

NEWS

Null and Noteworthy: COVID-19 conclusions; diagnosis duplication; oxytocin again

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Late last month, *Spectrum* interviewed **Damien Fair**, director of the Masonic Institute for the Developing Brain at the University of Minnesota in Minneapolis.

The conversation focused on neuroimaging studies and, in particular, their **lack of replicability**. When asked about solutions, Fair emphasized a need for collaboration.

“There likely needs to be a shift in how we’re funding research — encouraging more collaborative grants, so that when you’re looking at some trend across a population, the sample will be large enough to be reliable,” Fair told *Spectrum*. “At the institution level, we typically value things such as speed and big findings. People need to be able to value null results and negative results, too.”

Here is this month’s batch of null and replicated results. Thanks for reading, and as usual, if you have any studies you think should be highlighted next month, please send them along to news@spectrumnews.org.

Post-pandemic diagnoses:

Past research has linked infection during pregnancy to autism and other neurodevelopmental conditions in children, so some experts speculated that the COVID-19 **pandemic might seed an uptick** in diagnoses.

The prediction hasn’t come true (**at least so far**): COVID-19 infection in parents shows no association with overall neurodevelopment in their children, even when a parent contracts the illness while pregnant, according a **systematic review and meta-analysis** of eight studies involving 21,419 participants up to 1 year old.

Children born or raised during the pandemic are more likely than their pre-pandemic peers to have trouble with communication, regardless of exposure to the virus, the study found. Those born to parents infected with COVID-19 during pregnancy are, however, more likely to lag in fine motor skills. The results were published in *JAMA Network Open* in October.

Follow-up studies are crucial to determine if the results hold up over time, the researchers write. The study focused on children under 1, but autism is **diagnosed at an average age of about 4**.

Reinforcing sex differences:

Autistic people are more likely than their non-autistic peers to have **co-occurring psychiatric conditions**, such as anxiety and depression, and **autistic girls tend to experience more issues with mental health** than autistic boys.

New **research** supports those findings, showing that autistic people are more likely than their non-autistic peers to be diagnosed with and hospitalized for a psychiatric condition. As in previous studies, girls and women with autism were at a higher risk for psychiatric conditions — particularly anxiety, depression and sleep disorders — than their male counterparts. The results, based on records from 1,335,753 people, including 20,841 with autism, underscore the need for robust mental health resources for autistic people, the researchers write.

The study was published in *JAMA Psychiatry* in October and **covered** by *Spectrum*.

Oxytocin, once again:

Two of our past three newsletters tackled studies about autism and oxytocin, whether focusing on potential **pathways** or **dosages** to use the hormone as therapy. This month, another **study** joins our collection: After taking oxytocin intranasally twice a day for three months, 87 autistic children aged 3 to 12 years experienced no change in social behavior. A subset of the children — those between 3 and 5 years old — did improve, though, in social interactions as assessed by their caregivers and compared with results from a three-week placebo phase of the trial.

The results were published in *Molecular Psychiatry* in October.

Et. al.:

- **Transcranial magnetic stimulation** is touted as a potential treatment for brain conditions but may not be useful for adolescents with **neurofibromatosis 1** — a genetic condition linked to autism. Brain stimulation decreased inhibitory activity in the part of the brain implicated in working memory in these teens, but with or without it they performed the same on a working-memory task. *Scientific Reports*
- Pups born to obese mice fed a high-fat diet **exhibit changes in their gut microbiomes**, as

well as autism-like traits such as social issues and repetitive behaviors. Results from October replicate those findings and show that the maternal high-fat diet impairs social behavior in the offspring's pups as well. *Cell Reports*

- Studies are mixed when it comes to the relationships among **the microbiome, autism and antibiotics**. Antibiotic use by mothers during labor and delivery, however, is not linked to an increased chance of autism in children, according to new research. *Pediatrics*
- Autistic people tend to have **co-occurring physical and mental health conditions**, and they are often **underserved by the health-care system**. New research replicates each of those findings and expands on them by showing that autistic people report higher levels of bodily symptoms, such as stomach and back pain, yet describe levels of health-care utilization that are no different from what those without autism describe. *Autism*
- Silencing miR-134 — a microRNA found in abundance in the brain and implicated in mouse models of seizures and epilepsy — does not reduce seizures or mortality in a mouse model of Dravet syndrome, suggesting that the microRNA is not a useful therapeutic target for the condition. *eNeuro*

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