

Anxious? Do a crossword puzzle

December 17 2008, By Yasmin Anwar

Anxious people often engage in mindless distractions to keep from thinking scary or troubling thoughts. But results from a new brain imaging study by a University of California, Berkeley, researcher suggest that brain-sharpening activities - rather than mind-numbing ones - can rein in a restless psyche by activating the region of the brain that commands logical reasoning and concentration.

With an economic crisis and holiday obligations fueling people's anxiety this season, the study's findings could prove helpful to those feeling overwhelmed. Rather than washing the dishes or watching a soap opera to tune out negative thoughts, for example, the results suggest that anxious people might want to train their brain to stay focused via a tough crossword puzzle or game of chess.

"If anything, hard tasks can keep anxious people from being sidetracked and can help them stay on task," said Sonia Bishop, a UC Berkeley psychologist and lead author of the brain imaging study, published online by *Nature Neuroscience* yesterday on Dec. 14.

Bishop's study shows that people who are overly anxious have a hard time concentrating on mundane tasks such as ironing and filing paperwork, even when they are not imagining worst-case scenarios. This is because, when distracted, anxious people struggle to activate the prefrontal region of the brain needed to focus on the task at hand.

These findings break new ground in understanding the brain circuitry of anxiety because previous anxiety investigations have focused on an

overactive amygdala, or fight-or-flight reflex, which alerts the body to protect itself in times of danger. The new findings suggest that poor concentration in anxious people is as much due to a slow response in the prefrontal cortex when they are engaged in undemanding pastimes or chores.

National surveys indicate that one in five adults experience above-average levels of anxiety in a given year. Researchers have established that anxious people have a hard time concentrating, but the source of this difficulty has not been fully understood.

Using functioning Magnetic Resonance Imaging (fMRI), Bishop and her team conducted the study of 17 men and women, ranging in age from 19 to 48, at Cambridge University. They scored in standardized tests as having varying levels of anxiety, but were not on medication. Their brains were scanned as they performed letter-searching tasks on a screen.

Each time they saw an "N" or "X" in a string of letters, they had to press a corresponding button. At times, the Ns and Xs were easy to spot, and at other times they were buried among long strings of letters. To present a distraction, a similar but irrelevant letter was placed above or below the letter sequence.

When the letter search was demanding, brain scans showed all the study participants' dorsolateral prefrontal cortexes, which control planning, organization and memory, to be fully engaged. But when the letter search was easy, the prefrontal brain activity in high-anxiety participants plummeted as their attention wandered. In contrast, low-anxiety participants easily activated the prefrontal brain to focus on the task at hand when presented with distractions.

"The results go a long way in explaining the general day-to-day difficulties in concentration and distractibility associated with clinical

anxiety," Bishop said, adding that her new research paves the way for new coping strategies for poor concentration in anxiety, such as mindfulness training and drug therapies that target the prefrontal brain.

Provided by UC Berkeley

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