

# WORLD DRUG DELIVERY AND NOVEL THERAPY SUMMIT

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### Ganesh Elumalai

Texila American University, Guyana

#### 3D constructive connectivity analysis in Alzheimer patients: Detecting structural alterations and their underlying substrates for optic ataxia in correlations with “How” stream visual pathways

Optic ataxia is a high order neurological deficit, mostly seen in Alzheimer’s patient which affects the posterior parietal cortex. These patients exhibit deficit for spontaneous eye hand coordination. Visual information is processed in two distinct routes dorsal and ventral streams, for (visual spatial recognition and perception). The interactions between dorsal and ventral streams are important for controlling, object-oriented hand movements. Previous studies unravel the substantial evidences, we Team NeurON focused to correlate its structural connectivity with Optic Ataxia in Alzheimer’s Patients correlating its functional importance, using “Diffusion Imaging fiber Tractography”. The study involves both the sex (DTI) datasets from 25 control and 25 Alzheimer patients, age group from 50 to 75 years.

**Results:** The fibers were traced, and identified for “Dorsal-how” stream pathways involved in visual objects spatial orientation. The neural structural connections, seen in “Dorsal” stream pathways, extending between the “Visual cortex (BA 18 & 19) with Superior Parietal Lobule (BA 7)”, shows visuo-motor coordination pathway or “how” stream pathways in visual perception. Observations on control groups (numbers

and volumes) of fibres are higher at proportion in female than in male (Fig-1). In contrast it was observed that females displayed a much severe changes in (numbers and volumes) when compared with male’s patients (Fig-2).

**Conclusion:** The current observations, propose insight knowledge to understand Damage to “how” stream fibers in the Visual pathways, manifest as Optic ataxia in Alzheimer’s Patients. But, the findings need to be confirmed with functional MRIs analysis in future understandings.

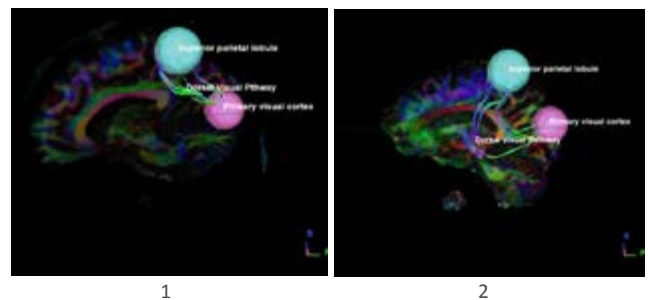


Fig-1: Dorsal stream Visual Pathway - Control Group  
Fig-2: Dorsal stream Visual Pathway - Alzheimer Patient’s

#### Biography

Ganesh Elumalai is an Assistant Professor of Anatomy and Neuroscience at the Texila American University, College of Medicine. He has received a distinguished Neuroscience, Medical Embryology and Histology Teacher award. His designation, decorates various positions in TAU-COM as Academic, Research, Chair in Program Evaluation Committee, Chair and Principle Investigator Team NeurON and Publishing activities that relate to teaching and research support.

physiovesalius@gmail.com