

Walkability Research and Resources from NIH and CDC

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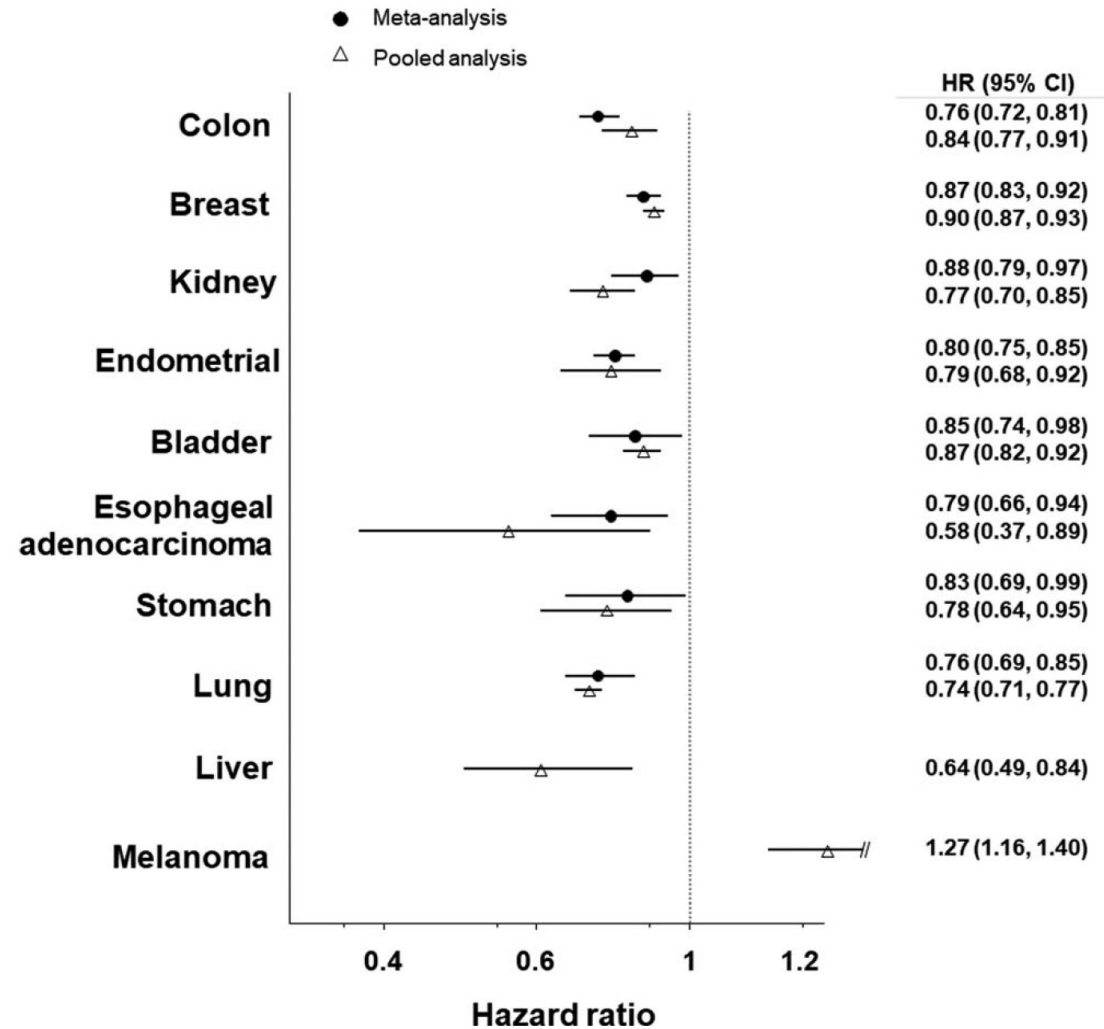
Walkability In Health Research

- Why are NCI, NIH and CDC at the table?
- Walking and walkability in the United States
 - Leisure and transportation walking in urban and rural areas from the National Health Interview Survey
 - Time use and walkability in the NORC AmeriSpeak Panel Survey
- Walkability and responses to weight loss Interventions
- Research needs
 - Understanding walking in rural areas
 - Evaluation of natural experiments in walkability

Why is NCI at the Table?

Collectively, there is consistent, compelling evidence that physical activity plays a role in preventing many types of cancer and for improving longevity among cancer survivors.... Together, these findings underscore the importance of physical activity in cancer prevention and control.

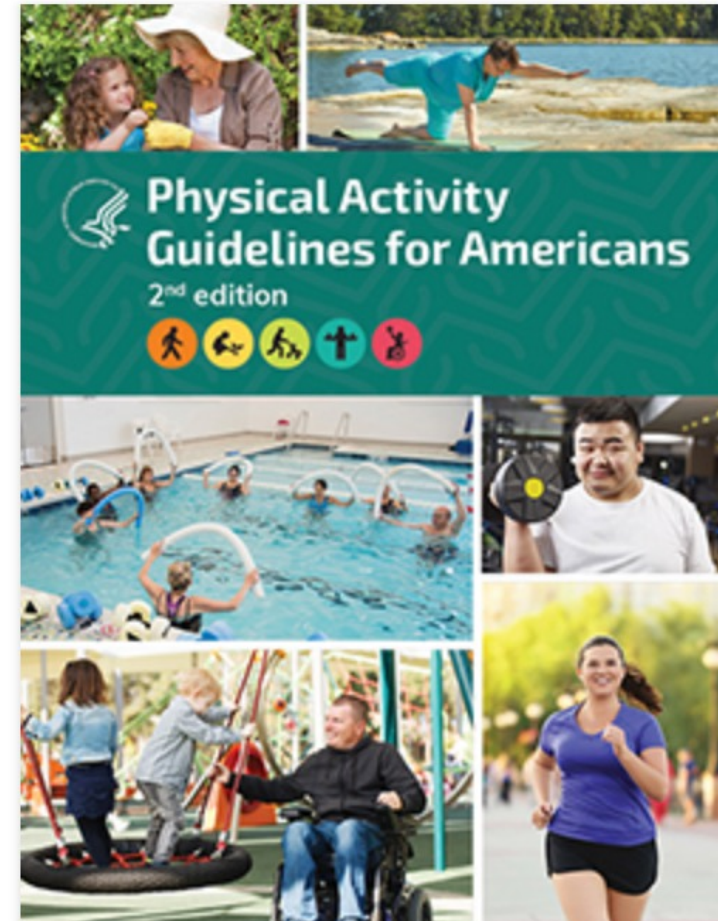
Patel et al. 2019



Why are NIH and CDC at the Table?

The Physical Activity Guidelines for Americans provides evidence-based guidance to help Americans maintain or improve their health through physical activity.

PA Guidelines, 2018



Why are NIH and CDC at the Table?

Strong evidence exists that physical activity has substantial health benefits.^{4,5} People can get these benefits through brisk walking or by adding brisk walking to other physical activities.⁵ Walking is an excellent way for most Americans to increase their physical activity.

Step it Up!: The Surgeon Generals Call to Action, 2015

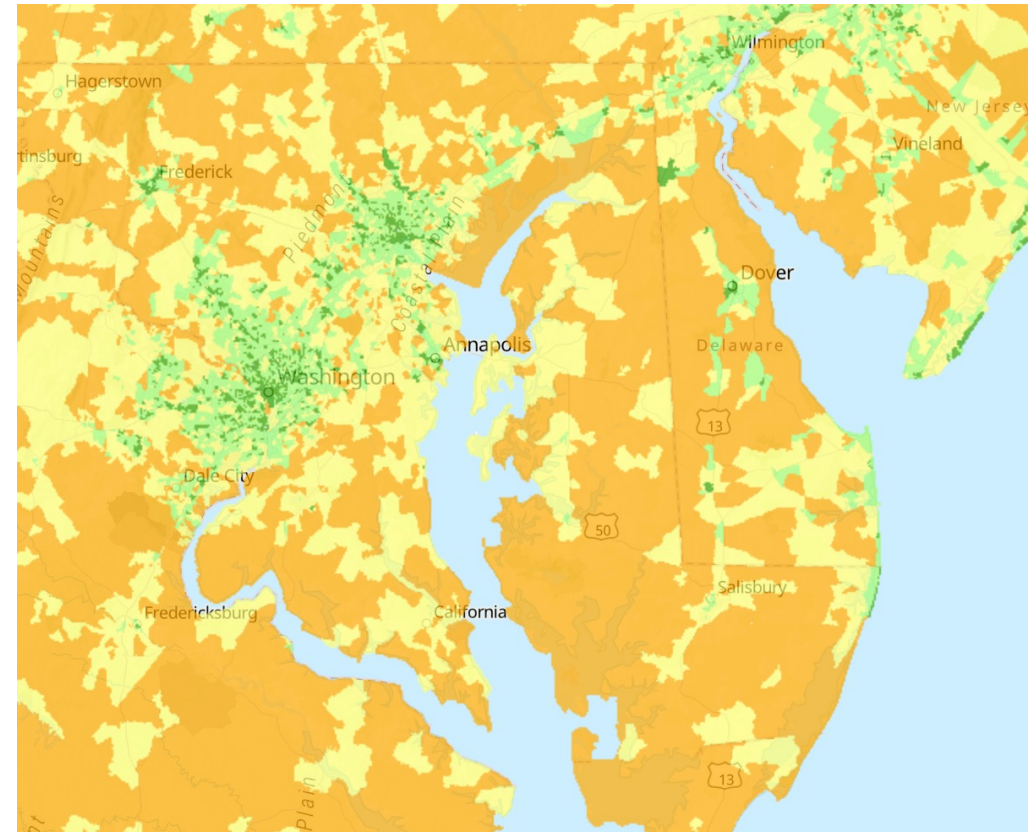


Some Past Projects on Walkability

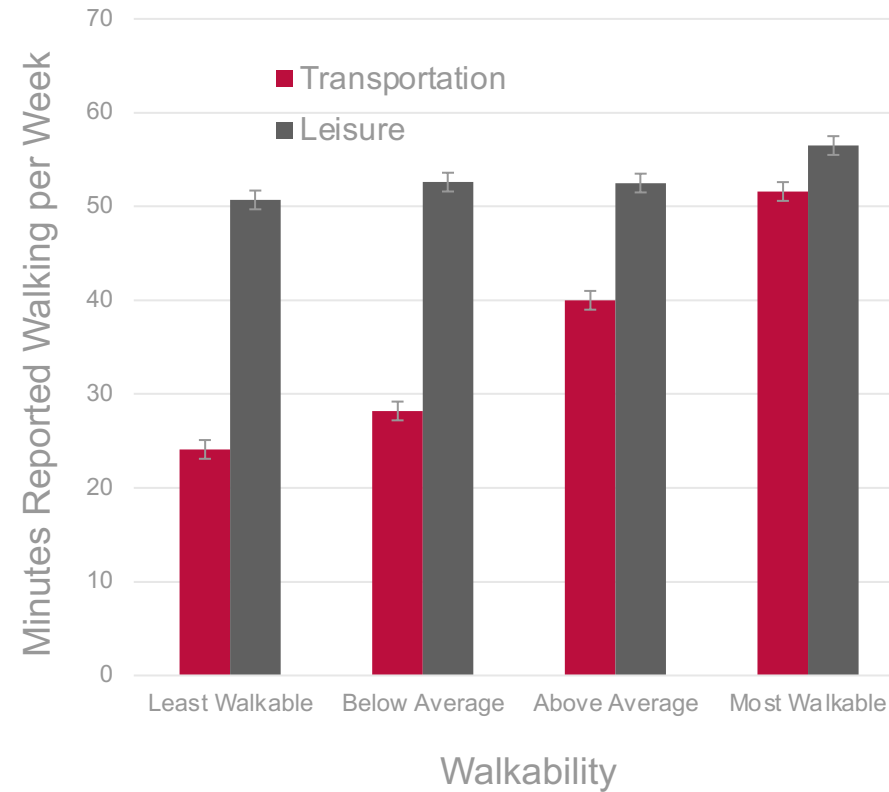
Project	Sample/Exposure	Outcome	Result
Berrigan and Troiano et al. 2002	US National Home Age	Walk 1+ miles > or =20 times per month	More walking by people who lived in homes built before 1973
Berrigan et al. 2010	LA/San Diego Street Connectivity	Minutes per week of Active Transportation	Probability of AT was greater in neighborhoods with higher connectivity
Hoehner et al. 2011	Texas Census Based index	Cardiorespiratory Fitness/BMI	Higher fitness and lower BMI in people living in “Traditional Core” Block groups
Watson et al. 2020	US National EPA Walkability Index	Leisure and Transportation Walking	Leisure and Transportation walking higher in more walkable areas, especially for transportation walking in urban areas

Linkage Study of Walking and Walkability with the 2015 National Health Interview Survey

- EPA Walkability Index at the Block Group level (2010-2012)
 - Land Use Mix
 - Intersection Density
 - Transit Stops
 - Commute Mode Mix
- National Health Interview Survey 2015
 - Leisure and Transportation walking in the past 7 days
 - Demographic Covariates [Sex, Age, Race/Ethnicity, Education, Census Region, Urban/Rural]
 - Block Group
 - N = 33,672



Minutes Walked and Walkability



Limitations and Next Steps

Limitations

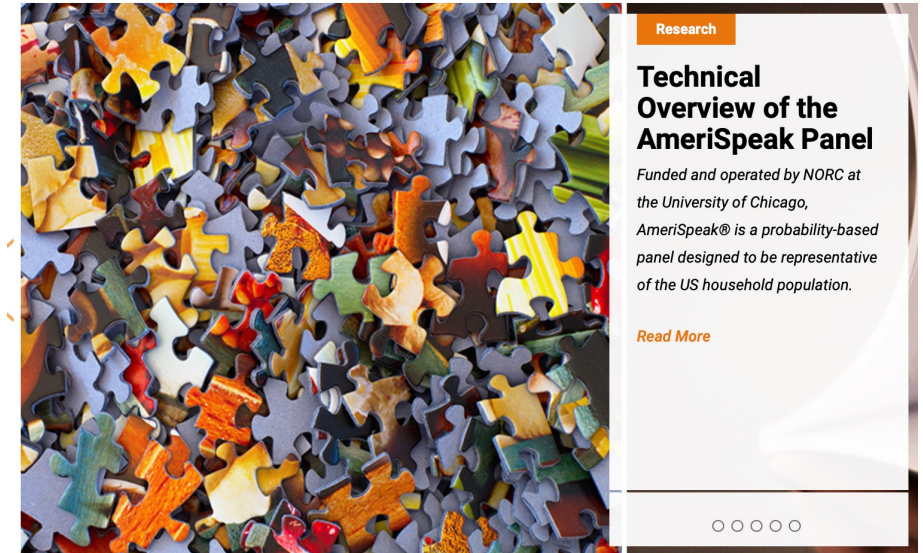
- Self reported walking with standardized survey questions concerning past week
- Census geography (Block Group) rather than activity space
- Crude urban rural distinction

Next Steps

- *Walkability and previous day recall of activities*
- Linkage with newly released device based measures from the 2011-2014 NHANES

What's Next: Linkage Study of Walking and Walkability with the 2019/2020 NORC Amerispeak ACT-24 Survey

- EPA Walkability Index at the Tract Level (2020)
- NORC AmeriSpeak Panel
 - Probability based
 - 97% Population Coverage
 - 2019/2020 data collection
 - \$30 incentive
 - Height, Weight, Demographics, Sleep Characteristics, Adherence to Covid Mitigation (2020) and COVID Risk Perceptions
 - 1-2 ACT-24 24 hour physical activity recalls complete with longitudinal and cross sectional elements



Recall Data (scored)

Study Name	Participant ID	Assessment	Recall Score	QC Score	Final Score
ACT24	P001	Recall	85	90	87.5
ACT24	P002	Recall	78	88	83
ACT24	P003	Recall	92	95	93.5
ACT24	P004	Recall	65	75	70
ACT24	P005	Recall	88	92	90
ACT24	P006	Recall	72	82	77
ACT24	P007	Recall	80	85	82.5
ACT24	P008	Recall	95	98	96.5
ACT24	P009	Recall	68	78	73
ACT24	P010	Recall	82	87	84.5
ACT24	P011	Recall	75	85	80
ACT24	P012	Recall	90	93	91.5
ACT24	P013	Recall	62	72	67
ACT24	P014	Recall	85	90	87.5
ACT24	P015	Recall	78	88	83
ACT24	P016	Recall	92	95	93.5
ACT24	P017	Recall	65	75	70
ACT24	P018	Recall	88	92	90
ACT24	P019	Recall	72	82	77
ACT24	P020	Recall	80	85	82.5
ACT24	P021	Recall	95	98	96.5
ACT24	P022	Recall	68	78	73
ACT24	P023	Recall	82	87	84.5
ACT24	P024	Recall	75	85	80
ACT24	P025	Recall	90	93	91.5
ACT24	P026	Recall	62	72	67
ACT24	P027	Recall	85	90	87.5
ACT24	P028	Recall	78	88	83
ACT24	P029	Recall	92	95	93.5
ACT24	P030	Recall	65	75	70

Research Team

Register study

Researcher Site

ACT24

Login

You are successfully logged out.

Email Address:

Password:

Welcome to ACT24

The Activities Collected over Time over 24-hours (ACT24) instrument is a physical activity assessment tool made available by the National Cancer Institute for research purposes. ACT24 enables multiple automated self-administered 24-hour recalls of physical activity and sedentary behavior.

This Researcher Site allows approved Researchers to manage their study by updating study details, viewing study progress, and downloading analysis files.

For first time users to get started:
Create a Researcher account if you do not already have one by selecting

[Forgot/Reset password](#)

Review and Analyze

Automated scoring

Tracking completion

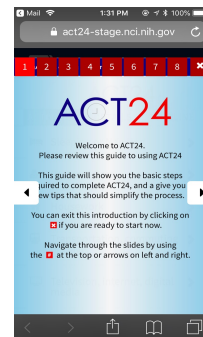
- Manually
- Automated (API)

Complete recall (Y/N)

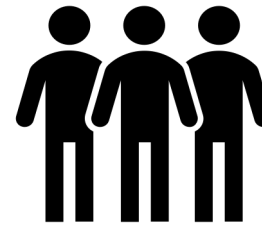
Decision for make-up

- >Recall+QC = done
- >No recall = re-invite
- >Recall+no QC = re-invite

Participant Site



Participants



Invitation (access key)

Invitation & recall tracking database



Timing of MVPA in the United States

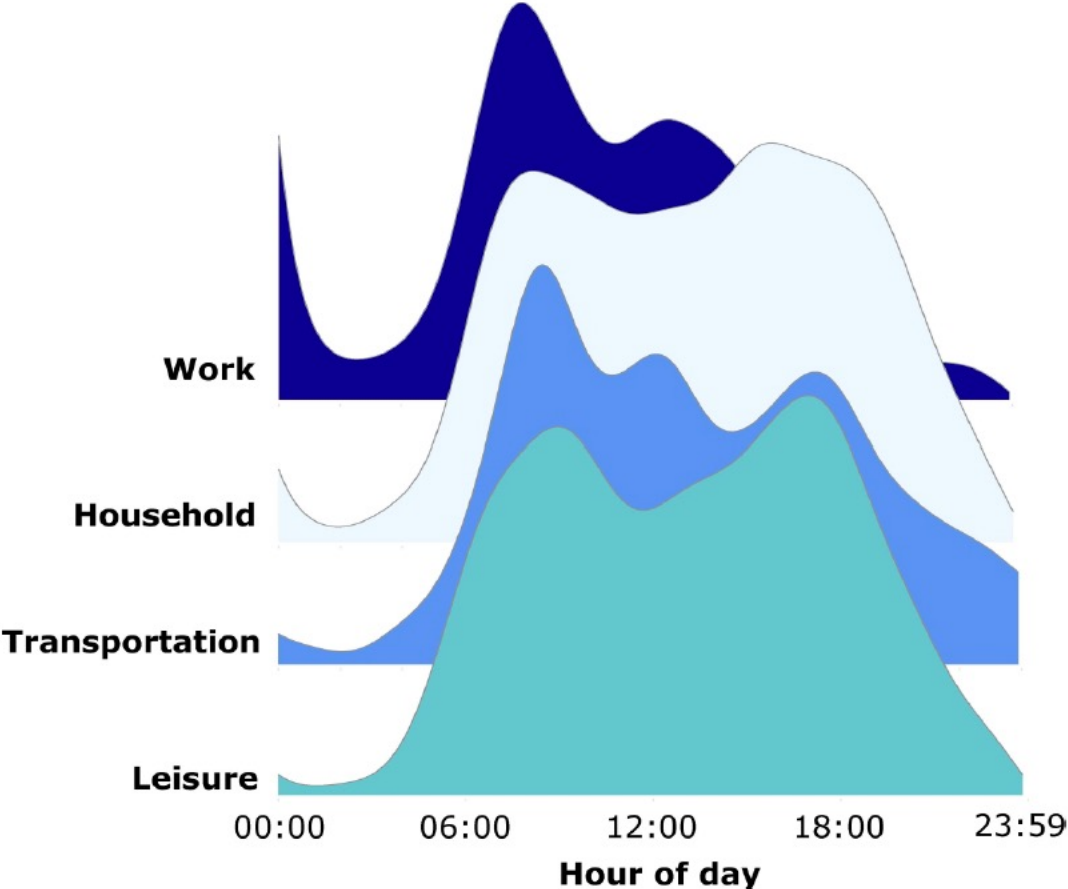
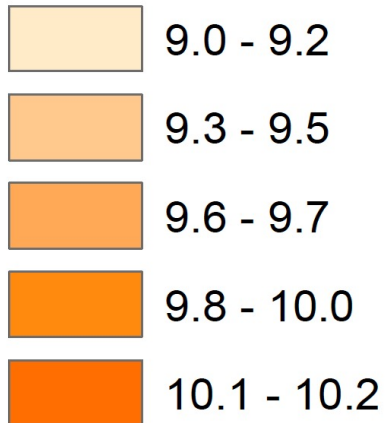
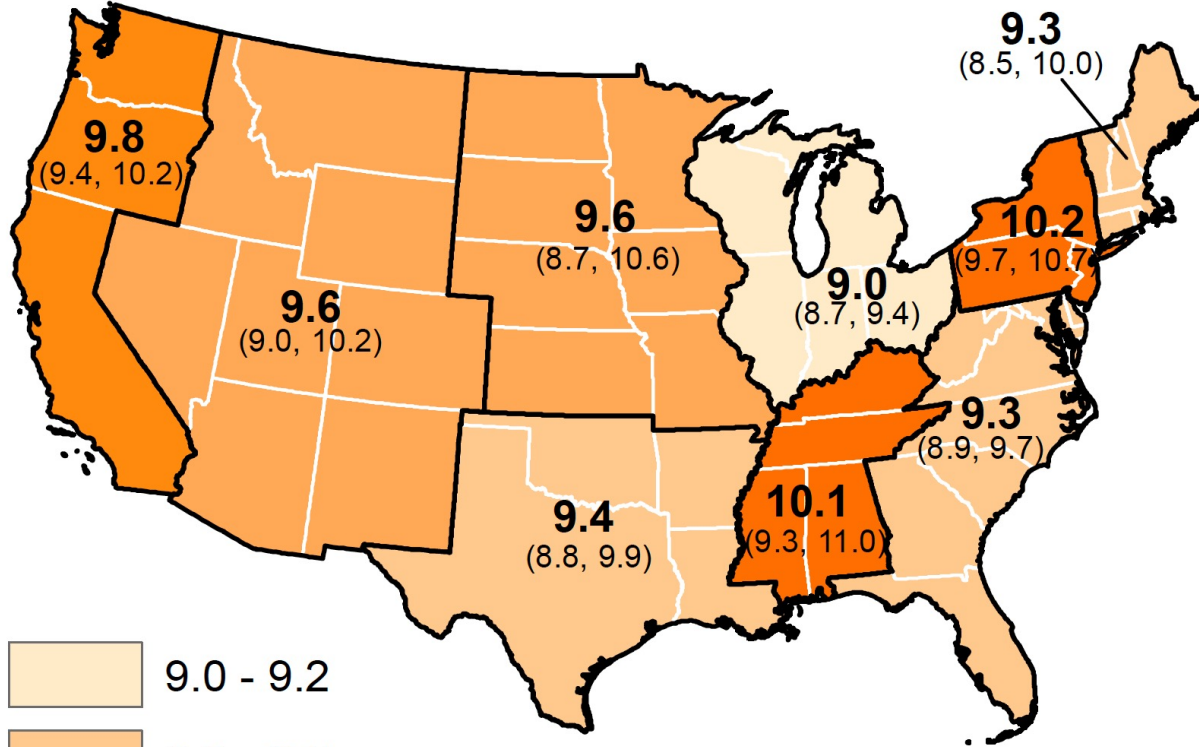


Figure 3. Timing of moderate-vigorous physical activity, by domain. Values are for each domain and represent the % of participants among those that reported some MVPA (n=2,092) reporting behaviors at a given time of day.

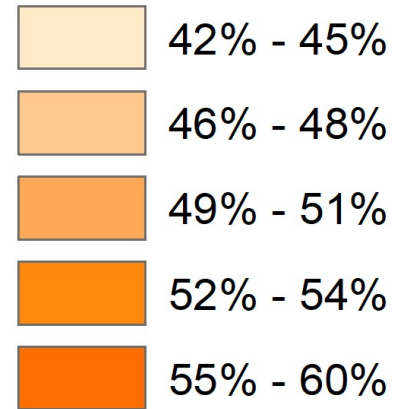
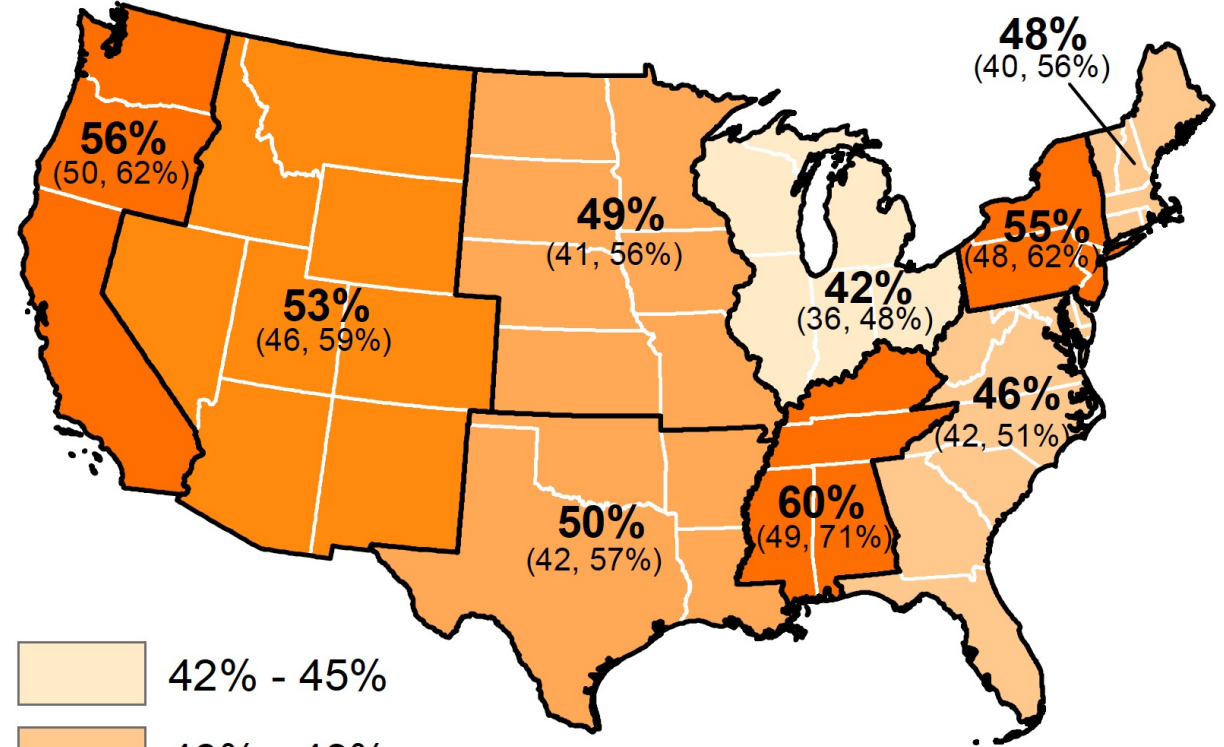
A. Mean Sedentary Time (hrs/d)

Overall mean = 9.5 hrs/d



B. Excessive Sedentary Time (%)

Overall prevalence = 50%



Next Steps

- Walkability, walking and time use analyses with Dr. Kim Clevenger

- Try out ACT-24

<https://dceg.cancer.gov/research/how-we-study/exposure-assessment/physical-activities-completed-over-time-24-hours-act-24>

Walkability and Weight Loss

- Accumulating Data to Optimally Predict Obesity Treatment (ADOPT) Core Measures: Environmental Domain
- EPA Walkability Index one of five recommended measures concerning the environment [Socioeconomic Deprivation; Personal Safety, Urbanicity, Food Outlet Accessibility]
- Data Layers and/or instructions available on our website at the block group and/or tract level
- **The big idea:** Neighborhood Environments might explain variation in response to weight loss interventions



Accumulating Data to Optimally Predict Obesity Treatment

Core Measures: Environmental Domain



Saelens et al. 2018 Obesity
<https://gis.cancer.gov/research/adopt.html>

Optimal Timing of Exercise Initiation Within a Lifestyle Weight Loss Program

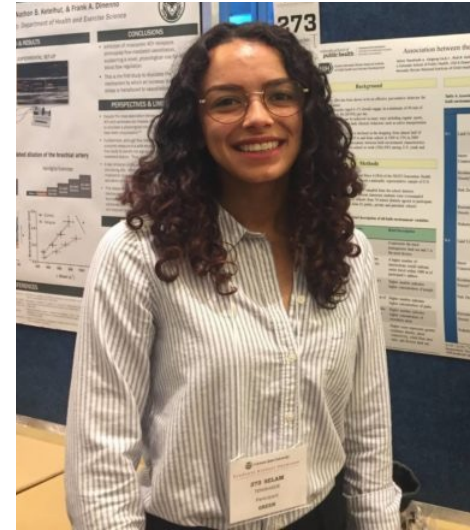
“The Exercise Timing Study”



Danielle Ostendorf, PhD

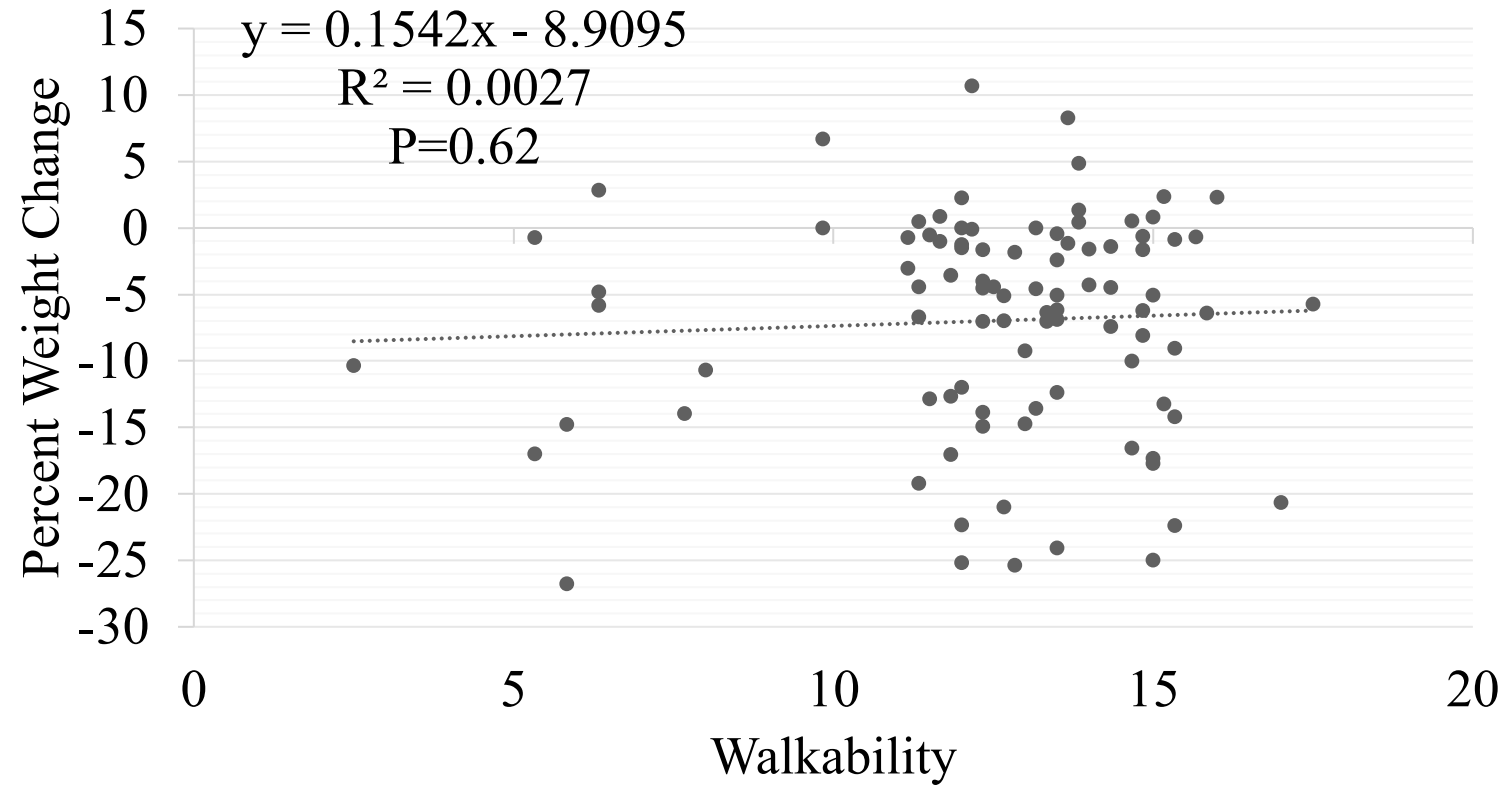


Vicki Catenacci, MD

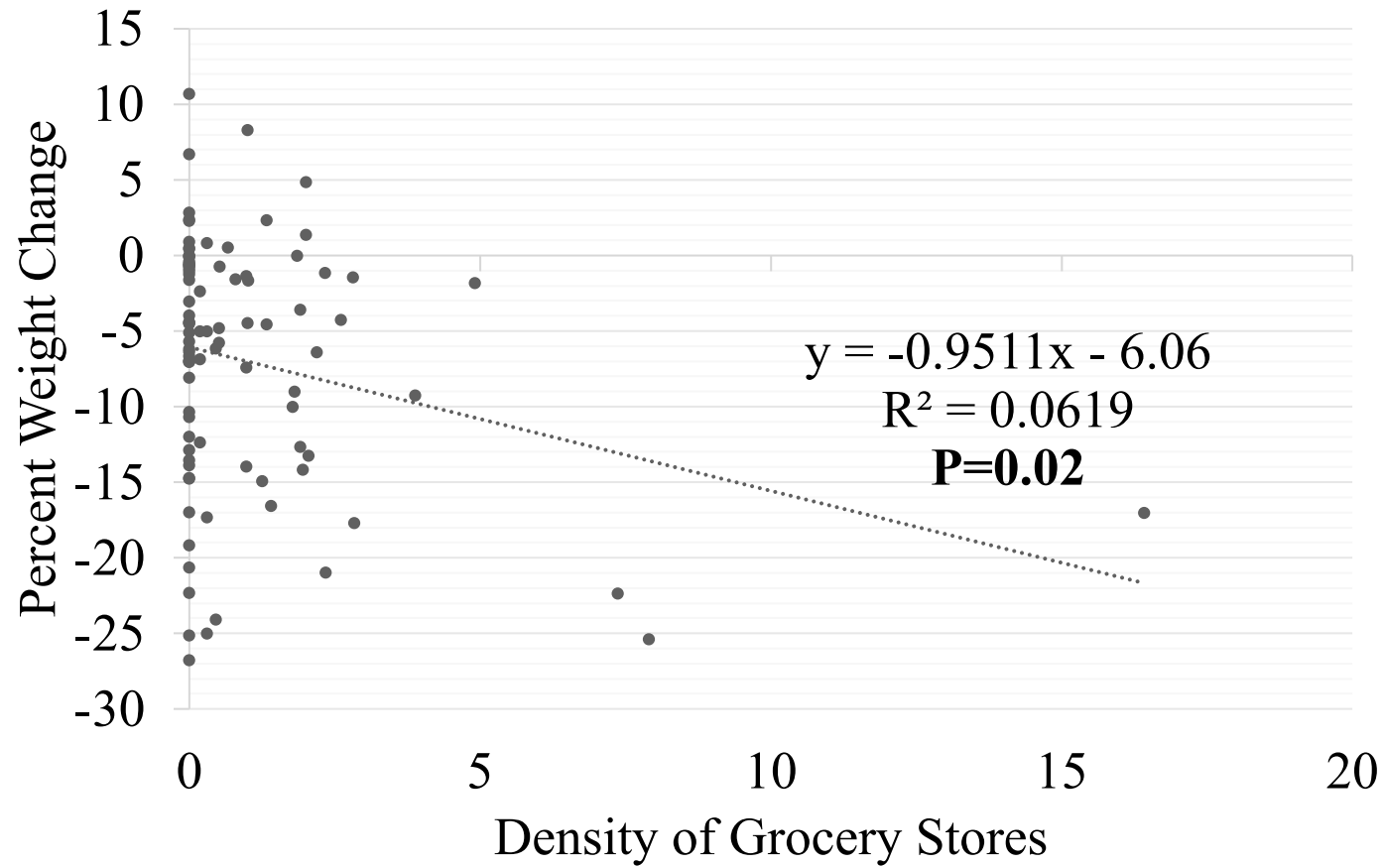


Selam Tewahade, MPH

No association between walkability and percent weight change at 18 months



Association between density of grocery stores and changes in percent weight at 18 months



Conclusions

- Walkability indices are associated with walking, especially for transportation in Urban areas
 - More evaluation of natural experiments needed to establish best interventions to increase walking
- More work is needed to understand healthful physical activity environments in rural areas
- Built and retail environments can sometimes influence weight loss but effect sizes are small and results mixed

Acknowledgements

NHIS and Walkability

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ADOPT Core Measures

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Tatalovich Z

ACT-24 Time Use and Walkability

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Thank you



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