

Publication

Acute effects of LSD on amygdala activity during processing of fearful stimuli in healthy subjects

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 3896697**Author(s)** Mueller, F.; Lenz, C.; Dolder, P. C.; Harder, S.; Schmid, Y.; Lang, U. E.; Liechti, M. E.; Borgwardt, S.**Author(s) at UniBasel** [Liechti, Matthias Emanuel](#) ;**Year** 2017**Title** Acute effects of LSD on amygdala activity during processing of fearful stimuli in healthy subjects**Journal** Translational Psychiatry**Volume** 7**Number** 4**Pages / Article-Number** e1084

Lysergic acid diethylamide (LSD) induces profound changes in various mental domains, including perception, self-awareness and emotions. We used functional magnetic resonance imaging (fMRI) to investigate the acute effects of LSD on the neural substrate of emotional processing in humans. Using a double-blind, randomised, cross-over study design, placebo or 100 μ g LSD were orally administered to 20 healthy subjects before the fMRI scan, taking into account the subjective and pharmacological peak effects of LSD. The plasma levels of LSD were determined immediately before and after the scan. The study (including the a priori-defined study end point) was registered at ClinicalTrials.gov before study start (NCT02308969). The administration of LSD reduced reactivity of the left amygdala and the right medial prefrontal cortex relative to placebo during the presentation of fearful faces ($P < 0.05$, family-wise error). Notably, there was a significant negative correlation between LSD-induced amygdala response to fearful stimuli and the LSD-induced subjective drug effects ($P < 0.05$). These data suggest that acute administration of LSD modulates the engagement of brain regions that mediate emotional processing.

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