

# X ISNIM CONGRESS & III SIPNEI CONGRESS

## HISTOLOGICAL CHANGES IN THE BRAIN OF YOUNG MICE CONSUMING ENERGY DRINK

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The World Health Organization has warned about the risk that increased consumption of energy drinks, particularly among young people, may pose to public health. This work aimed at studying the effect of different concentrations of a commercially available energy drink in the brain of young mice. Six-week old Balb/c male mice were divided into 4 groups. One group consumed the energy drink at a concentration of 28  $\mu$ l energy drink/ml water, and animals were killed after 10 days (T1). Another group consumed the energy drink at the same concentration but during 20 days (T2). A third group of mice consumed the energy drink at a final concentration of 14  $\mu$ l/ml for 20 days (T3). The fourth group was provided only with water and served as control. Mice of all groups drank around 3 ml per day. A strong tendency to lower brain weights in the treated groups as compared to the control was observed. The size of the hippocampus was affected by the energy drink, and fewer cells surrounded by gaps, were detected in the CA1, CA2, and CA3 regions, and especially in the Dentate Gyrus. The hippocampi of mice in the T2 group were more affected than those of mice in the groups T1 and T3. The number of cells in the granular zone, especially pyramidal cells in the cerebrum, of the treated groups, was lower than in the controls. The lowest number of cells was also observed in the group T2. No comparable changes were observed in the brain stem. Since it is well established that the brain is involved in modulating immunity, and it is also known that energy supply can affect immune functions, immunological and behavioral studies using this model are planned.