

## ***Human Visual Processing for Spatial 3-D Imaging Recognition: Cortical connectivity deficits in Parkinson's spatial perceptual visual pathway***

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### ***Abstract***

**Introduction:** Parkinson's disease (PD) is a Neurodegenerative disorder traditionally linked to motor impairment but recent findings have revealed, patients suffering from PD exhibit decline in visual-spatial skills [1] [2]. The aim of this study is to explore, neural structural connectivity between the superior parietal lobe (BA 5) and the primary visual cortex (BA 17, 18 & 19) in PD patients. Generally, this pathway modulates visual and spatial domains, hence if found to be impaired in PD patients could explain the dysfunction in visual-spatial skills.

**Methods:** In this research, we attempted to correlate the dorsal stream visual pathway in Parkinson's Patients. The study was carried out through "Diffusion Imaging Fibre Tractography" which involves 120 DTI data sets from control and PD patients between 60-120 years with IRB approval.

**Observations:** It was observed that fibers in the females in the control group were higher (Fig 1 ) when compared to that of the males (Fig 2), and on completion, males displayed more prominent changes in numbers and volumes of where stream pathway"(Fig 3). In males both right and left hemisphere were affected, whereas with female much difference is not noticed. The results are statistically significant at  $P < 0.05$ .

**Results:** Based on our observations, destruction in the where stream pathway were identified, and is believed to be underlying cause for deficiency in visual spatial recognition. However, for better understanding of these findings, functional and effective connectivity analysis must be recommended.

**Keywords:** Parkinson's Disease (PD), Where Stream Pathway, Brodmann's Area (BA), Diffusion Tensor Imaging (DTI)

### ***Biography***

I hereby Geethanjali Vinodanand student of Texila American University - Guyana at present in semester MD-5 clinical rotations a junior researcher where I have already published 4 papers and two others are under editorial work. I would also like to mention that I have attended 3 international conferences and has been serving as a board member of repute in My research team.

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