

Experts summarize state of the science in autism disorders

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Scientific understanding and medical treatments for autism spectrum disorders (ASDs) have advanced significantly over the past several years, but much remains to be done, say experts from the Center for Autism Research at The Children's Hospital of Philadelphia who published a scientific review of the field today.

"We summarized many new findings by [autism](#) researchers throughout the world, and give our perspective on the current state of the science in autism spectrum disorders," said lead author Susan E. Levy, M.D., a developmental pediatrician and medical director of the Regional Autism Center at Children's Hospital. "We hope our review will be a useful reference for healthcare professionals working with ASD patients and families."

The article appears in the British journal *The Lancet*, published online on Oct. 12. Levy co-authored the review with Robert T. Schultz, Ph.D., a neuropsychologist and director of the Center for Autism Research at Children's Hospital, and David S. Mandell, Sc.D., a psychiatric epidemiologist at the University of Pennsylvania School of Medicine.

Some recurrent themes of the review are the expanding knowledge of early brain development, and the importance of early diagnosis of ASDs, accompanied by intensive early treatment. The researchers also recognize the important role of parent involvement in early recognition of ASDs and in reinforcing their child's behavioral treatments at home. They also endorse research on methods for supporting families to reduce

[parental stress](#).

As evidenced by a long history of family and twin studies, ASDs are the [neuropsychiatric disorder](#) most affected by genetic factors. The authors review recent studies performed with the help of sophisticated gene-analyzing tools, and cite the finding earlier this year that a significant percentage of ASD patients have DNA alterations in a genetic area that affects how neurons interconnect in the brain. Combined with other studies of brain anatomy and function, the authors say, "genetic and neurobiological evidence point to a good causal model of this disorder—namely, genetically mediated abnormal findings of synaptic maturation and connectivity."

Further research is needed to explain in detail how genes affect the development of brain cell interconnections, but the authors say that future investigation may suggest techniques to intervene early in life with medical treatments.

Neuroimaging tools, such as magnetoencephalography (MEG), a method of mapping the brain's magnetic field, hold the potential of identifying a biological signature of ASDs, so that clinicians might identify autism during early childhood and monitor the effectiveness of treatments.

Regarding therapy, the authors note that the most researched treatments are those based on applied behavioral analysis, which includes intensive, highly structured treatments beginning in early childhood. More recently, those highly structured programs have been combined with other behavioral programs more akin to real-life situations, with increased effectiveness.

Although existing drugs do not treat core symptoms of ASDs, the authors refer to results showing medications may be effective in relieving related symptoms such as irritability and anxiety. Many other

proposed and existing treatments, both biological and non-biological, have not been adequately studied.

In sum, say the authors, "no cure for [autism spectrum disorders](#) is yet available." However, "outcomes are improved with early detection and intensive treatment." In the future, the authors conclude that advances in early detection and diagnosis will allow more individualized and effective early treatment to alter the course of early behavior and brain development.

Source: Children's Hospital of Philadelphia ([news](#) : [web](#))

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