

The Effects of Reaching Task Following Selective Trunk Stability Exercise

- **NCT Number: NCT05767437**
- **Protocol Version:1.0**
- **Document Date: July 20, 2022**
- **Study Design: A crossover study comparing ADIM exercise and Conventional therapy**
- **Study Groups:**
 1. Group A (ADIM-CT): ADIM exercise followed by Conventional therapy
 2. Group B (CT-ADIM): Conventional therapy followed by ADIM exercise
- **Sample Size Calculation**
 - Using G*Power Version 3.1 (Franz Paul, Kiel, Germany)
 - Input parameters:
 - Effect size: 0.44
 - Significance level (α): < 0.05
 - Power: 0.80
 - Required total sample size: 12 participants

Although we initially planned to recruit 12 participants in total, considering a potential dropout rate of 10%, we recruited 10 participants per group (20 participants total)

● Statistical Analysis

1. Statistical Software
 - Data analysis was performed using IBM SPSS 14 (version 28.0.1.1)
2. Tests for Normality
 - The Kolmogorov-Smirnov test was used to assess data normality
 - Kinematic data showed normal distribution ($P > 0.05$)
3. Basic Statistical Analysis
 - Sex distribution: Chi-square test
 - Comparison of demographic and clinical characteristics:

- For normally distributed data: Independent t-test
- For non-normally distributed data: Mann-Whitney U test (non-parametric)

4. Crossover Analysis

- Carryover Effect: Analysis combining data from both periods for each group
- Period Effect: Analysis of differences between groups for each treatment
- Treatment Effect: Mixed Analysis of Variance (Mixed ANOVA)
 - Factors: 2 groups \times 3 assessment points
 - Interaction analysis: Analysis of change patterns between groups over time

5. Multiple Comparison Adjustment

- Bonferroni correction method
- Statistical significance level: $P < 0.05$

6. Post-hoc Analysis

- Bonferroni sample t-test
- Pairwise comparisons within each group across three assessment points

7. Clinical Outcome Analysis

- Two-sided unpaired t-test
- Significance level: $P < 0.05$