

Post-concussion depression more than emotional

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By Joene Hendry

NEW YORK (Reuters Health) - Post-concussion symptoms of depression may stem from an underlying neurological abnormality caused by the concussion, results of a Canadian study suggest.

Depression after a blow to the head may not simply be the individual's emotional or psychological reaction to the injury and their subsequent loss of playing time, as is commonly thought, investigators note in the medical journal, Archives of General Psychiatry.

"It seems there is a cerebral dysfunction caused by the injury," Dr. Alain Ptito, of the Montreal Neurological Institute and Hospital at McGill University in Quebec, told Reuters Health. The injury manifests itself as symptoms of depression, he added.

Ptito and colleagues compared neuroimaging test results for 8 athletes with concussion and moderate depression, 16 with concussion and mild depression, 16 athletes with concussion and no depression, and 16 athletes with no concussion.

Traditional structural imaging examinations, such as magnetic resonance imaging, were normal in all subjects.

However a more in-depth analysis of gray matter density, showed some athletes with reduced gray matter in regions of the brain associated with memory, mood, emotional processing, and motivation and desire.

And the reductions in gray matter density were proportional to the severity of the athletes' depression, Ptito reported.

For example, the higher the depression, the higher the reduction in gray matter density in the anterior cingulate cortex -- a portion of the brain with a well established role in mood and emotional processing.

This study suggests a neurological basis for depression following concussion, the team concludes. The researchers are conducting follow-up studies to confirm these results, noting that "early identification of the nature of depression symptoms following head trauma (psychological or pathological) has important implications for early intervention and successful outcome."

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