**Introduction**

- In the US, wheelchair cushions are deemed durable medical equipment – therein, the life expectancy is 60 months
- Understanding variations in cushion performance over time during use can inform design and clinical interventions

**Objectives**

- Document cushion performance over lifespan
- Identify predictors of cushion degradation
- Develop and validate a clinical measure of seat cushion degradation

**Methods**

- 138 different cushions studied
  - Most common: Jay2 (32), Roho Hi Profile (26), Evolution (14)
- Repeated measures on 24 cushions

**Data Collection**

- Client evaluation – diagnosis, weight, pressure ulcer history
- Visual inspection of cushion
- Seated posture and cushion performance measures using human and buttock model interface pressures

**Results**

- Both model and subject pressures indicate NO relationship over time
  - Black: IPM using buttock model
  - Red: IPM using cushion user
  - Look at variability of red model data compared to variability of black subject data

**Conclusions**

- Strong positive correlation between temperature and relative humidity
- Controlled tests did not reach steady-state, while most empirical bouts reached steady-state after approximately 90 minutes

**Acknowledgements**

- This research was conducted as part of the RERC on Wheeled Mobility, which is supported by Grant H133E080003 from the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education.

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