

Comparison of the Immediate Effects of Visual, Auditory, and Combined Feedback Modalities on Dynamic Balance: A Randomized Controlled Trial

Clinical Trial Protocol

NCT Number: Not yet assigned

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Study Design

This study is a randomized controlled trial with a parallel-group design. Participants are randomly assigned to visual, auditory, or combined feedback groups to assess immediate effects on dynamic balance.

Objectives

Primary: Compare immediate effects of feedback modalities on dynamic balance. Secondary: Evaluate whether auditory or combined feedback improves postural control more than visual feedback alone.

Study Population

Healthy young adults aged 18–25 years.

Inclusion Criteria

Age 18–25, normal or corrected vision, no musculoskeletal or neurological disorders, no prior lower limb or spine surgery, no vestibular or balance disorders.

Exclusion Criteria

Dizziness during testing, injury during protocol, medication affecting balance, alcohol intake within 12 hours, non-compliance.

Interventions

Arm 1: Visual feedback (mirror). Arm 2: Auditory feedback (Mozart music). Arm 3: Combined visual and auditory feedback. All participants perform the SEBT.

Outcome Measures

Primary outcome: SEBT dynamic balance performance (normalized reach distance in 8 directions).

Time Frame

Immediate assessment during a single experimental session after each condition.

Statistical Analysis Plan

Data analyzed using SPSS. Normality tested with Shapiro-Wilk. One-way ANOVA with Tukey post-hoc tests. Significance set at $p < 0.05$.