

Beyond Blood Sugar: Impact of the Social Determinants of Health on Patients with Diabetes

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Disclosure Statement

Nira Kadakia, PharmD,
BCACP, has no relevant
financial relationship(s) with
ineligible companies to
disclose.



Learning Objectives

At the completion of this activity, the participant will be able to:

- Describe social determinants and how they affect diabetes prevalence, management, and outcomes.
- Apply different strategies to address SDOH concerns and improve outcomes for a patient with diabetes.



Background



Chronic conditions

- Chronic conditions are leading causes of illness, death, and disability in United States
- Chronic conditions account for massive amounts of healthcare costs in U.S.
- Majority of healthcare costs are for people with chronic and mental health conditions

Health outcomes

Health outcomes influenced by



Age

Genetic
makeup

Family
history

Social
factors

Definitions

Social Determinants of Health - Healthy People 2030.
Health disparities. Centers for Disease Control and Prevention.
2021 National Healthcare Quality and Disparities Report | Agency for Healthcare Research and Quality.

Health disparities

Preventable differences in prevalence and burden of disease, injury, or opportunities to achieve optimal health outcomes

Healthcare disparities

Differences between groups in access to healthcare and experiences with healthcare services

Social determinants of health (SDOH)

Conditions in which people are born, live, learn, work, play, worship, and age; nonmedical factors that impact health and quality of life

Social determinants of health (SDOH)





Education access and quality



Healthcare access and quality



Neighborhood and built environment



Social and community context



Economic stability

SDOH domains

Higher
education

Literacy

Early childhood
education

Language

Career/technical
training

Education
access and
quality

Insurance
coverage

Health literacy

Transportation
to healthcare
facilities

Copays

Provider
availability and
accessibility

Quality of care

Healthcare
access and
quality

Housing

Transportation

Safety

Walkability

Recreation/parks/
green space

Water quality

Access to healthy
food

Neighborhood
and built
environment

Social and
community
integration

Support systems

Community
engagement

Stress

Discrimination

Social and
community
context

Employment

Income

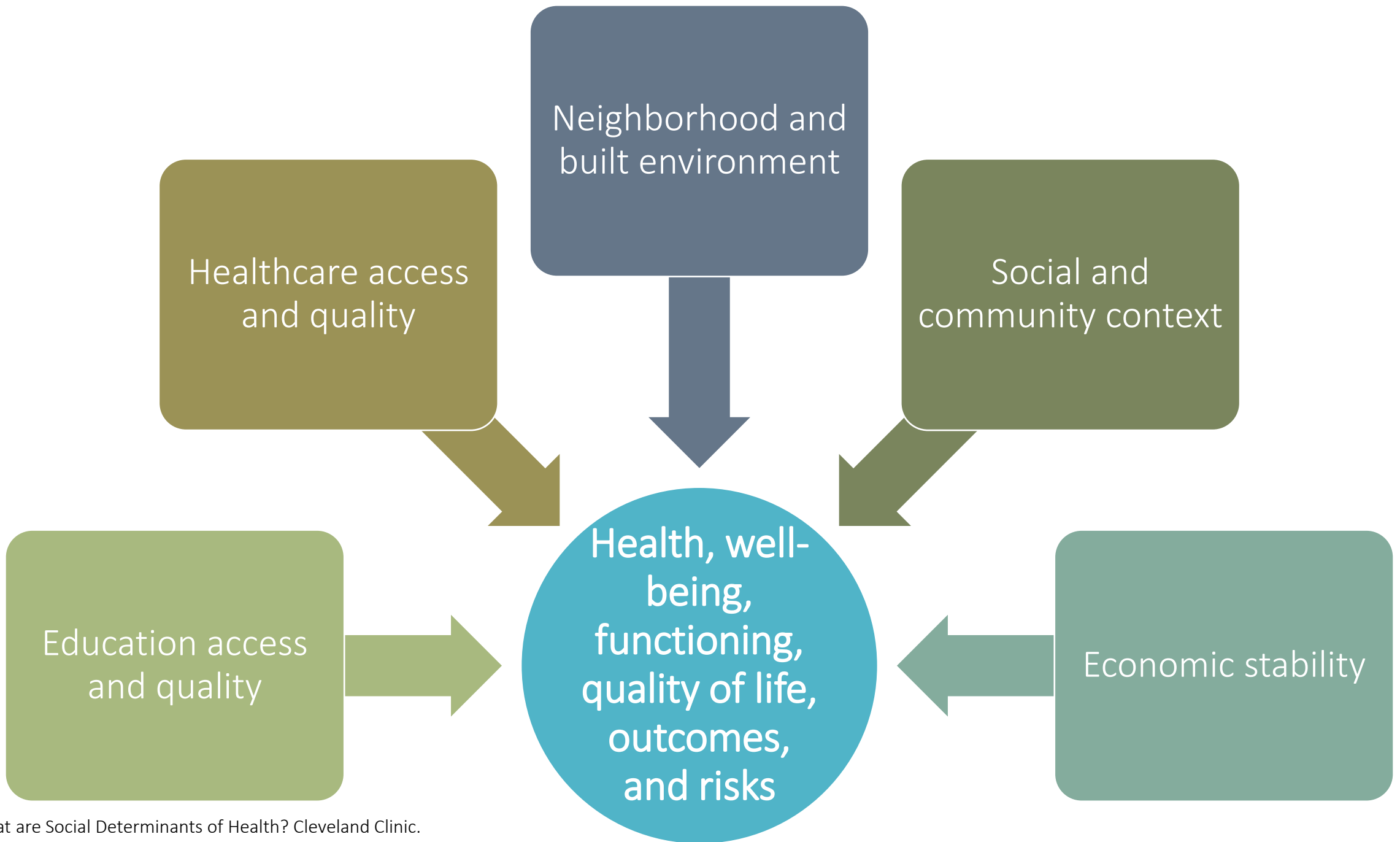
Debt

Expenses

Financial support

Medical bills

Economic
stability



Impact of SDOH on chronic conditions

- Communities with greater access to supermarkets experienced lower obesity rates compared with communities that had a greater density of convenience stores
- Certain aspects of the physical environment can also promote health and well-being
- Education has a close association with health; more educated people have better health outcomes
- Health insurance increases access to affordable medical services, which has well-documented health benefits
- Healthy aging and social support can lead to healthy outcomes, like lower rates of morbidity and mortality and improved mental health

Diabetes



Diabetes by the numbers

38.4

11.6

13.6

13.1

500

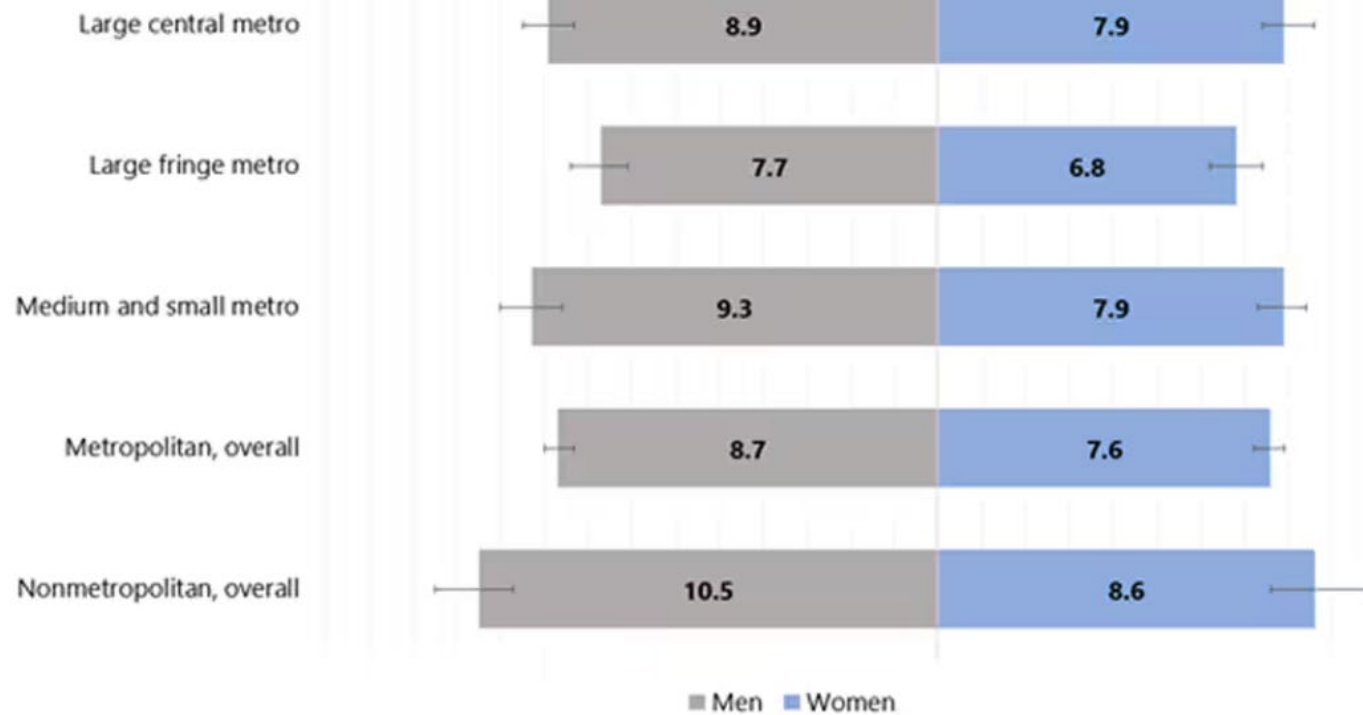


Table 2. Crude prevalence of diagnosed diabetes by detailed race and ethnicity among adults aged 18 years or older, United States, 2019–2021

Race and Ethnicity Subgroup	Total Percentage (95% CI)
American Indian or Alaska Native, non-Hispanic	16.0 (12.1–20.6)
Black, non-Hispanic	12.5 (11.6–13.4)
Native Hawaiian or Other Pacific Islander, non-Hispanic	11.7 (7.4–17.2)
Asian, non-Hispanic	9.2 (8.2–10.4)
Asian Indian, non-Hispanic	10.8 (8.3–13.7)
Chinese, non-Hispanic	7.1 (5.2–9.3)
Filipino, non-Hispanic	12.2 (9.4–15.6)
Japanese, non-Hispanic	6.8 (4.1–10.5)
Korean, non-Hispanic	6.1 (3.8–9.1)
Vietnamese, non-Hispanic	6.4 (3.7–10.0)
Other Asian, non-Hispanic	8.9 (5.9–12.8)
Hispanic	10.3 (9.4–11.1)
Mexican or Mexican American	11.1 (9.9–12.3)
Central American	7.3 (5.6–9.4)
South American	5.0 (3.3–7.1)
Puerto Rican	13.3 (11.0–15.9)
Cuban	9.0 (6.5–12.1)
Dominican	9.4 (5.9–14.2)
Other Hispanic, Latino, or Spanish	7.2 (5.5–9.2)
White, non-Hispanic	8.5 (8.2–8.8)



Let's meet
Annie Grady!

Let's meet Annie Grady!

Annie Grady is a 56-year-old female who lives with type 2 diabetes (diagnosed 10 years ago) and hypertension (diagnosed 12 years ago). She is at the medication management clinic today for a diabetes management appointment. Her mother had diabetes and passed away at age 68 after a heart attack, so Annie wants to get her condition under control. Her vitals were taken at the beginning of the appointment: BP 150/95 mmHg, HR 85 bpm, SpO2 99%, weight 85 kg (BMI 30). Annie presents to the clinic with worsening blood sugar control over the past six months (most recent HbA1c 9.2% and FBG 210 mg/dL). She reports frequent episodes of thirst and frequent urination. She also reports feeling increasingly stressed and overwhelmed.

A close-up photograph of a woman's face, looking slightly to the right. The image is overlaid with a semi-transparent teal filter. A dark teal horizontal band runs across the middle of the image, containing white text. The woman has dark hair and is wearing a dark top.

What are Annie's risk factors for diabetes complications?

Diabetes risk factors

Age

Sex

Ethnicity

Family
history

Weight

Blood
pressure

Physical
activity

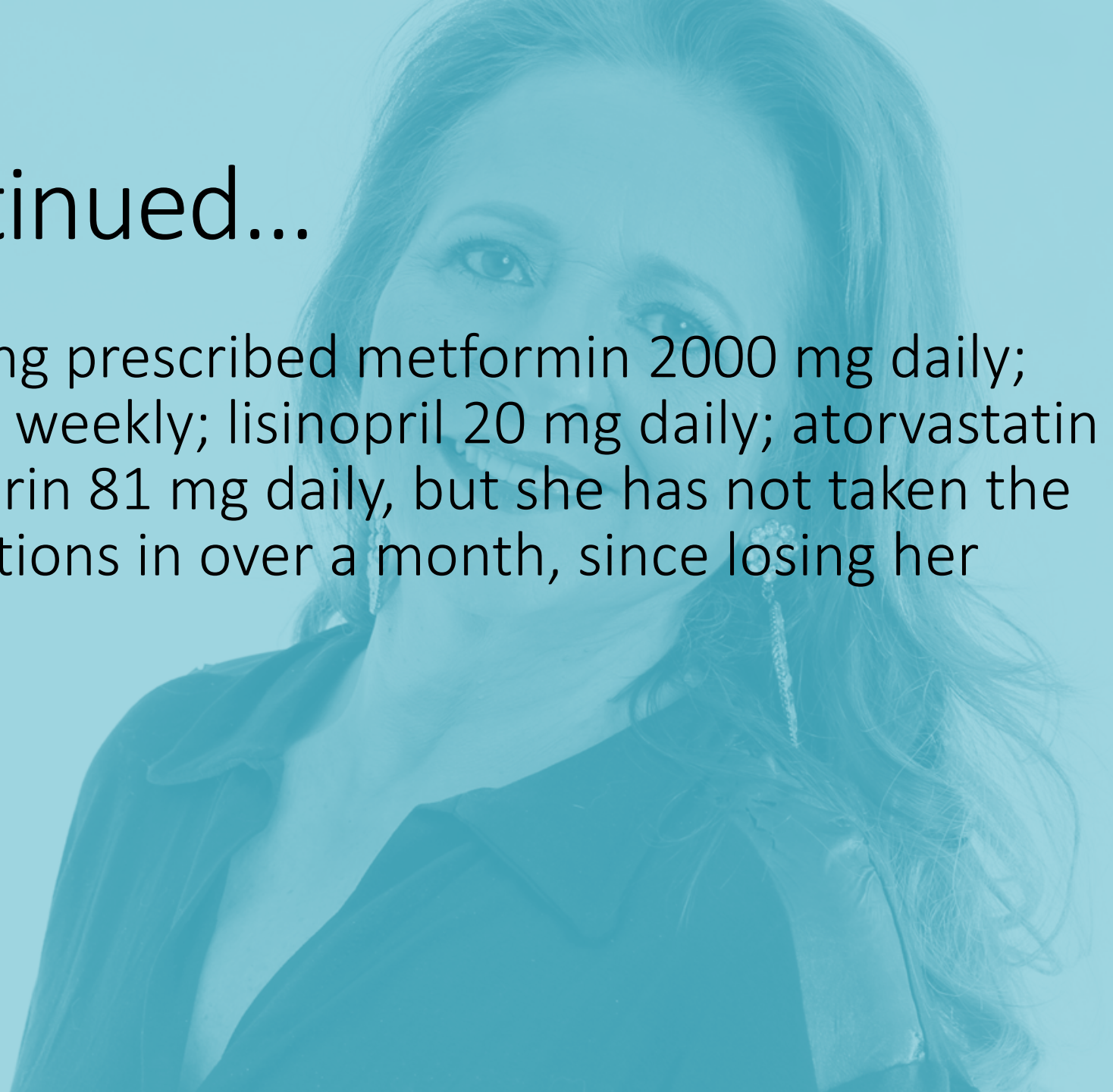
Diet

Annie, continued...

Annie lives in Columbus, OH, in the King-Lincoln Bronzeville neighborhood. She currently is single and currently helping raise her grandchild. She previously was working two part-time jobs, neither of which offers health insurance. She recently lost one of her jobs and can no longer afford the insurance she was getting through the Marketplace. Additionally, she is having a difficult time maintaining a healthy lifestyle. She does not smoke cigarettes or use marijuana, but she does occasionally drink alcohol. She tries to walk at least three days a week for about 20 minutes at a time but recently has not had the time or energy to do so.

Annie, continued...

Annie reports being prescribed metformin 2000 mg daily; semaglutide 1 mg weekly; lisinopril 20 mg daily; atorvastatin 20 mg daily; and aspirin 81 mg daily, but she has not taken the semaglutide injections in over a month, since losing her insurance.



A close-up photograph of a woman's face and shoulders, overlaid with a teal filter. The woman has dark hair and is looking slightly to the right. The image is partially obscured by a dark teal horizontal band containing white text.

What are Annie's potential SDOH concerns?



Education access and quality



Healthcare access and quality



Neighborhood and built environment



Social and community context



Economic stability

SDOH domains

Education access and quality

- Higher education level associated with lower disease incidence and mortality
- Level of educational attainment negatively associated with type 2 DM prevalence and trends
- Literacy-sensitive interventions associated with small decreases in HgbA1C

Healthcare access and quality

- Free clinics, FQHCs, and patient assistance programs can help fill gaps for diabetes care with positive health outcomes
- Medicaid expansion provided increased access to healthcare, diabetes management, and health status, including increased rates of detection and diagnosis of DM
- Medicaid expansion led to reduction in cost-related medication nonadherence rates
- Patients with diabetes in medically underserved areas may be less engaged in primary care and experience high rates of emergency department utilization

Hill-Briggs F, Adler NE, Berkowitz SA, et al. Social determinants of health and diabetes: A scientific review. *Diabetes Care*.

Simon ME, Reuter ZC, Fabricius MM, Hitchcock NM, Pierce RP. Diabetes Control in a Student-Run Free Clinic During the COVID-19 Pandemic. *Journal of Community Health*.

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Neighborhood and built environment

- Housing instability associated with higher outpatient utilization and worse diabetes outcomes
- Neighborhood walkability associated with lower risk for diabetes, obesity, and hypertension
- Food environment can impact outcomes related to glycemic control and self-management behaviors

Nguyen QC, Tolga Tasdizen, Mitra Alirezaei, et al. Neighborhood Built Environment, Obesity, and Diabetes: A Utah Siblings Study. *SSM, population health*.

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Helpful Tips

Getting Started

Adding Your Data

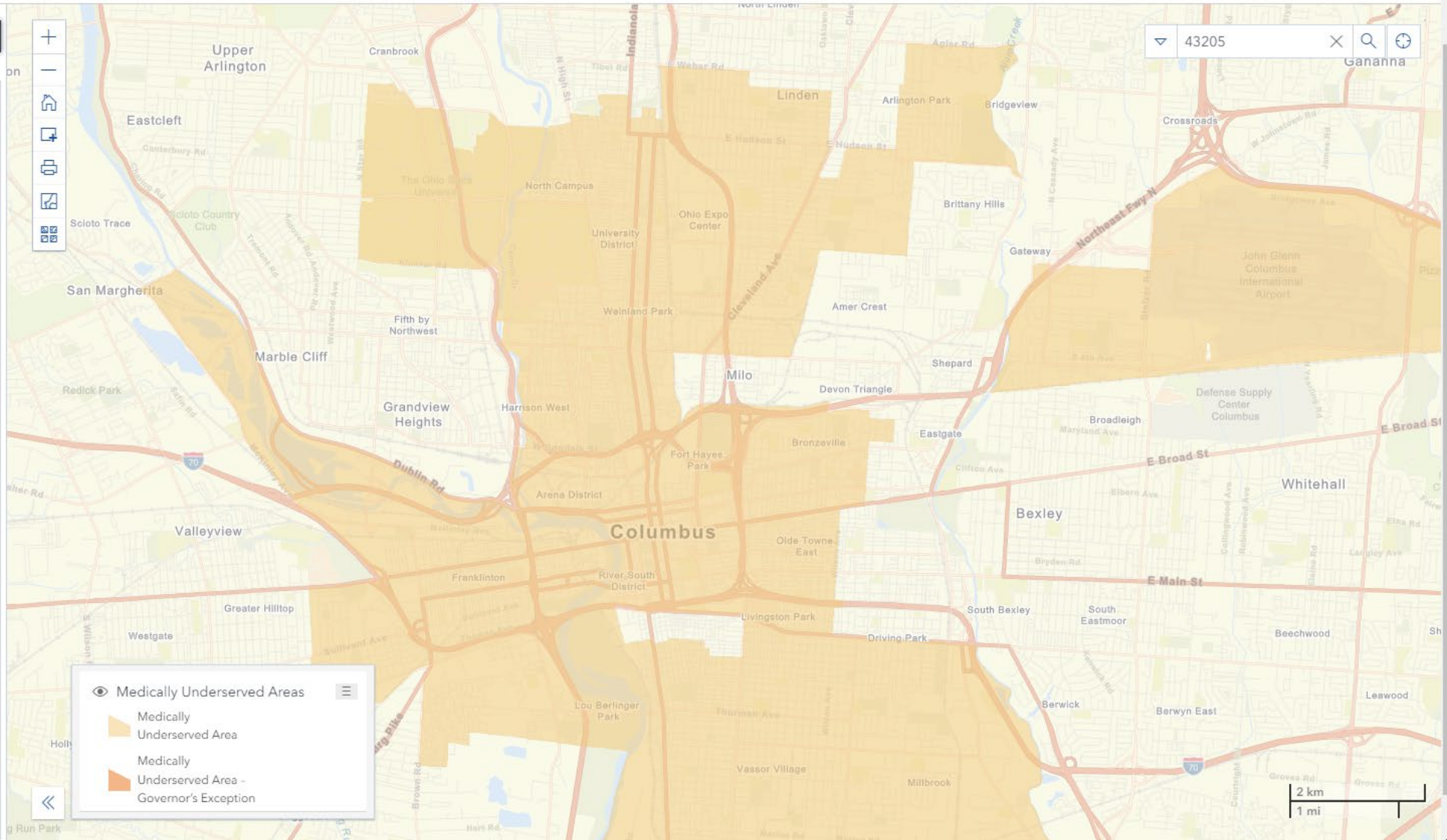
HRSA Map Tool

Select and plot health centers, grants, and other agencies' data on the map as separate data layers. Import data from the web or upload a CSV file.

Type here to search data below

Or browse all data to map:

- Facilities, Providers, Sites/Areas**
 - Health Centers and Other Facilities/Providers/Sites
 - Shortage Areas
 - Primary Care Area HPSAs (HPSA Score)
 - Primary Care Facility HPSAs
 - Dental Health Area HPSAs (HPSA Score)
 - Dental Health Facility HPSAs
 - Mental Health Area HPSAs (HPSA Score)
 - Mental Health Facility HPSAs
 - Medically Underserved Areas
 - Medically Underserved Populations
 - Rural Health Areas and Other Boundaries
- HRSA Grants/Loans/Scholarships**
 - Awarded Grants
- Population and Public Health Data**
 - Demographics
 - Opioid Treatment
- Your Data** Add Data
 - None added



Social and community context

- Social capital positively associated with diabetes control
- Jackson Heart Study showed that stronger neighborhood social cohesion associated with lower incidence of T2DM
- Lack of social support associated with increased mortality and diabetes-related complications
- Racism and discrimination influence other social factors that impact diabetes
- Social support interventions may be beneficial for improving diabetes outcomes

Economic stability

- Prevalence of diabetes and diabetes-related complications increases as income decreases
- Unemployment associated with increased odds of prediabetes and T2DM

What do the guidelines say about SDOH?

American Diabetes Association[®] (ADA) Standards of Care in Diabetes – 2024

Standard 1: Improving Care and Promoting Health in Populations

1.1 Ensure treatment decisions are timely, rely on evidence-based guidelines, capture key elements within the social determinants of health, and are made collaboratively with people with diabetes and care partners based on individual preferences, prognoses, comorbidities, and informed financial considerations.

1.2 Align approaches to diabetes management with the Chronic Care Model.

1.3 Care systems should facilitate in-person and virtual team-based care, include those knowledgeable and experienced in diabetes management as part of the team, and utilize patient registries, decision support tools, and community involvement to meet needs of individuals with diabetes.

1.4 Assess diabetes health care maintenance using reliable and relevant data metrics to improve processes of care and health outcomes, with attention to care costs, individual preferences and goals for care, and treatment burden.

1.5 Assess food insecurity, housing insecurity/homelessness, financial barriers, and social capital/social community support to inform treatment decisions, with referral to appropriate local community resources.

1.6 Provide people with diabetes with additional self-management support from lay health coaches, navigators, or community health workers when available.

1.7 Consider the involvement of community health workers to support the management of diabetes and cardiovascular risk factors, especially in underserved communities and health care systems.

Standard 5: Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes

5.4 DSMES should be **culturally sensitive and responsive to individual preferences**, needs, and values and may be offered in group or individual settings.

5.5 Consider offering DSMES via telehealth and/or digital interventions to **address barriers to access and improve satisfaction**.

5.7 **Identify and address barriers** to DSMES that exist at the payer, health system, clinic, health care professional, and individual levels.

5.8 **Include social determinants of health** of the target population in guiding design and delivery of DSMES with the ultimate goal of health equity across all populations.

What can pharmacists do?

Incorporate SDOH screening

Referral to social services

Medication cost assistance

Pharmacist-run services

Guideline-directed medication therapy (GDMT)

Patient education

Kalabalik-Hoganson J, Ozdener-Poyraz AE, Rizzolo D. Call to Action: Addressing Social Determinants of Health in Pharmacy Practice. *Annals of Pharmacotherapy*.

Heath S. How Pharmacists Can Help Address Social Determinants of Health. *Patient Engagement*.

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Pharmacists' Role in Tackling Social Determinants of Health. *Pharmacy Times*.

Richards W. Social Determinants of Health Offer Pharmacists the Chance to Deeply Connect with Patients and Boost Their Bottom Lines.

Social Determinants: **Concern present**

Learning Needs: Learning Needs Incomplete

11/10 DOCUMENTATION

Height: 167.6 cm (66") >30 days (>99%)

Wt: 56.7 kg (125 lb) >5 days (>99%)

LAST 3YR

No visits

No results

CARE GAPS

- Hepatitis B Vaccines (1 of 3 - ...)
- IPV Vaccines (1 of 3 - 4-dose...)
- Hepatitis A Vaccines (1 of 2 - ...)
- MMR Vaccines (1 of 2 - Stan...)
- 6 more care gaps**

PROBLEM LIST (0)

Social Determinants of Health



Tobacco Use

NOV 10 **Medium Risk**
2020



Financial Resource Strain

NOV 10 **High Risk**
2020



Transportation Needs

NOV 10 **Unmet Transportation Needs**
2020



Stress

NOV 10 **Stress Concern Present**
2020



Intimate Partner Violence

NOV 10 **Not At Risk**
2020



Housing Stability

NOV 10 **Low Risk**
2020



Alcohol Use

NOV 10 **Heavy Drinker**
2020



Food Insecurity

NOV 10 **Food Insecurity Present**
2020



Physical Activity

NOV 10 **Insufficiently Active**
2020



Social Connections

NOV 10 **Moderately Isolated**
2020



Depression

NOV 10 **Not at risk**
2020



Resources Needed

NOV 10 **NO**
2020

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**United Way
of Central Ohio**



**mid-ohio food
collective**

FIND FOOD



What can pharmacists do?

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Referral to social
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**Medication cost
assistance**

Pharmacist-run
services

Guideline-directed
medication
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GoodRx

Lilly Cares[®]
Foundation



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Incorporate SDOH
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Medication cost
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**Pharmacist-run
services**

**Guideline-directed
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Audience

- Any -



Resource Type

- Any -



Language

- Any -



Sort by:

Date

Alphabetical

Relevancy

Reset



Types of Physical Activity

This handout accompanies the physical activity video series from the American Diabetes Association, for people who are looking to reduce their risk for or manage type 2 diabetes. These activities are great for anyone with diabetes, but talk to your health care professional before beginning any new type of exercise.



Nutrition for Life: Diabetes Plate Method

The Diabetes Plate Method is a helpful tool for anyone who wants to eat better and learn about variety and portion sizes, including people with prediabetes. Each section (based on a nine-inch plate) is for the following three food groups: vegetables, carbohydrates, and protein. These three food groups are the foundation for healthy eating.

Fill 1/2 of the plate with non-starchy vegetables
Non-starchy vegetables are low in carbohydrates. One serving amounts to one cup raw veggies, such as a salad greens, or 1/2 cup cooked, such as broccoli. You can have as many



Best Foods For You: Making Healthy Food Choices

Making Choices
A large part of taking care of diabetes is making choices about your food. The best choices are foods that are high in fiber and nutrients and low in saturated fat, added sugar, and sodium. This information will help you make healthy food choices.

- Non-starchy Vegetables**
 - The best choices are fresh, frozen, and canned vegetables and vegetable juices without
 - Grapes
 - Peaches
 - Pears
- Whole wheat flour
- Whole oats/oatmeal
- Whole-grain corn/corn meal



DIABETES ADVISOR

Your Mental Health and Diabetes

Having type 2 diabetes can be stressful. But with the right approach to treatment, you can live a long and healthy life. Reaching your diabetes goals early and learning how to manage diabetes over time can prevent or delay the long-term complications associated with diabetes.

Your diabetes journey requires being in touch with your emotions and taking charge of your physical and mental health. Having diabetes can seem overwhelming, but these tips can help you to manage it.

Support is Key to Success

PQA SOCIAL DETERMINANTS OF HEALTH

RESOURCE GUIDE

For Improving Medication Use Quality



PQA

THIRD EDITION

Examples of
SDOH services



Let's help
Annie Grady!

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Need more
information?

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2024 Midyear Meeting & Trade Show
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