

The effects of tryptophan on everyday social interactions of quarrelsome individuals

Aan het Rot M, Moskowitz DS*, Pinard G, Young SN

Departments of Psychiatry and *Psychology, McGill University, Montreal, Quebec, Canada

Within the emerging discipline of social neuroscience, few studies have looked directly at the role of neurotransmitters in human social behaviour in everyday life. Data on the serotonin-aggression relationship often involve patients, not healthy people. Observations in volunteers have been limited to laboratory-based aggression measures. Moreover, experimental studies involving manipulations of the serotonin precursor, tryptophan, have traditionally favoured depletion over augmentation, even though only the latter is suitable for the study of longer-term effects.

Comparative animal models of social behaviour have been used to inform not only about the serotonin-aggression relationship but also about serotonin's role in for example affiliation and dominance. Until recently, these could not reliably be studied in humans. However, thanks to recent advances in social science methodology, normal variations in social behaviour can now be studied along the agreeable-quarrelsome and dominant-submissive axes.

Using such a methodology, one recent study suggested that serotonin might indeed affect social interactions in everyday life. Normal healthy people were given tryptophan and a placebo, each for 12 days. Tryptophan decreased quarrelsomeness and increased dominance. The present study was based on these results, as well as on indications from earlier studies that tryptophan affects aggressivity in the lab more in those with high trait-quarrelsomeness. Healthy individuals self-selected for high quarrelsomeness were hypothesized to report less quarrelsome and more dominant behaviours, and also more agreeable behaviours, while taking tryptophan. The present results are based on data from 39 men and women with high scores on two self-report trait-quarrelsomeness measures. As predicted, male participants taking tryptophan were not only less quarrelsome but also more agreeable. Men also became less dominant when on tryptophan. These behavioural changes were accompanied by complementary changes in social perceptions. In women, similar changes in perceptions were present, yet tryptophan only decreased quarrelsomeness. Overall, serotonin seems to promote more constructive social behaviours.

Marije aan het Rot, Department of Psychiatry, McGill University, 1033 Pine Avenue West, Montreal, Quebec, Canada, H3A 1A1, e-mail marije.aanhetrot@mail.mcgill.ca

Speaker in session number 44 (Friday, June 4)