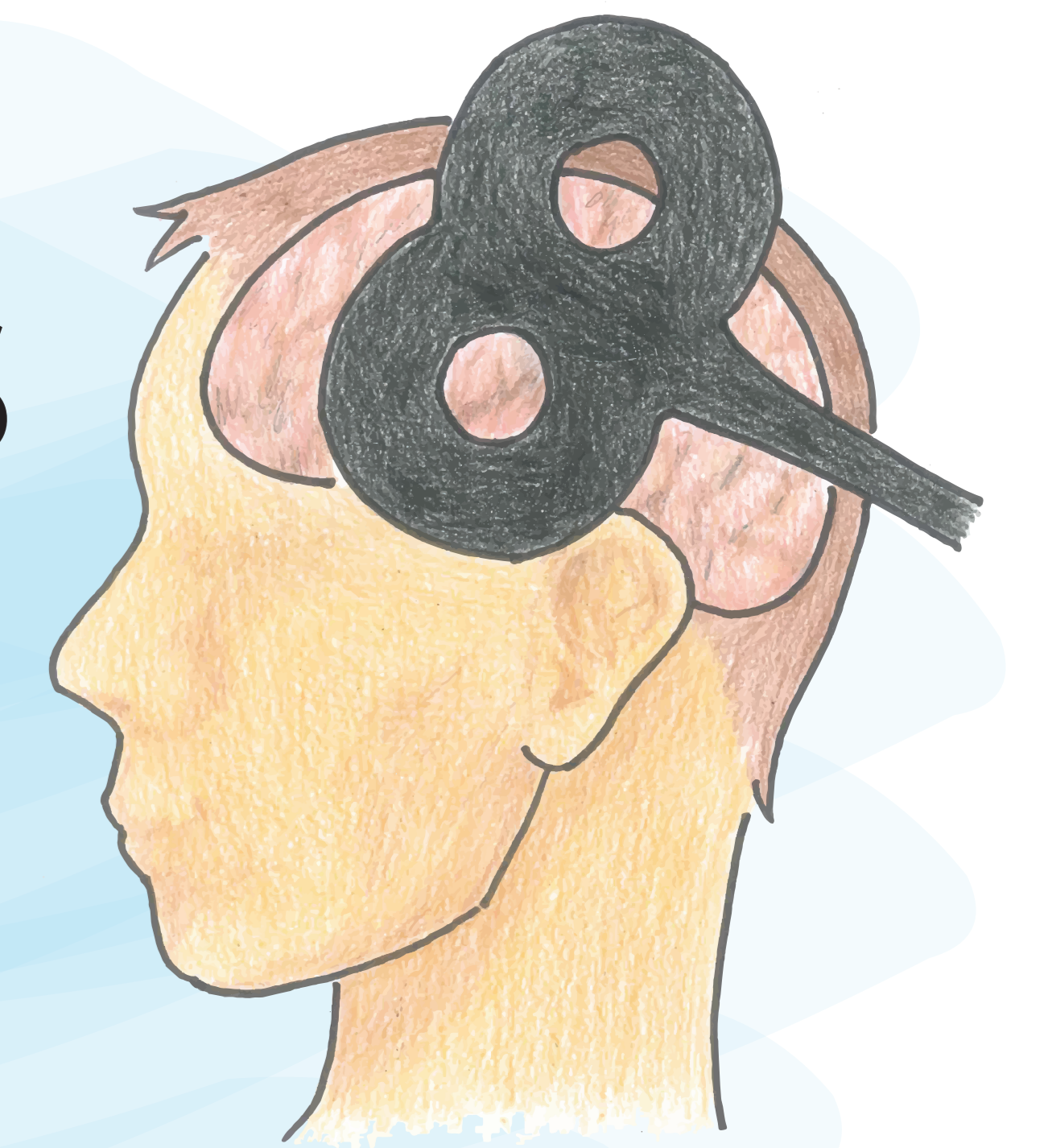


No effect of inter-pulse interval for TMS motor evoked potentials in active muscles



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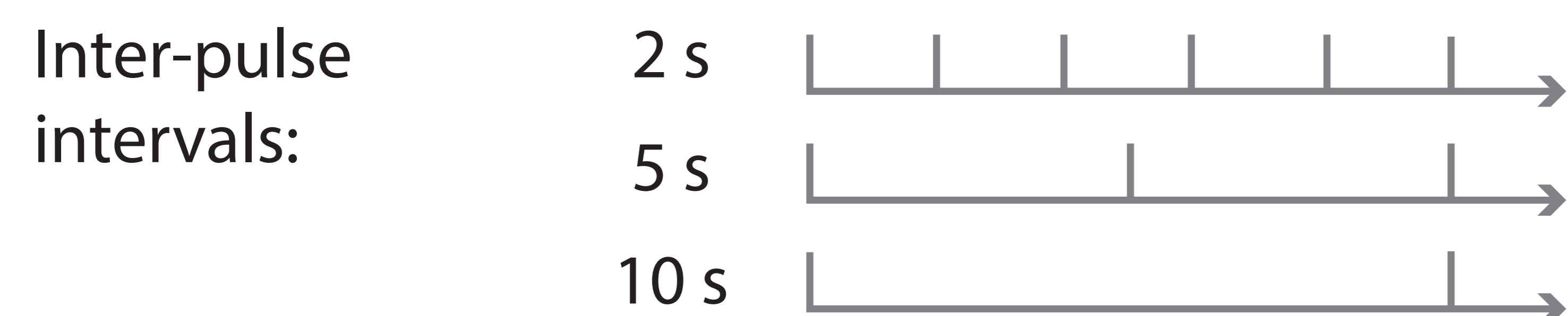
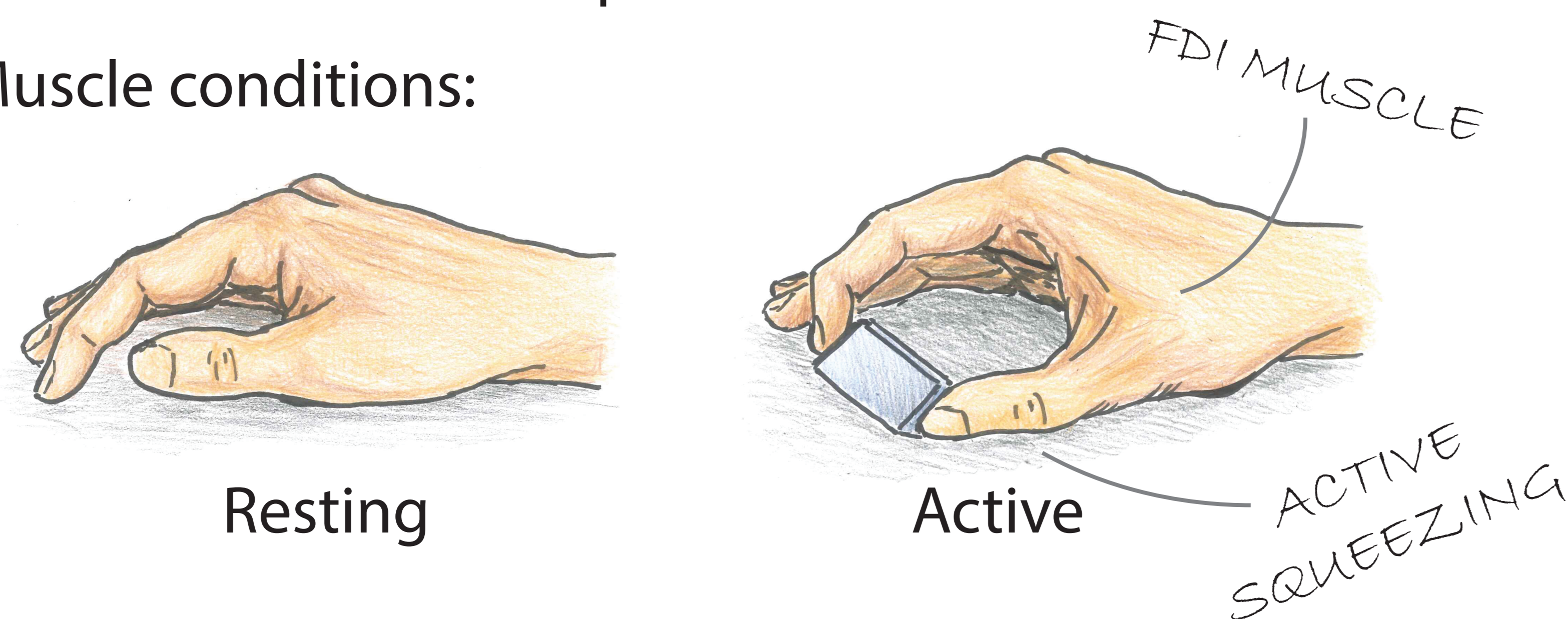
“Is it possible to speed up TMS motor mapping with shorter inter-pulse intervals (IPIs)?”

“IPI affects MEPs with **resting** muscle. What about with **active** muscle?”

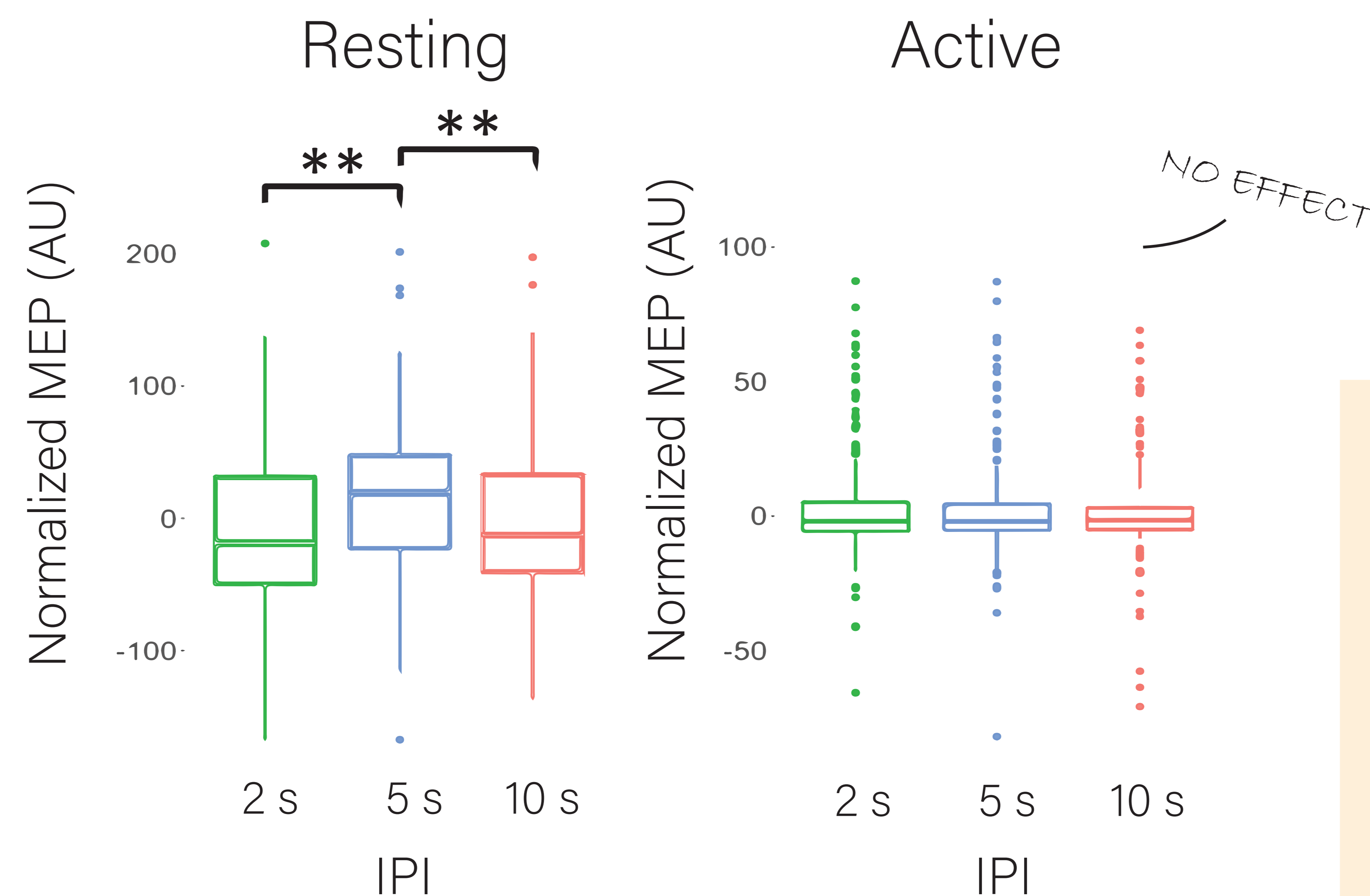
Methods

We studied motor evoked potentials (MEPs) from the FDI muscle of the right hand during the TMS of the primary motor cortex. We used two muscle conditions and three inter-pulse intervals.

Muscle conditions:



Results



The effect of different IPIs on MEP amplitudes for resting (N=4) and active (N=8) muscles. Amplitudes are normalized (divided with the baseline rms) and centered (the mean IPI10 amplitude is subtracted) to remove the effect of the baseline and the subject. Tested with ANOVA.

For the active muscle, the IPI had no significant effects. The only variable affecting the MEP amplitudes during active muscle contraction was the baseline EMG magnitude before the pulse, higher baseline producing higher MEP ampli-

tudes. For the resting muscle, the 5 s IPI produced significantly higher MEP amplitudes than other IPIs. The results for resting muscle support the findings in previous studies, in which IPI affects the MEP amplitude [1,2,3,4].

Conclusion

- IPI has no effect on MEPs for active muscle contraction.
- IPIs as short as 2 s can be used to speed up TMS motor mapping in active muscles.

References

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