



**Ahad Hussaina**

Southeast University  
China

## Exploring the Dysregulation of BCAA and the effect of exercise on their levels in autism spectrum disorder

### Abstract:

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by impaired in social interaction, repetitive behaviors and communication. Dysregulation of branch chain amino acids(BCAA) have been reported in children with ASD. However, there have been no consistent results and intervention studies for altered BCAA and related factors explored. The purpose of this study was to explore the urinary BCAA in ASD children before and after the exercise, and identify their correlations with behavior characteristics measured by autism treatment evaluation checklist (ATEC). Urinary BCAA (leucine, isoleucine and valine) levels were measured in 30 ASD and 30 non ASD children, aged 3-10 years. Fasting urine samples were taken from ASD children before and after the exercise intervention program (30 days). The behavior characteristics were measured by ATEC before and after the exercise. The amino acids were evaluated by High-performance liquid chromatography. We found that urinary BCAA levels were significantly higher as compare to non ASD group at baseline, and a poor ATEC score was recorded before the training. The level of the targeted amino acids (BCAA) and ATEC score was significantly improved at the end of the training program. In short, exercise intervention significantly improved urinary BCAA levels and behavior characteristics in children with ASD, as measured by the ATEC. This improvement may have positive effects on neurotransmitter balance and improve behavioral and cognitive outcomes. However, further long term studies are needed to fully understand the etiology of the disease and underlying mechanisms.

### Biography

**Ahad Hussain** is a PhD student, major in nutrition and food hygiene, school of public health Southeast University, Nanjing, China. Completed his master degree, major in human nutrition from University of Agriculture, Peshawar, Pakistan. Member of national nutrition and dietetics society in Pakistan. Published papers in reputed journals and has been serving as a reviewer with many journals.