

**SPOTTED**

# Pruning protein; cultural connection; cannabis consent and more

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## WEEK OF DECEMBER 4<sup>TH</sup>

### Exclusionary measures

Girls on the spectrum who meet criteria for “gold-standard” diagnostic measures tend to have more intense autism features than boys on the spectrum, researchers reported 4 December in the *Journal of Autism and Developmental Disorders*. The results **raise questions** about how sensitive these measures are, the investigators say, noting that girls on the spectrum who had higher cognitive ability were less likely to meet criteria.

#### SOURCES:

**Journal of Autism and Developmental Disorders** / 04 Dec 2017

What about the girls? Sex-based differences in autistic traits and adaptive skills

<https://link.springer.com/article/10.1007%2Fs10803-017-3413-9>

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### Arresting disparity

Compared with people without disabilities, those with disabilities have greater odds of being arrested, according to results reported 1 December in the *American Journal of Public Health*. Racial disparities also exist within the disability population, the findings show: **Black people with disabilities** have the greatest probability of being arrested, and white people with disabilities the least.

#### SOURCES:

**American Journal of Public Health** / 01 Dec 2017

The cumulative probability of arrest by age 28 years in the United States by disability status,

race/ethnicity, and gender

<http://ajph.aphapublications.org/doi/full/10.2105/AJPH.2017.304095>

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## Pruning protein

Neurons receive messages from other neurons through branch-like extensions called **dendrites**. As the brain develops, a protein called E6AP prunes and shapes these cellular contacts. **UBE3A**, the gene for this protein, has been associated with autism. In a mouse model of autism, **overproduction of E6AP** leads to too much pruning of dendrites and lost connections, researchers reported 4 December in the *Journal of Neuroscience*.

E6AP causes this damage by tagging a protein that prevents cell death, leading to its destruction. That action triggers a chemical pathway that ends with disruption of the cell's internal structures, causing dendrite loss.

### SOURCES:

**Journal of Neuroscience** / 04 Dec 2017

The autism protein Ube3A/E6AP remodels neuronal dendritic arborization via caspase-dependent microtubule destabilization

<http://www.jneurosci.org/content/early/2017/12/04/JNEUROSCI.1511-17.2017>

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## Their own worst critic

The relationship between **autism and anxiety** is complex. New findings suggest that social anxiety in people on the spectrum may trace to worry that their inner critic will detect social gaffes, rather than to a fear of external criticism. The size of a **brain signal** in young people with autism is associated with their reports of these fears, researchers reported 6 December in *Autism Research*.

Young people's reports of their own anxiety correlate with measures of this brain signal, called the error-related negativity. Interestingly, parents' reports on the same questionnaires do not.

### SOURCES:

**Autism Research** / 06 Dec 2017

Error-related brain activity and anxiety symptoms in youth with autism spectrum disorder

<http://onlinelibrary.wiley.com/doi/10.1002/aur.1898/full>

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## Cultural connection

Non-English-speaking, non-white populations get little attention when it comes to designing and testing autism treatments. A study of what **Latino families** see as important in early autism therapies suggests a **need for cultural adjustments** to make these therapies optimally effective. The study was published 29 November in *Journal of Autism and Developmental Disorders*.

### SOURCES:

**Journal of Autism and Developmental Disorders** / 29 Nov 2017

In search of culturally appropriate autism interventions: perspectives of Latino caregivers

<https://rd.springer.com/article/10.1007%2Fs10803-017-3394-8>

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## Strong singles

Although the genes behind a specific trait are expected to act in pairs — one copy from each parent — a cell sometimes uses only one member of the pair. This **'monoallelic' expression**, which has been associated with autism, appears to be **widespread in brain cells**. The dominance of a single copy of a gene can also be specific to cell type, according to findings published 10 November in *BMC Genomics*.

### SOURCES:

**BMC Genomics** / 10 Nov 2017

Characteristics of allelic gene expression in human brain cells from single-cell RNA-seq data analysis

<https://bmcgenomics.biomedcentral.com/articles/10.1186/s12864-017-4261-x>

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## Cannabis consent

Minnesota has joined a few other U.S. states listing autism as **an approved indication** for **medical marijuana**. Although the state's health department rejected adding the condition last year, health officials reversed course this year, citing two pending clinical trials and evidence of links between autism and the molecular pathways that cannabis affects, the *Star Tribune* reported 1 December.

### SOURCES:

**Star Tribune** / 01 Dec 2017

Autism, sleep apnea added to Minnesota list for medical marijuana

<http://www.startribune.com/autism-sleep-apnea-added-to-minnesota-list-for-medical-marijuana/461063283/>

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## Maternity medicines

Pregnant women who need medications have almost no information about the safety and effectiveness of drugs for their population. At the invitation of the U.S. federal government, women are now **telling their stories** of navigating a drug landscape with little evidence to point the way, *STAT* reported 5 December.

The women describe not being able to get answers to questions about whether they should **continue their antidepressants**, and worrying about the safety of cough drops. Even when they take drugs for long-standing indications, such as antacids for acid reflux, the lack of evidence for safety during pregnancy makes the use of these drugs 'off label.'

The government is collecting women's stories in public meetings, part of the work of a task force Congress created to seek ways to resolve these problems.

### SOURCES:

**STAT** / 05 Dec 2017

Pregnant women who need medications face a risky guessing game. A federal task force is now trying to help

<https://www.statnews.com/2017/12/05/pregnant-women-medication-use>

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## Expanded code

The four-letter DNA codebook has undergone an expansion. Researchers have created two more letters and coaxed bacteria into passing these new building blocks to their descendants. Even more remarkably, with the expanded code, the bacteria can **create novel proteins**, investigators reported 29 November in *Nature*.

### SOURCES:

**Nature** / 29 Nov 2017

A semi-synthetic organism that stores and retrieves increased genetic information

<https://www.nature.com/articles/nature24659>

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## Qatar collaboration

Children on the spectrum in Qatar soon may have expanded sports opportunities, including swimming classes and horseback-riding lessons. Two Qatari groups have joined forces with the **World Innovation Summit for Health** to offer the programs. According to a 5 December statement from the Qatar Foundation, a partner in the collaboration, the agreement also **opens the way** for all involved to collaborate on more Qatar-based autism research.

### SOURCES:

**Qatar Foundation** / 05 Dec 2017

QF signs agreement to promote autism plan

<https://www.qf.org.qa/news/qf-signs-agreement-to-promote-autism-plan>

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## News tips

Do you have a new paper coming out? Are you making a career move? Did you see a study or news story that you want to share? Send your news tips to **[news@spectrumnews.org](mailto:news@spectrumnews.org)**.

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