

# Point-of-Decision Prompts Increase Walking in a Large Metropolitan Airport: The Walk to Fly Study

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# Walking in Airports?

CDC  
**VitalSigns™**  
August 2012

## More People Walk to Better Health

 **48%**

About half of all adults get enough aerobic physical activity\* to improve their health.

 **6 in 10**

Walking is the most popular aerobic physical activity. About 6 in 10 adults reported walking for at least 10 minutes in the previous week.

 **6%**

Adults who walk for transportation, fun, or exercise went up 6 percent in 5 years.

More than 145 million adults now include walking as part of a physically active lifestyle. More than 6 in 10 people walk for transportation or for fun, relaxation, or exercise, or for activities such as walking the dog. The percentage of people who report walking at least once for 10 minutes or more in the previous week rose from 56% (2005) to 62% (2010).

Physical activity helps control weight, but it has other benefits. Physical activity such as walking can help improve health even without weight loss. People who are physically active live longer and have a lower risk for heart disease, stroke, type 2 diabetes, depression, and some cancers. Improving spaces and having safe places to walk can help more people become physically active.

→ See page 4

Want to learn more? Visit

[www.cdc.gov/vitalsigns](http://www.cdc.gov/vitalsigns)

\*Aerobic activities like brisk walking, running, swimming and bicycling make you breathe harder and make your heart and blood vessels healthier.



# Point-of-Decision Prompts: A Recommended Strategy

## The Effectiveness of Interventions to Increase Physical Activity A Systematic Review

Emily B. Kahn, PhD, MPH, Leigh T. Ramsey, PhD, Ross C. Brownson, PhD, Gregory W. Heath, DHSc, MPH, Elizabeth H. Howze, ScD, Kenneth E. Powell, MD, MPH, Elaine J. Stone, PhD, MPH, Mummy W. Rajab, MS, Phaedra Corso, PhD, and the Task Force on Community Preventive Services

In one minute,  
a 150 pound  
person burns  
approximately  
10 calories  
walking up stairs,  
and only 1.5  
calories riding  
an elevator.



No  
waiting  
one door  
over.



Physical  
activity will  
add years  
to your life,  
and life to  
your years.



# The Walk to Fly Study: Purpose

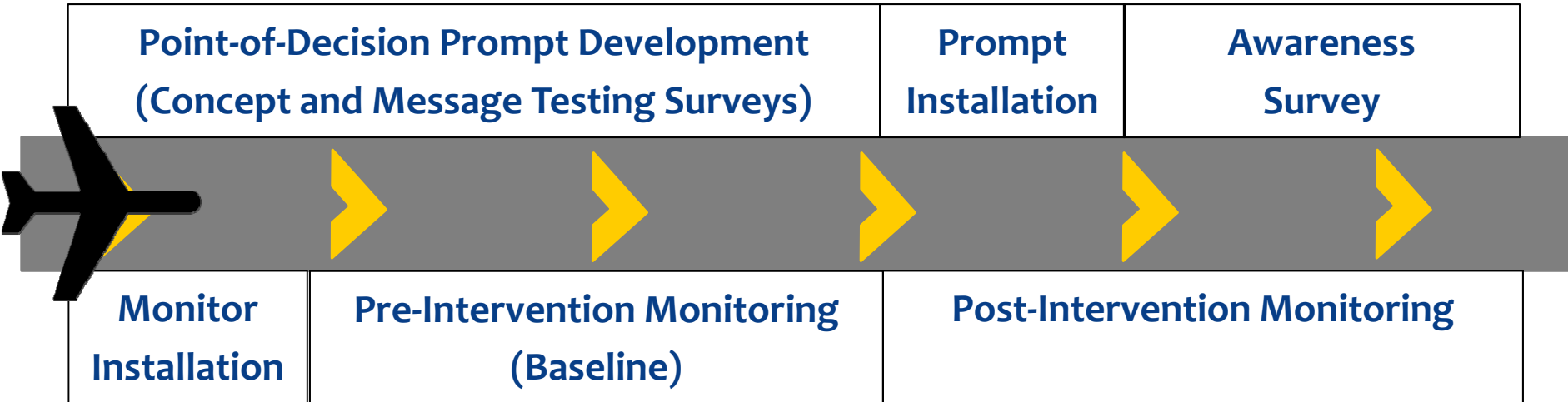
- \* Develop, implement, and evaluate the impact of a point-of-decision prompt intervention to encourage walking in a large metropolitan airport

# A Point of Decision



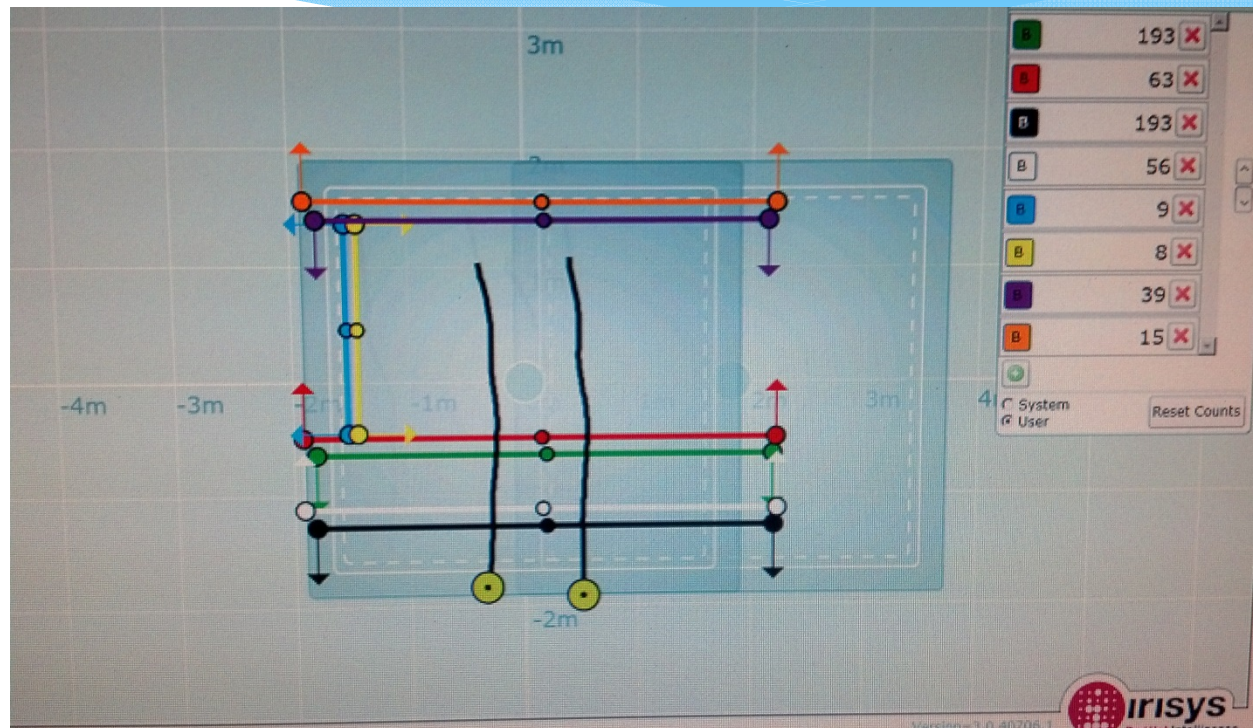
# Study Design

## Messaging

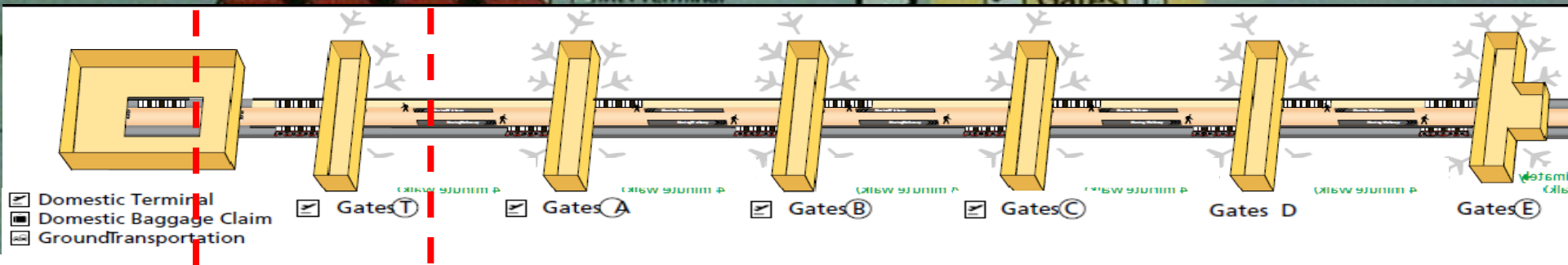


## Monitoring

# Ceiling-Mounted Infrared Monitors



# Airport Transportation Mall Layout





# Development and Evaluation of Point-of-Decision Prompts

## \* Development

- \* Surveys of random sample of airport travelers
- \* Barriers to walking in the airport
- \* Concepts to prompt walking

## \* Evaluation

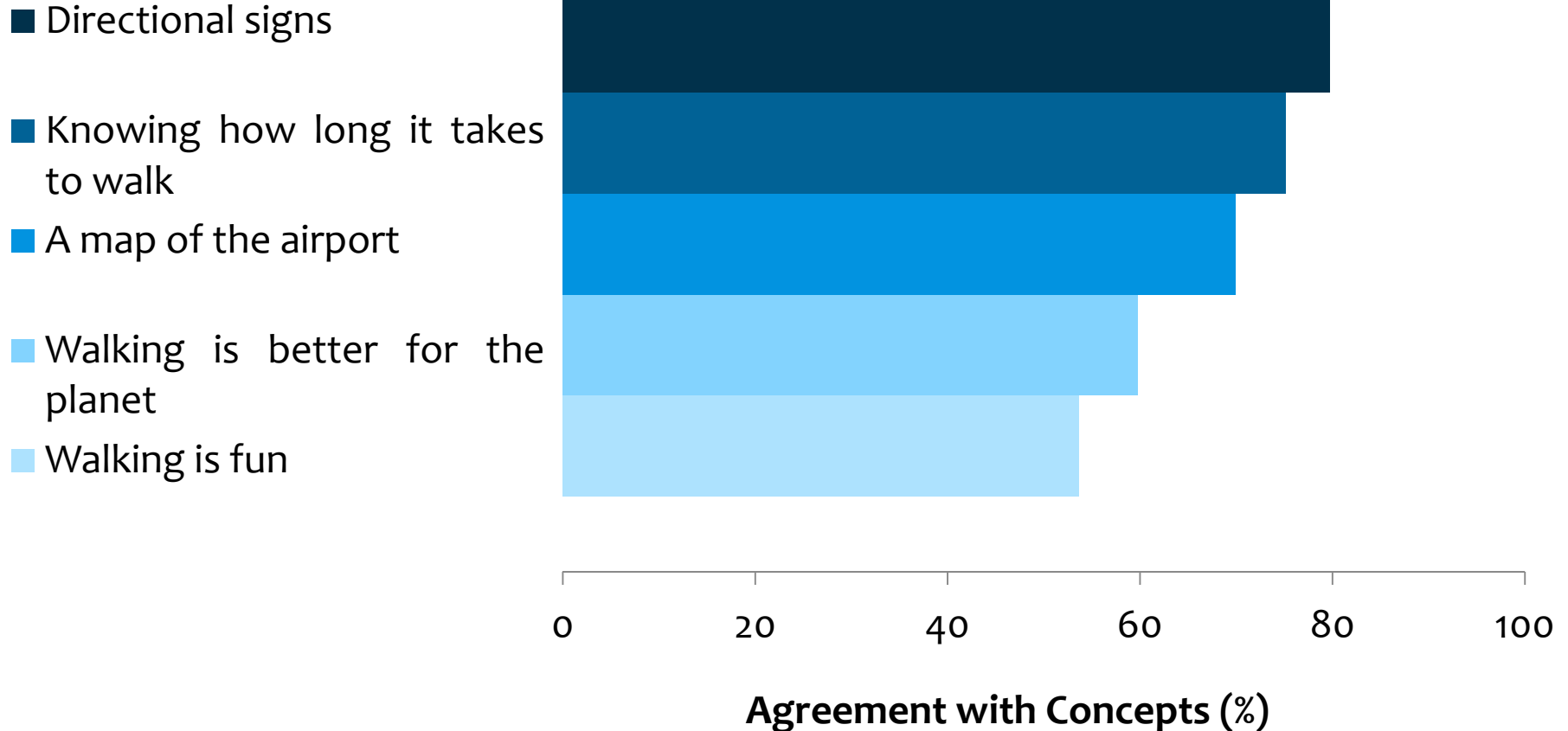
- \* Time-series analysis
  - \* Monitor counts, before versus after
  - \* Controlled for time of year and day of week

# Airport Traveler Characteristics

	Overall		Men		Women	
	n <sup>a</sup>	% <sup>b</sup>	n <sup>a</sup>	% <sup>b</sup>	n <sup>a</sup>	% <sup>b</sup>
<b>Age group (years)</b>						
18-44	55	38.3	31	40.0	24	35.2
45+	95	61.7	53	60.0	42	64.8
<b>Travel Purpose</b>						
Business	55	36.2	37	47.5	18	16.6
Leisure	85	58.2	41	47.3	44	77.3
Both	8	4.4	5	4.2	3	4.8
Other	2	1.1	1	1	1	1.3
<b>Day of Week</b>						
Weekday	103	65.1	58	62.0	45	70.5
Weekend	47	34.9	26	38.0	21	29.5
<b>Total</b>	150	100.0	84	100.0	66	100.0

<sup>a</sup> Weighted sample size; <sup>b</sup> Weighted percentages; some percentages do not sum to 100% due to rounding

# What would encourage you to walk to your gate?





Before



After

Walk to Your Gate  
Camino a su puerta de embarque  
5 Minute Walk  
Between Concourses  
5 minutos caminando entre terminales

E E D C B A I

# Before Intervention

## Airport Traveler Traffic Patterns

June 15, 2013 – September 3, 2014

Travelers entered  
transportation mall:  
20,532,246

While train operational:  
20,221,574

Train:  
18,120,976 (89.6%)

Walk:  
2,100,598 (10.4%)

❖ 89.6% Train

❖ 10.4% Walk

# Change in Walking

Walkers per day			
	Before prompts* (95% CI)	After prompts	Percent change** (95% CI)
<b>Overall</b>	4717 (4377 - 5019)	5392	<b>Change</b> <b>675</b> 14.0 (7.9 - 22.0)
<b>Weekday</b>	5079 (4821 - 5318)	5741	13.0 (8.3 - 18.0)
<b>Weekend</b>	3911 (3753 - 4055)	4515	15.0 (12.0 - 19.0)

\*Traveler counts estimated in the absence of intervention for the time period after installation of the prompts (September 4, 2014-February 19, 2015), based on counts prior to installation (June 15, 2013-September 3, 2014), adjusted for variation due to time of year and day of week.

\*\*p<0.01 for all change values.

# A Tale of Two ~~Cities~~ Minutes

- \* Wait 2 minutes, on average, see 70 people pass through transportation mall location
- \* Before signs, 7 would walk
- \* Now, 8 would walk

# A Tale of ~~Two~~ Cities 1 City

- \* After prompts were installed, 114,084 additional people chose to walk
- \* Equivalent to population of Carlsbad, California





# Conclusions

- \* Of 46,000 travelers / day entering transportation mall of a large metropolitan airport:
  - \* Point-of-decision prompts increased number of travelers walking by 14%, ~ 675 travelers / day
  - \* Increase has remained steady over 5 months

# Implications for Policy and Practice

- \* Providing information may help people make the active choice

## REDUCED FAT MILK 2% Milkfat

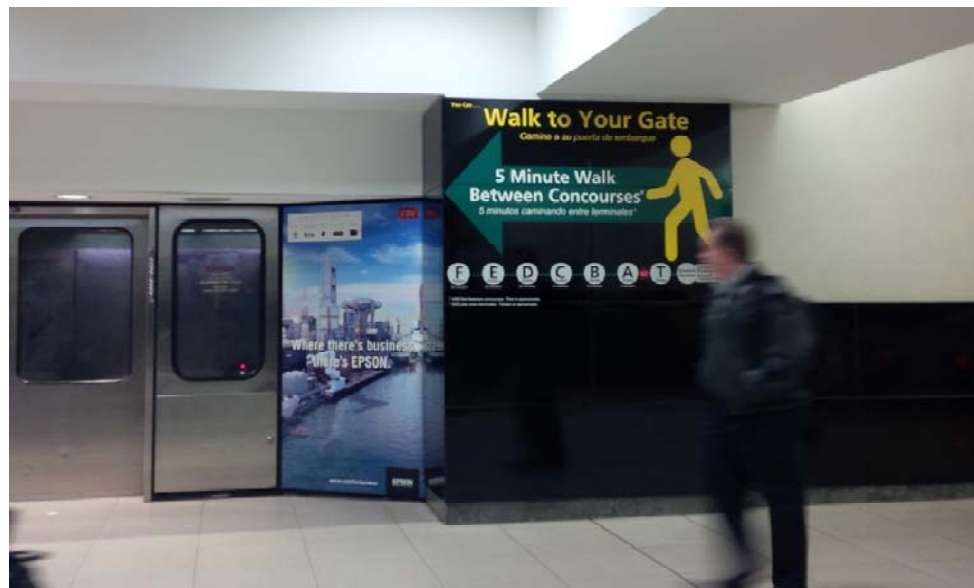
Nutrition Facts	
Serving Size 1 cup (236ml)	
Servings Per Container 1	
Amount Per Serving	
<b>Calories</b> 120	Calories from Fat 45
% Daily Value*	
<b>Total Fat</b> 5g	8%
Saturated Fat 3g	15%
Trans Fat 0g	
<b>Cholesterol</b> 20mg	7%
<b>Sodium</b> 120mg	5%
<b>Total Carbohydrate</b> 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
<b>Protein</b> 9g	17%
Vitamin A 10% • Vitamin C 4%	
Calcium 30% • Iron 0% • Vitamin D 25%	

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

## NONFAT MILK

Nutrition Facts	
Serving Size 1 cup (236ml)	
Servings Per Container 1	
Amount Per Serving	
<b>Calories</b> 80	Calories from Fat 0
% Daily Value*	
<b>Total Fat</b> 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
<b>Cholesterol</b> Less than 5mg	0%
<b>Sodium</b> 120mg	5%
<b>Total Carbohydrate</b> 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
<b>Protein</b> 9g	17%
Vitamin A 10% • Vitamin C 4%	
Calcium 30% • Iron 0% • Vitamin D 25%	

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.



# Application to Other Sectors: Transportation



- \* Pedestrian signage policies
- \* Walking directions
  - \* Time it takes to walk
  - \* Distance

One small nudge for man,  
one giant nudge for mankind!

# Thank You!

Questions?

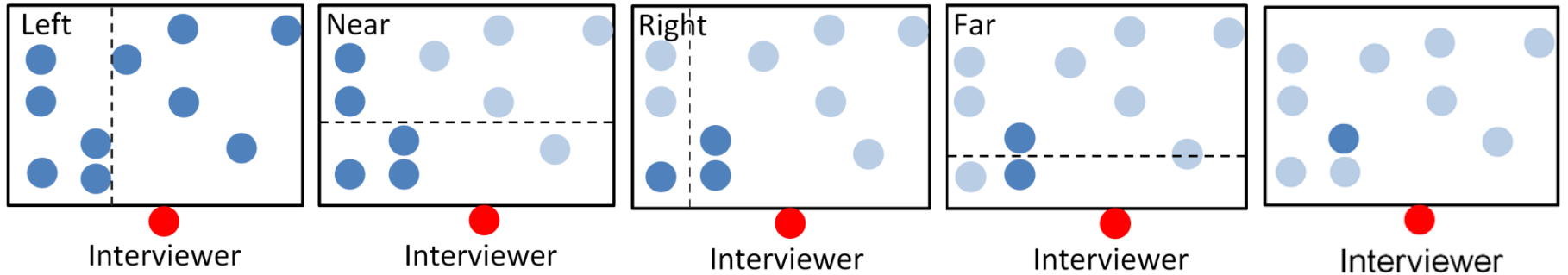
# AIR-TRaCS:

## An Innovative Rapid Technique for Random Crowd Sampling

Area	Set 1	Set 2	Set 3
A18	LNRF LFRN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RNLF RFRF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RFLN RFLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A21	LNLN LNLN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LFLF LNLN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LFLN LFLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A1	RFLF LFLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LNLN RNRF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LNRF RNLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A5	RFLN RNRN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RNLF LFLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RFRN LNLN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A6	RNRF LFLN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LFRF RNLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RFLF RNLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A8	LNRF LNRF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LNRN RFRN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RNLN RNLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A12	LFLF LFRN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RFLF LFRN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LNLN LFRF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			
A15	LNRF LFRF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	RFRF RFLF <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other	LNLN LFLN <input type="radio"/> Sleep <input type="radio"/> Phone <input type="radio"/> U18 <input type="radio"/> Other
Comments			

# AIR-TRaCS:

Sequence: L N R F L F R N



Gate ME1-G

You Can... **Walk to Your Gate**  
*Camino a su puerta de embarque*

**5 Minute Walk  
Between Concourses\***  
*5 minutos caminando entre terminales\**



F E D C B A T

\* Only with walking assistance. Book in advance.  
\* Sólo con asistencia caminando. Reserva con anticipación.

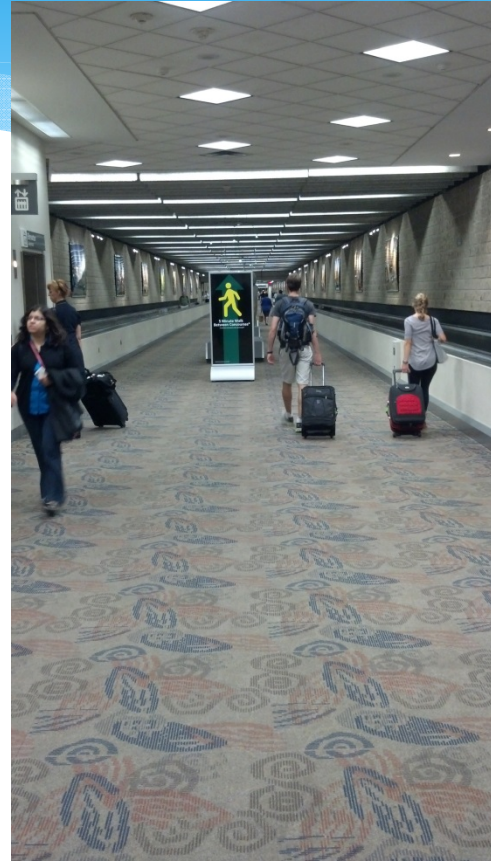
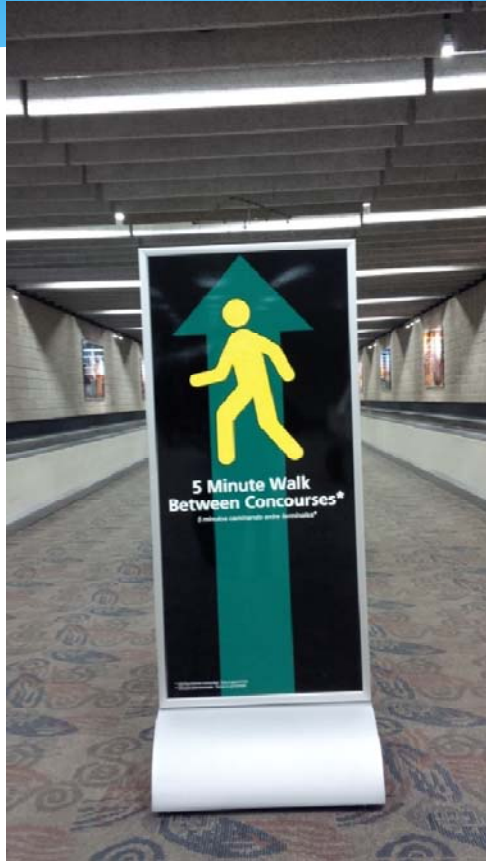


EPSON

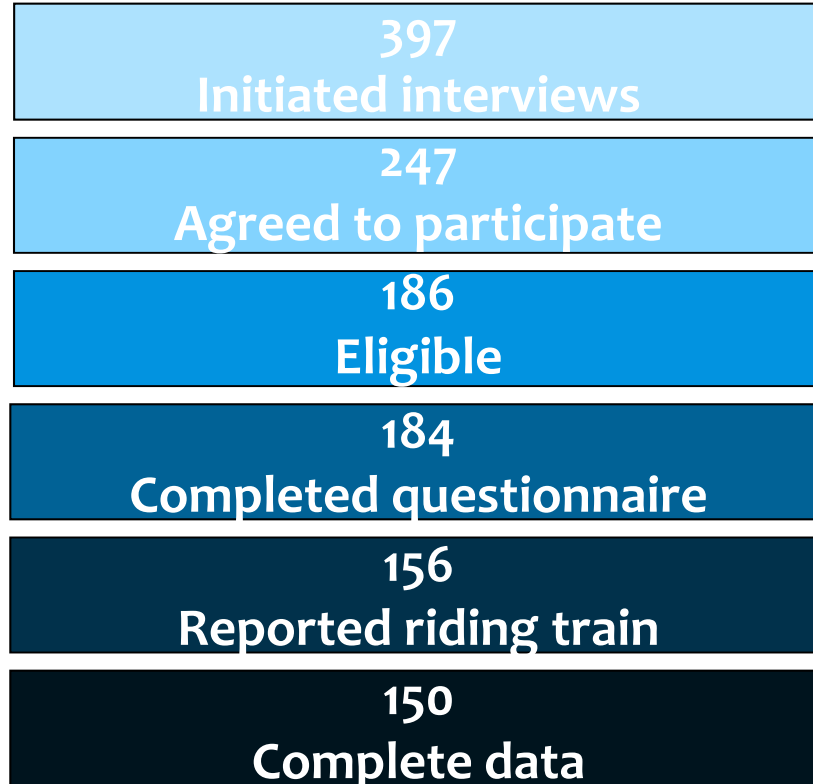




# Standing Sign in Transportation Mall



# Analytic Sample



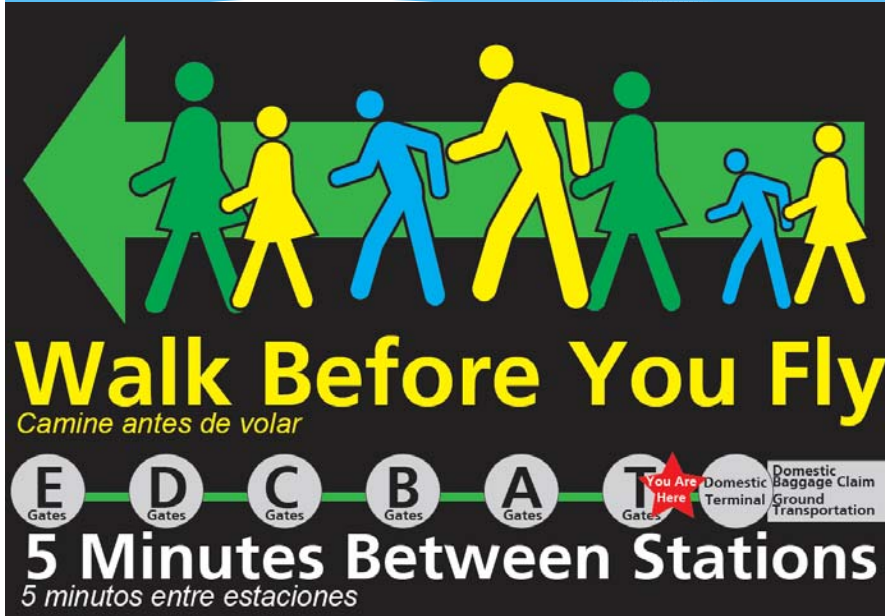
# Change in Traveler Traffic Patterns

Travelers per day			
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<b>Overall</b>	4717 (4377 - 5019)	5392	14.0 (7.9 - 22.0)
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\*\* $p < 0.01$  for all change values based on Bayesian posterior tail area.

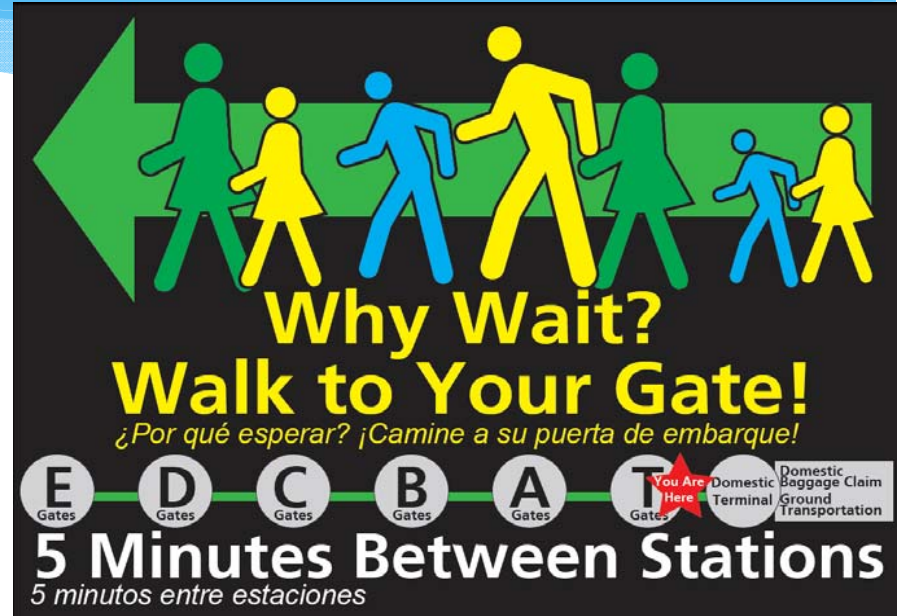
# Message Testing Survey



A sign with a black background and a large green arrow pointing left. Above the arrow are stylized human figures in green, yellow, and blue. Below the arrow, the text reads "Walk Before You Fly" in large yellow letters, followed by "Camine antes de volar" in smaller white letters. At the bottom, a horizontal line connects seven circular icons labeled E, D, C, B, A, T, and a red star with "You Are Here". Below the icons, the text reads "5 Minutes Between Stations" in large white letters, followed by "5 minutos entre estaciones" in smaller white letters. The icons are labeled: E Gates, D Gates, C Gates, B Gates, A Gates, T Gates, and a red star with "You Are Here". To the right of the star are the labels "Domestic Terminal" and "Domestic Baggage Claim Ground Transportation".

**Walk Before You Fly**  
*Camine antes de volar*

**5 Minutes Between Stations**  
*5 minutos entre estaciones*



A sign with a black background and a large green arrow pointing left. Above the arrow are stylized human figures in green, yellow, and blue. Below the arrow, the text reads "Why Wait? Walk to Your Gate!" in large yellow letters, followed by "¿Por qué esperar? ¡Camine a su puerta de embarque!" in smaller white letters. At the bottom, a horizontal line connects seven circular icons labeled E, D, C, B, A, T, and a red star with "You Are Here". Below the icons, the text reads "5 Minutes Between Stations" in large white letters, followed by "5 minutos entre estaciones" in smaller white letters. The icons are labeled: E Gates, D Gates, C Gates, B Gates, A Gates, T Gates, and a red star with "You Are Here". To the right of the star are the labels "Domestic Terminal" and "Domestic Baggage Claim Ground Transportation".

**Why Wait? Walk to Your Gate!**  
*¿Por qué esperar? ¡Camine a su puerta de embarque!*

**5 Minutes Between Stations**  
*5 minutos entre estaciones*

Is the sign clear?

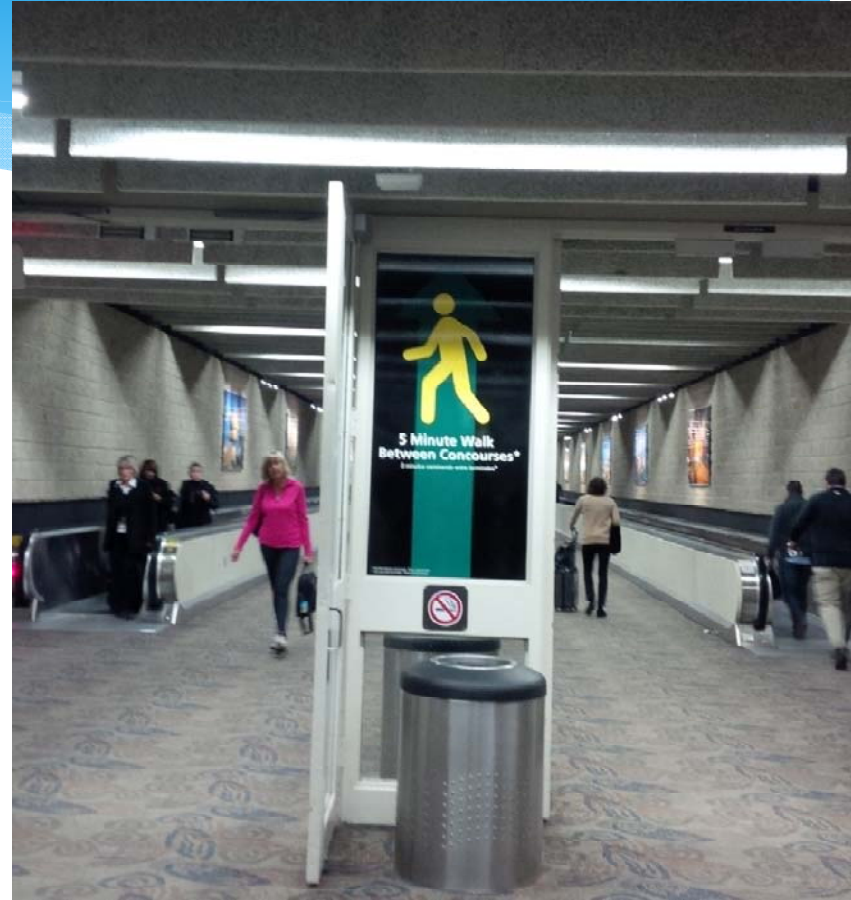
Which sign do you prefer?

Do you have any suggestions for improving the signs?

# Message Testing Findings: Summary

- \* **De-clutter**
- \* **Remove walking people**
- \* **Make time stand out more**
- \* **Make arrow stand out more**
- \* **Show time between multiple concourses**
- \* **Use shorter message**

# Transportation Mall Walkway





# Barriers to Airport Walking

Themes	Barriers to Walking	Standardized Factor Loading
<b>Modifiable Barriers</b>	Everyone else was riding the train.	0.85*
	I was afraid of getting lost.	0.33*
	I did not know walking was an option.	0.32*
<b>Non-Modifiable Barriers</b>	I did not want to sweat.	0.88*
	I am not wearing suitable clothing for walking.	0.48*
	Riding the train is more fun than walking.	0.30*
	Walking was not fast enough	0.29*
	I do not like walking.	0.15
	Walking was too difficult.	0.03

\*Significant loadings ( $p < 0.05$ )