

# Sit-to-Stand transitions for health monitoring using cameras at home



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## 1. Introduction

**Sit-to-stand (STS) transition** can be quantified using skeleton data recorded with cameras. The trajectory of the head joint (Figure 3) is **processed to find peaks**. This produces STS duration and speed of ascent.

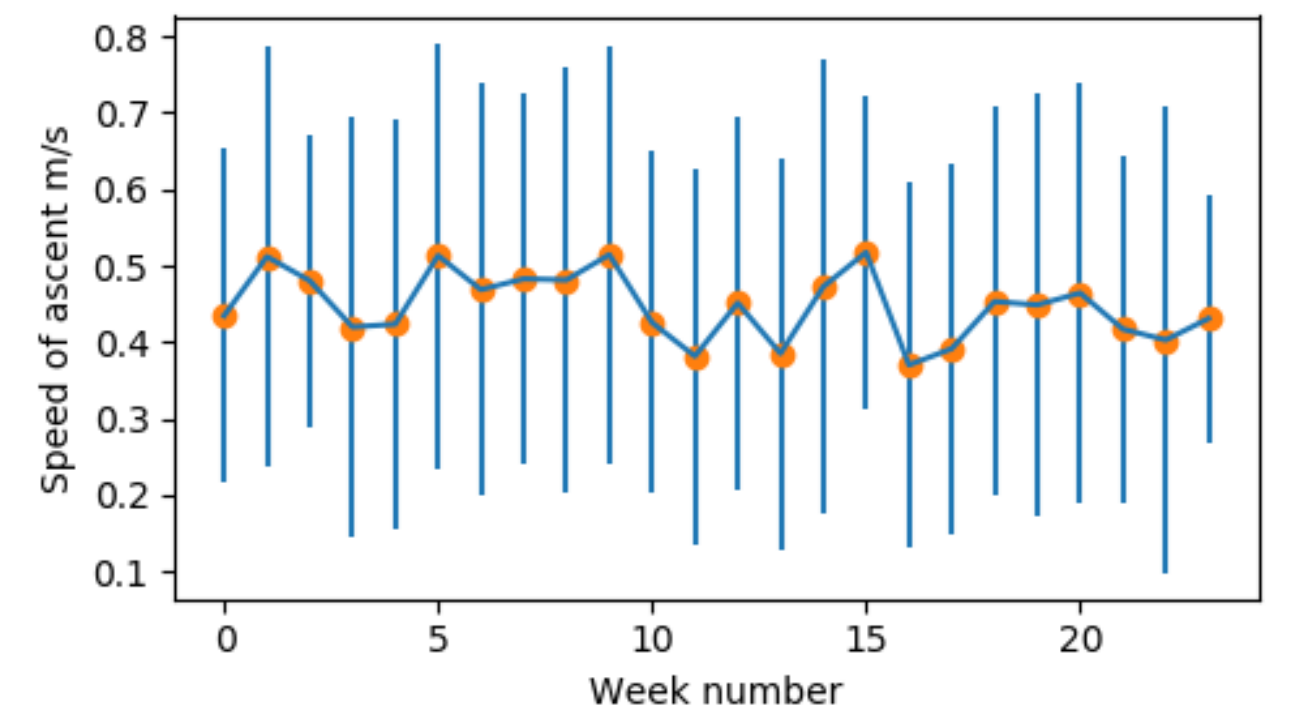
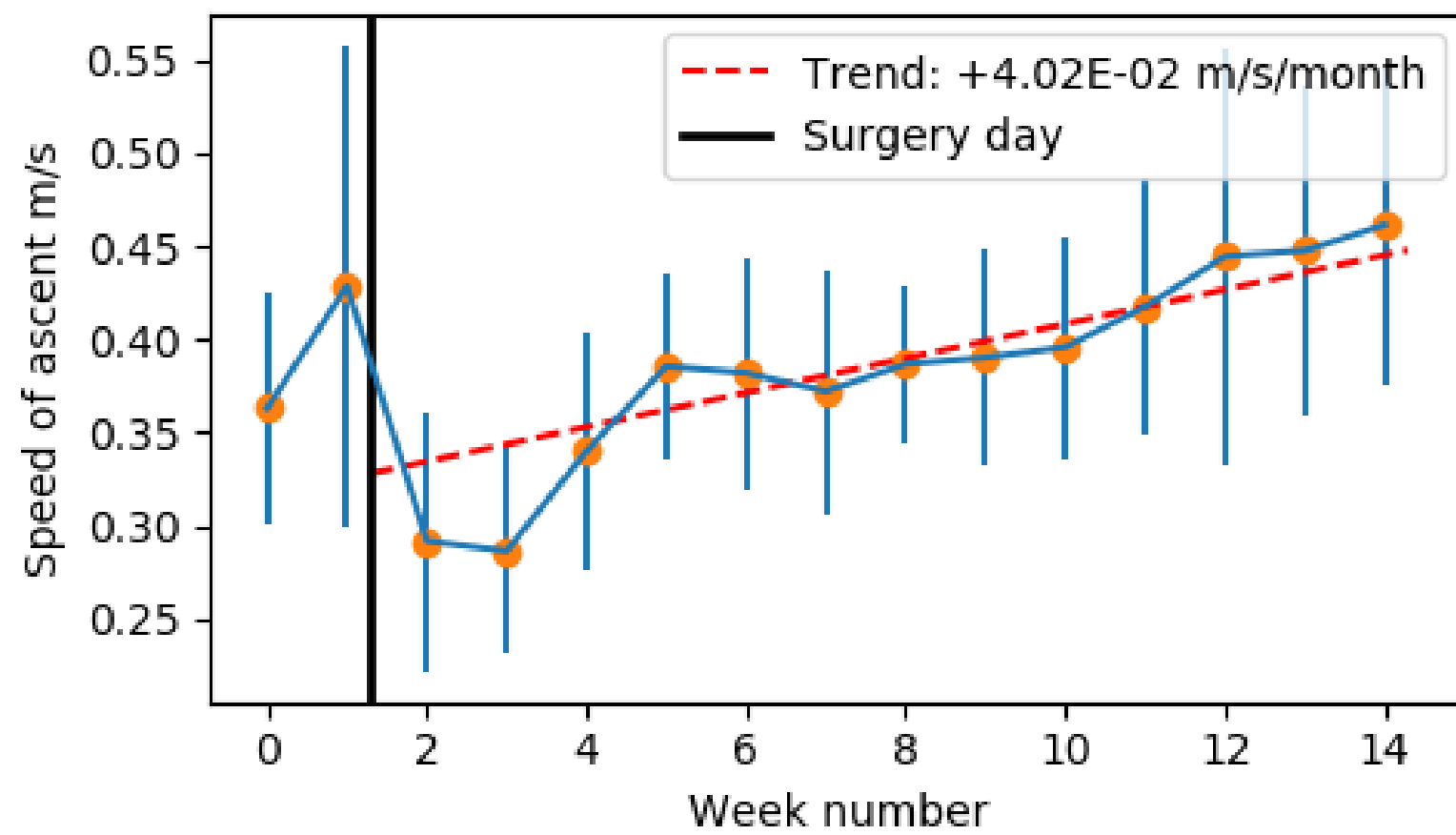


Figure 1

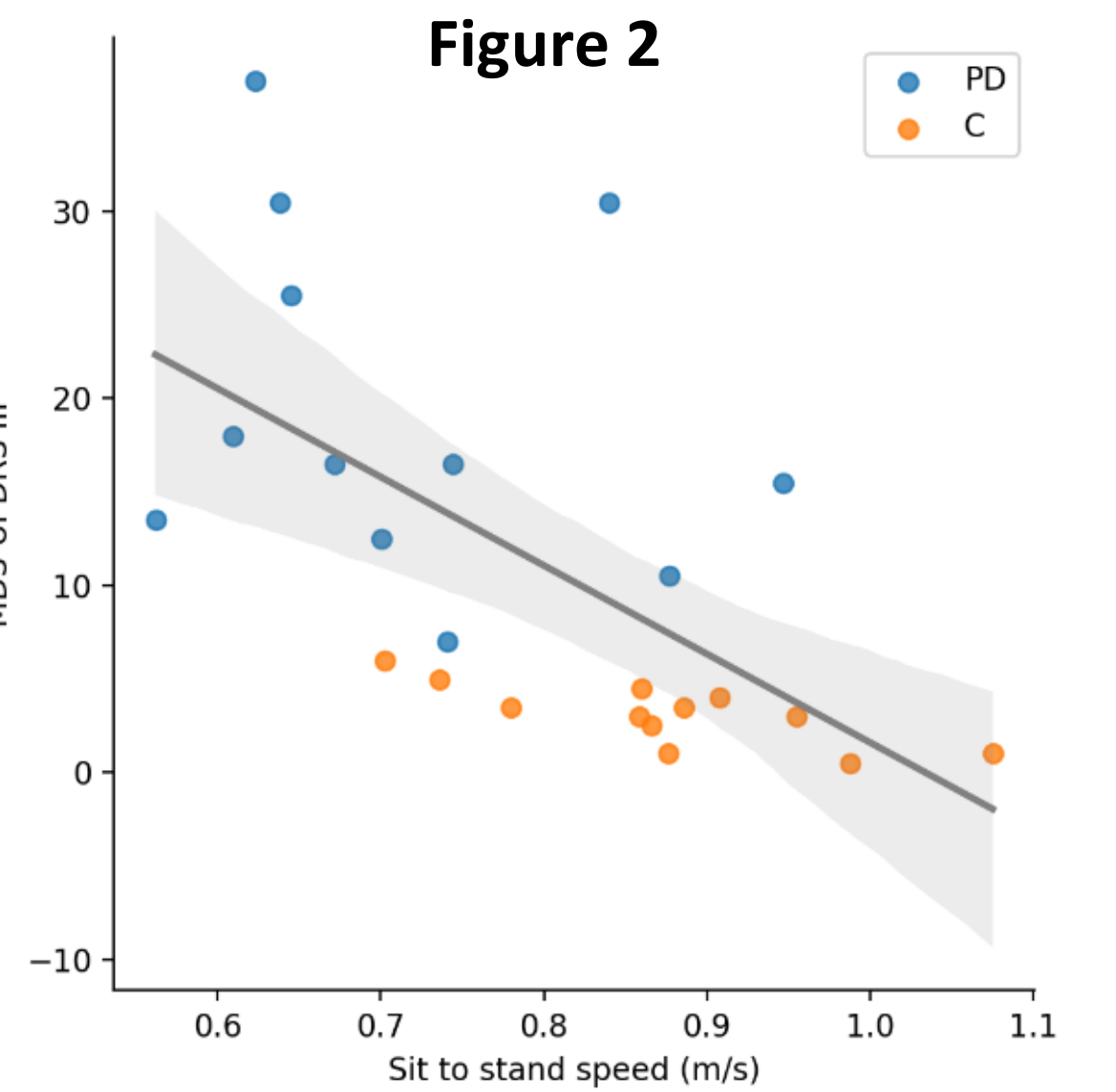


Figure 2

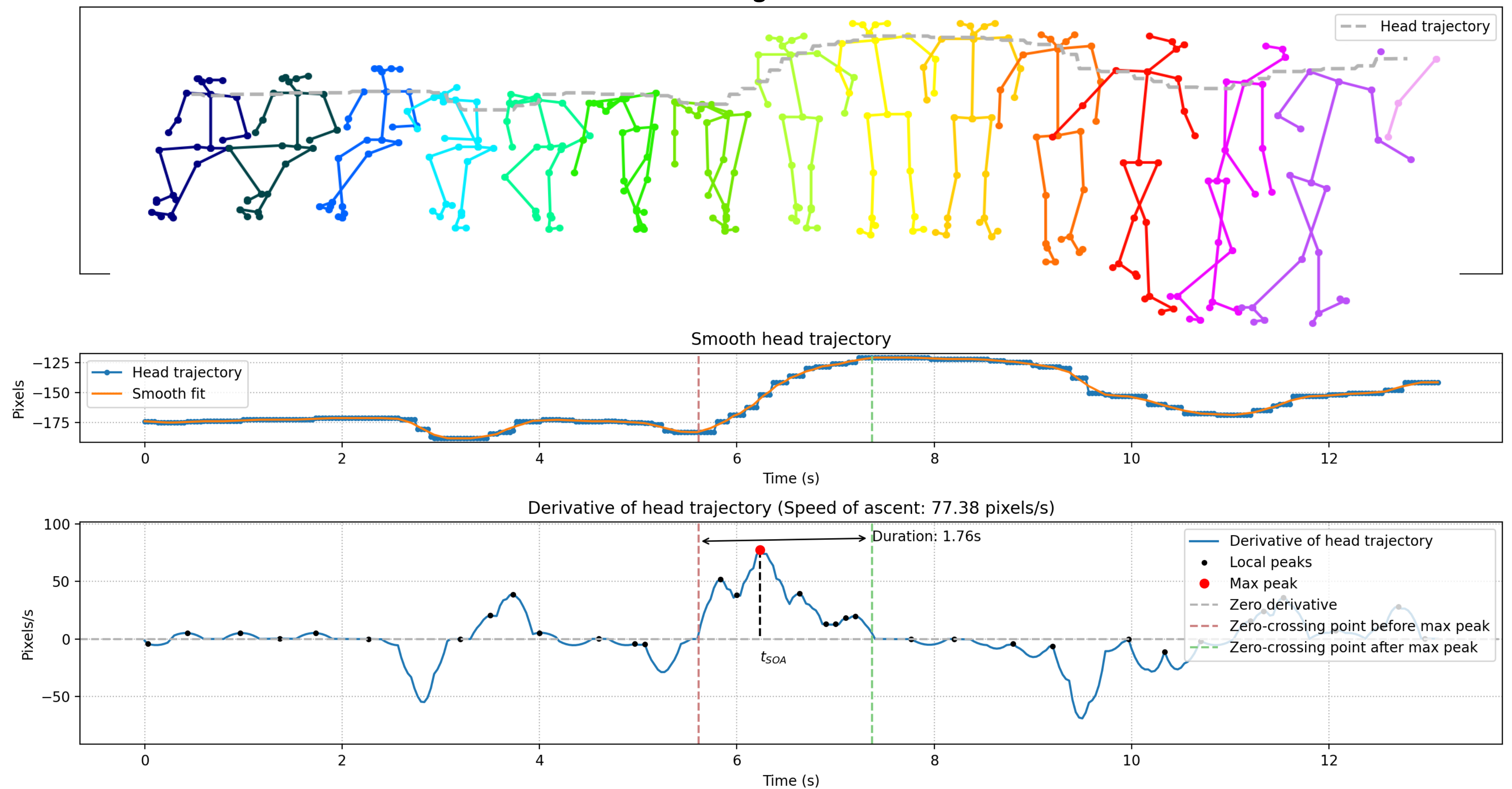
## 2. Results

For participants undergoing hips/knee replacement surgery, **speed of ascent correlates really well with the recovery trend** of the participant (Figure 1, left). For comparison, healthy participants (Figure 2, right) present no trend. For participants affected by Parkinson's Disease (PD), **speed of ascent correlates well with the MDS-UPDRS III score** used by clinicians to measure the severity of PD (Figure 3).

## 3. Conclusions

**STS time and speed are strong indicators of health** than can be used to automatically monitor the progress of different medical conditions such as the recovery from hip or knee surgery and PD.

Figure 3



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