Health & Medicine

Wired for Trauma

Summer 2010

A soldier witnesses a horrific scene in battle. Somewhere else, a child is physically abused. Will they suffer from post-traumatic stress? That depends partly on whether their DNA has been altered, according to new research by Sandro Galea, the chair of epidemiology at the Mailman School of Public Health.

Galea has examined the genetic profiles of people with post-traumatic stress disorder (PTSD) and discovered that certain clusters of genes, which usually lie dormant in people who are healthy, show signs of having been “switched on.” Some of these genes, when activated, are known to permanently stimulate our stress response. They also seem to compromise our immune system, which Galea says could explain why people with PTSD have high rates of diabetes, cardiovascular disease, and other physical conditions. He hypothesizes that the genes in question may get activated by biochemical changes in the body amid emotional trauma.

“Our findings suggest a new biological model of PTSD, in which alteration of genes, induced by a traumatic event, changes a person’s stress response and leads to the disorder,” says Galea. “Identification of the biologic underpinnings of PTSD will be crucial for developing appropriate psychological and pharmacological interventions, particularly in the wake of an increasing number of military veterans returning home.”

Galea’s research involved 100 subjects from the Detroit Neighborhood Health Study, a longitudinal project focused on PTSD and other mental disorders. It appears in the May 3 *Proceedings of the National Academy of Sciences*.



Guide to school abbreviations

All categories >