

SPOTTED

Fever finding; neuronal cookbookery; CRISPR'd unicorns; mining 23andMe

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16 JUNE 2017

WEEK OF JUNE 12TH

Fever finding

Having a fever **during pregnancy** is associated with increased odds of having a child with autism. The association shows a dose response, with three or more fevers amping up the risk, especially if the temperature spike hits after the first trimester.

The findings, published 13 June in *Molecular Psychiatry*, contribute to a **growing body of evidence** linking prenatal infections to autism risk.

Acetaminophen use during a fever episode was linked to a small decrease in autism risk.

The researchers also looked for links with ibuprofen use and found no ibuprofen use among women whose children later had an autism diagnosis. They caution, however, that ibuprofen use was quite low in their study population.

The absolute risk of autism associated with fever during pregnancy is small. Up to one in five women have high temperatures at some point during pregnancy, and autism rates are much lower.

SOURCES:

Molecular Psychiatry / 13 Jun 2017

Prenatal fever and autism risk

<http://www.nature.com/mp/journal/vaop/ncurrent/full/mp2017119a.html>

Neuronal cookbookery

Think of it as a “Joy of Cooking” for neuronal differentiation: Add a critical protein here, another one there, and bake up the perfect neuronal phenotype for your research. That’s the idea behind **Kristin Baldwin**’s plans to develop a handy guide for coaxing undifferentiated cells into neurons with different features.

Baldwin, associate professor of neuroscience at the Scripps Research Institute in La Jolla, California, identified a group of proteins that act on core genes to generate a prototype neuron within two weeks. Different combinations of these proteins can shape this basic construct to create variations on the neuron theme.

Baldwin and her team have used the cookbook to dish up neurons that mediate anxiety and others that make serotonin and dopamine receptors. Now they **will use funds from a National Institutes of Health Pioneer Award** to support the development of a free online database of these recipes and related information for neuroscientists.

SOURCES:

National Institutes of Health / 08 Jun 2017

Creative minds: A transcriptional “periodic table” of human neurons

<https://directorsblog.nih.gov/2017/06/08/creative-minds-a-transcriptional-periodic-table-of-human-neurons/>

Empathy imaging

Patterns of brain activity are similar among people **reacting to distressing stories** but differ depending on whether the feelings are sympathetic caring or empathic distress in response to another person’s suffering. Using functional magnetic resonance imaging to monitor brain activity while participants listened to upsetting narratives, researchers found that the activity overlapped with value and reward areas of the brain during feelings of sympathy. During empathic distress responses, the activity overlapped with regions associated with mirroring emotions, according to the *Neuron* study, published 8 June.

SOURCES:

Neuron / 08 Jun 2017

Empathic care and distress: Predictive brain markers and dissociable brain systems

[http://www.cell.com/neuron/fulltext/S0896-6273\(17\)30415-4](http://www.cell.com/neuron/fulltext/S0896-6273(17)30415-4)

Bigger better?

Researchers are at odds over a proposed National Institutes of Health (NIH) 'Robin Hood' plan to **shift money to less wealthy labs** by limiting how much funding investigators can obtain, *Science* reported on 7 June. An agency study indicated that labs show diminishing productivity once they hit a certain size, spurring the NIH to set an upper limit on how much funding a lab can receive. The plan and interpretation of the study's findings have spurred considerable debate. Perhaps not surprisingly, well-funded grantees take issue with the proposal. The NIH continues collecting feedback but expects to establish the new policy in the fall.

SOURCES:

Science / 07 Jun 2017

Critics challenge NIH finding that bigger labs aren't necessarily better

<http://www.sciencemag.org/news/2017/06/critics-challenge-nih-finding-bigger-labs-aren-t-necessarily-better>

Wide open

When scientists publish studies involving large genomic datasets, they often agree to make the data publicly available. Turns out, some researchers **forget to take that step**, according to a report in *PLOS Biology* on 8 June. Its authors, researchers from the University of Washington, used an automated system called Wide-Open to scan publications for **overdue datasets** and found hundreds of examples of not-yet-released data. They say that most instances are simply the result of forgetfulness.

SOURCES:

PLOS Biology / 08 Jun 2017

Wide-Open: Accelerating public data release by automating detection of overdue datasets

<http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.2002477>

Retraction whoops

Two percent of published results of **randomized controlled trials contain 'suspect data'**, according to a report published 5 June in *Anaesthesia*. Researcher John Carlisle analyzed more than 5,000 papers in eight top medical journals and found **95 problematic studies**, reports *Retraction Watch*. Of these, only 16 have been retracted. He used the Carlisle method, a widely

publicized statistical approach he and his colleagues **described in 2015**.

SOURCES:

Anaesthesia / 04 Jun 2017

Data fabrication and other reasons for non-random sampling 5087 randomised, controlled trials in anaesthetic and general medical journals

<http://onlinelibrary.wiley.com/doi/10.1111/anae.13938/full>**Retraction Watch** / 05 Jun 2017

Two in 100 clinical trials in eight major journals likely contain inaccurate data: Study

<http://retractionwatch.com/2017/06/05/two-100-clinical-trials-eight-major-journals-likely-contain-inaccurate-data-study/>

Data ban

A data ban has effectively halted most research at the U.S. National Institute on Deafness and Other Communication Disorders, **leaving millions of funding dollars in limbo**.

The institute's leadership has prohibited researchers from using data from the lab of **Allen R. Braun**, a neurologist who studies language and communication disorders. The ban covers data from more than 1,000 individuals, collected over 25 years.

Institute officials cite record-keeping errors to explain the controversial decision, but several investigators dispute the significance of the errors. They are all clerical mistakes related to volunteer screening and data from physical exams and do not involve fabrication or safety issues, according to *The Washington Post*.

The tensions at the institute go beyond data disagreements. Braun is one of at least six researchers who have been forced out of the tiny institute since **Andrew J. Griffith** became director in 2009, the newspaper reported. Some of the scientists have filed discrimination-related complaints.

SOURCES:

The Washington Post / 04 Jun 2017

Millions of dollars' worth of research in limbo at NIH

https://www.washingtonpost.com/national/health-science/millions-of-dollars-worth-of-research-in-limbo-at-nih/2017/06/04/34bb5606-38dd-11e7-9e48-c4f199710b69_story.html

Mining 23andMe

Mining data from 23andMe, investigators have found no genetic association between autism and scores on the **Reading the Mind in the Eyes** test. In their study, published 6 June in *Molecular Psychiatry*, University of Cambridge researcher Varun Warriar and his colleagues used these scores as a **measure of cognitive empathy**. They report that for girls and women, empathy is associated with small sequence changes in a specific region on chromosome 3. They also describe a link between the test scores and anorexia nervosa, educational level and openness to experience.

The researchers also looked at twin pairs to evaluate the heritability of scores on the Reading the Mind in the Eyes test. They report a heritability of 28 percent, which agrees with other studies of empathy in twins, they say. Also in agreement with previous findings, girls and women have higher scores than boys and men on the test.

SOURCES:

Molecular Psychiatry / 06 Jun 2017

Genome-wide meta-analysis of cognitive empathy: heritability, and correlates with sex, neuropsychiatric conditions and cognition

<https://www.nature.com/mp/journal/vaop/ncurrent/full/mp2017122a.html>

ResearchGate reputations

The social platform ResearchGate assigns academics its 'RG Score,' calling it a measure of "scientific reputation." Yet an analysis of these scores suggests that **they are based not on publication record** but on how much academics interact on the site itself. Researchers, publishing 12 June in *Scientometrics*, conclude that "RG Scores should not be mistaken for academic reputation indicators."

SOURCES:

Scientometrics / 12 Jun 2017

Do ResearchGate Scores create ghost academic reputations?

<https://rd.springer.com/article/10.1007%2Fs11192-017-2396-9>

Predicting suicide

Suicide risk is higher in some **subsets of people with autism**. Researchers at Vanderbilt University in Nashville, Tennessee, have developed a machine-learning algorithm that predicts **whether or not someone will attempt suicide**, and its accuracy increases as the suicide-attempt time point nears. Based on hospital admissions data, the algorithm is 80 to 90 percent accurate as far as two years from an attempt and reaches 92 percent accuracy within a week of an attempt, reports *Quartz*.

Facebook has announced plans to join the artificial intelligence trend, using machine learning to monitor user posts for red flags suggesting plans to self-harm.

SOURCES:

Quartz / 10 Jun 2017

Artificial intelligence can now predict suicide with remarkable accuracy

<https://qz.com/1001968/artificial-intelligence-can-now-predict-suicide-with-remarkable-accuracy/>

Essential medicines

The World Health Organization (WHO) has updated its **essential medicines list for 2017**, adding 55 new entries, for a total of 433 in the WHO Model List of Essential Medicines. The WHO considers these drugs to be critical elements of any formulary, and many countries use the list as a guide for their national health systems. Medications on the list for mental and behavioral conditions include risperidone (an antipsychotic that is used off-label for autism features), diazepam (an anti-anxiety medication) and clomipramine (used to treat obsessive-compulsive disorder).

SOURCES:

World Health Organization / 06 Jun 2017

WHO updates Essential Medicines List with new advice on use of antibiotics, and adds medicines for hepatitis C, HIV, tuberculosis and cancer

<http://www.who.int/mediacentre/news/releases/2017/essential-medicines-list/en/>

Macrocephaly rates

Macrocephaly, or a larger-than-normal head circumference, is present in about 1 in 5 children with autism in a Mexican population, according to a new study. This rate matches those reported in other parts of the world. Rates of macrocephaly in the general population are 2.5 to 3 percent. In the study, published 7 June in the *Journal of Autism and Developmental Disorders*, researchers

evaluating head circumference in **94 children with autism** also found a 1 percent rate of microcephaly, or unusually small head size.

SOURCES:

Journal of Autism and Developmental Disorders / 07 Jun 2017

Brief report: Macrocephaly phenotype and psychiatric comorbidity in a clinical sample of Mexican children and adolescents with autism spectrum disorders

<https://link.springer.com/article/10.1007%2Fs10803-017-3175-4>

CRISPR'd unicorns

CRISPR researcher Jennifer Doudna isn't kidding, she writes in her new book, when she says that the gene-editing tool will "allow us to bend nature to our will." Our will could include bringing about "woolly mammoths, winged lizards and unicorns," she suggests. "A Crack in Creation: Gene Editing and the Unthinkable Power to Control Evolution," co-authored by Samuel Sternberg, **contains very little dishing** and even less of Doudna's trademark cautious statements about the gene-editing tool that's **got many geneticists giddy and ethicists on edge**, according to a review this week in *STAT*. The book hit the stands on 13 June.

SOURCES:

STAT / 11 Jun 2017

CRISPR pioneer Doudna envisions a world of woolly mammoths and unicorns

<https://www.statnews.com/2017/06/11/crispr-jennifer-doudna-book/>

Gleeson honored

Rare-mutation hunter **Joseph Gleeson** received the 2017 Constance Lieber Prize for Innovation in Developmental Neuroscience on 13 June at a symposium at the Johns Hopkins School of Medicine in Baltimore, Maryland. The **\$100,000 cash prize** goes to a researcher under age 55 who has made a "transformative contribution" to the field. Gleeson has made his mark **as a gene detective**, scouring the world for rare mutations associated with uncommon forms of autism and that link autism and epilepsy. He is director of neurodevelopmental genetics at the Rady Children's Institute for Genomic Medicine in San Diego, California.

SOURCES:

Lieber Institute for Brain Development / 13 Jun 2017

<https://www.spectrumnews.org>

The Constance Lieber Prize for innovation in developmental neuroscience
<http://www.libd.org/constance-lieber-prize/>

Job news

Making a career move? Send your news to jobmoves@spectrumnews.org.
