Software to Diagnose Sensory Issues in Fragile X Syndrome and Autism

Tech ID: 34150 / UC Case 2024-738-0

CONTACT

Grace Yee
grace.yee@ucr.edu
tel: 951-827-2212.

OTHER INFORMATION

CATEGORIZED AS

- **Computer**
  - Software
- **Medical**
  - Diagnostics

RELATED CASES

2024-738-0

BACKGROUND

Susceptibility to sensory distractors is the hallmark symptom of Autism spectrum disorders and Fragile X syndrome. This prevents adaptation to distracting stimuli like a noisy cart or blinking lights and can lead to limited social interaction and delayed learning. Currently, there are no therapy options that target distractor susceptibility and no diagnostic tool that directly tests distractor susceptibility.

BRIEF DESCRIPTION

Professor Anubhuti Goel and colleagues from the University of California, Riverside have developed a novel diagnostic tool and software program that provides a quick, objective measure of sensory issues for individuals with Autism spectrum disorders and Fragile X syndrome. This tool works by using a software application to administer a game. Based on the individual's score at the end of the game, a diagnosis about sensory issues may be made. This technology is advantageous because it may provide an easily accessible, low cost, and safe diagnostic tool for Fragile X Syndrome and Autism that can be developed as a telehealth diagnostic tool.

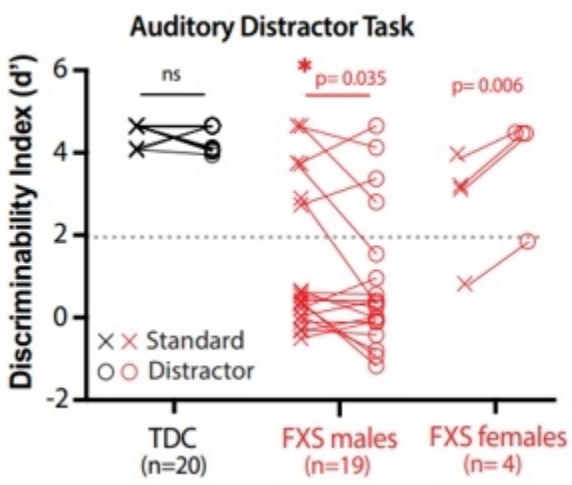


Fig 1: The UCR diagnostic tool results from a participant pool of nineteen males with FXS, 20 male typically developing healthy controls (TDCs), 4 females with FXS, and 2 TDC females. When compared to TDCs, FXS male participants (middle column) showed a significant decrease in d' in the presence of distractors, FXS females (right column) exhibited a higher d' on the distractor session.

SUGGESTED USES

- For a quick initial diagnosis of sensory issues in individuals with ASD and FXS.
- To test and track the efficacy of drug treatment by measuring before and after the drug treatment.

RELATED MATERIALS

- Rahmatullah, Noorhan, et al. "Hypersensitivity to distractors in fragile X syndrome from loss of modulation of cortical VIP interneurons." The Journal of Neuroscience, vol. 43, no. 48, 2023, pp. 8172–8188, https://doi.org/10.1523/jneurosci.0571-23.2023.

University of California, Riverside

Office of Technology Commercialization

200 University Office Building,

Riverside,CA 92521

otc@ucr.edu

https://research.ucr.edu/

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