Brain’s immune cells may play role in autism development

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.

The brain of a newborn baby is an overgrown garden. Billions of neurons connect via an unimaginable number of junctions, or synapses, far more than will remain in adulthood. For this thicket of connections to mature into a properly organized adult brain, a group of special immune cells called microglia must get to work. They pick their way among the overgrowth, shape-shifting the tendrils of their branch-like arms into blobs that rake up debris and damaged cells. They battle microbial invaders, engulfing their remains, and capture and destroy incorrectly folded proteins.

Scientists are trying to untangle not only how microglia function in healthy brains, but also what they may be doing in the brains of people with autism, and whether they present a possible path to new treatments. Do microglia become active in response to physical damage, or some kind of genetically predisposed altered wiring? Or are dysfunctional microglia themselves the source of the trouble?

In 2005, neurologist Carlos Pardo-Villamizar of Johns Hopkins University and his colleagues examined postmortem brain tissue from 11 people with autism who had died in accidents, and cerebrospinal fluid from 6 living people with autism. Their analysis found signs of inflammation in both sets of autism brains compared with the brains of controls, including spikes in microglia activity and proteins related to microglia. It was the first documentation of abnormal microglial activity associated with autism, Pardo-Villamizar says. His theory is that the cells respond to malformed connections in the cerebral cortex.

Read full, original post: The brain’s secret gardeners