

Scientists identify potential biomarker to help diagnose autism

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(Medical Xpress) -- Autism is difficult to diagnose because of a lack of specific biological markers and a variability of symptoms, ranging from mild in some individuals to severely disabling in others.

Now a team of University of Washington and Battelle scientists have identified metabolites in urine that could potentially predict young children at risk of developing autism.

The varying degrees and manifestations of this developmental brain condition are collectively called autistic spectrum disorder. ASD is characterized by impaired social interactions, difficulty in communicating, and repetitive behaviors. Many other symptoms also can be present, including anxiety, depression, learning disabilities, sleep disorders, and gastrointestinal problems.

Currently, diagnosing a child with ASD requires a thorough evaluation by a team of health professionals from a wide range of specialties. Early intervention often can reduce or prevent the more severe symptoms and disabilities associated with ASD.

Autism specialists and many other people look forward to a day when a test for a biological marker might detect autism risk in young children. To this end, Seattle researchers evaluated porphyrins in the urine of children to determine if the levels of these metabolites could predict ASD.

The research team included James Woods, professor of environmental and occupational health sciences at the UW School of Public Health, and Nicholas Heyer and Diana Echeverria, senior scientists at Battelle Centers for Public Health Research and Evaluation

While porphyrins are found in everyone's urine, the research team observed that certain kinds of these metabolic byproducts are much higher in the urine of some children with autism, compared with typically developing, non-autistic children of the same age.

Additionally, when children with autism were randomly compared with typically developing children or children with other developmental disorders, the porphyrin biomarkers correctly identified more than thirty percent of autistic children without incorrectly identifying a single non-autistic child.

The ability to detect porphyrins in a urine sample opens new clinical possibilities. Simple [urine](#) tests, if they prove effective, could become a rapid, low-cost, widely available way to screen [young children](#) for this type of autism risk.

"The significance of this [biomarker](#) is not only that it may facilitate earlier detection of autism risk," said Woods, "but also that it might help identify those ASD children whose symptoms are specifically associated with altered porphyrin metabolism."

He added, "When validated in a larger study, this biomarker could help to identify a specific subset of ASD kids and improve the search for more focused treatment options for these [children](#)."

The findings were published in this month's edition of *Autism Research* to coincide with [Autism](#) Awareness Month. The paper can be found [online](#).

Provided by University of Washington

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