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**Early-life nutrition and cognitive development: Imaging approaches****Hamza Jan***Al-Razi Institute, Pakistan*

Brain development in the first years of life is the most dynamic and perhaps the most important phase of brain maturation. While it is widely recognized that nutrition plays a key role in early brain development, particular nutrients will most likely differentially affect distinct aspects of brain development. The critical dosage windows and time frames for various nutrients at different stages of brain development are likely dissimilar. Therefore, efforts have been devoted to identifying potential associations between nutrients and early brain development. However, behavioral assessments are typically employed as the outcome measures, which are known to suffer from low sensitivity and the inability to provide neural substrates underlying brain functional maturation. In contrast, magnetic resonance imaging is capable of providing detailed anatomical and functional information - an ideal tool to characterize brain functional development and nutrition. Our team has developed strategies that enable imaging of typically developing children from birth to teens without sedation. Quantitative assessments of brain structural and functional development during the first years of life have been accomplished, which reveal important features of early brain development. These developed tools will most likely substantially enhance our ability to rigorously characterize the interplay between nutrients and early brain development.

**Biography**

Hamza Jan received his MSc. (Hons) with research domain in Human Nutrition & Dietetics in the year 2020 from the University of Agriculture, Faisalabad (UAF) under the supervision of Dr. Aysha Sameen. Currently, he is serving as Head of the Human Nutrition & Dietetics Department in AL-RAZI Institute Lahore. His research interests focus on the Development & Quality Evaluation of Cheese Spread Enriched with Branched Chain Amino Acids in experimental subjects to assess associated health benefits. He also Working on Community Nutrition with Aim of Provide Nutritional Awareness at National Level.