

Genetic links to impaired social behavior in autism

Individuals with autism spectrum disorders (ASD) show profound deficits in social interactions and communications, and display repetitive behaviors and abnormal responses to sensory experiences. One aspect of an autistic child's impaired social abilities is their lack of affiliative behaviors, i.e., behaviors such as touching and hugging that strengthen social bonds. On May 15th, *Biological Psychiatry* is publishing an article that reports new findings on genetic bases of these behaviors.

In this study, Yale University researchers recruited, genotyped, and clinically assessed a large sample of autistic children and their families. They specifically examined the genetic variants in six genes known to be involved in maternal and affiliative behaviors.

Dr. Elena Grigorenko, the senior author, discusses their study, "Animal studies have taught us that genetic factors can play a crucial role in the development of close affiliative ties. With the help of Yale's Autism Center of Excellence, led by Drs. Ami Klin and Fred Volkmar, and many families of individuals with ASD, we have registered a possible association between some of the genes identified in animal studies as controlling affiliative behaviors in ASD."

The strongest statistical findings of the study implicate the prolactin gene, the prolactin receptor gene, and the oxytocin receptor gene in these affiliative behavior deficits.

John H. Krystal, M.D., Editor of *Biological Psychiatry* and affiliated with both Yale University School of Medicine and the VA Connecticut Healthcare System, comments, "We are beginning to see that molecular genetics research is creating exciting new links between research in animal models and clinical disorders. The paper by Carolyn Yrigollen and colleagues suggests that two neurohormones that have been linked to affiliative behavior in animals, prolactin and oxytocin, are linked to deficits in affiliative behaviors associated with autism."

Dr. Grigorenko adds, "This work builds on the most recent advances in genomics and the developmental neurosciences, and it sets the stage for a more extensive examination of our initial hypothesis. A clearer understanding of the genetic factors involved in ASD should result in new and better interventions for these devastating disorders."

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