From Virtual to Reality

Making positive changes in the lives of those with autism and anyone with social cognitive differences
What if your most daunting aspiration was to make a friend?

For many with social cognition deficits, reading facial expressions and knowing how to respond are confusing daily challenges that pose barriers to relationships and career goals.

Cognitive neuroscientists, clinicians and game developers at the Center for BrainHealth® at The University of Texas at Dallas have created an immersive virtual reality platform that is helping individuals with autism and social cognition challenges achieve social and economic independence.
The Center for BrainHealth’s scientifically validated training is a fun, high-tech game that uses personalized avatars and an immersive environment to simulate real-life scenarios in settings such as a school, home, bookstore or coffee shop. In the virtual world, face-tracking technology allows users to see their own and others’ facial emotions and reactions in real time. An expert clinician initiates nonscripted conversation that instills social brain strategies to help participants reach personal goals.

This approach has been shown to build social-reasoning skills and increase confidence in real-world interactions.

Participants may practice initiating conversations, dealing with confrontation, asking someone out on a date and interviewing for a job.
Traditional role-play therapy is limited by a lack of realism. The clinician’s appearance and location are fixed. In virtual reality training, changeable identities and immersive surroundings create limitless scenarios. Participants are motivated to master social strategies because they enjoy and respond well to the friendly, yet challenging video game environment.

“We live in a highly social world that puts more emphasis on knowing somebody than work or brain power. The best thing about this program is that it’s a very low-stakes way to practice interacting in everyday ways with others. It provides five to six years of social training in just a few sessions.”

CLARK THURSTON, social cognition research participant

THE FUTURE OF VIRTUAL REALITY TRAINING

Telehealth is a burgeoning field that expands a clinician’s reach and allows underserved populations in remote locations to receive treatment. Our research team is partnering with researchers at Yale University’s Child Study Center to expand the program and further validate the science with advanced brain imaging, including fMRI and EEG.

Social brain activation before (left) and after training (right).
Real-World Results

In our research, after only 10 one-hour sessions over 5 weeks, participants significantly improved in the ability to recognize and understand emotions and respond to cues from others and manage their own.

THREE-MONTH FOLLOW-UP RESULTS

Participants Report:
100% Significant increase in the ability to communicate to others
100% Significant increase in social engagement

Direct Improvement of Social Skills*
71% Starting a conversation | 100% Maintaining a conversation
86% Understanding other points of view | 86% Establishing relationships

As gaming and virtual technology continue to evolve, the goal is not for them to replace social connections but to enable the most effective treatments to become globally accessible.

“Since receiving the training, my student is using a more appropriate tone of voice, expressing his feelings when wronged, and has begun standing up for himself if treated unfairly. He is more willing to participate in activities and will even start a conversation with peers, something he just wasn’t interested in doing before.”

COACH RICHMOND, teacher at a participating middle school

“If you can succeed in virtual reality, you can do it for real. I wouldn’t have been able to interview and do what I’m doing if it weren’t for the training. I have also made real, long-lasting friends. I now truly understand what friendship means and value its importance.”

CARLY MCCULLAR, social cognition research participant