

**SPECIAL REPORT SUBARTICLE**

# Most-viewed articles of 2013

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*This is a list of the ten stories that most caught our readers' attention this year.*

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## 1. Drug linked to mitochondria treats mouse model of autism

Our most popular news story of the year hinged on an obscure bit of biology we had never covered before. Every cell in the body contains proteins called 'purinergic receptors' that are indirectly controlled by mitochondria, the energy-producing structures in the cell. Robert Naviaux and his colleagues at the University of California, San Diego reported that suramin, a century-old drug that acts on purinergic receptors, improves social behaviors and motor coordination in a popular mouse model of autism. Naviaux declined to talk to SFARI.org about the study's details, saying that he was "very concerned that our work is being oversold." Given the popularity of this news story, he may have been right.

[Read the article »](#)

## 2. Large study links autism to autoimmune disease in mothers

This article, based on the largest study to date of this kind, reported that women who have children with autism are more likely to carry certain immune molecules in their bloodstream than are mothers of typical children. Other studies have shown that these immune molecules target proteins

found in the fetal brain. The article's popularity reflects both the prevalence and mysteriousness of autoimmune diseases, and the hopeful yet unsettling possibility that autism risk could someday be identified before a woman even becomes pregnant.

[Read the article »](#)

### 3. Study of nonverbal autism must go beyond words, experts say

About one-quarter of people with autism speak few or no words. A complete lack of spoken language represents a profound disability, yet relatively little research has addressed this population of individuals or how to help them. This article struck a chord with our readers, and we received many comments expressing relief that researchers are finally beginning to probe the subtleties of nonverbal autism, as well as some anger that this has taken so long to happen.

[Read the article »](#)

### 4. Long-term studies track how autism changes with age

There's no better way to understand how autism progresses than to follow the same set of individuals with the disorder over a long period of time. Still, most of our knowledge of autism is based on studies that look at people of different ages with the disorder at a single point in time. For example, there is little understanding of whether most people improve with time, worsen or stay the same. This article pieced together information from several long-term studies that are just beginning to find patterns — for example, that symptoms in the majority of those with the disorder stay consistent, but about 10 percent of people improve dramatically by their mid-teens.

[Read the article »](#)

### 5. Evidence weak for social communication disorder

In May, the American Psychiatric Association released the DSM-5, its latest edition of the Diagnostic and Statistical Manual of Mental Disorders. As part of a **special report** examining the many changes in the new manual, **Helen Tager-Flusberg** sharply criticized the introduction of a new disorder in the DSM-5 called social communication disorder. This diagnosis is intended to include children who have many of the social deficits that mark autism, but not repetitive behaviors, a key component of autism's new definition. Tager-Flusberg, who is director of Research on Autism and Developmental Disorders at Boston University, argued that the evidence for this new disorder is flimsy and vague, and that it should never have been included in the DSM-5.

[Read the article »](#)

## 6. Diagnostic tests for autism may miss many girls Diagnosis eludes many girls with autism, study says

Autism affects both boys and girls, but diagnostic tests are more likely to capture boys with the disorder, according to two stories we ran in 2011 and 2012, respectively. It's a testament to the topic's rising importance that both turned up in our most-viewed list for this year. The topic also took **center stage** at the **2013 International Meeting for Autism Research**. It's unclear whether girls are diagnosed less often because they present less severe symptoms or because the tests are skewed to detect boys' symptoms. In either case, however, delayed diagnoses prevent these girls from getting the help they need.

Read the articles [here](#) and [here](#) »

## 7. Special report: DSM-5

Autism's definition has evolved many times since the 1940s, **when the disorder was first described**, and each iteration has brought confusion and contention with it. To air the many unanswered questions about what the new manual would mean for researchers, clinicians and families, we created a special report with news, expert opinions — including those of the architects of the new diagnostic criteria for autism — and a roundtable discussion of the DSM-5's impact. The incisive commentaries from these experts continue to resonate with our readers well after the DSM-5's launch.

[Explore the special report »](#)

## 8. Can nutritional supplements help treat some cases of autism?

Few rigorous studies have examined whether dietary supplements can help to prevent or treat autism. But, as we reported in March, several studies over the past year explored supplements' potential as autism treatments and found promising results. Among the candidates: Certain amino acids can treat a rare autism-related metabolic disorder, and pregnant women who take folic acid may lower their risk of having a child with autism. Until more is known, however, researchers urge caution when using unreliably tested supplements.

[Read the article »](#)

## 9. Study questions large head size in autism

A large head has been the most well-known physical feature of autism since Leo Kanner's **original description** of the disorder. But most studies reporting that people with autism have abnormally large heads have been tainted by biased control samples, according to a provocative study published in May. The following month, another study found that children with autism do tend to have larger heads than their unaffected siblings, but the difference is only about 2 millimeters on average. What's more, a significant fraction of the children with autism have much smaller heads than their siblings.

[Read the article »](#)

## 10. Autism genes are surprisingly large, study finds

In 2011, **Benjamin Philpot's** team discovered that a drug related to a class of enzymes called topoisomerases **may treat Angelman syndrome**, a rare autism-related developmental disorder. This year, Philpot and his colleague **Mark Zylka** reported in Nature that, in neurons, these enzymes are crucial for the expression of extremely long genes, one-quarter of which are known autism candidates. Intrigued by this unexpected finding, the researchers further uncovered that autism genes in general are three to four times longer than the average gene expressed in neurons. No one knows why long genes might be important in autism, but Zylka outlined **several possible explanations** in a Viewpoint.

[Read the article »](#)