



## Research Project Description

*Neuroplasticity* is the ability of the brain to adapt and "re-wire" itself throughout a lifetime. It is the basis for learning and for compensatory behaviors.

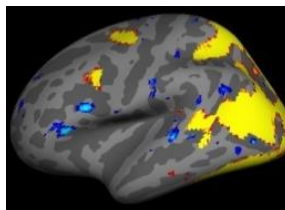
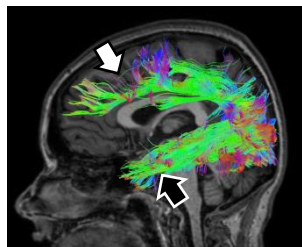
We are investigating how the brain develops and adapts to visual impairment due to brain based (i.e. cerebral/cortical visual impairment, or CVI) and ocular based causes.

We use advanced brain scanning techniques such as diffusion based imaging and functional magnetic resonance imaging (fMRI) to better understand how the brain is connected and activates in response to visual abilities.



*Philips 3T Ingenia Elition scanner located at Boston University Center for Biomedical Imaging*

*Reconstruction of white matter pathways corresponding to the dorsal and ventral visual processing pathways*



*Pattern of brain activation revealed by fMRI in response to a visual task*

Your participation will help us better understand the link between vision and brain structure and function. Results are shared with participants and families.

## General Eligibility Criteria:

- Aged 14 or older and having a diagnosis of early onset visual impairment associated with:

1. Cerebral/cortical visual impairment (CVI)

OR

2. Ocular disease or injury

## Participation includes:

- Approximately 2 hours

- Compensation for participation, parking, and travel expenses reimbursement provided

For more information, please contact:

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# Understanding how the Brain is "Wired" in Visual Impairment

*The Laboratory for Visual Neuroplasticity  
Massachusetts Eye and Ear  
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