

Force Plate Countermovement Jump (CMJ)

This document is a quick guide informed by the comprehensive test protocol document

Pre-Test

- **Equipment setup:**
 - Dual plates, calibrated quarterly (static load up to 300 kg).
 - Plates leveled, aligned, zeroed before each test.
 - Ensure consistent footwear and surface.

Warm-Up Protocol

1. **Athlete's usual warm-up** (≈ 10 minutes).
2. **Pre-test jumps** (≈ 5 minutes):
 - 3 maximal CMJs \rightarrow rest 2 minutes.
 - 3 more maximal CMJs \rightarrow rest 2 minutes.
 - Proceed to official trials.

Testing Procedure

Key Instructions:

- Hands fixed on hips throughout.
- Emphasis: jump *fast and high* (height prioritized, then speed).
- Stance width and depth self-selected.
- Minimal cueing to ensure repeatability.

Execution (3–5 min per athlete):

1. **System weight collection:** athlete stands still, hands on hips for 5–10 sec.
2. **Test instructions and demo:**
 - Countdown: “Ready — stay nice and still — 3-2-1-Jump.”
 - Landing emphasis - stillness and stable, soft at $\sim 1/4$ squat depth.
3. **Repetitions:**
 - Perform 3–5 valid jumps.
 - Rest 10–15 sec between jumps.
4. **End of test:** stop recording, inspect traces, repeat invalid trials.

Technical Considerations

- **Invalid Trials:** hands leave hips, premature upward motion, unstable landing, or stepping off plates.
- **Data Reporting:**
 - Typically use **mean of trials** (\pm SD).
 - For entry/exit or cross-sectional testing, best trial *may* be used.

Summary:

The CMJ force plate protocol relies on consistent warm-up, strict adherence to test instructions, and careful validation of trials. Ensuring reliable setup, standardized warm-up, and controlled testing procedures maximizes data accuracy and supports athlete monitoring over time.