



## Paper Highlights Our Kids

*Current Biology* journal publishes on Prakash children

The science aspect of Project Prakash forms a core part of our mission. When Project Prakash was founded 10 years ago, it was with the intent of curing blindness among children, but the mission was also to further our understanding of how the brain learns to see. Over the last several years, we have helped thousands of children and furthered our understanding of the brain.

Today, we add another scientific achievement.

Dr. Pawan Sinha, Dr. Tapan Gandhi and Dr. Amy Kalia, based at M.I.T., and Dr. Suma Ganesh from Dr. Shroff's Charity Eye Hospital in Delhi, in working with the children of Project Prakash, have published a paper in the esteemed scientific journal, *Current Biology*.

In the paper, the scientists tested whether nine Project Prakash children were susceptible to visual illusions in the days following treatment for blindness. All the subjects previously had dense bilateral congenital cataracts and then underwent cataract removal surgery and an intraocular lens implant. Nine normally-sighted children were used as the control group. The control group was susceptible to the visual illusions. The newly-sighted children were also susceptible to the illusions within two days after surgery.

Interestingly, these findings suggest that susceptibility to the illusions does not require extensive visual experience, but rather is apparent immediately after sight onset.

This is not a small realization, but a new important development and an illustration of the impact of Project Prakash. Previous explanations of why people see the two visual illusions tested in this study suggest that, with visual experience, people learn to associate particular two-dimensional visual cues, such as parallel and adjacent lines, with three-dimensional depth information derived from the structure of the environment. Therefore, in these particular illusions, people misperceive depth information, which makes them perceive lines that are the same length to be of different lengths.

Until now, the experience-based explanations have not been rigorously tested because it requires having subjects who have not had visual experience. It is very difficult to work with newborn babies and older infants, who may be easier to test, but already have too much visual experience to answer the question. Yet, the authors write that work with children who gain sight after extended early-onset blindness, as part of Project Prakash, provides a unique opportunity to resolve this question.

Since it is difficult to obtain reliable responses from infants, the children in India between the ages of 8 to 16 who recently received vision, were the ideal test subjects.

"No organization can claim the accomplishments that Project Prakash claims. While we have a clear humanitarian objective, we are also motivated to learn about how the brain learns to see," Executive Director Sheila Lalwani said. "This paper is another example of the unique space Project Prakash fills in the vision world."

To view a summary of the paper, click [here](#):

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