MedicalXpress

Cognitive process speed in teen years affects depression risk in adulthood

May 19 2015

Teens with slower performance on a test of "cognitive processing speed" are more likely to have depression and anxiety symptoms as adults, reports a paper in *Psychosomatic Medicine: Journal of Biobehavioral Medicine*, the official journal of the American Psychosomatic Society.

"Adolescents with slower processing speed may be at increased later risk of anxiety and depression," according to the new research by Catharine R. Gale, PhD, of Edinburgh University and colleagues. The results add new evidence that lower cognitive ability may be a contributor to depression, rather than a consequence of it.

Slower Processing Speed Linked to Depression 20 Years Later

The researchers analyzed data from 705 Scottish participants in a study including follow-up from adolescence into adulthood. At age 16, the participants were evaluated on a simple test of cognitive processing speed—reaction time in pressing keys corresponding to numbers (1 to 4) flashed on a screen.

At age 36, the participants completed standard questionnaires assessing depression and anxiety symptoms. The relationship between reaction time in adolescence and mental health in adulthood was assessed, with adjustment for a wide range of other factors (education, lifestyle habits, etc).

Slower cognitive processing speed—that is, longer reaction time—at age 16 was associated with increased anxiety and depression symptoms at age 36. After adjustment, the relationship remained significant for one of the two mental health questionnaires (the General Health Questionnaire), but not the other (the Hospital Anxiety and Depression Scale).

Smoking appeared to play a role in the relationship between teen reaction times and adult depression scores. "This might at least in part reflect the use of cigarettes as a method of relieving or coping with psychological symptoms," Dr. Gale and coauthors write.

The researchers were also interested in assessing the role of the cumulative effects of stress over time, or "allostatic load." As reflected by various measures related to stress—for example, blood pressure and general inflammation—allostatic load seemed to at least partly account for the link between reaction time and anxiety/depression symptoms. However, this relationship was no longer significant after adjustment for other factors.

Previous studies have shown that people with more severe depression have slower reaction times and other cognitive deficits. It has generally been assumed that this "psychomotor slowing" is a consequence of depression, rather than a risk factor for it. The new study suggests that slower processing speed may contribute to the development of mental health disorders—possibly by leading to "increased stress and difficulties responding to adversity earlier in life."

Dr. Gale and colleagues note some key limitations of their study, especially the fact that the participants had a narrow range of depression scores. The researchers conclude, "Further prospective studies of the relation between reaction time and mental health outcomes in other samples are needed to gauge whether reaction time is a true risk factor

for mental disorders and to confirm the mediating roles played by smoking and allostatic load."

More information: "Depression and Risk of Venous Thromboembolism: A Population-Based Retrospective Cohort Study." DOI: 10.1097/PSY.0000000000000193

Provided by Wolters Kluwer Health