

Loss of Neural Connectivity

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Marcel Just and his team: Carnegie Mellon University

“The brains of Neurotypical children develop greater ability for ad-hoc collaboration between different brain centers. This “connectivity” provides the opportunity for flexible, original and integrated responses to the environment.

The brains of people with ASD demonstrate significant *under connectivity* in their formation of neural patterns. As ASD brains develop, they appear to preserve and possibly enhance the functioning of individual cortical processing centers.

The absence of maturation of higher order [integrative] circuitry, results in reliance on lower order abilities and circuitry. Specific types of problems and stimuli become rigidly linked to specific brain centers. This limits their ability to respond flexibly and in a more holistic manner to changes in their world.”

Just, M., Cherkassky, V., Keller, T., & Minshew, N. (2004). Cortical activation and synchronization during sentence comprehension in high-functioning autism: Evidence of underconnectivity. *Brain*, 127, 1811-1821.