

# Transportation and Health: CDC and the Healthy Community Design Initiative

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# CDC and Transportation Partnerships

- CDC provides assistance to state and local partners in matters of public health



# CDC and Transportation Partnerships

- **The Healthy Community Design Initiative**
  - Focus on built environment and health
  - The design of communities impacts the health of residents, including chronic diseases, injuries, infectious diseases, and poisonings
- **Community design elements include:**
  - Transportation systems
  - Public spaces and zoning
  - Housing
  - Food systems

# Ineffective Community Design



# Community Design and Public Health

## ■ Community Design - Historical Perspective

- Indoor plumbing
- Underground sewage
- Water treatment
- John Snow's handle



Sanitary  
Community  
Design



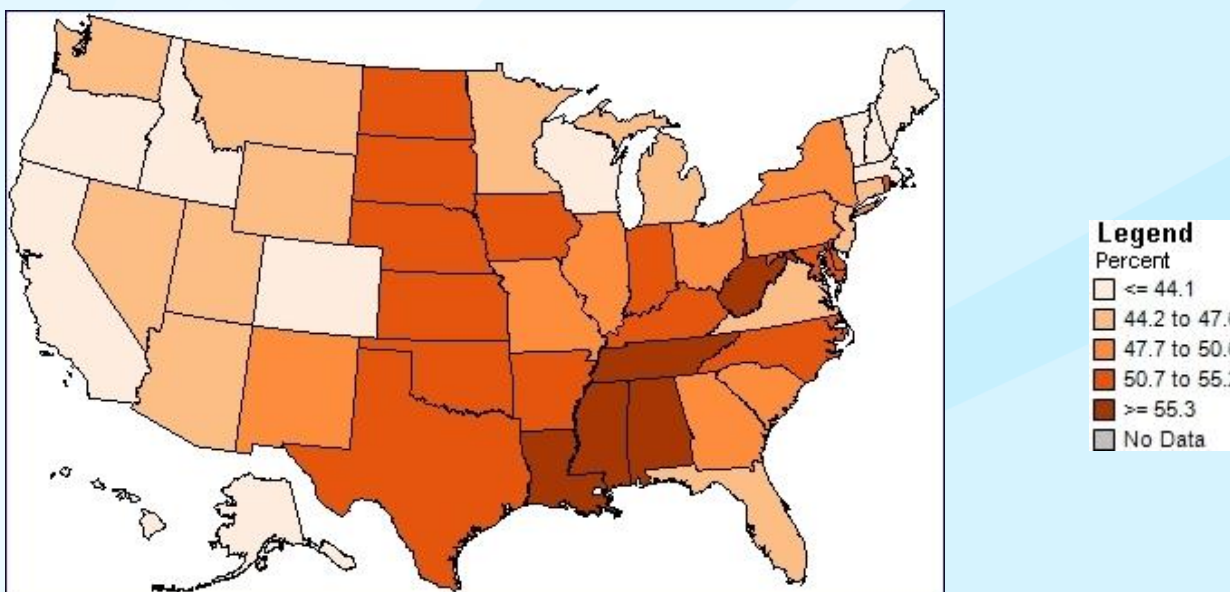
Antibiotics



Increased  
Lifespan

## Inactivity in Tennessee

- **2011: 61% fail to meet aerobic physical activity guidelines**
  - National rank: 50<sup>th</sup>



- **Nashville area slightly better: 57%**
- **Tennessee tied for 10<sup>th</sup> highest prevalence of obesity (31.1%)**

## **Nashville MPO: Transportation and Health**

- **The Nashville Metropolitan Planning Organization (MPO) recognized these problems**
- **All can be influenced by transportation planning, which is the MPO's mission**
- **Nashville MPO among the first to incorporate multiple health issues in planning**
  - First step: transportation and health study

# Middle Tennessee Transportation and Health Study



- **6,000+ Households, 7 counties**
- **Traditional transportation study**
  - Transportation habits questionnaire
  - 1-day travel diary
- **Health Components**
  - 6 general health questions (all respondents)
  - Expanded health questionnaire (10% health sub-sample)
  - Accelerometer + GPS monitor (10% health sub-sample)



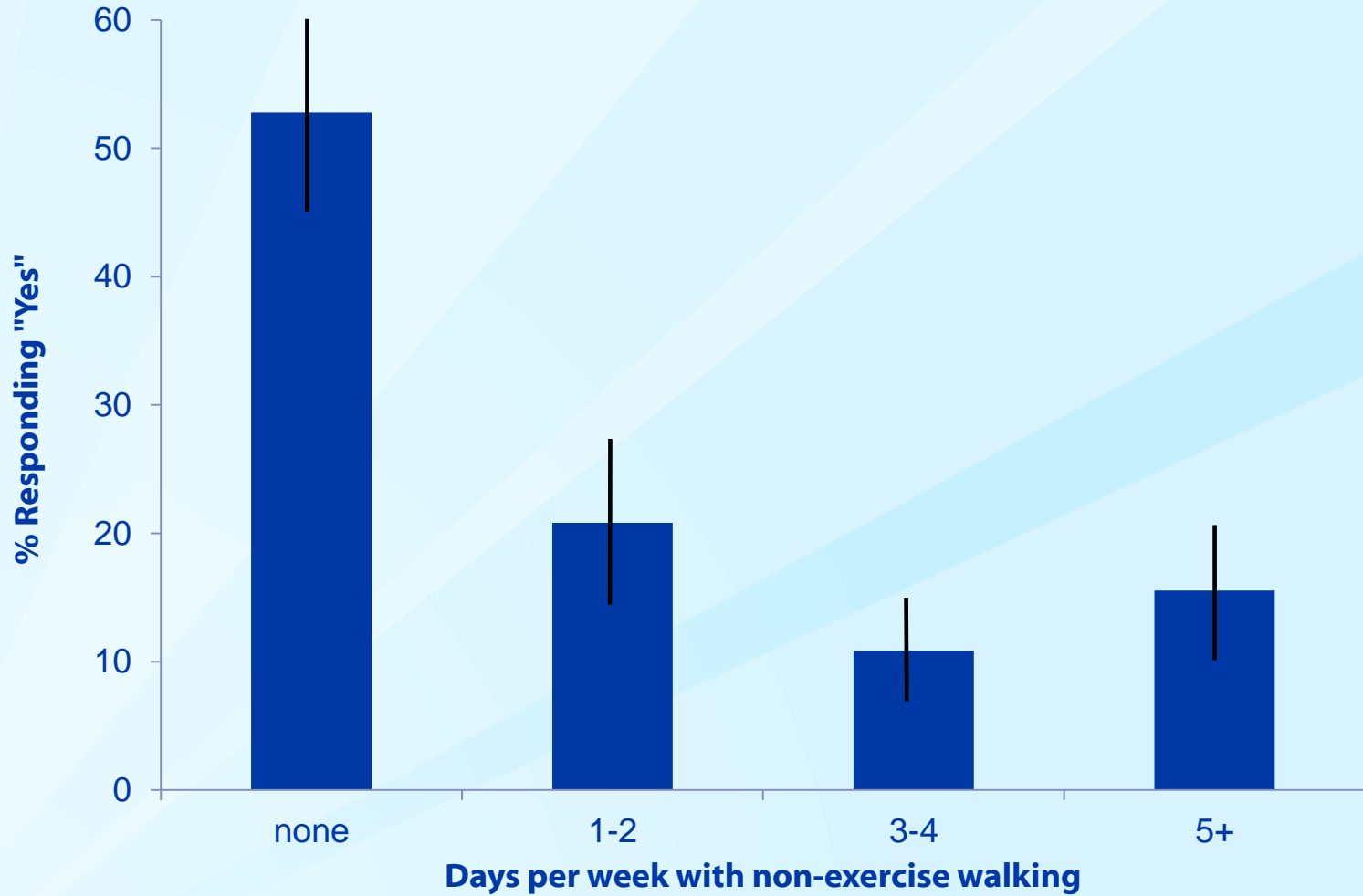
# Six General Health Questions

#	Question Text	Response Options
1	During the last 7 days, how much time did you usually spend sitting on a weekday?	Number of hours
2	Which of the following statements best describes how physically active you are in a typical week.	<ol style="list-style-type: none"><li>1. I rarely or never do any physical activity</li><li>2. I do some light or moderate physical activities</li><li>3. I do some vigorous physical activities</li></ol>
3	In general, how healthy is your diet?	<ol style="list-style-type: none"><li>1. excellent</li><li>2. very good</li><li>3. good</li><li>4. fair</li><li>5. poor</li></ol>
4	Would you say that, in general, your health is:	<ol style="list-style-type: none"><li>1. excellent</li><li>2. very good</li><li>3. good</li><li>4. fair</li><li>5. poor</li></ol>
5	About how much do you weigh?	Inches
6	About how tall are you?	Pounds

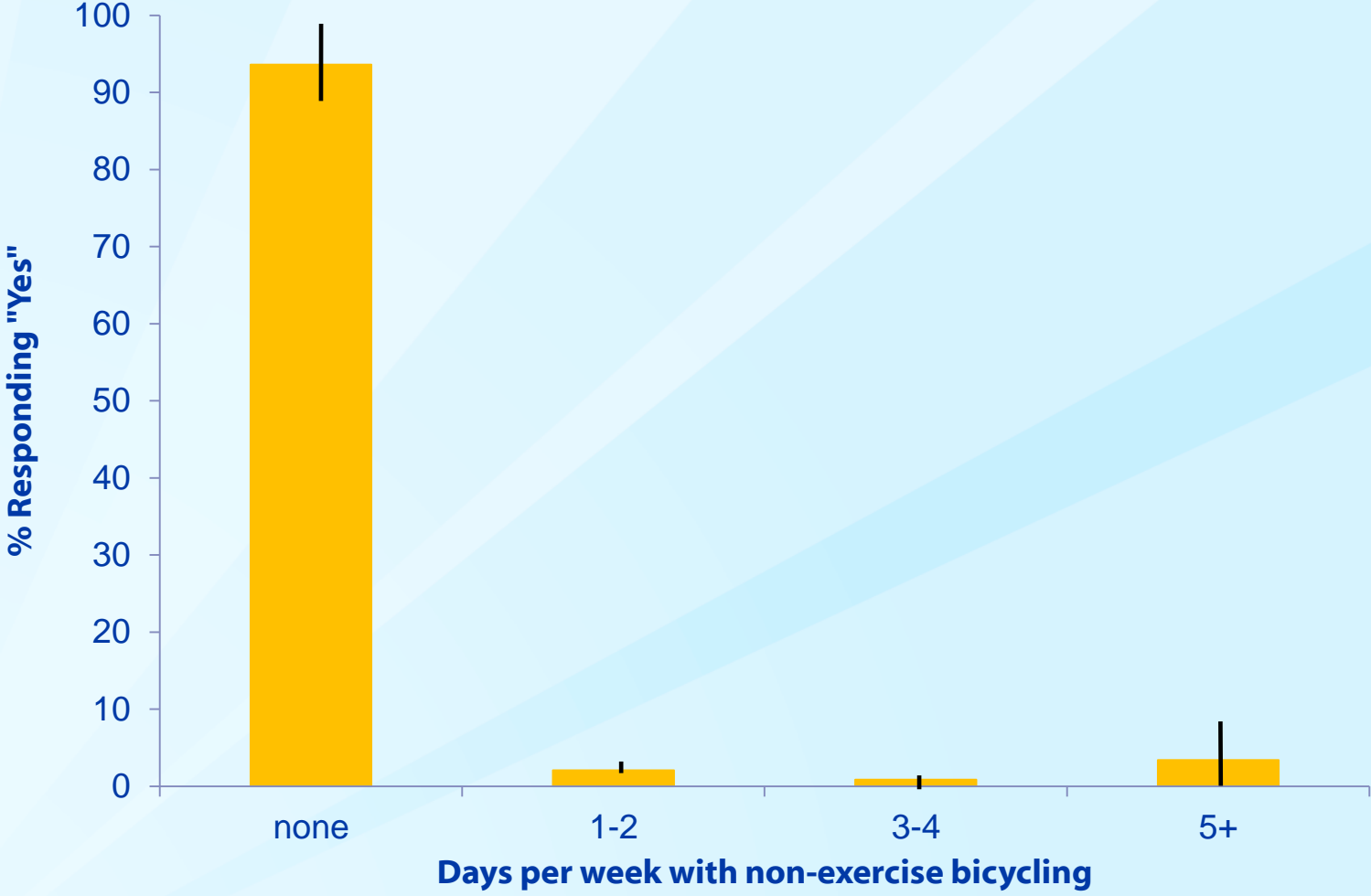
## Preliminary Results – General Health

General Health Status	Weighted n	Weighted %	BRFSS MMSA %	BRFSS TN %
Excellent	108,276	16%	18%	18%
Very Good	232,981	34%	32%	31%
Good	237,119	35%	33%	30%
Fair	76,869	11%	12%	13%
Poor	21,888	3%	5%	8%

# Transportation Walking



# Transportation Bicycling

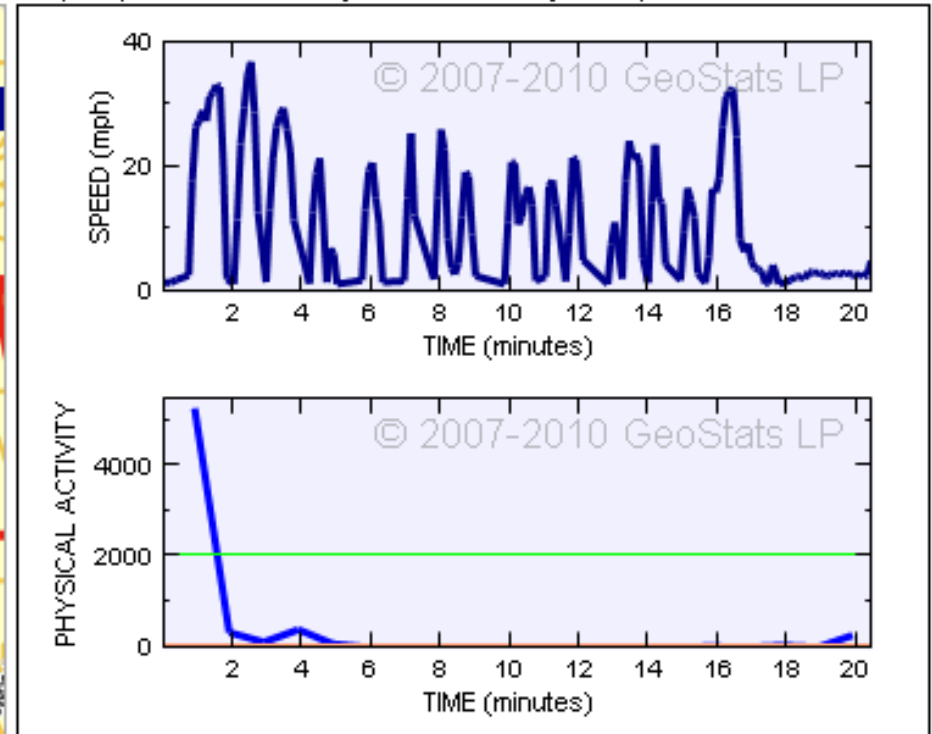


# Accelerometer and GPS

Trip Map



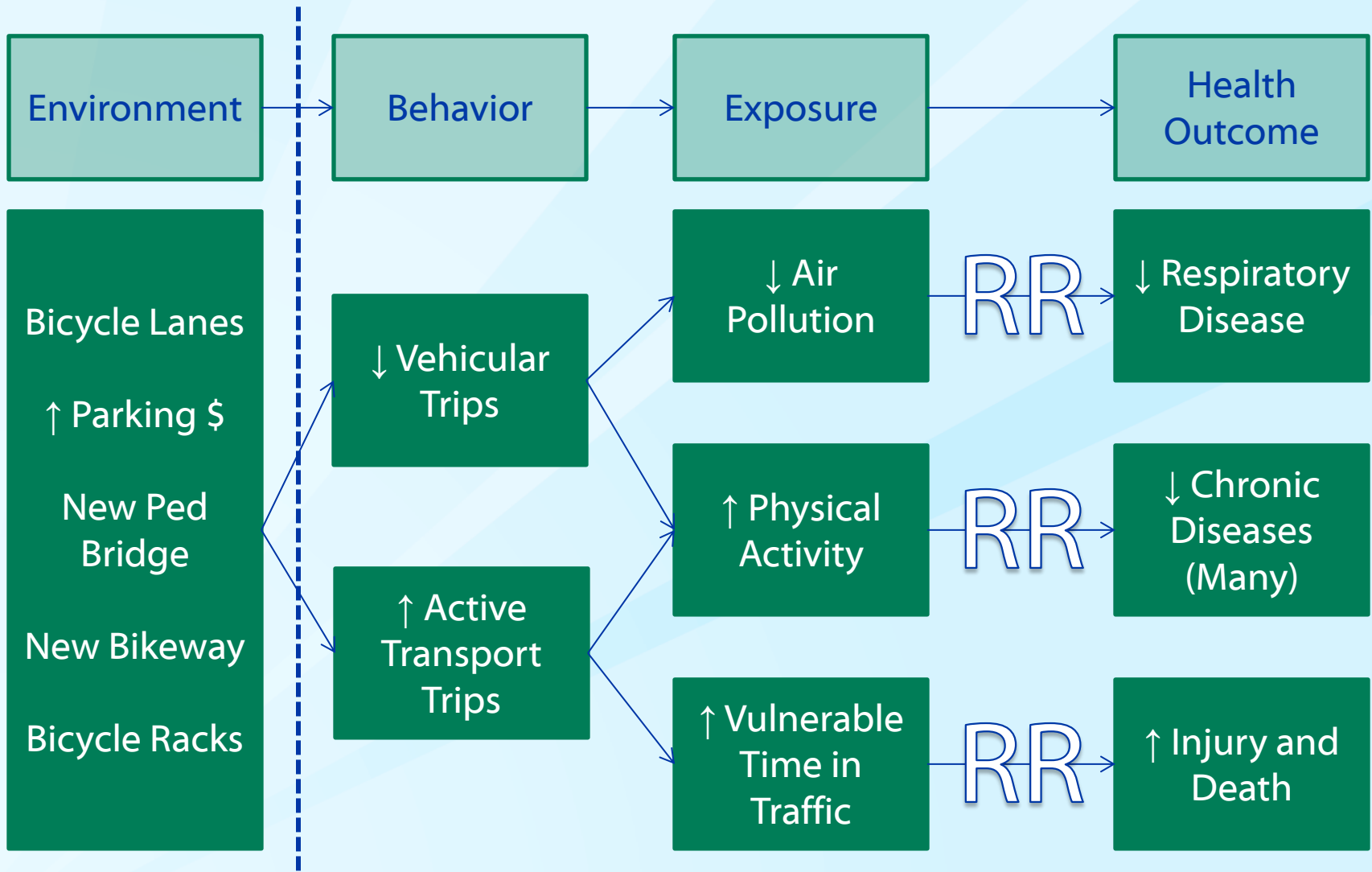
Trip Speed And Physical Activity Graphs



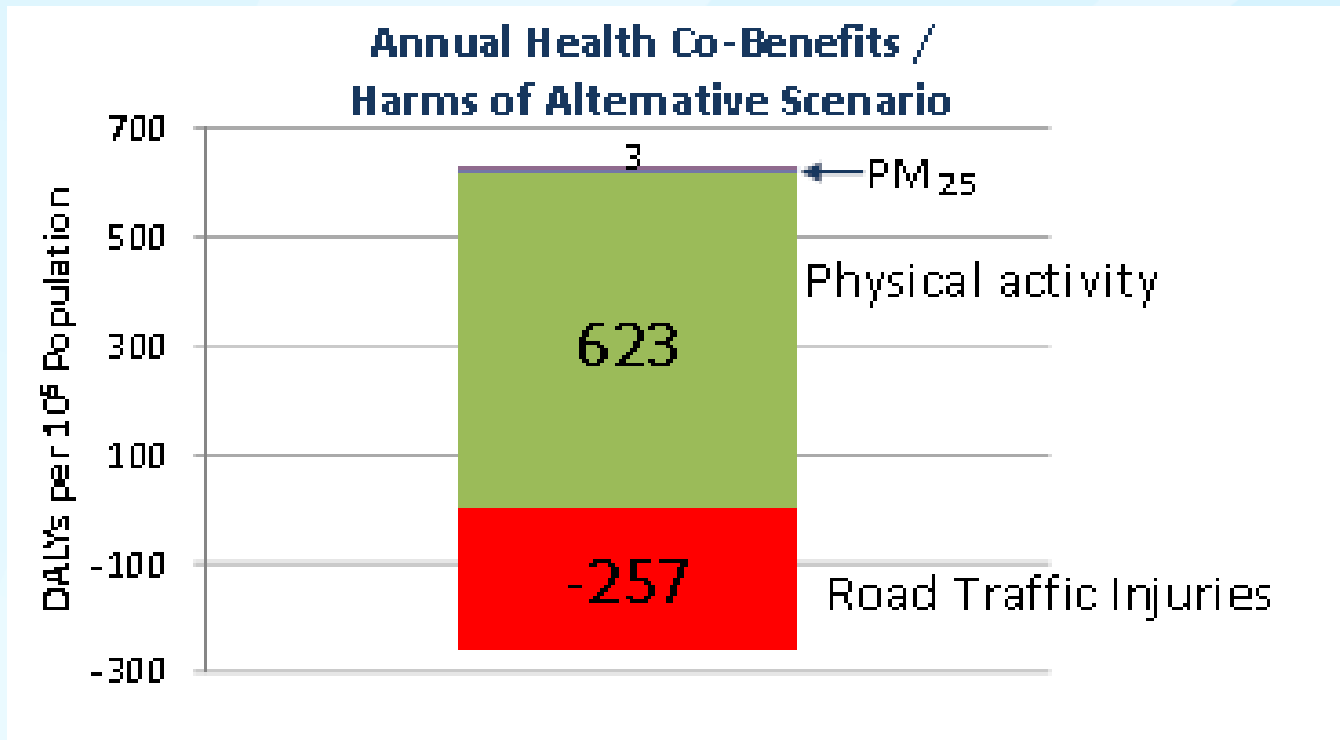
# Using Health Data in Transportation Planning

- **What might the MPO do with these data?**
- **Scenarios:**
  - A neighborhood has high childhood obesity, no safe routes to parks or schools
  - A neighborhood has predominantly older population, no transit options to local medical center
  - A main road linking residences to commercial center has high bike and pedestrian traffic, but no sidewalks or bike lanes
- **Health impact modeling**

# ITHIM Model Schematic



## Example Model Results



- Increased activity = 623 DALYs averted per 100,000 people
- Increased injuries = 257 DALYs incurred per 100,000 people

Sourced from Neil Maizlish, California Department of Public Health, ITHIM Developer  
Data presented do not represent Nashville health impacts



## **Conclusion**

- **Healthy community design should incorporate health-conscious transportation infrastructure**
- **Partnerships between public health and transportation are important**
  - Broad reach
  - Durability
  - Targeted planning
- **Health information helps inform “healthy transportation” decisions**

# Visit HCDCI: [www.cdc.gov/healthyplaces](http://www.cdc.gov/healthyplaces)

**For more information please contact Centers for Disease Control and Prevention**

1600 Clifton Road NE, Atlanta, GA 30333

Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

Visit: [www.cdc.gov](http://www.cdc.gov) | Contact CDC at: 1-800-CDC-INFO or [www.cdc.gov/info](http://www.cdc.gov/info)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



# Next Steps for the MPO

## ➔ Use ITHIM outputs to:

- Educate decision makers about health/transportation relationship
- Focus on monetizing disease burdens
- Inform the policy and funding of the 2040 Regional Transportation Plan
- Talk with Federal agencies and other MPOs about value of having health integrated into transportation planning

## ➔ Finish analyzing results of the Regional Transportation and Health Survey

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