

SPOTTED

# Outgrowing autism; scrutinizing cells; editing history

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## Outgrowing autism

The idea that children can **'outgrow' autism** has captivated researchers and parents alike. In **one study**, 9 percent of children diagnosed with autism at age 2 no longer met the criteria for the condition at age 19. But the reason for these disappearing diagnoses remains a mystery.

A blog by Wisconsin-based psychiatrist **Darold Treffert** published Wednesday in *Scientific American* explores one of the more controversial possibilities: Perhaps the children who 'outgrow' autism **never had it to begin with**.

"My position is that 'outgrowing' autism is most often the situation in which a diagnosis of [autism spectrum disorder] was prematurely and mistakenly applied," writes Treffert.

Treffert specializes in savant syndrome, a condition marked by mental disability as well as genius. Many people with savant skills have autism-like traits, but that doesn't mean they have autism.

"That early distinction can be a very difficult one since separating 'autistic-like' symptoms from autism spectrum disorder itself can be difficult in those early years," Treffert writes, explaining that some children who speak late but show an early and "intense fascination with numbers and letters" may be misdiagnosed with autism. Autism-like traits in these children wane over time, and so the children appear to be outgrowing autism.

### SOURCES:

**Scientific American** / 09 Dec 2015

Outgrowing autism? A closer look at children who read early or speak late

<http://blogs.scientificamerican.com/guest-blog/outgrowing-autism-a-closer-look-at-children-who-read-early-or-speak-late/>

## Scrutinizing cells

Cells are the building blocks of human beings, and in many ways, medical science. Researchers rely on cells to study diseases and test treatments. But what if those cells are imposters?

A series of blogs this week in *Retraction Watch* highlights the **huge problem of cell-line contamination**. Roughly 20 percent of cell lines contain foreign cells, which can alter experiments and lead to spurious results.

“Decisions are being made about new anticancer drugs and other treatments based on work in misidentified cell lines,” writes Amanda Capes-Davis, chair of the **International Cell Line Authentication Committee**. “Hundreds of articles are published using these cell lines under their false identities, and read by other scientists who will use those cell lines for their own work.”

Capes-Davis says scientists must “authenticate their cell lines,” but there is currently little incentive to do so.

In another blog, Leonard Freeman, president of the **Global Biological Standards Institute**, argues that **journal editors and funders** of scientific research play an important role in making cell-line authentication a standard part of the scientific process.

“Now is the time to curb the problem, and asking biomedical researchers to universally adopt and demonstrate the routine use of techniques to authenticate their cell culture lines — while requiring a modest amount of time and money — is the right thing to do,” writes Freeman, who published a study last year suggesting that U.S. researchers **waste \$28 billion each year** on research that can’t be reproduced.

### SOURCES:

**Retraction Watch** / 08 Dec 2015

Hundreds of researchers are using the wrong cells. That’s a major problem

<http://retractionwatch.com/2015/12/08/hela-is-the-tip-of-the-contamination-iceberg-guest-post-from-cell-culture-scientist/>**Retraction Watch** / 09 Dec 2015

We’re wasting a lot of research funding using the wrong cell lines. Here’s one thing we can do

<http://retractionwatch.com/2015/12/09/its-time-to-set-standards-in-the-lab-guest-post-from-leonard-freedman/>

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## Editing history

It seems that **everyone's talking about CRISPR** these days, and for good reason. The gene-editing tool has revolutionized biomedical research, and stands to do much more. But discussions about CRISPR's future often stir up the past.

At a gene-editing summit in Washington, D.C., last week, historian **Daniel Kevles** of Yale University brought up eugenics fears in Nazi Germany and in pre-World War II America.

"While arguing that state-mandated eugenics efforts were unlikely to arise again, he noted that other forces, such as commercial incentives and consumer demand for genetic enhancement, could push germline gene editing into dangerous territories," John Travis wrote in a **reporter's notebook about the summit** for *Science*.

But for some people, the past is incentive to push forward on the gene-editing front.

"If you have the skills and the knowledge to eliminate these diseases," said audience member Sarah Gray of the **American Association of Tissue Banks**, whose son died from anencephaly when he was 6 days old, "then freakin' do it."

#### SOURCES:

**Science** / 04 Dec 2015

Inside the summit on human gene editing: A reporter's notebook

<http://news.sciencemag.org/scientific-community/2015/12/inside-summit-human-gene-editing-reporter-s-notebook>

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## Target practice

Tools that give researchers 'precise' control over specific neurons in animals may have off-target effects, according to a study in this week's *Nature*.

Researchers made the **accidental discovery** while studying rats trained to push a lever. Injecting a drug into a motor control center of the brain, the motor cortex, renders the rats temporarily unable to perform the task.

The researchers then injected a toxin into the same brain area to permanently destroy the neurons responsible for the lever push. But the effects were only temporary. Just 10 days later, the animals were pushing away.

The researchers discovered that the drug they were using in the initial experiment was exerting its effects on lever pushing through a different mechanism than they thought. The finding has

implications for **optogenetics experiments**, in which light, rather than drugs, targets supposedly specific cells in the brain.

“As with any sharp tool, you have to be careful how you use it,” lead researcher and Harvard neuroscientist **Bence Ölveczky** told *Nature*.

**SOURCES:**

**Nature** / 09 Dec 2015

Brain-manipulation studies may produce spurious links to behaviour

<http://www.nature.com/news/brain-manipulation-studies-may-produce-spurious-links-to-behaviour-1.19003>

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