

## **The Potential Health Hazard of Tartrazine and Levels of Hyperactivity, Anxiety-Like Symptoms, Depression and Anti-social behaviour in Rats**

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**Abstract:** The current research aimed to determine the influence of different doses of exposure to tartrazine on levels of hyperactivity, anxiety, depression and anti-social behaviours in rats. Forty five weanling male Wistar rats were randomly assigned into 3 groups of 15, divided on 2 replicates and administered our treatment daily in drinking water at different concentrations; 0, 1% and 2.5% for a 16 weeks period. Different animal models of anxiety; open field, elevated plus maze and dark-light transition tests were employed in our study. Tests for depression as well as social interaction were also used. Tartrazine-treated rats showed hyperactivity in open field test presented by increased horizontal locomotion. Anxiogenic effect of tartrazine was evidently observed during open field, elevated plus-maze and dark-light transition tests. Furthermore, tartrazine intake significantly promoted depression as expressed by prolonged immobilization during forced swim test. Impairment in social interaction test was also detected signifying the relevance of administered dose especially on numbers of bouts of social contacts. This study provides sufficient scientific evidence that a causal link truly exists between tartrazine and inflection of hyperactivity, anxiety and depression-like behaviours in rats and points to the hazardous impact of tartrazine on public health.

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