

gait lab

Dayton Children's is one of the few hospitals in the world that offers patients a gait and motion analysis laboratory. The Gait Lab's state-of-the-art computer technology can identify problems that are not always detectable in a typical clinical exam and offer children more specific treatment options for movement issues with better results.

what is the Gait Lab?

The Gait Lab uses cutting edge technology to capture three-dimensional movement, muscle activations and forces in the body. The information from the lab can help with surgical planning, brace/spasticity management and other recommended treatments.

how do I prepare for my appointment?

A visit to the Gait Lab will typically take 1.5-2 hours. Please shower before your appointment and do not apply any lotions to the skin. We ask that you bring a pair of shorts, a tank top, and a sports bra. The sports bra should have straps that do not cross in the back (no racer backs). Please also bring any assistive devices (braces, crutches, walker) that the patient uses to walk.

what happens in the Gait Lab?

First, videos will be taken of your child to analyze how they are walking visually. Then, an in-depth physical therapy assessment will be done to measure joint range of motion and strength. Small reflective markers and muscle sensors will be placed on your child's body. All sensors and markers are attached with stickers and are easily removed at the end of the study. Then, motion-capture cameras record the child as they step, walk and run on a pressure-sensor mat and force plates. The data captured is then rendered into 3D imagery which provides an in-depth look at a child's alignment, walking patterns and muscle activity. The results from the Gait Lab study are formulated into a report that is shared with the referring physicians and can help guide future medical care.

who is on the Gait Lab team?

The lab's multidisciplinary team consists of an orthopedic surgeon, physical therapist, and biomechanical engineer working together to gain a complete understanding of how a child moves and functions.

who should be referred to the Gait Lab?

Typically, children that are referred to the Gait Lab have orthopedic and/or musculoskeletal conditions that impact their gait and mobility. This includes children with:

- Cerebral palsy
- Chiari malformation
- Limb deficiency
- Scoliosis
- Spina bifida
- Toe walking



how do i make an appointment with the Gait Lab?

Patients need a physician referral to be seen in the Gait Lab. Call 937-641-3024 for questions on the Gait Lab and referral process.

