

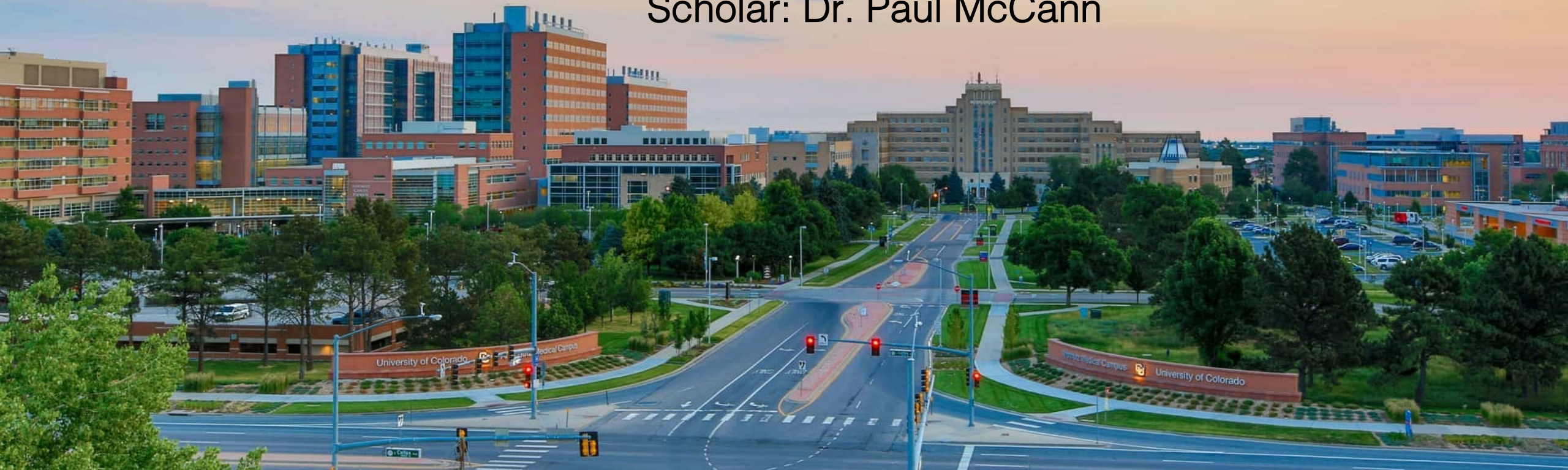


University of Colorado **Anschutz Medical Campus**

Exploring the Intersection of Epidemiology, Glaucoma, and Health Disparities

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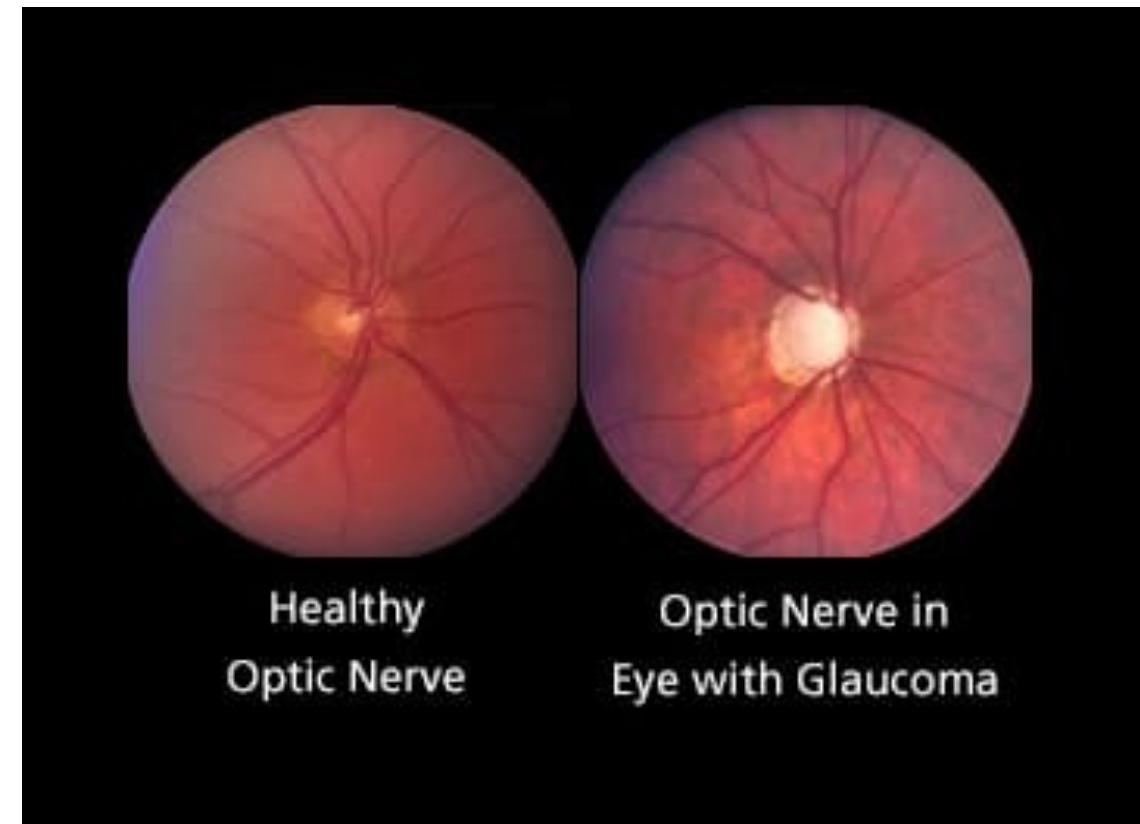
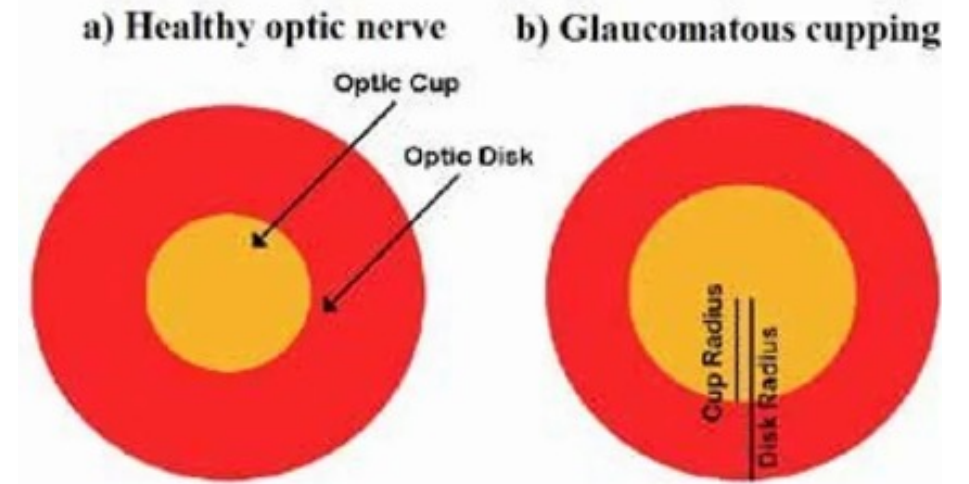


Intersection

- **Epidemiology:** Study of disease patterns, causes, and effects in populations.
- **Glaucoma:** Eye condition leading to irreversible blindness, prevalence varies across populations.
- **Health Disparities:** Systematic differences in health outcomes among population groups.
- **Intersection:** Epidemiology identifies risk factors, prevalence, and incidence of glaucoma. Health disparities contribute to unequal outcomes in glaucoma diagnosis, treatment, and management.

Glaucoma Overview¹

- Glaucoma is a group of eye conditions that damage the optic nerve, which sends visual information from your eye to your brain.
- Glaucoma can occur at any age but is more common in older adults. It is one of the leading causes of blindness for people over the age of 60.
- Many forms of glaucoma have no warning signs. The effect is so gradual that you may not notice a change in vision until the condition is in its later stages.
- Risk factors include high internal eye pressure, age over 55, black, Asian or Hispanic heritage, family history of glaucoma, diabetes and migraines, eye injury or certain types of eye surgery, and taking corticosteroid medicines for a long time.



Glaucoma Diagnosis²

- **Remember:** Glaucoma often has no symptoms in its early stages, so regular eye exams are essential for early detection and effective management.
- Diagnosis:
 - Comprehensive eye exam
 - Intraocular pressure measurement (tonometry)
 - Optic nerve damage assessment (dilated eye exam, imaging tests)
 - Visual field test
 - Corneal thickness measurement (pachymetry)
 - Drainage angle inspection (gonioscopy)



Glaucoma Treatment²

- Lowering intraocular pressure is the main goal
- Prescription eye drops to improve fluid drainage or decrease fluid production
- Oral medications, laser treatment, surgery, or a combination of approaches may be used
- Regular checkups are necessary to monitor progress and adjust treatment as needed
- **NOTE:** Glaucoma cannot be cured, but treatment is focused on preventing further vision loss. The damage caused by glaucoma is irreversible.



Health Disparities in Glaucoma

- Disparities in access to glaucoma specialists based on rural location, lower income, and education level:
- Study found that travel time to glaucoma specialists was longer for patients in rural areas and those with lower income and education levels
- Health disparities in access to glaucoma specialists may contribute to delayed diagnosis and treatment, leading to worse outcomes³



Health Disparities in Glaucoma

- Disparities in risk factors for developing open-angle glaucoma based on race, gender and age:

- Among individuals of African and Latinx descent compared to those of European background, there is a higher prevalence, earlier onset, more rapid progression of primary open angle glaucoma and greater incidence of blindness⁴

- Current evidence suggests that older women are at risk for glaucoma and glaucoma blindness. Further interdisciplinary research involving investigators, specialized in glaucoma, women's health and health disparities, will lead to better understanding of gender health disparities in glaucoma and better targeting populations at risk⁵



Health Disparities in Glaucoma

- Disparities in adherence to glaucoma follow-up visits based on race:
 - Study found that Black and Hispanic patients were less likely to adhere to glaucoma follow-up visits compared to White patients⁶
 - Health disparities in adherence to follow-up visits may contribute to worse outcomes and progression of glaucoma in minority populations
- **Conclusion**
 - Health disparities in glaucoma exist across various factors, including access to specialists, risk factors, and adherence to follow-up visits
 - Addressing these disparities is important for improving outcomes and reducing the burden of glaucoma in minority populations.



An Example of Addressing Health Disparities in Glaucoma: *Telemedicine Strengthens Glaucoma Diagnosis and Management*⁷

- Telemedicine is revolutionizing glaucoma care
- Teleglaucoma has rapidly expanded in recent years
- Emerging telemedicine technologies can conduct tests typically done in a clinic
- Telemedicine can increase accessibility to care and reduce the need for in-person visits
- It may help to address health disparities in glaucoma by making care more accessible to patients who live in rural or underserved areas or who have difficulty traveling to appointments.



Cara Capitena Young, MD, demonstrates using an iCare HOME tonometer.

Epidemiology plays a critical role in understanding and addressing glaucoma and health disparities.

- Understanding Glaucoma:
 - Identifies risk factors and prevalence of glaucoma in different populations.
- Identifying Health Disparities:
 - Assesses variations in glaucoma outcomes among different demographic groups.
- Guiding Interventions and Policies:
 - Informs targeted interventions and evidence-based policies for glaucoma prevention and control.
- Monitoring and Evaluation:
 - Tracks changes in glaucoma prevalence, evaluates intervention effectiveness, and measures progress.
- Improving Public Health:
 - Supports disease prevention, equitable access to care, and health promotion efforts.



- References:

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Thank you for listening!

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