

# Bose Institute Celebrates Colloquium Series



Venue – Lecture Hall I, UAC, Bose Institute

Time: 3.00 pm to 4.00 pm

Date: 10<sup>th</sup> March, 2025 (Monday)

## Title of the Talk

### Brain Development and Function: Roles of Docosahexaenoic acid, 22:6n-3



#### Speaker:

Professor Asim K Dutta Roy

Faculty of Medicine,

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Docosahexaenoic acid, 22:6n-3 (DHA), and its metabolites are crucial for the structural and functional development of the brain in fetuses and infants and for maintaining healthy brain function in adults. DHA is the primary fatty acid found in brain membranes. The brain primarily regulates fatty acid levels by taking up plasma-free fatty acids. Consequently, circulating plasma DHA is significantly associated with cognitive abilities during aging and is inversely related to cognitive decline. The signaling pathways of DHA and its metabolites play a role in neurogenesis, antinociceptive effects, anti-apoptotic effects, synaptic plasticity, and Ca<sup>2+</sup> homeostasis in brain diseases and in the functioning of nigrostriatal activities. The mechanisms by which DHA metabolites affect various processes in the brain will be discussed. A diet that includes higher intakes of foods rich in n-3 fatty acids and/or lower intakes of n-6 fatty acids is strongly linked to a reduced risk of Alzheimer's disease and other brain disorders. DHA supplementation improves behaviors associated with attention deficit hyperactivity disorder, bipolar disorder, schizophrenia, and impulsivity, as well as cognitive function.



**All are invited in the plenary talk**