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## Neighborhood design and active aging

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### Abstract

This qualitative analysis of focus groups describes how neighborhood design encourages active aging. Nine focus groups were conducted in 2002 and 2003 with residents ( $N = 60$ ) aged 55 and over living in Portland, OR, USA. Content analysis revealed that local shopping and services, traffic and pedestrian infrastructure, neighborhood attractiveness, and public transportation influence activity among older adults. This information will be useful for making policy recommendations relating to land use planning and transportation, to assist in senior-friendly developments and neighborhood improvements, and to design effective senior health interventions with an emphasis on neighborhood design influences.

### Keywords

Neighborhood design; Successful aging; Walking; Traffic; Safety; Public transportation

### Introduction

Few factors contribute as clearly to successful aging as having a physically active lifestyle (Rowe and Kahn, 1998). Despite known benefits (Singh, 2002), activity levels decline with age (DiPietro, 2001). A trans-disciplinary research agenda is focusing on how policy and community design can promote more active lives (see for example, Owen et al., 2004; Humpel et al., 2002).

Research in the transportation, urban planning, and public health fields indicates that people are more active in accessible neighborhoods with mixed land uses, high street connectivity, and greater population density (Handy et al., 2002; Saelens et al., 2003). This research has rarely focused on special populations, such as seniors (Cunningham and Michael, 2004; Frank et al., 2003; Ory et al., 2003). The history of research in environmental gerontology, or the study of physical environment on older adults, began in the 1960s (Hans-Werner and Weisman, 2003). The theoretical advances in this field have not been successfully translated into the current research and applications related to community design. Additionally, few empirical studies identify built or social environmental features based on the perspective of seniors (Feldman and Oberlink, 2003). The purpose of this paper is to address this gap in the literature and to answer the research question: How does neighborhood design encourage or inhibit active aging according to older adults?

This qualitative analysis is part of a larger project that will be used to develop tools to evaluate the specific neighborhood aspects important for successful aging. “Active aging” describes the desire and ability of older adults to integrate physical activity into daily routines, such as walking for transportation, exercise, or pleasure. Active aging may also include engagement in economic or socially productive activities, such as playing in the park with grandchildren and working in the home or yard.

## Methods

This study reports on focus group interviews conducted as part of the Senior Walking Environment Assessment Tool (SWEAT) study. SWEAT is a collaborative project including partners from Oregon Health & Science University, Portland State University College of Urban and Public Affairs, and Elders in Action, a local advocacy agency for older adults. Ten city neighborhoods in Portland, OR, USA were selected to represent a relatively diverse spectrum of socio-demographic characteristics, including cost of housing, population, and age of residents. Neighborhood boundaries are identified by the Portland City Council and delineated by streets and districts.

## Data collection

Nine focus groups were conducted between December 2002 and May 2003 involving adults 55 years of age or older and living in or near one of our study neighborhoods. Potential participants were recruited to participate in a one-time focus group about neighborhood environment and senior physical activity using news-paper ads, announcements at neighborhood associations and other organizations serving older adults, and flyers in participating neighborhoods. The advertisement acknowledged that the focus groups were part of a research study, and it is possible this discouraged some volunteers from participating in the discussions. All the individuals who responded to recruitment efforts were screened to determine age and neighborhood of residence, and eligible adults were divided into groups according to neighborhood. One of the focus groups was conducted with volunteers from Elders in Action who did not necessarily live in our study neighborhoods. Groups were held in public locations within each neighborhood, such as libraries or community centers. Prior to the focus group discussions, the participants signed consent forms. Each audiotaped session lasted approximately 90 min. In the focus groups participants were asked to describe:

1. Features they like and do not like about their neighborhood,
2. activities they do in their neighborhoods that do not involve using a car,
3. things that make it easy or difficult to walk in their neighborhood, and
4. the ideal neighborhood they would like to live in as they get older.

Participants were also shown photos taken of their neighborhood and asked to describe how they would feel walking on the street in the picture.

## Analysis

Audiotapes were transcribed and reviewed by the investigators. The investigators created initial codes based on prior research and additional codes were suggested from the participants' comments (Morgan and Krueger, 1998). Atlas.ti (2004), software designed for the management and analysis of qualitative data, was used to organize the data, facilitate coding and identify themes. Themes were assigned by one investigator (MG) and verified by another investigator (YLM). To ensure accuracy of comments and of the researchers' interpretations, a summary of the study results was distributed to participants who were invited to respond by mail, phone, or attendance at either of two community meetings.

Comments from the 15 participants in this member checking process are incorporated into the final analysis (which follows in the Results section).

## Results

### Sample

The ten Portland neighborhoods selected for this research are described in Table 1. Recruitment difficulties forced us to exclude neighborhood C from our data collection efforts. Neighborhoods B and H are contiguous and due to close geographic proximity were combined as one focus group. According to 2000 Census data, 79.2% of people living in Portland were non-Hispanic Caucasian and median property value was \$157,900. The nine focus groups ranged in size from 4 to 11 people. The average age of a person attending a focus group was 69 years and people ranged in age from 56 to 84 years. While the majority of the people who attended our focus groups were healthy and active, 3% of participants said they did not regularly walk and 12% reported some mobility limitation.

### How does neighborhood design influence active aging?

Key themes illustrating how neighborhood design influences active aging emerged from the focus group data: (1) local shopping and services provide older adults with places to walk, to meet others, and to stay active without a car; (2) concerns about traffic and inadequate pedestrian infrastructure limit walking and other activities in neighborhoods by making older adults feel unsafe; (3) a neighborhood's overall sense of attractiveness, including gardens, buildings, and streets, encourages walking for exercise and pleasure; and (4) adequate public transportation is essential to remaining active in the larger community and independent in one's neighborhood. Table 2 summarizes the key points identified by each theme and representative statements from the focus group participants.

### Local shopping and services

Diverse services within a local neighborhood area provided participants with the ability to walk to daily activities: "I especially like the fact that we can walk to a lot of different kinds of services and places." About half said services within walking distance provided a way to get exercise while taking care of daily activities. Participants did not agree on what constituted "walking distance" for services. Some indicated they walked more than a mile to do errands and others indicated three blocks was too far to walk. Three non-driving participants specifically indicated the ability to walk to needed services played a role in their decision to live in a particular neighborhood. The perception among participants that an area lacked accessible services and/or that services were located in high crime areas was linked to decreased incentive to walk to local amenities and increased isolation.

### Traffic and inadequate pedestrian infrastructure

Most participants described busy, heavily trafficked roads as unsafe and unpleasant: "I wouldn't [walk on a busy street] because of traffic, noise and everything." Many participants indicated they avoid walking on busy streets and at heavy traffic times, such as rush hour. Others observed that completely avoiding busy streets is not possible because the services are located on busy arterials. A few participants noted sidewalks serve as a buffer against traffic, especially when the sidewalks are wide. A few also stated that a planting strip, or buffer zone, between the sidewalk and the street provided distance from traffic and increased walking.

Participants disagreed about the usefulness of traffic calming devices such as speed bumps, traffic circles, and cross walks for encouraging walking by slowing traffic and enhancing pedestrian safety. Traffic circles, raised islands placed in an intersection and landscaped

with ground cover and street trees, were perceived by some older adults as threats to pedestrian safety rather than enhancements because the circles limit visibility for drivers and walkers. Most participants found traffic signals with pedestrian controls essential to feeling safe at street crossings. However, the older adults agreed that signals in their neighborhoods did not provide enough time to safely cross the street.

### **Neighborhood attractiveness**

All of the participants were more likely to walk in attractive neighborhoods: “It’s a great walking neighborhood, the areas are kept clean and friendly...” Participants identified several specific aspects of attractiveness: gardens and well-kept yards, design of buildings and streets, and interesting things to look at. Specific examples of design aspects that add to a neighborhood’s visual interest included the presence of a variety of architectural styles within one block, historical markers, and curved streets. It is notable that while curved streets make an area more attractive for recreational walking, they may lengthen the distance to be walked to a destination compared to the traditional “grid” pattern.

The older adults agreed that neighborhood buildings in disrepair reduced their walking. Further, a few had participated in organized neighborhood activities, such as park clean-up days, litter patrols, and community gardens, or took individual action, such as cleaning graffiti off a sign, to improve neighborhood attractiveness.

### **Public transportation**

Focus group participants consistently emphasized the importance of public transportation in connecting them to valued activities and people: “...it’s a whole new world out there when you ride the bus.” Public transportation was described as important to older adults generally and essential for people with limited mobility. Participants mentioned public transportation is not just an alternative to driving, but can help seniors to meet and connect with other people. A few participants reported that lower-income areas within their neighborhoods have particular problems with lack of access to transportation. Those who must walk a long distance to reach a transit stop said it makes traveling out of their neighborhood less safe and in some cases unfeasible. Participants expressed a strong preference for living in their neighborhoods for as long as they are able and felt good public transportation helps make that possible.

### **Discussion**

Our findings suggest older adults believe that neighborhood design promotes activity in later years. At least one participant had relocated to her present neighborhood 2 years prior because she “wanted to be in an area that was handy to all sorts of activities... shops that are convenient including a post office,... restaurants, ... mass transit... wonderful places to walk in this gorgeous neighborhood.” Most moved to their neighborhoods many years earlier for reasons other than walkability (affordability, etc.), but stayed in part because close-by neighborhood destinations—grocery stores, library, public transit stop—provide older adults with a reason to walk as well as a place to interact with others. For older adults, maximizing the attractiveness or safety of a walking path is more important than minimizing the distance to a destination. Safety emerged as the biggest concern that limits walking for everyday activities as well as exercise. Primary safety concerns were busy, trafficked streets and unsafe street crossings. Traffic lights that provide exclusively pedestrian access and adequate time to cross were high priorities. More work needs to be done to address safety concerns raised among older adults in reference to traffic calming, especially traffic circles.

These findings are consistent with quantitative research that found the number of retail destinations within walking distance (Patterson and Chapman, 2004; King et al., 2003) and safe walking paths (Booth et al., 2000) were positively associated with walking among older adults, while perceived traffic was negatively associated (Wilcox et al., 2003). Research conducted in Scotland found that a traffic-calming scheme, including speed bumps and marked crosswalks, increased pedestrian activity among neighborhood residents (Morrison et al., 2004), however older adults were not considered separately.

### Limitations

This research involved a convenience sample of older adults living in nine neighborhoods in the city of Portland, OR, USA. Thus the generalizability of our findings may be limited. However, other focus group research conducted with older adults to identify livable communities found strikingly similar findings across very diverse communities (Feldman and Oberlink, 2003). This provides some evidence that our findings may not be unique to the community of Portland, OR, USA. While the intent in selecting neighborhoods for study was to provide a diverse sample in terms of socioeconomic status, the neighborhood with the lowest socioeconomic status (Neighborhood C) was ultimately not included in our data collection effort. These potential participants expressed distrust of research generally, concerns about privacy, and beliefs that the information might be used to make unwanted changes in their neighborhood.

### Implications

The overwhelming preference among older adults is to remain in their own home as they age, however, very little work has been done to understand the elements of neighborhood context and urban form that allow successful “aging in place” (Cannuscio et al., 2003). Understanding the role that neighborhood context plays in promoting active aging has implications for policy and urban design considerations of new neighborhood construction and retrofitting. For example, the findings from these focus groups were the basis for a formal recommendation to Portland City Council to address neighborhood factors that keep older adults physically active in their neighborhood and support independent living as individuals age. The recommendations were presented to City Council on March 31, 2004 and unanimously adopted. In November 2004, Portland Department of Transportation hosted Portland’s first Pedestrian Summit providing citizens and policy makers an opportunity to discuss specific actions to encourage active neighborhoods, including enforcement of pedestrian safety laws and the creation of a pedestrian Master Plan.

### Acknowledgments

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Table 1

Selected characteristics<sup>a</sup> of study neighborhoods

Neighborhood	Population	Median Property Value	%Homeowners	% Seniors	Description of Neighborhood from Land Use Maps
A	294	\$167,050	79	14	Mostly single-family dwellings and open space, some industrial space
B	3033	\$120,600	52	13	Primarily residential, single-family dwellings, commercial zone is not embedded within the dwelling area
C <sup>b</sup>	11,456	\$107,430	68	10	Mostly single-family zoning, with some multi-family areas. Some employment as well, and open spaces interspersed within residential areas
D	7923	\$181,475	16	5	Good mix of land uses from employment to open spaces to retail/commercial to single- and multi-family residential.
E	8234	\$139,150	38	9	Single- and multi-family dwelling. Commercial area along principal artery. Some open spaces
F	15,987	\$125,150	61	12	Majority single-family zoning, with some multi-family zoning. Open spaces are limited.
G	11,320	\$128,790	60	10	Majority is single-family zoning, with some commercial space.
H	11,346	\$109,525	56	9	Majority is industrial, with some areas of open space and a concentrated area of single-family dwelling zoning
I	3043	\$224,780	26	19	Mix of commercial and employment uses. Single- and multi-family residence. Very limited open space
J	4889	\$112,000	66	9	Mostly single-family zoning, with some multi-family. Industrial area is rather large. Some open space.

<sup>a</sup> Sources: June 2002 RLLIS, taxlots dataset (Data Resource Center, Metro); US Census 2000; Office of Neighborhood Involvement, [www.myportlandneighborhood.org](http://www.myportlandneighborhood.org).

<sup>b</sup> Neighborhood C was excluded from analyses.

**Table 2**

Essential neighborhood characteristics: the built environment and physical activity

Themes	Key Points	Representative Statements
Local shopping and services	Places to stop and rest while walking may be important for seniors	F: if you get tired when you get older there's quite a few places you can stop. G: yeah, quite a few places for coffee. H: I like the library.
	Close destinations allow seniors to combine walking with other daily activities Lack of amenities or concerns about safety limit walking and increase isolation	I try to incorporate errands that need to be done. If we need one or two little things at [store], then I...pick up one or two things rather than take the car. And get my walk in that way. I think it's sad that in some neighborhoods the seniors do not have activities close to them, stores close to them—another isolation issue. You go to some neighborhoods, there's really nowhere for them to walk than around and around the block.
Traffic and inadequate pedestrian infrastructure	Heavy traffic may result in self-limiting activity for safety reasons Traffic calming devices can slow cars and make walking more pleasant.	I think people [are most important] because you can have all the facilities, but if ... you were worried about... criminal activity or ... you wouldn't venture out your door, then what good would all the other things be? I think, to me, the people are the most important. ...the amount of traffic on [street intersection]. Where I would have done more walking across [street] to get to [name] park, I hesitate at certain times of the day. I don't want to cross those streets and other places. C: Yeah, you can see they're not gonna go flying through there so fast, there's a bump, in the street. D: yeah, there's a street bump there, yeah. It's probably quieter, trees are pleasant. E: those big circles in some of the streets. D: yeah, both of them are good at slowing things down.
	Some traffic calming schemes (circles, marked cross-walks) may actually increase danger to walkers.	I saw somebody right when it [traffic circle] was brand new...just kind of turn this way, go around it and just skidded right up on the sidewalk. So, I think they're dangerous in that sense. I think they redirect traffic inappropriately, I'd rather see bumps. Drivers, a lot of them, will not stop a crosswalk, even though it is marked.
	Older adults will go out of the way to cross at a light but lights may not provide adequate time to cross.	If we have to cross a busy street, we often go a block or so to get one to cross with [the light] depending on the time of day and the traffic. I do think that it's very difficult to make it across the street before the light changes and before the traffic starts turning toward you. And, I walk fairly briskly for my age I think
Neighborhood attractiveness	Presence of gardens and interesting things to look at increases enjoyment while walking	I enjoy walking around the neighborhood and seeing what everyone has in their garden, you know, what's blooming now, things you don't see when you're in your car. One thing I enjoy when I walk in different neighborhoods is a lot of historical places in Portland and homes. And, I like to have that pointed out. You know the name of the house and



Themes	Key Points	Representative Statements
Public transportation	Public transportation becomes important as ability to drive or health decreases	<p>the year it was established, things like that because it gives you a more sense of belonging to your community.</p> <p>I'd love to live out further, but I keep thinking 'Well, what if they pulled your license, what if your vision went real bad.' It's so important when you're older to live in a place where you can walk...because... I live in fear of will I always be able to drive?</p>
	Public transportation is an important aspect of walkable neighborhoods	I think it's very livable. It's easy to walk around in, and get around by bus.
	Access to public transportation may be limited in low-income areas	<p>I like walking there, I'm a block to transportation. I think Portland's a very friendly city.</p> <p>The only problem we have is that access to the lower income ones in the [neighborhood name]...and that area, we are having a heck of a time getting [public transportation] to run any kind of regular service in that area.</p>