Low intensity repetitive transcranial magnetic stimulation drives structural synaptic plasticity in the young and aged motor cortex.

Supplementary Material

Pooled analysis

Given that the pooled analysis showed strong evidence for a change to the rate of spine gains at +21hrs post a single stimulation, that was not evident in the single or multiple stimulation analysis alone, further analysis was conducted to determine whether this result was being driven by data from a particular stimulation group (single or multiple stimulation). We ran 3 models, Model 1 with an interaction term between stimulation group and imaging timepoints, Model 2 with stimulation group as a main effect and Model 3 that does not account for any effect of stimulation. Comparison between Models 1 and 2 did not show strong evidence for an interaction effect (BF=1.05), suggesting no difference in the change of the rate of dendritic spine over the imaging timepoints between the single and multiple stimulation groups. Similarly, a comparison between Models 2 and 3 did not show strong evidence for a difference between stimulation groups (BF=0.19), suggesting no difference in the data-generating process between the two stimulation groups.

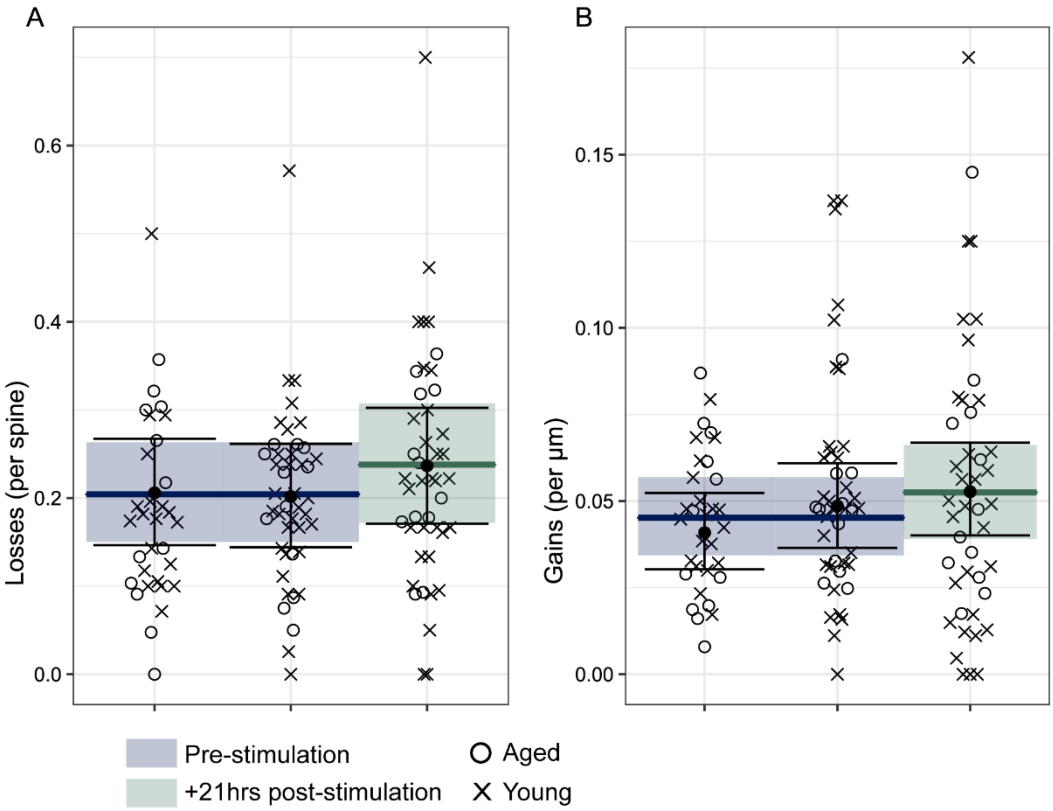

Figure S1. Pooled analysis further suggests that a single session of LI-rTMS drives structural synaptic plasticity in the motor cortex.

(a) Pooled analysis of dendritic spine losses shows strong evidence for an increase in the rate of spine losses +21hrs post a single stimulation.

(b) Pooled analysis of dendritic spine gains shows strong evidence for an increase in the rate of spine gains +21hrs post a single stimulation.

Data are shown as the aggregate means (solid-coloured lines) for each time period (pre-stimulation=blue, +21hrs post-stimulation=green) alongside the mean (•) at each imaging observation. Error bars represent the 95% **credible intervals** for each individual time point**,** whereas the shaded boxes represent the average 95% credible intervals for each time period. Each data point represents data from an individual dendritic arbour with data from young (o) and aged (x) animals.