

## Supplementary Materials

### **Defects and asymmetries in the visual pathway of non-human primates with natural strabismus and amblyopia**

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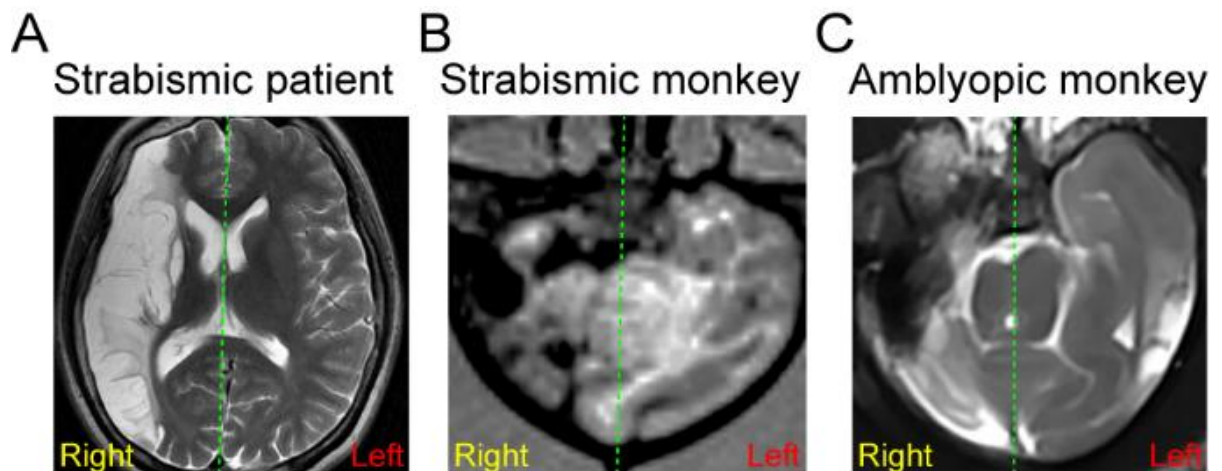
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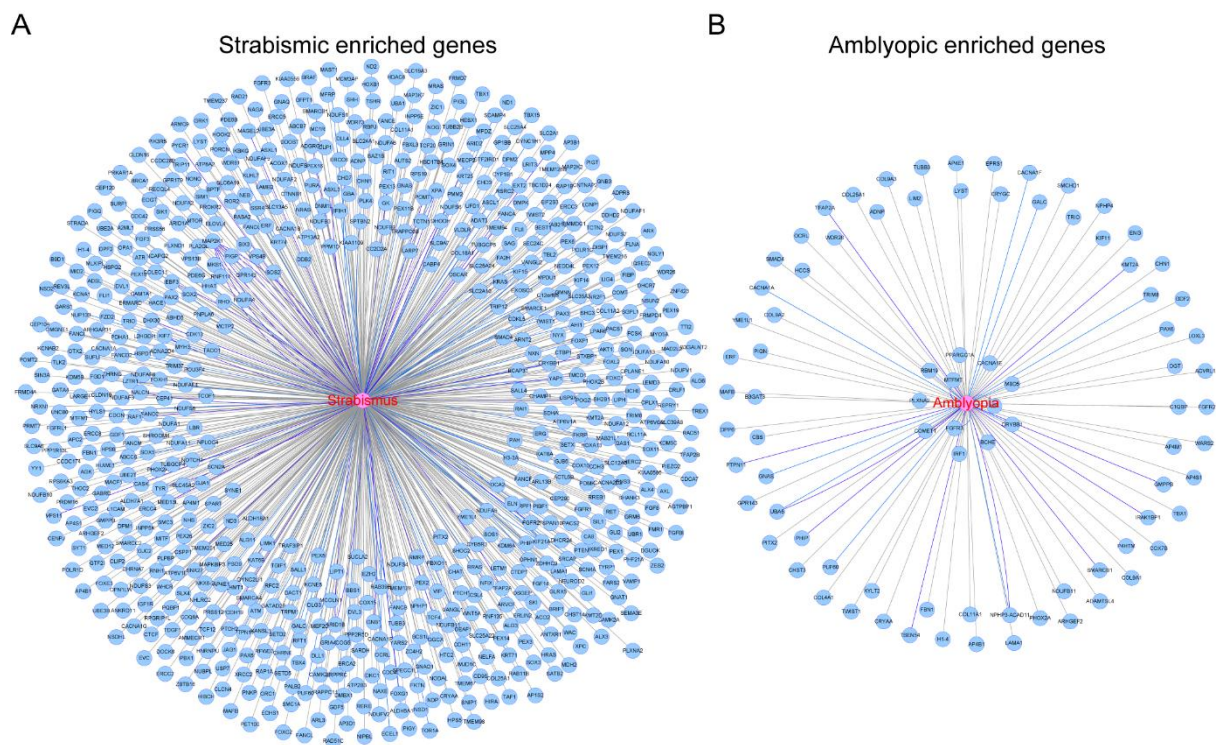
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**Supplementary Figure S1 Magnified horizontal plane view of whole brain volumes among strabismic patient and natural strabismic and amblyopic monkeys**

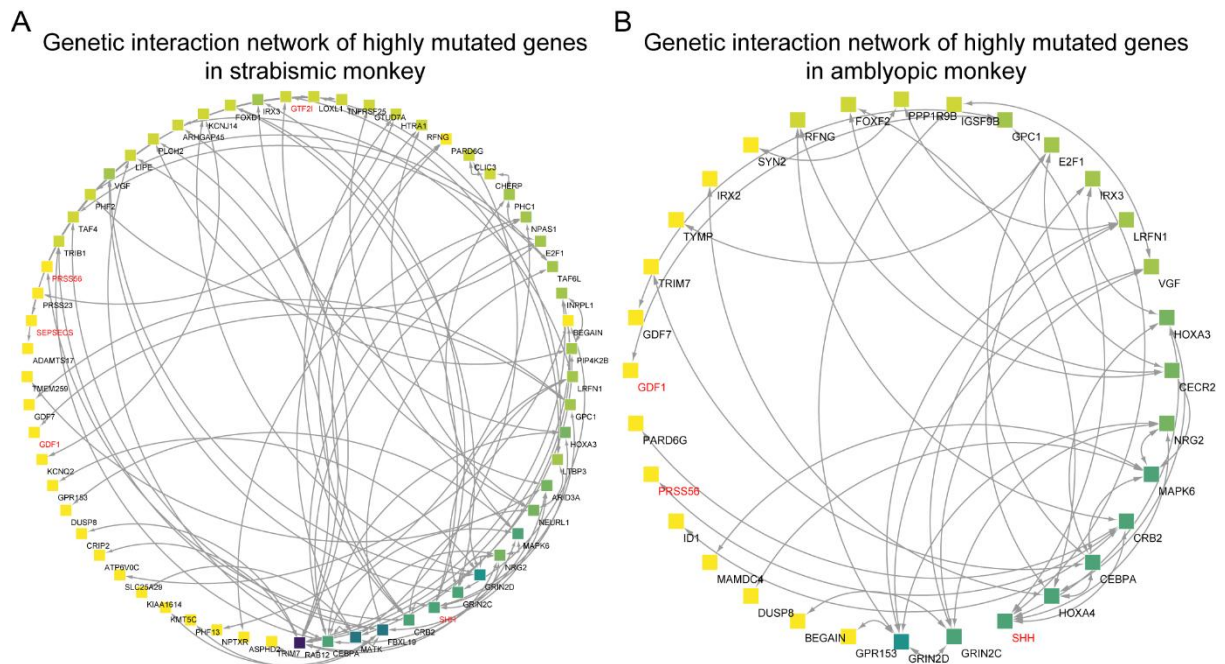
A-C: Details of abnormal asymmetrical brain impairment in strabismic patient (A) and natural strabismic (B) and amblyopic (C) monkeys were shown by magnified horizontal plane view of whole brain volumes. Red left and yellow right represent left and right hemisphere, respectively. Green dotted line indicates central line of whole brain.



**Supplementary Figure S2 Disease-based network analysis of genes involved in**

## strabismus and amblyopia

A-B: Visualizations for candidate enriched genes associated with strabismus (A) and amblyopia (B). Central nodes with pink background represent disease name, and surrounding nodes with blue background represent disease-associated genes.



### Supplementary Figure S3 Differences in genetic interaction networks of top candidate genes between natural strabismic and amblyopic monkeys

A-B: Genetic interaction network analysis of candidate genes with higher degree of genetic variation revealed regulatory differences between strabismic (A) and amblyopic (B) monkeys. Only candidate genes with a score above 3 were considered. Black and red gene names represent candidate and strabismus-associated genes, respectively. Darker node backgrounds indicate stronger interactions.