

*Eat better and get more exercise.* That's what public health officials have said for years and yet, even in the face of heightened media and public awareness, California residents are growing increasingly overweight or obese.<sup>1</sup> *Where's the disconnect?*

The Community Activity & Nutrition Coalition of Sonoma County (CAN-C) and the Sonoma County Department of Health Services (DHS), working with the statewide Communities of Excellence in Nutrition, Physical Activity, and Obesity (CX<sup>3</sup>) program, took a ground-level look at low-income neighborhoods in Sonoma County to understand the dynamics shaping health behaviors. The findings are both provoking and instructional and could guide Sonoma County in making community-wide changes to significantly improve the health of Sonoma County.



### Challenged Communities

There is growing evidence that what people eat and the likelihood of being overweight is influenced by the environment where they live. More than half of all Sonoma County adults are overweight or obese.<sup>1</sup> As we struggle to reverse this alarming trend, access to healthy foods and physical activity is more important than ever.<sup>2</sup>

A recent statewide study showed that there are four times as many “unhealthy” food outlets (fast food restaurants and convenience stores) as “healthy” food outlets (supermarkets, produce vendors and farmers’ markets) in California.<sup>3</sup> Convenience stores, small corner markets and gas stations are often the only food retailers available in low-income neighborhoods.<sup>4</sup> Neighborhoods without access to healthy food from supermarkets or large grocery stores are being coined “food deserts.” Residents who can’t drive are left to either take a bus or taxi to the nearest large grocery store, both time-consuming and costly. Consider these health facts:

- In low-income neighborhoods, each additional supermarket has been found to increase residents’ likelihood of meeting nutritional guidelines by one-third.<sup>5</sup>
- Residents in communities with a more “imbalanced food environment” (where fast food and corner stores are more convenient and prevalent than large grocery stores) have more health problems and higher mortality than residents of areas with a higher proportion of large grocery stores, when other factors are held constant.<sup>6</sup>
- The presence of a supermarket in a neighborhood is linked to higher fruit and vegetable consumption and lower rates of overweight and obesity.<sup>7,8</sup>
- Children and adults who report eating higher intakes of fruit on a daily basis have a lower body mass index (BMI) than those with lower intakes.<sup>9</sup>
- Research suggests that about one third of cancer deaths were related to nutrition, physical inactivity, obesity or overweight and could have been prevented.<sup>10</sup>

### Obesity Costs

Overweight and obesity are serious health issues associated with increased risk of morbidity and mortality from chronic diseases.<sup>11</sup> These health issues are most pronounced among low-income communities.<sup>12</sup> In addition to the negative consequences these health problems have for individuals, it also take a toll on the economy through increases in health care costs, workers compensation and costs associated with loss of productivity.



## Communities of Excellence

The Communities of Excellence in Nutrition, Physical Activity, and Obesity Prevention (CX<sup>3</sup>) project takes an in-depth, on-the-ground look at select low-income neighborhoods in Sonoma County to measure the nutrition environment and identify opportunities for improvement. Because the community itself plays a critical role in preventing obesity, this project examines communities in relation to a variety of obesity prevention benchmarks. These benchmarks – or standards of excellence – define what a community should look like in order to help prevent the devastating chronic diseases related to overweight and obesity for its residents.

Through neighborhood audits, the CX<sup>3</sup> project examined factors ranging from food quality, affordability and availability to healthy food alongside messaging and marketing practices. The local data and resulting performance measurements show how a community currently “measures” and where it needs to improve to become a “community of excellence.” The project’s goal is to gain a realistic picture of the health of the community/neighborhood and offer residents, merchants, decision makers and local neighborhood and health groups a focal point as they work to build a healthier community.

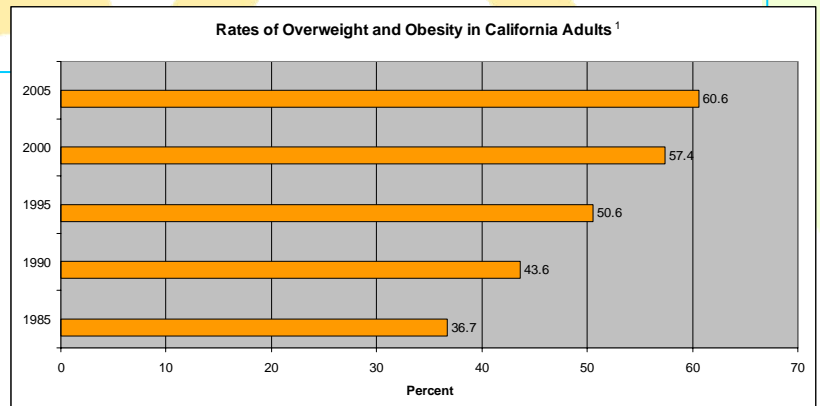
### Mapping the Neighborhood

CAN-C & DHS, working in collaboration with the California Department of Public Health’s *Network for a Healthy California*, collected and analyzed local data to gain a realistic picture of the overall quality of the nutrition environment in particular neighborhoods. DHS evaluated four low-income neighborhoods in the county: Boyes Hot Springs, Payran Neighborhood in Petaluma, Roseland in southwest Santa Rosa, and South Park/Kawana Springs neighborhood in southeast Santa Rosa.

Initial information was gathered using the on-line Geographic Information System website to map the number of grocery stores, supermarkets, farmers’ markets and fast food outlets in the four neighborhoods, along with other factors such as the number of schools parks and playgrounds.

With a map of the food environment in hand, data was collected by staff and volunteers of the Redwood Empire Food Bank from April 22, 2008 to June 5, 2008 to learn what was going on in and around the stores where residents purchase food. They surveyed the neighborhood food sources to determine:

- What kinds of food retailers/stores are located in the neighborhood? Are local stores offering healthy, affordable foods? Do they stock fresh fruits and vegetables?



- Are those stores easily and safely accessible?
- Are stores promoting nutrition information and healthier choices?
- What type of marketing and presence do fast food outlets have near local schools, parks and playgrounds as well as the neighborhood?

Once collected, the data was entered into a standardized scoring system developed by CX<sup>3</sup> to evaluate the quality of local stores. Stores earned points for factors contributing to a positive nutrition environment. The overall percent of stores in the neighborhood meeting “quality standards” become performance indicators for how well a neighborhood does in providing healthy nutrition for its residents, called Neighborhood Nutrition Indicator Performance.

### Neighborhood Food Store Quality

Access, availability, quality and the promotion of nutritious foods, especially fruits and vegetables, are key measurements of a healthy environment. There was a potential of 100 points with stores scoring 75 or more points meeting “quality standards.” For example, points were awarded based on:

- WIC (Women, Infant and Children) vouchers and food stamps acceptance
- Availability of a range of high quality fruits, vegetables and other healthy foods
- Reasonable prices for fruits and vegetables
- Promotion of nutrition information and healthy marketing practices inside and outside store
- Walkability and safety

"The distributors offer me 5% off to put chips and things wherever they want, but then I couldn't sleep at night. So I do the placement myself."

Roseland Store Owner

The marketing of fast food, especially to children, takes a variety of forms and shapes the diet and expectations of a neighborhood. Fast food outlets in each neighborhood were surveyed. There was a potential of 50 points possible, with fast food outlets scoring 37 or more points meeting “quality standards.” For example, points were awarded based on:

- Providing easy-to-find nutrition information
- Offering and promoting healthier menu options
- Limited exterior marketing practices along with an increase in marketing healthier food items
- Limited child-oriented marketing practices

This analysis of local neighborhood data and the resulting quality scores create a snapshot of what's going on in a particular neighborhood. By understanding the physical factors that shape the nutrition and physical activity behaviors of a community, community leaders can work together to accentuate the positive and to improve negative conditions. The CX<sup>3</sup> project provides insight and an opportunity to pursue the small changes that could lead to big health outcomes.



## Sonoma County's Nutrition Environment Findings

Sonoma County's low-income neighborhoods, based on the CX<sup>3</sup> analysis, are out-of-balance from a nutrition and health perspective. These neighborhoods are characterized by limited access to affordable, healthy foods like fruits and vegetables. They are dominated by an abundance of stores where cheaper, packaged, and less healthy foods dominate – namely convenience stores, small corner markets, fast food outlets, etc. While each neighborhood is unique, the data shows common issues and discoveries that are noteworthy:

- None of the neighborhoods have convenient public transit. That is, transit that stops within one block of a supermarket and runs at least every 30 minutes each way including evenings and weekends.

“Fresh fruits, vegetables, cheeses and healthy beverages once filled the shelves at a local neighborhood market. Today, fruit is scarce while soda and high calorie drinks overtake the produce display and vibrant neon signage promotes beer.”

Mother of Three  
Roseland

- None of the neighborhood food stores and fast food restaurants surveyed met the standards for healthy food marketing inside the store. Most of the marketing was for unhealthy food.
- Fresh produce is expensive at most neighborhood food stores. Most stores in Boyes Hot Springs,

Roseland, and Petaluma sell fruits and vegetables priced greater than 10% of the county average.

- Only three of the 18 supermarkets, grocery stores, and corner stores in the four neighborhoods accept WIC vouchers and all neighborhoods have over 50% of the Hispanic population living in poverty.
- Eighty-five percent of fast food restaurants surveyed were well below the standards for offering healthy food options to their customers.
- Three of four neighborhoods don't have a farmer's market in or near the neighborhood.

## Tackling Challenges, Seizing Opportunities

Communities have little chance of success in improving diet and reversing the alarming levels of obesity without improvements in the physical environment. Having adequate access to affordable, healthy, quality foods like fruits and vegetables is a critical step in cultivating healthier communities.

This analysis points to clear opportunities for action at the local level. Several stores were near meeting “quality standards.” With small improvements and the collaboration of key members of the community, these stores and neighborhoods can move toward improving the health of themselves and their neighbors.

On a larger level, discussions about zoning policies, support for retailers and limitations on certain marketing practices may need to be considered. Transportation, land use, and economic development decisions shape neighborhood food access and the food retail environment. Neighborhood, city and county government actions and policies can play a vital role in reshaping these neighborhoods and improving the overall health of some of Sonoma County's most challenged neighborhoods.

Important changes to the Women, Infants, and Children (WIC) food package represent a significant opportunity to improve the health of low-income families. In order to participate in the WIC program, stores now must stock at least two types of fresh fruits and vegetables and one whole grain cereal. This change has the potential to increase access to healthy foods in underserved areas and strengthen the viability of small grocers in those communities.

Small business owners located within low-income communities, however, may need assistance with infrastructure, such as refrigeration and scales, as well as technical expertise to properly stock fruits and vegetables and maintain quality.

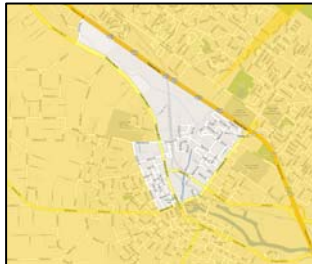
**Sonoma County  
Communities of Excellence  
Neighborhood Analysis**

**NEIGHBORHOOD SNAPSHOT**

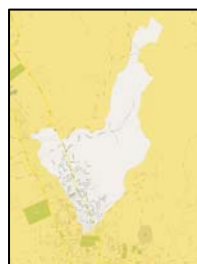
Total population	2,462	9,227	8,096	3,907
Percent of Hispanic population living in poverty <sup>13</sup>	57%	55%	53%	57%
Number of schools	1	2	4	1
Number of parks and playgrounds	0	1	1	1
Number of farmers markets	0	0	0	0
Number of supermarkets or large grocery stores	2	0	2	1
Percent of population living within a half mile of a supermarket or grocery store	91.0%	0.0%	25.0%	87.0%
Proportion of supermarkets or large grocery stores with convenient public transit	0	0	0	0
Number of small markets and other food stores	3	6	4	2
Number of convenience stores	4	2	8	2
Number of fast-food outlets (all types)	5	1	5	2
Fast-food chain outlets near/within a half mile of schools, parks & playgrounds that offer promotional toy give-aways	3	0	1	0
Ratio of fast-food outlets to population	1:492	1:9227	1:1619	1:1954
Index of unhealthy to healthy food sources <sup>14</sup>	6.0	9.0	5.3	7.0

**NEIGHBORHOOD NUTRITION INDICATOR PERFORMANCE**

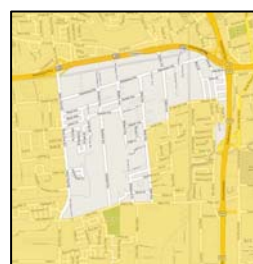
<b>Total Neighborhood Food Store Quality (% meet standards)</b>	11.0%	0%	21.4%	20.0%
<b>Fast Food (% meet standards)</b>	20.0%	0%	0%	0%



**Petaluma**



**Boyes Hot Springs**



**Roseland**



**SE Santa Rosa**

Everyone plays a role in supporting changes within the environment. By working together to understand the challenges, opportunities and prioritizing action steps, communities can improve the nutrition and physical activity environments in their neighborhoods and start erasing the devastating health outcomes related to poor nutrition and physical inactivity. This study points to some key opportunities for local and county governments in Sonoma County to begin building healthier neighborhoods. Some steps include:

- **Increase the number of grocery stores and other produce vendors in neighborhoods that have limited access to fruits, vegetables, and other healthy foods**
- **Expand public transit service and prioritize the development of pedestrian and bicycle facilities to improve access to healthy food options**
- **Support innovative retail strategies to increase the availability and affordability of fruits and vegetables and other healthy foods, and to market healthy foods**
- **Set reasonable limits on the number of fast-food restaurants and convenience stores**
- **Urge retailers to participate in, and promote, federal assistance programs such as Food Stamps and WIC, to make healthy foods more affordable to low-income families**



CX3 is a project of the Community Activity & Nutrition Coalition of Sonoma County and the Sonoma County Department of Health Services. This material was funded by USDA's Food Stamp Program through the California Department of Public Health's Network for a Healthy California. These institutions are equal opportunity providers and employers. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483.

## FOOTNOTES

- 1 California Dept. of Public Health, Cancer Surveillance and Research Branch, Survey Research Group; 1984-1989 data weighted to the 2000 California population; CDC Behavioral Risk Factor Surveillance System Trends Data, 1990-2006; <http://apps.nccd.cdc.gov/brfss/Trends/TrendData.asp>; County-specific overweight and obesity data obtained from the 2005 California Health Interview Survey, see <http://www.chis.ucla.edu>.
- 2 Centers for Disease Control and Prevention. "Overweight: By Body Mass Index, Trends Data: California." 2006.
- 3 California Center for Public Health Advocacy, Searching for Healthy Food: The Food Landscape in California Cities and Counties (January 2007), available at [www.publihealthadvocacy.org/RFEI/expanded%20methods.pdf](http://www.publihealthadvocacy.org/RFEI/expanded%20methods.pdf) (last accessed 9/24/07).
- 4 A. Shaffer, The Persistence of L.A.'s Grocery Gap: The Need for a New Food Policy and Approach to Market Development (May 2002), Center for Food and Justice, available at <http://departments.oxy.edu/uepi/cfi/publications/Supermarket%20Report%20November%202002.pdf> (last accessed 9/24/07).
- 5 K. Morland et al., *The Contextual Effect of the Local Food Environment on Residents' Diet*, Vol. 92, Issue 11, American Journal of Public Health, at 1761-1768 (November 2002).
- 6 Mari Gallagher Research and Consulting Group, Examining the Impact of Food Deserts on Public Health in Chicago (July 2006), available at [www.mari Gallagher.com/site\\_media/dynamic/project\\_files/Chicago\\_Food\\_Desert\\_Report.pdf](http://www.mari Gallagher.com/site_media/dynamic/project_files/Chicago_Food_Desert_Report.pdf) (last accessed 9/24/07).
- 7 S. Inagami et al., *You Are Where You Shop: Grocery Store Locations, Weight, and Neighborhoods*, Vol. 31, Issue 1, American Journal of Preventative Medicine, at 10-17 (2006). See also K. Morland et al., *Supermarkets, Other Food Stores, and Obesity: The Atherosclerosis Risk in Communities Study*, Vol. 30, Issue 4, American Journal of Preventative Medicine, at 333-339 (2006).
- 8 R. Sturm and A. Datar, *Body Mass Index in Elementary School Children, Metropolitan Area Food Prices, and Food Outlet Density*, Vol. 119, Public Health, at 1059-1068 (2005).
- 9 Lin B, Morrison RM. Higher fruit consumption linked with lower body mass index. *Food Review*. 2003;25, 28-32.
- 10 Doll R, Peto R, The causes of cancer: quantitative estimates of avoidable risks of cancer in the united States today. *Journal National Cancer Institute*. 1981;66,1191-1308.
- 11 Visscher T.L. and Seidell, J.C. "The Public Health Impact of Obesity." *Annu Rv Public Health*, 2002, 22:355-375; and U.S. Department of Health and Human Services. "Overweight and Obesity: Health Consequences."
- 12 Bootsma-van der Wiel, Annetje, et al. "Association between chronic diseases and disability in elderly subjects with low and high income: the Leiden 85-plus Study." *The European Journal of Public Health Advance*. 494-497. 2005.
- 13 Hispanics living in poverty described as at or below 185% Federal Poverty Level
- 14 Index of unhealthy to healthy food sources (convenience stores and fast food outlets vs. farmers' markets, supermarkets and large grocery stores), low score = better index