

ADDRESSING THE SOCIAL DETERMINANTS OF VISION



Grace Sun, MD
Associate Professor in Ophthalmology
New York Presbyterian Hospital/Weill Cornell Medical College
President, Women in Ophthalmology



Weill Cornell Medical College

FINANCIAL DISCLOSURES

- No financial disclosures or commercial relationships



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Learning objectives

At the conclusion of this activity, participants will be able to:

- Define social determinants of health (SDOH) and key domains
- List examples of the impact of SDOH in ophthalmology
- Describe the role of the eye care professionals in addressing SDOH



<https://www.cdc.gov/publichealthalliance/adohr/index.html>

WHAT DO YOU ASK A PATIENT WITH DIABETES?

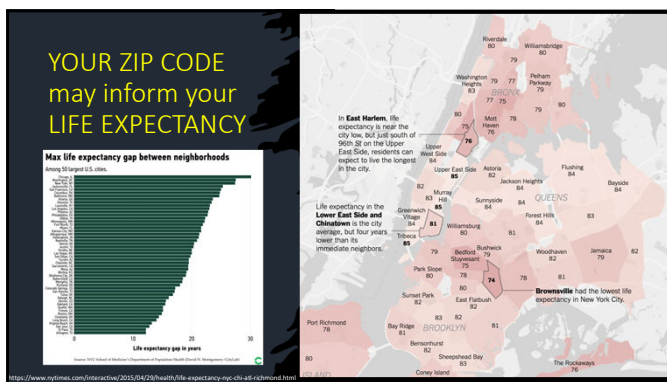
- While HbA1c and duration of disease are known risk factors, they account for only 11% of the risk of developing microvascular complications from the disease. The assessment of environmental risk factors for diabetic eye disease allows for the determination of modifiable population-level challenges that may be addressed to facilitate the end of blindness from diabetes.

Beyond HbA_{1c}: Environmental Risk Factors for Diabetic Retinopathy

Kristen Harris Nwanyanwu¹, Paula-Anne Newman-Casey², Thomas W Gardner², and Jennifer I Lim^{1,*}

¹University of Illinois at Chicago, Chicago, Illinois, USA

²University of Michigan, Ann Arbor, Michigan, USA



What are Social Determinants of Health (SDOH)?

Conditions in the environment in which people are born, grow, live, learn, work, play and age that affect health risks and outcomes

Social determinants of health are estimated to account for 80% to 90% of a population's health outcomes, while medical care accounts for only 10% to 20%

Elim AH, Nwanyanwu KH, Scott AW. Elevating Social Determinants of Health and Community Engagement in Eye Care: The Time is Now. JAMA Ophthalmol. 2022 May 1;140(5):453-454. doi: 10.1001/jamaophthalmol.2022.0409. PMID: 35323858.




SDOH are key drivers of health inequities and disparities

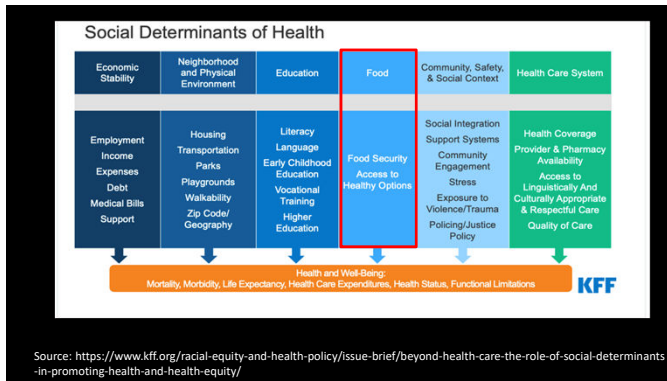
- Health inequities** refers to differences in the health of individuals or groups
- Health equity** is defined as the "attainment of the highest level of health for all people" (Healthy People 2020), where no one is "disadvantaged from achieving this potential because of social position or other socially determined circumstances" (Centers for Disease Control and Prevention)
- Health inequities** are avoidable, unjust, and systematic differences in health between disparate groups that result in health disparities
- Health disparities** are differences in health outcomes or disease burden between different groups that arise from a lack of health equity. Disparities are a metric used to measure progress towards achieving health equity

American Academy of Ophthalmology Task Force on Disparities in Eye Care

- Improving Access to Eye Care
- Health Literacy/Patient Education
- Leveraging Data Sources
- Enhancing Diversity in the Ophthalmic Workforce
- Position Paper: Disparities in Vision Health and Eye Care



Paul P. Lee, MD, JD
Chair of Task Force



AMERICAN ACADEMY OF OPHTHALMOLOGY

Disparities in Vision Health and Eye Care

Angela R. Elam, MD,^{1,2,3} Victoria L. Tseng, MD, PhD,⁴ Tannia M. Rodriguez, MSE,⁵ Elise V. Mike, MD, PhD,⁶ Alexis K. Warren, MD,⁷ Anne L. Coleman, MD, PhD,^{1,8} for the American Academy of Ophthalmology Taskforce on Disparities in Eye Care

Ophthalmology. 2022 Oct;129(10):e89-e113.

Health Disparity Populations

NIH-designated U.S. health disparity populations include:

- American Indians/Alaska Natives
- Asian Americans
- Blacks/African Americans
- Hispanics/Latinos
- Native Hawaiians and other Pacific Islanders
- Sexual and gender minorities
- Socioeconomically disadvantaged populations
- Underserved rural populations

Source: <https://www.nimhd.nih.gov/about/overview/>

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Large Disparities in Receipt of Glaucoma Care between Enrollees in Medicaid and Those with Commercial Health Insurance

Angela R. Elam, MD,^{1,2} Chris Andrews, PhD,^{1,2} David C. Musch, PhD, MPH,^{1,2,3} Paul P. Lee, MD, JD,^{1,2} Joshua D. Stein, MD, MS^{1,2,3}


Ophthalmology 2017;124:1442-1448 © 2017 by the American Academy of Ophthalmology

- Medicaid patients with a new diagnosis of OAG received substantially less glaucoma testing in the first 15 months following initial diagnosis compared with persons with commercial health insurance (234% increased odds of not undergoing glaucoma testing)
- Disparity most notable for Black patients with Medicaid (291% increased odds of not undergoing glaucoma testing)



Diabetic Eye Disease

- Racial and ethnic minoritized populations have a higher prevalence of diabetic retinopathy and diabetic macular edema, but are less likely to undergo screening dilated fundus examinations than Whites
- Underrepresented in clinical trials related to diabetic retinopathy and macular edema



<https://www.ncbi.nlm.nih.gov/books/NBK278967/>

Coney JM, Scott AW. Racial disparities in the screening and treatment of diabetic retinopathy. *J Natl Med Assoc* 2022;S10027-9684(21)00236-4.

Berkowitz ST, Groth SL, Gangaputra S, Patel S. Racial/ethnic disparities in ophthalmology clinic trials resulting in US Food and Drug Administration Approvals from 2000 to 2020. *JAMA Ophthalmology* 2021;139:629-637.

Bowe T, Salabati M, Soares R, Huang et al. Racial, ethnic, and gender disparities in diabetic macular edema clinical trials. *Ophthalmology Retina* 2022;S2468-6530(22)00040-9.

Multicenter Study > Ophthalmol Retina. 2020 May;4(5):550-552.
doi: 10.1016/j.oret.2020.01.016. Epub 2020 Jan 28.

Neighborhood Deprivation and Adherence to Initial Diabetic Retinopathy Screening

Ramsey Yusuf ¹, Evan M Chen ², Kristen Nwyanwu ², Bradley Richards ³

Affiliations — collapse

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- 1 Department of Ophthalmology and Visual Science, Yale School of Medicine, New Haven, Connecticut. Electronic address: ramseyyusuf@yale.edu.
- 2 Department of Ophthalmology and Visual Science, Yale School of Medicine, New Haven, Connecticut.
- 3 Department of Internal Medicine, Yale School of Medicine, New Haven, Connecticut.

Significant SDOH predictors of poor vision

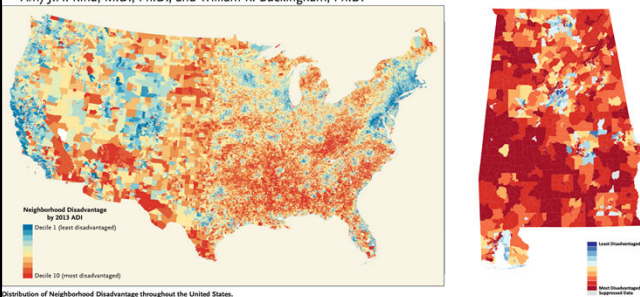
- economic stability,
- educational attainment,
- health care access and quality,
- neighborhood and built environment,
- and social context

Table 1. Example markers, indices, and tools available to estimate SDOH in ophthalmology research.

Name	Background	Assessed Measures of SDOH
Area Deprivation Index (ADI)	<ul style="list-style-type: none"> Developed by the Health Resources & Services Administration (HRSA), modified by University of Wisconsin-Madison Neighborhood Atlas Project in 2006. Uses data (17 inputs) collected in American Community Survey (ACS) Five Year Estimates. Allows researchers to assess the level of socioeconomic deprivation at the ZIP Code level. 	<ul style="list-style-type: none"> Median income / Income disparity / Income below federal poverty level Unemployment rate Education level <9 years / High school diploma Home value / Gross rent / Monthly mortgage / Occupied housing units Single-parent households / Access to motor vehicle / Access to telephone / Access to computer/internet
Social Deprivation Index (SDI)	<ul style="list-style-type: none"> Developed by the Robert Graham Center in 2012. Uses data collected in American Community Survey (ACS) Five Year Estimates. Allows estimation of SDOH at the county, census tract, ZIP Code, and Primary Care Service Area (PCSA) levels. 	<ul style="list-style-type: none"> Income below 100% federal poverty level Unemployment rate Education level <12 years Single-parent households / Access to vehicle / Percent living in crowded housing
Disadvantaged Communities Index (DCI)	<ul style="list-style-type: none"> Developed by the Economic Innovation Group. Interactive map based on U.S. Census Bureau's Business Patterns and American Community Survey 5-Year Estimates from 2014-2018, covering nearly 25,500 ZIP Codes and 99% of the US population; the ZIP Code level and classifies communities into 5 tiers (Prosperous, Comfortable, Mid-tier, At-risk, Distressed). 	<ul style="list-style-type: none"> Poverty rate Median household income High school diploma Adults not working Change in employment Housing vacancy rate Change in establishments

Making Neighborhood-Disadvantage Metrics Accessible — The Neighborhood Atlas

Amy J.H. Kind, M.D., Ph.D., and William R. Buckingham, Ph.D.



Area Deprivation Index

- Integration of ADI within electronic health record (EHR) may help identify vulnerable patients in need of additional resources and targeted interventions (travel vouchers, education initiatives, community outreach initiatives)

Multicenter Study > Ophthalmol Retina. 2020 May;4(5):550-552.
doi: 10.1016/j.oret.2020.01.016. Epub 2020 Jan 28.

Neighborhood Deprivation and Adherence to Initial Diabetic Retinopathy Screening

Ramsey Yusuf ¹, Evan M Chen ², Kristen Nwanyanwu ², Bradley Richards ³

- Yale New Haven Health System electronic medical record queried for patients 18 years or older with diabetes who received a first-time referral for diabetic retinopathy evaluation in the primary care setting from 2013 to 2107
- Patient addresses used to obtain ADI and cohort divided into quintiles based on ADI national percentiles
- Of the 1,387 patients included in the study, 727 (52%) underwent a dilated eye examination as referred

Residence within each of the 3 most disadvantaged deciles associated with an increased risk of nonadherence to diabetic retinopathy screening

Table S2. Univariate and multivariate regression analysis of the association between the most disadvantaged Area of Deprivation Index deciles and adherence to first-time referral for diabetic retinopathy screening.

	Univariate analysis Odds ratio (95% CI)	p-value	Multivariate Model* Odds ratio (95% CI)	p-value
ADI National Quintile				
Least Disadvantaged 60%	1.00		1.00	
Fourth-Most Disadvantaged Decile	1.02 (0.77-1.36)	0.884	1.10 (0.82-1.48)	0.538
Third-Most Disadvantaged Decile	0.48 (0.33-0.70)	0.00016	0.53 (0.36-0.78)	0.0015
Second-Most Disadvantaged Decile	0.41 (0.22-0.72)	0.0027	0.48 (0.26-0.86)	0.015
Most Disadvantaged Decile	0.56 (0.35-0.82)	0.0034	0.65 (0.44-0.97)	0.035

*Multivariate analysis controls for age, race and insurance status
ADI = Area Deprivation Index, CI = Confidence interval

Strategies to Address SDOH of Vision Health and Eye Care in the Community

- Provide eye care education and eye health literacy. A commonly cited barrier to eye care utilization is lack of awareness of the importance of eye care.
- Support community events.
- Expand community-based eye care
- Expand community-engaged research.



- Review clinical practice data
- Ensure one standard of care for all patients
- Assess SDOH as part of every patient encounter
- Integrate social screening into the electronic health record (adopted screening for social needs (ex. food insecurity, housing insecurity, energy insecurity, and transportation problems)
- Expand our eye care team members to include social workers, community health workers, and other professionals
- Integrate social support structures for vulnerable groups
- Promote eye care education and eye health literacy
- Advocate for policies that expand access to eye care and adequate reimbursement
- Accept Medicaid insurance
- Increase workforce diversity
- Understand and address biases in yourself and your practice

Address underlying social factors that affect vision health through collaborative strategies that can lead to substantive change.



Social justice is a matter of life and death. It affects the way people live, their consequent chance of illness, and their risk of premature death. We watch in wonder as life expectancy and good health continue to increase in parts of the world and in alarm as they fail to improve in others. A girl born today can expect to live for more than 80 years if she is born in some countries – but less than 45 years if she is born in others. Within countries there are dramatic differences in health that are closely linked with degrees of social disadvantage. Differences of this magnitude, within and between countries, simply ~~should never happen~~.

These inequities in health, avoidable health inequalities, arise because of the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces.

Social and economic policies have a determining impact on whether a child can grow and develop to its full potential and live a flourishing life, or whether its life will be blighted. Increasingly the nature of the health problems rich and poor countries have to solve are converging. The development of a society, rich or poor, can be judged by the quality of its population's health, how fairly health is distributed across the social spectrum, and the degree of protection provided from disadvantage as a result of ill-health.

In the spirit of social justice, the Commission on Social Determinants of Health was set up by the World Health Organization (WHO) in 2005 to marshal the evidence on what can be done to promote health equity, and to foster a global movement to achieve it.

As the Commission has done its work, several countries and agencies have become partners seeking to frame policies and programmes, across the whole of society, that influence the social determinants of health and improve health equity. These countries and partners are in the forefront of a global movement.

The Commission calls on the WHO and all governments to lead global action on the social determinants of health with the aim of achieving health equity. It is essential that governments, civil society, WHO, and other global organizations now come together in taking action to improve the lives of the world's citizens. Achieving health equity within a generation is achievable. It is the right thing to do, and now is the right time to do it.

Social Determinants of Health are Associated with Risk of Vision Loss

Conclusions

- Disparities in eye care access and vision health are pervasive and persist
- Social determinants of health are major drivers of disparities in eye health
- Social determinants of health are estimated to account for 80% to 90% of a population's health outcomes, while medical care accounts for only 10% to 20%
- Addressing SDOH is necessary to promote equity in vision health for all
- **The Time is Now**

THANK YOU!
grs2003@med.cornell.edu

Acknowledgements: Fasika Woretta, MD
