

Stress effects are seen in the brain

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Penn State scientists have developed a non-invasive way to view effects of psychological stress in an area of the brain linked with anxiety and depression.

The research reportedly has important implications for how practitioners treat the numerous long-term health consequences of chronic stress.

In the study, the scientists used functional magnetic resonance imaging to detect an increase in blood flow to the prefrontal cortex in individuals subjected to stress. Further, the increase remained even when the stressor was removed, suggesting the effects of stress are more persistent than once thought.

Whereas most previous fMRI studies have relied on indirect measures of cerebral blood flow, the Penn team, led by John Detre, measured blood flow directly, using a technique called arterial spin labeling. The technique is non-invasive, relying on magnetically "tagging" water molecules in subjects' blood.

The study is reported in the Nov.21 online edition of the Proceedings of the National Academy of Sciences.

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