

Activation of hypothalamic orexin neurons is a potential mediator of the weight gain associated with some antipsychotic drugs. Male rats display increased Fos expression in lateral hypothalamic orexin neurons following clozapine administration; however, amphetamines led to increased Fos expression in medially located orexin neurons. The rhesus monkey (*Macaca mulatta*) provides a model to examine the relationships between orexin neurons, weight and physical activity. Using stereology, the number of orexin-A immunoreactive neurons was quantified in 18 male (7.6–18.3kg) and 18 female (4.8–12.2kg) monkeys. In females, there was no relationship between weight and medial or lateral orexin-A neuron number. Conversely, in male monkeys, higher body weight was significantly associated with less medial orexin-A neurons ($P < 0.05$), but the relationship with lateral orexin-A neurons only approached significance ($P = 0.075$). Of the 36 animals in which orexin-A neurons was estimated, activity was monitored for 21 days via an Actiwatch-64 in 12 males and 12 females. Weight was negatively associated with activity in males ($P < 0.05$), but not females. Comparisons of activity to orexin-A neurons revealed a significant association between higher activity levels and greater numbers of orexin-A neurons in the medial hypothalamus ($P < 0.05$) but not with those in the lateral hypothalamus of males. Females showed no relationship between orexin-A neurons in either region and activity. The significant relationship between weight, activity, and medial orexin-A neurons of males, indicates that in monkeys, the medially located orexin neurons may be more influential in mediating body weight than in the rodent. (Supported by NIH Grant-P01-AG00001-29 and RR-00165).

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Neurochemical markers for aggression-related personality traits

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Background: Various biological risk factors for aggressive behaviours have been proposed, including disturbances in monoaminergic neurotransmission, endocrine axes and central nervous system (CNS) integrity.

Aims: To describe findings of correlations between markers of CNS chemical integrity, neurotransmission and hormone metabolism in relation to personality traits from forensic psychiatric investigatees and normal subjects in a stress paradigm.

Method: Cerebrospinal fluid (CSF) and serum (S) samples from 46 forensic psychiatric investigatees and 35 healthy subjects undergoing knee replacement surgery were analysed in relation to aggressive personality traits as rated by the Karolinska Scales of Personality, the Psychoopathy Checklist-Revised and the Temperament and Character Inventory.

Results: Aggressive traits were especially associated with increased HVA/5-HIAA ratios, indicating a deficient serotonergic tonic regulation of the monoaminergic activity, and with indices of deficient CNS integrity, such as increased CSF/S albumin ratios.

Conclusion: Neurobiological vulnerability factors are associated with aggressive behavioural and personality traits.

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Time course of emotional responses: the effects of subjective ratings of emotional intensity and voluntary suppression

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Background: Emotional regulation plays a pivotal role in socialization and personal development. However, little is known about the time course of emotional responses and the interaction with the subjective assessment of emotional intensity. The aim of this project was to examine the time course of emotional responses to visual stimuli when they naturally subside and when they are cognitively suppressed.

Methods: Healthy volunteers ($n=48$) viewed 54 images, each lasting for 6 sec, taken from the International Affective Picture System (18 positive, 18 negative, 18 neutral). In the passive condition, subjects had to press a button to view the next image when their response had subsided. In the active condition, subjects had to press a button to view the next image when their response was successfully suppressed. After each presentation, participants rated the intensity of their response on a scale from 1 (lowest) to 9 (highest). Time to resolution (TTR) after image presentation and intensity ratings were averaged (mean \pm SD).

Results: TTR (seconds) for neutral images was 7.22 ± 7.91 and 4.49 ± 5.41 for passive and active condition, respectively. For positive images, 12.1 ± 9.2 and 8.66 ± 7.13 for passive and active condition, respectively. For negative images, 15.68 ± 10.14 and 11.42 ± 8.25 for passive and active condition, respectively. TTR was statistically significantly shorter ($p < 0.006$) for all images during suppression. TTR in both conditions correlated positively with intensity of emotional response.

Conclusions: TTR of emotional responses to emotionally valenced images increases with intensity of the associated response and decreases with voluntary suppression.

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The effect of personality dimensions on subjective and objective measures of emotional reactivity

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Background: This study explores the contribution of personality dimensions as a source of individual variability, to electrodermal arousal, subjective ratings of intensity and time to resolution (TTR) of emotional responses to affectively valenced images.

Methods: Healthy volunteers ($n=48$) viewed 54 images from the International Affective Picture System equally split in positive, negative and neutral categories. Subjects pressed a button to view the next image when their response had naturally subsided (passive condition) or following voluntary suppression (active condition) and then rated the intensity of their response on a scale from 1 (lowest) to 9 (highest). The amplitude of the maximum peak of skin conductance responses (SCRs) was also measured. Personality dimensions were assessed with the Eysenck Personality Inventory (EPQ-Neuroticism, EPQ-Psychoticism and EPQ-Extraversion).

Results: Linear regression analyses were conducted to examine the effect of EPQ-P, EPQ-N and EPQ-E on TTR, intensity ratings, and maximum SCR amplitude in each experimental condition.

The emotional valence of the pictures was the strongest predictor of all 3 main outcome measures in both active and passive condition accounting for 36% of the variance for TTR, 72% for the intensity ratings and 16% for the maximum SCR amplitude. Higher EPQ-Psychoticism