

A breath of fear : a translational approach into the mechanisms of panic

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A breath of fear

A translational approach into the mechanisms of panic

Nicole Leibold, 25 juni 2015

1. Inhaling CO₂ induces a dose-dependent increase in negative affect, which is best reflected by the diastolic blood pressure that might represent a biomarker for the reactivity to CO₂. (*this thesis*)
2. Inhaling CO₂ activates the brainstem to a stronger extent in panic disorder patients than in healthy individuals. This suggests an increased neural sensitivity at the brainstem level. (*this thesis*)
3. Variants in the ACCN2 gene moderate the reactivity to a CO₂ inhalation. (*this thesis*)
4. While 5-HTT deficient mice show more fear-related behavior under basal conditions, they are less sensitive to the effects of CO₂ in comparison with wildtype mice. This indicates that the serotonergic system exerts inhibitory effects on the fear response to CO₂. (*this thesis*)
5. CO₂ exposure in rodents is highly aversive, which questions the use of CO₂ to euthanize lab animals.
6. Research would benefit from improving the similarity of experimental stimuli and outcome measurements between rodents and humans to enhance knowledge transfer to eventually improve treatment strategies. (*valorization – this thesis*)
7. Replication studies are at least as important as discovery studies.
8. “What is a scientist after all? It is a curious man looking through a keyhole, the keyhole of nature, trying to know what’s going on.” (*Jacques Yves Cousteau*)
9. According to Confucius our greatest glory is not in never falling, but in rising every time we fall. This applies to the practice of science as well.
10. Pessimism also has its benefits.