Autism and chemical messenger receptors: Study challenges popular theory

New results from brain scans of adults with autism are at odds with the popular theory that autism involves weak brakes on brain activity. Some experts say, however, that the scans in the new study are too imprecise to cast serious doubt on this theory.

The scans show no difference from controls in the density of certain receptors for a chemical messenger that dampens brain signals.

One of the most popular theories of autism holds that too little of this chemical messenger, gamma-aminobutyric acid (GABA), results in too much excitation in the brain. In support of this, several studies have found that autism brains have less GABA or less GABA-A, the most abundant receptor for GABA, than typical brains. Because of this, several research teams and companies are testing drugs that activate GABA receptors.

Most of the studies of GABA-A levels relied on postmortem tissue, however, and included individuals with intellectual disability or epilepsy, or who had been on medications that can influence receptor levels. The new study is one of the first to measure GABA-A levels in the brains of living autistic people.

“We find no evidence for differences in this receptor within this particular subgroup of individuals,” says Declan Murphy, professor of psychiatry and brain maturation at King’s College London.

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