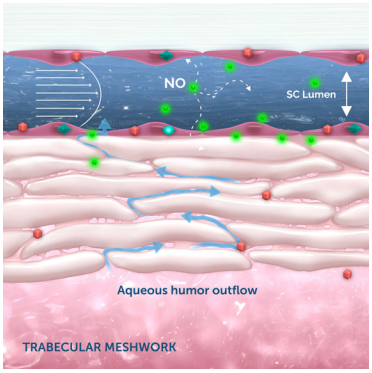
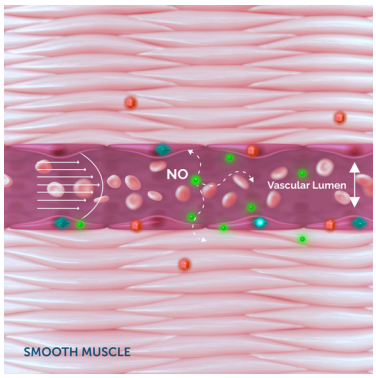
GLAUCOMA
HORIZONS

PARALLELS IN REGULATION:
IOP VS BLOOD PRESSURE

INTRAOCULAR PRESSURE (IOP) AND BLOOD PRESSURE share a multitude of physiological features in common. Clinical and scientific studies indicate that nitric oxide signaling is critical to the dynamic regulation of both processes.[1-4]

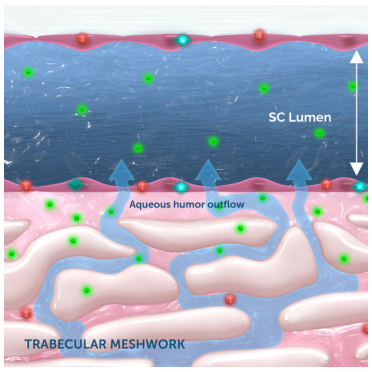
NITRIC OXIDE INACTIVE eNOS ACTIVE eNOS ENDOTHELIN-1

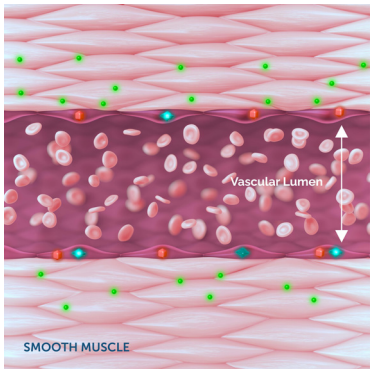




ELEVATED IOP VS VASCULAR HYPERTENSION

When IOP is elevated, the trabecular meshwork (TM) stretches and the Schlemm's canal (SC) narrows, thus increasing shear stress in the SC. This mirrors the increased shear stress in vascular endothelial cells when blood vessels narrow.[3,4]





NORMAL IOP VS VASCULAR RELAXATION

The endothelial cells respond to shear stress by activating endothelial nitric oxide synthase, leading to increased nitric oxide production.

Nitric oxide then diffuses rapidly to relax cells, either in the TM or vascular smooth muscle, to increase fluid flow.[3-4]

"The physiology of IOP and systemic blood pressure regulation are closely related."

—Dan Stamer, PhD

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