

**SPECIAL REPORT SUBARTICLE**

# Hot topics of 2015

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This year held no shortage of autism news, but some of the most groundbreaking developments are still unfolding. Here's a rundown of five trending topics that are turning traditional assumptions about autism on their head.



## Girl power

Long considered a **boyhood disorder**, autism can have a profound **impact on girls and women**, and that fact is finally getting some much-deserved attention.

At least 11 major studies investigating sex and gender in autism are underway, backed by **more than \$6.4 million in funding**. This surge of interest could illuminate why girls and women may be generally **protected from autism**, and whether and why those who are affected tend to have more severe symptoms than their male counterparts.

*Spectrum* discussed the latest developments and lingering questions about sex and gender in autism in a **special report** this fall.



## Growing up

Many people think of autism as a disorder of children, but, of course, children with autism eventually become adults. As an estimated 50,000 U.S. children with autism **turn 18 each year**, a growing number of researchers are examining the **effects of the disorder in adulthood**.

Adults with autism are at risk for a **long list of health problems**, from **depression** to diabetes. They are also more than twice as likely as people without the condition to **die prematurely**.

Some health problems may be tied to certain autism symptoms. Picky eating, for instance, which is common in autism, may raise the risk of **obesity**. Many researchers are aiming to uncover the

source of this susceptibility in hopes of finding ways to prevent these conditions.

Some evidence suggests that adults with autism lack preventive medical care. And many of the doctors who do see adults with autism feel **unprepared to treat these individuals**. These healthcare gaps are particularly worrisome given the ballooning number of adults on the spectrum and their special medical needs.



## Counting cases

The **prevalence** of autism ticked up again this year to **1 in 45**. But the latest estimate, based on a national survey of parents, highlights **holes in methods for measuring autism's spread**.

The survey is one of three ways the U.S. Centers for Disease Control and Prevention tracks autism prevalence. But a tiny tweak to this year's format sparked a sizeable jump in the autism rate alongside a drop in other disorders. The shifting statistics support the notion that some new cases of autism are actually **old cases of other conditions** — simply rebranded.

This year also saw a change in how doctors screen for autism. A panel of experts **declined to support routine screening for autism**, placing the onus on parents and pediatricians to flag possible autism symptoms in young children.



## Trailblazing tools

In 2015, researchers and clinicians crafted numerous techniques and devices to help them better understand autism and improve the lives of people on the spectrum.

New tools are helping researchers **study synapses** —the connections between neurons — **map methyl tags** on DNA, gauge gene expression in single cells, and **inspect the twisted complex of DNA and proteins** packed into a neuron's nucleus in exquisite detail. These tools, many of which are freely available, could pave the way to solutions for ongoing mysteries about autism's origins.

Technology is also changing the way people live with autism, **giving a voice to those who cannot speak** and empowering families to participate in research with **easy-to-use iPhone apps**.



## Genetic triage

If 2014 brought enthusiasm for **identifying potential autism genes**, then 2015 ushered in a rush to **scrutinize them**.

Several research teams have taken on the arduous task of carefully **vetting each candidate** to make sure it belongs on the growing list of 'autism genes.' Some mutations have stronger ties to the condition than others, and many **have unknown effects**.

New tools that **predict the biological impact of a mutation** may refine researchers' understanding of autism and could open the door to new treatments.