Background

The purpose of this study is to better understand the role of motor-planning-specific massed practice on motor learning, and whether gains persist over the course of training.

In a previous study, we have demonstrated 2 motor planning systems.1

1. Common Endpoint

2. Common Vector

Methods

Subjects: 1 control subject, right hand-dominant

Task: The subject performed many repetitions of reaches on a tabletop as instructed on a display monitor with alternating blocks of trials grouped by common endpoint and common vector.

Sessions: 3 sessions per week for 6 weeks. 18 sessions total.

3D finger position recorded by an Optrotrack at 200 Hz

Results

From Session 1 to Session 18 there was a 38% increase in precision

Conclusions

The subject’s gains in precision persisted and accrued over the 18 sessions.

Follow-up studies will allow us to determine whether the gains persist over long periods of time (e.g., months) and generalize to untrained tasks.

Our experiments aim to develop long-term, motor-planning-specific, rehabilitation treatment regimens.


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