Investigation of Intention Tremors in a Healthy Population

Your Name

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1 Introduction

This study aims to assess the characteristics and prevalence of intention tremors in a healthy population during various controlled tasks, using gyroscope and accelerometer data.

2 Demographics

- Age: Age can significantly influence motor control and tremor characteristics.
- Gender: Gender differences may be relevant, especially if hormonal influences on tremor are considered.
- Education Level: Educational background can be relevant, particularly in understanding participants' comprehension of the tasks and instructions.
- Handedness (Right/Left/Ambidextrous): Handedness can affect motor control and coordination, which is vital for tasks requiring fine motor skills.
- Lifestyle Factors:
  - Physical Activity Level: Regular exercise can influence motor control and overall health.
  - Dietary Habits: Diet, including caffeine and alcohol consumption, can affect tremor dynamics.
  - Smoking Status: Nicotine can have an impact on tremors and nervous system function.
- Medical History:
  - General Health Status: Any past or current health issues, even if they seem unrelated to tremors.
  - Medication Use: Some medications can induce or influence tremors.

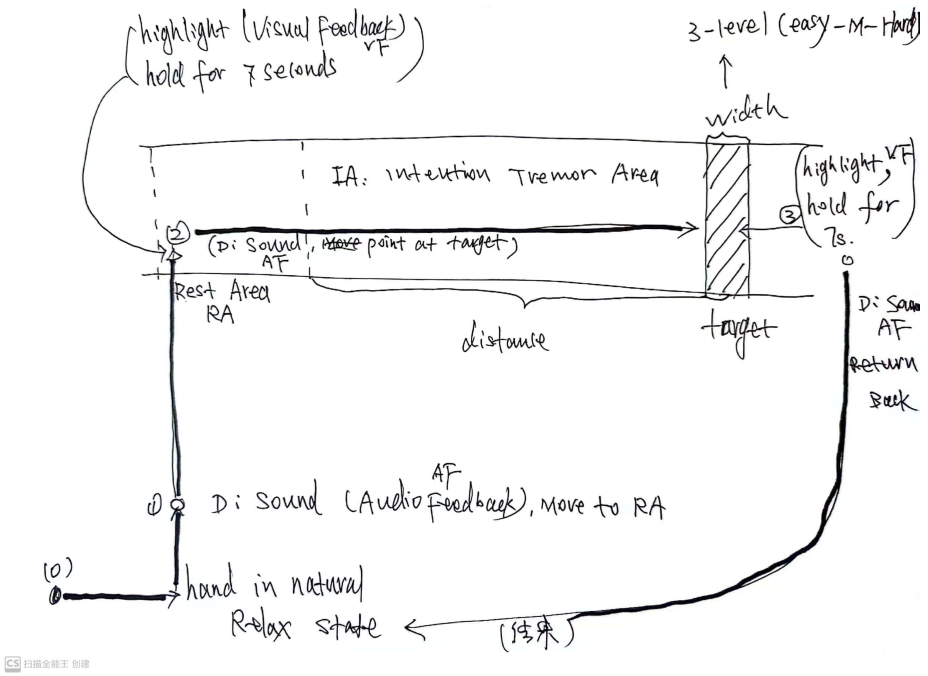

Figure 1: task

Collecting this comprehensive demographic information allows for a more nuanced analysis of the data. It helps in understanding how different factors might correlate with or influence the presence and characteristics of intention tremors in healthy individuals. This data also enables you to control for potential confounding variables in your analysis. Remember to ensure the privacy and confidentiality of all participant information, adhering to ethical guidelines for research with human subjects.

3 Equipment

- Gyroscopes and Accelerometers.
- Data Recording System.

4 Experiment Design

4.1 Task Selection

1. Pointing Task: Participants point at small targets at varying widths and distances.

4.2 Procedure

1. Sensor Attachment: Securely attach sensors to the participant's hand or finger.
2. Measurement: Record baseline data with the participant at *rest*.
3. Task Performance: Participants perform each task, with sensor data recorded.
4. Repeat Trials: Conduct multiple trials for each task for consistency.

5 Data Collection

- Collect gyroscope and accelerometer data during each task.
- Note time, duration, and characteristics of any tremors observed.

6 Data Analysis

- Analyze the data for tremor frequency, amplitude, and pattern.
- Assess the occurrence and nature of intention tremors in healthy individuals during task performance.

7 Ethical Considerations

- Obtain informed consent from participants.
- Ensuring data privacy and confidentiality.

8 Conclusion

This study aims to provide insights into the baseline characteristics of intention tremors in a healthy adult population.