Sight restoration in congenitally blind humans does not restore visual brain structure

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In typical brain development cortical surface area increases in childhood and cortical thickness decreases, indicating an expansion and refinement of neural networks.

Patients who were born with dense bilateral cataract had even years after cataract removal surgery a lower visual cortical surface area (blue marked areas, middle panel) and a higher visual cortical thickness (red marked areas, right panel) than normally sighted controls. These results were similar as in congenitally permanently blind individuals.

The degree of visual cortical surface expansion and cortical thinning after surgery predicted the finally reached visual acuity in congenital cataract reversal individuals.