

NEWS

Mat with pressure sensors detects characteristic gait in dup15q syndrome

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People with dup15q syndrome tend to walk more slowly, have a wider stance and take shorter steps than their typical peers do.

This gait pattern may be a **biomarker** of the syndrome and could be a target for treatment, says lead investigator **Rujuta Bhatt**, assistant professor of pediatrics and pediatric neurology at the University of California, Los Angeles. Bhatt presented the unpublished results Friday at the **2017 Dup15q Alliance Scientific Meeting** in Los Angeles.

Bhatt and her colleagues collected most of the data at the alliance's **international family conference**, also held in Los Angeles last week. They used a pressure-sensing floor mat to assess gait in 45 attendees with the syndrome and 10 of their typical siblings, and quickly analyzed the data.

"This is the largest cohort of children with dup15q syndrome," Bhatt says.

Movement difficulties are common among people with dup15q syndrome, a condition closely related to autism. Up to 80 percent of children with autism also have **trouble with balance and are clumsy**. The exact nature of motor problems can vary from person to person, but overall, such problems contribute to difficulties with communication and daily-living tasks.

One way scientists can measure children's motor abilities is by using a standardized test called the Movement Assessment Battery for Children. The test assesses a child's performance on tasks such as threading beads on a string or tracing a picture.

Modified tests:

However, most children with dup15q syndrome score low on this test because they either cannot attend to the tasks long enough to complete them, can't finish them in the allotted time or can't do them at all because they don't understand the instructions, says Bhatt.

Bhatt and her colleagues are trying to modify the tasks so that the children can complete them. They have also sought measures that are quantitative or provide qualitative information about motor abilities beyond simple motor tests.

A 2014 study of mice provided inspiration. In that study, researchers at the University of Chicago used an automated gait-tracking system to **measure footstep patterns** in a mouse model of dup15q syndrome. The study found that the mutant mice walk more slowly and have a wider stance and shorter stride length than control mice do¹.

Bhatt acquired a similar device that can track walking patterns in people: a floor mat equipped with pressure sensors that tracks footstep patterns as people walk across it. She has since measured the walking patterns of 10 children with dup15q syndrome who visited her clinic.

REFERENCES:

1. Piochon C. *et al. Nat. Commun.* **5**, 5586 (2014) [PubMed](#)