

## **Review of the article "Fitts' Law-Based Identification of Motor Development Stages for the Upper Limb: Proof of Concept in Three Age Groups" (#108404)**

Thank you for the opportunity to review this insightful manuscript, which tackles an important topic within the field of psychomotor development. The study is particularly valuable for its application of Fitts' law to evaluate motor control across different developmental stages.

The research question is well-defined, and the methodology is grounded in established scientific principles, making a compelling case for the potential clinical utility of throughput (TP) as a robust metric for assessing motor performance.

The introduction effectively establishes the context and relevance of the study. However, the background could be enriched by discussing **recent literature** that applies Fitts' law to pediatric and adolescent populations, as this would further contextualize the importance of the study's focus. **Providing a clearer explanation** of the clinical implications of using TP to track rehabilitation or assess motor impairments could strengthen the introduction.

The methods section is detailed and well-structured, adhering to rigorous ethical standards. While the methodology is described comprehensively, it would benefit from **further clarification regarding the calibration process for the tablet-based tasks and a justification for the selection of the specific age groups**. This information would enhance the reproducibility of the study and better support the rationale for its design.

The results are presented clearly, with appropriate statistical analyses that substantiate the study's conclusions. The inclusion of post-hoc tests to identify significant differences among the age groups is commendable. However, **the figures could be improved** for clarity, particularly by ensuring that statistical significance indicators in Figure 3 are fully explained in the legend.

The discussion provides a thoughtful interpretation of the findings, highlighting their alignment with known neuromotor development patterns. To further enhance this section, I encouraged the authors **to explore the practical implications of their results more deeply**. For instance,

discussing how TP could be implemented in clinical settings or adapted for use in populations with specific motor impairments would provide valuable insights. The discussion would benefit from a brief consideration of the study's limitations, such as **the relatively small sample size and the inclusion of only right-handed participants**, as these factors may affect the generalizability of the findings.

The conclusion effectively summarizes the study's contributions, emphasizing the relevance of TP as a metric for motor development. However, it could be strengthened by **linking the conclusions more explicitly to the research objectives and hypotheses** stated earlier in the manuscript. Furthermore, the authors should consider **outlining directions for future research, such as extending the study to clinical populations or exploring the use of TP in rehabilitation contexts**.

**With minor revisions** to address the points raised, the study will be well-suited for publication in PeerJ, section - Brain, Cognition, and Mental Health.