BROOKS® Rehabilitation

Motion Analysis Center

Measurement During Motion

Clinical Care & Research

Brooks Motion Analysis Center (MAC)

The MAC uses state-of-the-art 3D motion capture technology to deliver customized recommendations to promote recovery for children with walking disorders. Our programs focus on kids with neurologic and orthopedic impairments. Measurements can include: muscle activity (timing and coordination), joint motion (range of motion occurring during each phase of gait), and forces produced by each leg.

Our team consists of pediatric physical therapists, biomechanical engineers, and exercise physiologists. However, it is important to remember that you are the most important member of the team. Please read the following information about your test session and how the information will be used. You may ask questions at any time.

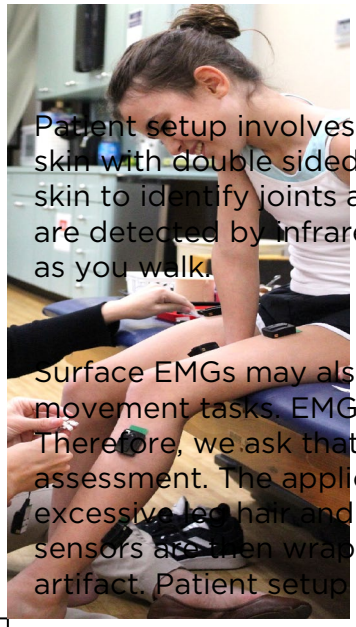
Motion analysis report

Each motion analysis report includes assessment interpretations, recommendations, clinical assessment outcomes, and graphical representation of the motion capture data collected during your assessment. The report takes two-to-three weeks to complete. A copy of the report is provided to the referring clinician or physician who will then discuss the results with you.

What to expect during the test

A typical visit will begin with a clinical assessment that generally takes 45-60 minutes. During this time, clinical testing for joint mobility, strength, and muscle tone are done with a specialist. Measurements of your height, leg-length, and body weight are also collected and standard pictures/video will be recorded during this time.

Clinical assessment of hip muscle strength



Placement of EMGs during setup

Patient setup involves special reflective markers being attached to your skin with double sided tape. These reflective markers are placed on the skin to identify joints and specific landmarks on the body. The reflections are detected by infrared cameras and help us learn how your joints move as you walk.

Surface EMGs may also be used to detect your muscle activity during movement tasks. EMG signals are sensitive to your skin condition. Therefore, we ask that you do not use lotion on the day of your assessment. The application process for EMGs requires removal of excessive leg hair and cleansing of the skin with an alcohol swab. The sensors are then wrapped with cohesive tape to prevent movement artifact. Patient setup generally takes 30-45 minutes.

The motion assessment involves repeated walking within a designated location of the lab. Assistive devices such as walkers or canes can be used during the capture, and breaks will be allotted between bouts. The tasks you may be asked to perform include:

- Walking at various speeds
- Walking backward
- Standing from a sitting position
- Stepping over an obstacle
- Any activity that the therapist identifies as safe that will produce relevant and beneficial information

Interpreting the data

The motion capture data collected from your assessment will be processed using state-of-the-art scientific techniques. Our team, consisting of a trained physical therapist and biomechanical engineer, will then use the information from your motion capture, the clinical assessment, and your medical history to provide a comprehensive interpretation of your movements. This interpretation will help determine appropriate treatment plans to improve functional movement and promote greater recovery.

What to Wear

Men

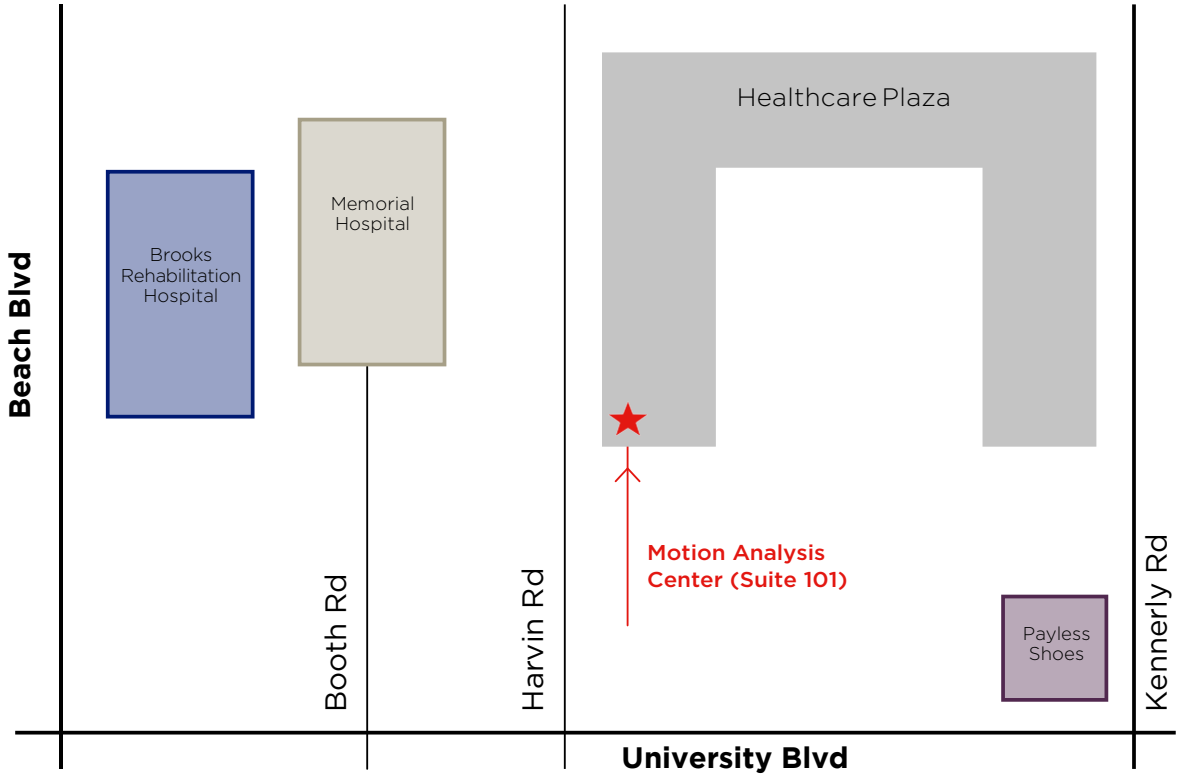
-Short-length shorts or shorts thin enough to be rolled up and clipped (shorts can be provided)
-Tank top, unless you are comfortable without a shirt
-Athletic shoes that fit appropriately
-NO LOTION

Women

-Short-length shorts or spandex (no long pants)
-Tank top, unless you are comfortable wearing a sports bra. One-piece bathing suit can be worn to avoid stomach exposure
-Athletic shoes that fit appropriately
-Hair-band(s)
-NO LOTION

Location

3901University Blvd S. Suite 101
Jacksonville, FL 32216



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