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## ***Effects of Task Requirements on Choice of Upper Extremity Use in Subjects Chronic Post-Stroke***

College of Sciences and Health Professions

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### **Abstract**

**Purpose:** To explore how task requirements influence reaching in people post-stroke.

**Subjects:** Eleven subjects chronic post-stroke with mild to moderate stroke severity

**Methods:** Participants performed sitting reaching tasks under six conditions: object size (small or large), object location (Right or Left) and speed (slow or fast). Subjects were not instructed how to reach. The number of hands used, arm choice (paretic (P) or nonparetic (NP)), and if they reached contralaterally were recorded. Qualitative self-efficacy data was also collected.

**Data Analysis:** A general estimating equation model was used to calculate odds ratios, controlling for side of weakness and hand dominance. Descriptive statistics were run and qualitative comments reviewed for trends.

**Results:** All reaches were one-handed. Speed and object size were significantly associated with NP UE use ( $p = 0.002$  and  $p = 0.03$  respectively). The odds of using the paretic UE were 10.4 times lower (95% CI: 2.3 - 46.9) for the fast speed and 2.4 times lower (95% CI: 1.1 - 5.4) for the large size. Subjects only reached contralaterally with their NP UE (36.7% of time).

**Conclusions:** Subjects chronic post-stroke with mild/moderate severity use their P UE less to reach for objects that are larger and when reaching faster.