

Understanding and Measuring Bicycling Behavior with a Focus on Travel Time and Route Choice: The Family Activity Study

by

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The Family Activity Study is a longitudinal study with the primary objective of evaluating the influence of bicycle boulevards (also known as Neighborhood Greenways) on the travel behavior and physical activity of families with children. Bike boulevards are local streets designed to encourage walking and bicycling by using traffic calming features. [Read more about the study on Jennifer Dill's blog.](#)

ABOUT THE STUDY

Participant families were recruited from within a few blocks of planned boulevard routes or from comparable control routes. We worked closely with the Portland Bureau of Transportation to identify routes with imminent construction. We started with 335 households (including at least one adult and one child), and a total of 514 adults and 537 children. Each family participated by collecting GPS and accelerometer data for 5 consecutive days (between summer 2010 and summer 2011), and by completing detailed surveys of physical activity and travel behavior and attitudes. Most of the families (79%) completed a second full round of data collection two years later (and after the construction of the boulevards). We collected GPS data on over 38,000 trips, including about 8,500 walking trips and 3,500 bicycling trips. Funding for the Family Activity Study came from the Active Living Research program of the Robert Wood Johnson Foundation and OTREC, a US DOT university transportation center.

Lack of physical activity is one factor that is contributing to the rise in obesity among both children and adults. People can get physical activity through exercise/leisure activities and forms of active transportation such as walking and bicycling. A range of factors influence the decision to walk or ride a bicycle for recreation or transportation, including whether or not the physical environment is supportive of walking and bicycling. A central focus of this research aims to evaluate the effects of new, innovative infrastructure on physical activity (PA) of families with children. Participant families were recruited from within a few blocks of planned Neighborhood Greenway routes or from comparable control routes. We worked closely with the Portland Bureau of Transportation to identify routes with imminent Greenway construction. 335 households (including at least one adult and one child), and a total of 514 adults and 537 children participated by collecting GPS and accelerometer data for 5 consecutive days (between summer 2010 and summer 2011), and by completing detailed surveys of physical activity and travel behavior and attitudes. 79% of households were successfully reenlisted to complete a second full round of data collection 2 years later (and after the construction of the Neighborhood Greenway for treatment households). Over 38,000 trips were recorded, including about 8,500 walking trips and 3,500 bicycling trips.

The Family Activity Study is a before-and-after study of the influence of Neighborhood Greenways on the physical activity of families with children (Neighborhood Greenways are also known as “bicycle boulevards”, and are calm local streets designed to encourage walking and bicycling). Members of participating families wore GPS and activity monitors and took detailed travel and physical activity attitude and perception surveys at points in time two years apart. Portland has been building a number of Greenways around the city in recent years. Families were recruited from areas where Greenways were planned to be built in between data

collection periods, or from control routes. This study seeks to understand how the Neighborhood Greenways impacted the travel behavior and physical activity of participating families, and, with over 38,000 trips recorded from 335 families, provides a wealth of data to investigate the travel choices, activity, and attitudes of Portland families.

Mapping the Family Activity Study: Walk and Bike Trips

In order to visualize where study participants walking and bicycling trips were made, we created maps for each of these modes of travel. See the Walk Trips and Bike Trips Maps below.

