

NEWS

Community Newsletter: SUV39H2, work performance perceptions, ABA alternative

BY CHELSEY B. COOMBS

8 AUGUST 2021

Hello, and welcome to this week's Community Newsletter! I'm your host, **Chelsey B. Coombs**, *Spectrum's* engagement editor.

Our first threads come from Shabeesh Balan, a researcher at the RIKEN Center for Brain Science, in Wako, Saitama, Japan, and Toshihiro Endo, founder and scientist at Phenovance Research and Technology LLC, in Kashiwa, Chiba, Japan. Balan and Endo, along with 26 co-authors, published a paper that they say "provides direct evidence for **the role of SUV39H2 in ASD**."

Role of histone methyltransferase deficits in autism pathogenesis **#SUV39H2 #lofvariant #behavior #molecularpsychiatry ?@RIKEN_CBS? <https://t.co/z21o4irloU>**

— shabeeshbalan (@shabeeshbalan) **July 16, 2021**

I am happy to be a part of this new study by **@shabeeshbalan** et al for supporting them by **#IntelliCage** experiments. Here we used "SP-FLEX" protocol, a self-paced version of the original behavioral sequence learning/switching task in IntelliCage (Endo et al., 2011 with **@VVoikar**). **<https://t.co/9xr4B55cnO> [pic.twitter.com/7R5NEYVvPd](https://t.co/9xr4B55cnO)**

— Toshi Endo (Phenovance LLC, Japan) (@toshiendo_prt) **July 23, 2021**

The researchers focused on Kleefstra syndrome, characterized by autism-like behaviors and intellectual disability. Previous research showed that this rare condition can result from the loss of a gene encoding a protein that demethylates histone, around which DNA spools, at a particular spot called H3K9. The new work uncovered a rare variant of the SUV39H1 gene that affects methylation of that spot.

Several experiments in SUV39H1 knockout mice brought about a downstream decrease in H3K9 methylation, as well as behavioral inflexibility and hyperactivity during task-switching tests. Postmortem brain samples from autistic people also showed decreased expression of SUV39H1 and the related gene SUV39H2.

I am happy to be a part of this new study by [@shabeeshbalan](#) et al for supporting them by [#IntelliCage](#) experiments. Here we used "SP-FLEX" protocol, a self-paced version of the original behavioral sequence learning/switching task in IntelliCage (Endo et al., 2011 with [@VVoikar](#)). <https://t.co/9xr4B55cnO> [pic.twitter.com/7R5NEYVvPd](https://t.co/7R5NEYVvPd)

— Toshi Endo (Phenovance LLC, Japan) (@toshiendo_prt) **July 23, 2021**

Next up is a study from another large team of researchers headed by [Adam Guastella](#), professor of medicine and health at the University of Sydney in Australia. The paper looked at how social anxiety and executive function in autistic people relate to how well they rate their work performance.

New study: Anxiety & perceived executive skills predict workplace confidence in autistic adults. Our future studies will show mental health support is crucial to workplace success for autistic adults; with outstanding outcomes reported by them & employers
<https://t.co/QpGx3PMJnR>

— Adam Guastella (@Adam_Guastella) **July 17, 2021**

Autistic adults responded to questions about their social anxiety, mental health, executive function and social and work functioning. Some also took tests of executive function, measuring their working memory and ability to finish tasks.

Participants who said they had more social anxiety and executive function difficulties also reported feeling less confident in their social skills and job performance, the team found. But a person's executive function score was not related to her perceived social or work functioning.

"This study highlights the importance of taking into account perceived executive function and social anxiety when considering how best to support positive outcomes, such as getting and sustaining relationships and work, in autistic populations," the authors wrote.

Ian Hickie, professor of psychiatry at the University of Sydney in Australia and an investigator on the study, tweeted, "Reducing anxiety should be a therapeutic focus, and services need to be available for this."

Perceptions of social and work functioning are related to social anxiety and executive function in autistic adults <https://t.co/LgLIxgJ2b> @Adam_Guastella @NicRogerson
Reducing anxiety should be a therapeutic focus, and services need to be available for this
@BrainMind_Usyd

— Ian Hickie (@ian_hickie) July 18, 2021

Rebecca Sutherland, assistant professor of speech pathology at the University of Canberra in Australia, tweeted, "What a brains trust on the author list!"

This looks like an interesting study with great potential for real world application - and what a brains trust on the author list! <https://t.co/DHK2seJ01B>

— Dr Rebecca Sutherland (@becsutherlandSP) July 19, 2021

Yet another recent study drew a different kind of response on Twitter: "Yikes!" tweeted **Zack Williams**, a graduate student at Vanderbilt University in Nashville, Tennessee.

New article demonstrates that most BCBAs, RBTs, and other BACB certificants don't have adequate knowledge of or training in NDBIs, despite the substantial evidence base to

support them. Yikes! <https://t.co/nbdVzzEVsE>

— Zack Williams (@QuantPsychiatry) **July 29, 2021**

The study surveyed behavior analysts about their knowledge and attitudes toward **naturalistic developmental behavior interventions** (NDBIs) for autism.

NDBIs marry the principles of **applied behavior analysis** (ABA) and developmental psychology to teach autistic children new skills by way of naturally occurring situations. Although randomized controlled trials have proven the effectiveness of NDBIs, the researchers wrote, training resources for behavior analysts are not widespread and there are “relatively few high-quality studies [that] attest to [traditional behavioral therapies] effectiveness.”

In the survey, 11 percent of **board-certified behavior analysts** (BCBAs) and 25 percent of registered behavior therapists (RBTs) responded that they were unfamiliar with all of the NDBIs mentioned; 32 percent of BCBAs and 46 percent of RBTs said they had not received any training in NDBIs; and only 57 percent of BCBAs and 64 percent of RBTs said that NDBIs are an important tool.

“The field of ABA is often criticized for being limited in scope and ridged; by adopting current evidence-based practices into the scope of practice, the field has the opportunity to demonstrate greater flexibility, responsiveness, and evolution,” the authors wrote.

That’s it for this week’s *Spectrum* Community Newsletter! If you have any suggestions for interesting social posts you saw in the autism research sphere, feel free to send an email to me at chelsey@spectrumnews.org. See you next week!

Cite this article: <https://doi.org/10.53053/TRRW5648>