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PsyPost

Study reveals for first time that cognitive-behavior therapy changes the brain's wiring

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A new study from King's College London and South London and Maudsley NHS Foundation Trust has shown for the first time that cognitive behaviour therapy (CBT) strengthens specific connections in the brains of people with psychosis, and that these stronger connections are associated with long-term reduction in symptoms and recovery eight years later.

CBT – a specific type of talking therapy – involves people changing the way they think about and respond to their thoughts and experiences. For individuals experiencing psychotic symptoms, common in schizophrenia and a number of other psychiatric disorders, the therapy involves learning to think differently about unusual experiences, such as distressing beliefs that others are out to get them. CBT also involves developing strategies to reduce distress and improve wellbeing.

The findings, published in the journal *Translational Psychiatry*, follow the same researchers' previous work which showed that people with psychosis who received CBT displayed strengthened connections between key regions of the brain involved in processing social threat accurately. The new results show for the first time that these changes continue to have an impact years later on people's long-term recovery. In the original study, participants underwent fMRI imaging to assess the brain's response to images of faces expressing different emotions, before and after six months of CBT. Participants were already taking medication when they took part in the study, and so were compared to a group receiving medication only. The group receiving medication only did not show any increases in connectivity, suggesting that the effects on brain connections could be attributed to the CBT.

For the new study, the health of 15 of the 22 participants who received CBT was tracked for eight years through their medical records. They were also sent a questionnaire at the end of this period to assess their level of recovery and wellbeing.

The results show that increases in connectivity between several brain regions – most importantly the amygdala (the brain's threat centre) and the frontal lobes (which are involved in thinking and reasoning) – are associated with long-term recovery from psychosis. This is the first time that changes in the brain associated with CBT have been shown to be associated with long-term recovery in people with psychosis.

Lead author of the study Dr Liam Mason from King's College London, who is a clinical psychologist at the Maudsley Hospital where the research took place, said: "This research challenges the notion that the existence of physical brain differences in mental health disorders somehow makes psychological factors or treatments less important. Unfortunately, previous research has shown that this 'brain bias' can make clinicians more likely to recommend medication but not psychological therapies. This is especially important in psychosis, where only one in ten people who could benefit from psychological therapies are offered them."

The researchers now hope to confirm the results in a larger sample, and to identify the changes in the brain that differentiate people who experience improvements with CBT from those who do not. Ultimately, the results could lead to better, and more tailored, treatments for psychosis, by allowing researchers to understand what determines whether psychological therapies are effective.

See the original scientific article at <http://www.nature.com/tp/journal/v7/n1/full/tp2016263a.html>