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Keeping an eye on glaucoma

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Glaucoma is the leading cause of irreversible blindness and affects millions worldwide. Patients with primary congenital glaucoma (PCG) often have mutations in the cytochrome P450 family 1, subfamily B, polypeptide 1 (*CYP1B1*) gene. In the March 7 Science, Libby *et al.* report the characterization of a *Cyp1b1*$^{-/-}$ knockout mouse as a model for PCG (*Science* 2003, **299:**1578-1581). The mice had developmental eye defects similar to those seen in human patients. Genetic and histological analysis revealed a role for the *tyrosinase* gene as a genetic modifier. *Tyrosinase* also modifies the anterior segment dysgenesis phenotypes observed in mice lacking the *Foxc1* gene that has also been implicated in PCG. Tyrosinase converts tyrosine to L-dopa, and the ocular phenotypes of the knockout mice could be relieved by the administration of L-dopa. This study suggests that L-dopa should be tested as a possible therapeutic for treating glaucoma patients.

References

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