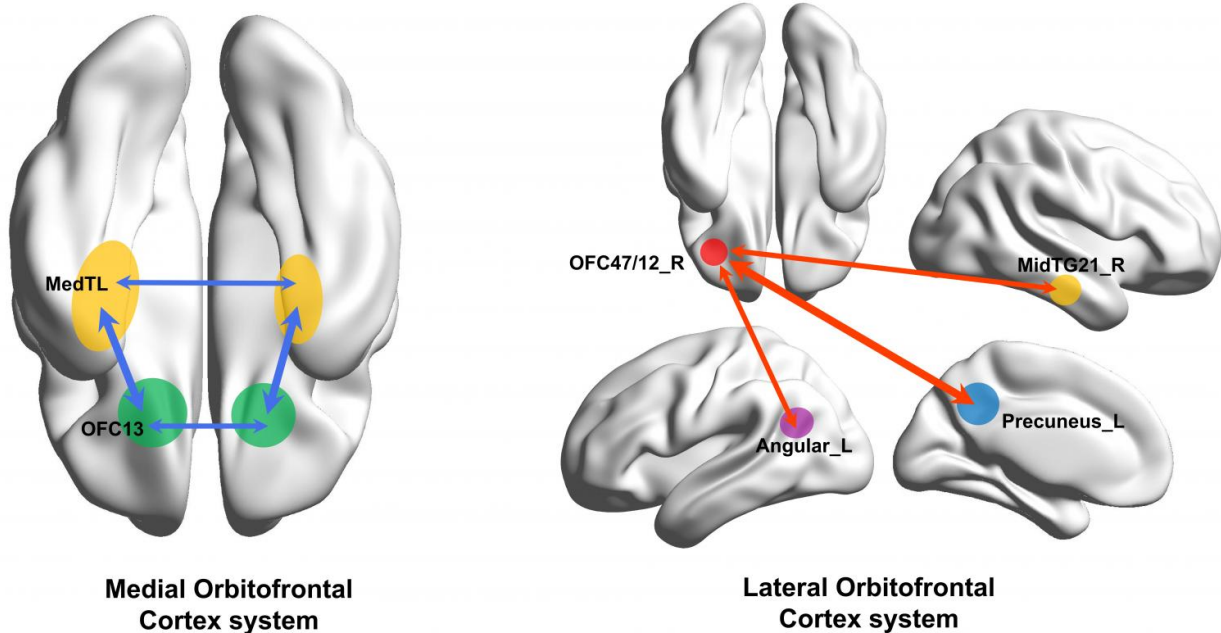


Depression's physical source discovered; potential for new treatments

October 18 2016, by Luke Walton



The human medial (reward-related, OFC13) and lateral (non-reward-related, OFC47/12) orbitofrontal cortex networks that show different functional connectivity in patients with depression. Credit: Dr Wei Cheng

Understanding of the physical root of depression has been advanced, thanks to research by the University of Warwick, UK, and Fudan University, China.

The study shows that [depression](#) affects the part of the brain which is

implicated in non-reward—the lateral orbitofrontal cortex—so that sufferers of the disease feel a sense of loss and disappointment associated with not receiving rewards.

This area of the brain, which becomes active when rewards are not received, is also connected with the part of the brain which is involved in one's sense of self, thus potentially leading to thoughts of personal loss and low self-esteem.

Depression is also associated with reduced connectivity between the reward brain area in the medial orbitofrontal cortex and memory systems in the brain, which could account for sufferers having a reduced focus on happy memories.

These new discoveries could herald a breakthrough in treating depression, by going to the root cause of the illness, and helping depressed people to stop focussing on negative thoughts.

The study has been carried out by Professor Edmund Rolls from Warwick, Professor Jianfeng Feng from Warwick and from Fudan University in Shanghai, Dr Wei Cheng from Fudan University, and by other centres in China.

In a particularly large study, almost 1,000 people in China had their brains scanned using high precision MRI, which analysed the connections between the medial and lateral orbitofrontal cortex—the different parts of the human brain affected by depression.

Professor Jianfeng Feng comments that depression is becoming increasingly prevalent:

"More than one in ten people in their life time suffer from depression, a disease which is so common in modern society and we can even find the

remains of Prozac (a depression drug) in the tap water in London."

"Our finding, with the combination of big data we collected around the world and our novel methods, enables us to locate the roots of depression which should open up new avenues for better therapeutic treatments in the near future for this horrible disease," Professor Feng continues.

Professor Edmund Rolls looks forward to the new treatments the research could lead to:

"The new findings on how depression is related to different functional connectivities of the orbitofrontal cortex have implications for treatments in the light of a recent non-reward attractor theory of depression."

The research, 'Medial reward and lateral non-reward [orbitofrontal cortex](#) circuits change in opposite directions in depression', is published in *Brain*.

More information: Wei Cheng et al, Medial reward and lateral non-reward orbitofrontal cortex circuits change in opposite directions in depression, *Brain* (2016). [DOI: 10.1093/brain/aww255](https://doi.org/10.1093/brain/aww255)

Provided by University of Warwick

Citation: Depression's physical source discovered; potential for new treatments (2016, October 18) retrieved 24 April 2024 from <https://medicalxpress.com/news/2016-10-depression-physical-source-potential-treatments.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.