

Brain discovery sheds light on link between vision and emotion

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(Medical Xpress) -- Neuroscientists have discovered a new area of the brain that is uniquely specialized for peripheral vision and could be targeted in future treatments for panic disorders and Alzheimer's disease.

Published today in high impact journal [Current Biology](#), researchers led by Dr. Hsin-Hao Yu and Professor Marcello Rosa from Monash University's Department of Physiology found that a brain area, known as prostriata, was specialised in detecting fast-moving objects in peripheral [vision](#).

This area, located in a primitive part of the cerebral cortex, has characteristics unlike any other visual area described before, including a “direct line” of communication to brain areas controlling emotion and quick reactions.

Dr. Yu said the discovery, identified during the development of the Monash Vision Group’s bionic eye, funded through the ARC Research in Bionic Vision Science and Technology Initiative, could lead to new treatments for panic disorders such as agoraphobia (fear of open spaces) and may extend into other medical areas including Alzheimer’s treatment.

“The brain is the most complex organ in the human body and perhaps the most remarkable. These findings change how we think of the brain in terms of how visual information is processed,” Dr. Yu said.

“This area is likely to be hyperactive in panic disorder, with agoraphobia. This knowledge could lead to treatment options for the hyperactivity, and therefore sensitivity to such disorders, particularly the fear of open spaces.

“Correlation with previous studies also shows that prostriata is one of the first areas affected in Alzheimer’s disease. This knowledge helps to explain spatial disorientation and the tendency to fall, which are among the earliest signs of a problem associated with [Alzheimer’s](#).”

Professor Rosa said this area had ultra-fast responses to visual stimuli, simultaneously broadcasting information to brain areas that control attention, emotional and motor reactions. This challenges current conceptions of how the brain processes visual information.

“This suggests a specialised [brain](#) circuit through which stimuli in [peripheral vision](#) can be fast-tracked to command quickly coordinated

physical and emotional responses,” Professor Rosa said.

Provided by Monash University

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