

Potassium balance and glaucoma

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Retinal ganglion cells (RGCs) make up the optic nerve. When RGCs degenerate due to elevated intraocular pressure caused by glaucoma, vision is lost.

Cells surrounding RGCs called Müller glia maintain a healthy ionic environment through a process called potassium siphoning, where Müller glia remove excess potassium ions through potassium channels.

These glial [potassium channels](#), such as Kir and K2P, are known to be altered in glaucoma and other retinal disorders. However, it has not been clear whether glaucoma-related stressors directly alter these channels.

Reporting in the *American Journal of Physiology-Cell Physiology*, Rebecca Sappington, Ph.D., and colleagues identified pressure-dependent changes in Kir and K2P channels in Müller glia.

They showed that while long-term pressure elevation produced changes in expression and localization of these channels, short term pressure elevation only resulted in reduced ion flux. Further study is needed to determine the contribution of Müller glia and ion homeostasis to glaucoma-related changes in RGC physiology.

Provided by Vanderbilt University

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