataset from which outliers (residuals >2SD) of the original models had been removed. Results of the trimmed model are reported.

Results

As expected, superimposed twitch amplitude was inversely related to the level of voluntary force (t=-40.807, $p<0.001$). Additionally, a significant interaction effect was observed between force and group (t=2.880, $p=0.005$) indicating that at higher forces pSS participants demonstrated poorer voluntary muscle activation (Suppl. Fig. S1).



Supplementary Fig. S1. Group means for the size of the superimposed twitches at the four different force levels during the submaximal contractions. Trendlines were obtained from the multilevel models, error bars indicate standard deviations. Voluntary muscle activation (%) is equal to 100% – superimposed twitch (%).