Ergonomic Assessment via Virtual Reality: Is it Possible?

**The Challenge**
To determine if virtual reality ergonomic assessments are a statistically equivalent substitute to physical ergonomic assessments.

**PEAT:**
Portable Ergonomic Assessment Tool

**Virtual Workspace**

**Data Collection Tools**

**Human Tech:**
Video-based tool that uses outline drawings to make ergonomic assessments

**REBA and RULA Assessments:**
Ergonomic assessments that evaluate body angles

**DELSYS System**
Square shaped electromyography sensors that track body movements

**Advanced Realtime System (ART)**
Small balls tracked by infrared cameras that produce coordinates in space

**Methods**

**TRIAL 1: Real Assembly**
- Assemble PEAT while standing at the workbench
- Video recording of participant
  - Baseline Cycle Time
  - Participants become familiar with assembly

**TRIAL 2: Real Assembly Again**
- Participants tracked with DELSYS and ART systems to perform a motion analysis while standing at a physical workbench.
  - A video will be taken of participant:
    - Human Tech Analysis
    - REBA & RULA Assessment

**TRIAL 3: Virtual Assembly**
- Assembly will be done in virtual environment modeled after the physical workspace
- Participants tracked with DELSYS and ART system to perform a motion analysis.
  - Video recording of participant:
    - Human Tech Analysis
    - REBA & RULA Assessment