

Testing Setup Checklist

Checklists are important part of completing any process-oriented task. A thorough explanation of the benefits of checklists can be found in [The Checklist Manifesto](#), this is our attempt to provide an entry-level checklist for capturing marker-based motion capture data. Of course, there are many crucial steps in collecting “routine” motion capture data and a normal collection session looks different in every lab. This checklist should be thought of as a starting point for your Motion Capture laboratory to build upon.

Have any suggestions? Let us know at support@has-motion.ca.

NOTE: Interested in collecting markerless motion capture data? The [Multi-centre & Markerless Orthopaedic Assessment Wiki](#) has a comprehensive overview of that study's collection and data management processes, including a [day-to-day checklist](#).

Before Participant's Arrival

1. Turn on ALL systems
2. Verify position and orientation of all equipment
 1. Verify the position and orientation of Motion Capture Cameras
 2. Verify the position and orientation of Force Platforms
 3. Verify the position and orientation of Force Structures
 4. Verify the position and orientation of Obstacles or Environment objects
3. Perform system calibration
 1. Perform static and/or dynamic calibrations of data collection devices
 2. Verify results against the Standards developed/referenced by your laboratory
4. Verify the protocol being used for the session
 1. Verify the experimental protocol for the current data collection session
5. Ensure appropriate system settings are selected
 1. As per experimental protocol, set and verify system settings, e.g., synchronise sampling rates, define marker thresholds and ranges, set up triggers etc.
6. Zero force plates and perform CalTester test
 1. Perform Caltester test at a minimum of 2 locations on each force platform
 2. Verify against prior laboratory results
7. Prepare necessary markers and supplies

Participant's Arrival

1. Obtain informed consent
2. Record participant details
 1. Ensure that there are no contraindications for the participant completing the data collection
 2. This may include data collection done via questionnaires or measurements
 3. If data collection includes questionnaires, check to make sure that they have been completed correctly
3. Apply markers as per experimental protocol

1. Take a set of digital pictures of the subject for post-hoc review of the marker placement
4. Record static calibration trial
 1. Ensure all markers are visible during the static trial
5. Verify recorded marker set
 1. Verify recorded marker set by launching Visual3D, creating model, and applying model template appropriate for the protocol
6. Remove anatomical markers
 1. If necessary, remove anatomical markers not needed for tracking during dynamic motion trials
7. Verify tracking using real-time
 1. Switch to Visual3D's real-time mode in Visual3D to verify that the tracking markers assigned to each segment are appropriate and that the force vectors make intuitive sense
8. Record dynamic trials
9. Verify force platform assignments
 1. Load data into Visual3D, assign movement trials to model, and verify force platform assignments
 2. Remove assignments to partial force contacts
 3. Remove assignments when two segments are in contact with the same platform
10. Execute pipeline for creating event labels
 1. Verify that these event labels make intuitive sense. If not, data collection should be repeated

After Participant Leaves

1. Clean up work station
2. Execute pipeline for processing
3. Load Report Template
4. Verify the report

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Last update: **2026/01/07 15:19**

