

Autism

Researchers (Nicholas et al, 2007) are asking whether genes responsible for timing in the brain are in some way flawed in children with Autism (including High Functioning Autism and Aspergers). Individuals on the Autism Spectrum display a significant number of symptoms that show timing in the brain is severely disrupted, from difficulty with sleep to the brain's ability to process information, to attention or the ability to switch from focusing on one thing to another (they often become fixated), to communicating & reciprocating in conversation, to sensory processing and integration, to motor coordination (including the muscles for vision and visual perception). The authors found that there is indeed a case to be made that "clock genes" are involved, however they urge further research. More and more professionals are including Interactive Metronome in their comprehensive treatment programs for children on the Autism Spectrum in order to improve the timing skills that are critical for development of speech & language, cognitive, social, and motor skills.

Nicholas, B., Rudrasingham, V., Nash, S., Kirov, G., Own, M.J., and Wimpory, D.C. (2007). Association of Per1 and Npas2 with autistic disorder: Support for the clock genes/social timing hypothesis. Molecular Psychiatry, 12, 581-592.

There is still controversy over whether Autism Spectrum Disorders result from some interaction with environment after birth (i.e., toxic exposures, immune-modulation post-vaccination, etc) or whether they result from genetic defect(s). Some would argue both are contributing factors, that certain individuals are born with a genetic predisposition and that exposure(s) in the environment turn on or off certain genes that may contribute to the development of Autism Spectrum Disorders. In this study, researchers provide a strong argument for a genetic defect in the "clock genes," genes that control our perception of time and with genes for a process called "methylation" that controls the turning on and off of our genes or how they are expressed (ultimately how they control our abilities). Individuals on the Autism Spectrum demonstrate numerous symptoms resulting from an impaired perception of time from circadian rhythm (sleep/wake/appetite) to millisecond timing required for speech-language, social/behavioral, cognitive, motor, and visual skills. The Interactive Metronome (IM) is a training program that is administered under the guidance of a certified professional. It is designed to improve the basic timing skills necessary for development of speech, language, cognitive, and motor skills. Many parents and professionals also report decrease in aggressive behavior, improved social skills, and better sensory processing following IM training.

Wimpory, D. (2002). Social timing clock genes and autism: A new hypothesis. Journal of Intellectual Disability Research, 46(4), 352-358.