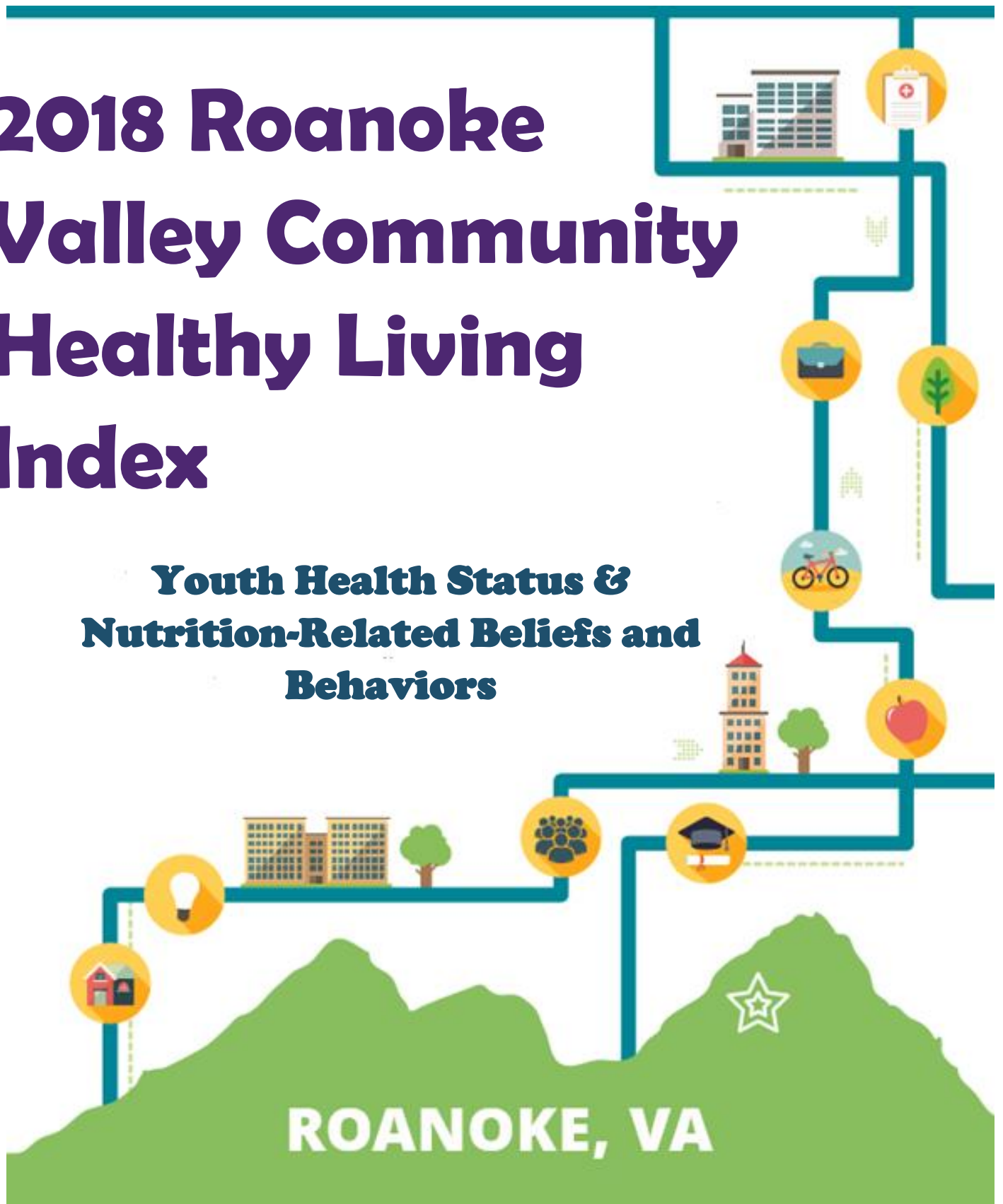


2018 Roanoke Valley Community Healthy Living Index

Youth Health Status & Nutrition-Related Beliefs and Behaviors



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Disclaimer:



The Roanoke Valley Community Healthy Living Index (RV-CHLI) was developed to propagate positive change toward the elimination of health disparities in Roanoke, Virginia. This report is intended for use by the community and can be cited accordingly: Ackley, E. (2018). The Roanoke Valley Community Healthy Living Index: 2018 Youth Health Report. As a means to encourage the long-term sustainability of the RV-CHLI, users are asked to contact the Center for Community Health Innovation at healthinnovation@roanoke.edu when reports are used to support organizational or community efforts. While an internal committee has reviewed the data presented in this report, complete accuracy cannot be guaranteed. The authors assume no liability for the use or misuse of this data.

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Background:

The Roanoke Valley Community Health Living Index (RV-CHLI) was developed in 2011 to facilitate awareness of relationships between “place” and health across Roanoke’s city neighborhoods. Adapted from a previously validated tool developed by the Centers for Disease Control and Prevention¹, the RV-CHLI combines GIS technologies with familial perceptions of access to healthy living resources and objective measures of youth health outcomes². In this way, the RV-CHLI serves to empower community stakeholders to make informed decisions in the development of projects and programs seeking to improve community health while encouraging cross-sector partnerships as a means to enhance collective impact in the neighborhoods that need it most.

In addition to providing an array of local stakeholders with benchmark data concerning youth health status across the city of Roanoke, the RV-CHLI has served as a catalyst for strategic planning for the Roanoke City Invest Health Initiative, Roanoke’s 2040 Comprehensive Plan, and the PATH Coalition.



¹ Soowon, K., et al. (2009). Development of the Community Healthy Living Index: A tool to foster healthy environments for the prevention of obesity and chronic disease. *Preventive Medicine*, 50(S), 80-85.

² Youth health outcomes used in this assessment were determined objectively from the FitnessGram Test Battery. More information on this widely-accepted assessment can be found at <http://www.cooperinstitute.org/fitnessgram/components>.

Executive Summary:

As community-level health inequities grow nationwide, a local understanding of the impact of neighborhood environments on health status and health behaviors is needed. This report summarizes youth health outcomes, engagement in nutrition-related behaviors, and perceptions of access to resources supporting healthy eating as reported by families of elementary-school aged children across the city of Roanoke.

When compared to national prevalence rates in similarly-aged youth³, elementary school-aged youth in Roanoke display higher rates of underweight and obesity and lower rates of healthy weight status (page 6, Table 1). With considerable variation in neighborhood prevalence of unhealthy weight status, the highest rates of unhealthy weight trend toward the northwest quadrant of the city; page 7, Figure 1).

When examining grade-level trends in weight status across Roanoke city youth, children display a gradual increase in overweight and obesity from kindergarten to 5th grade (page 8, Figure 3); this pattern reflects national trends in similarly-aged youth.

When prompted to reflect on engagement in healthy eating behaviors and beliefs towards healthy eating, among Roanoke city families:

- 81% perceive that foods impact their physical health (pg. 10);
- 83% report eating meals together as a family more than four times per week (pg. 9);
- 61% report reading nutrition labels sometimes or often (pg. 10);
- 42% are satisfied with the nutritional value of foods served at school (pg. 11);
- 18% perceive that it is difficult to purchase healthy foods in their home neighborhood (pg. 12)



2018 Roanoke City Assessment Results

Youth Health Status

Weight-Related Health Status:

The measurement of body mass index-for-age (BMI-for-age) allows for the assessment of weight-related health risk in youth while controlling for maturation as children age. Derived from assessments of weight and height, BMI-for-age percentiles can be used to classify a child as underweight (< 5th percentile for age), healthy weight (\geq 5th to < 85th percentile for age), overweight (\leq 85th to < 95th percentile for age), or obese (\geq 95th percentile for age)³. BMI-for-age is determined as a part of the FitnessGram test battery, an annual assessment of the components of health-related fitness conducted by school physical educators.

Recent data reported by the National Center for Health Statistics (2015) indicates that, when viewing BMI-for-age percentiles at the national level, 17.5% of school-aged children (6-11 years) are obese, whereas 17.2% of children classify as overweight³. When underweight status is considered (comprising 3.5% of the youth population), roughly 38% of youth are classified as having increased health risk due to unhealthy weight³. In line with national trends, state-level indicators suggest that approximately 31% of youth in the Commonwealth are overweight or obese⁴. Results from the 2018 assessment of BMI-for-age for the city of Roanoke are provided in Table 1, with neighborhood variations in the prevalence of unhealthy weight status displayed in Figure 1.

Table 1: Youth weight status

BMI-for age Classification	Roanoke City			United States
	Boys	Girls	Total	
Underweight	8%	8%	8%	4%
Healthy Weight	56%	51%	54%	63%
Overweight	15%	16%	15%	17%
Obese	21%	25%	23%	17%
Total number of students (n)	3,005	2,837	5,842	n/a

Note. The Roanoke city sample represents 79% of students enrolled in the public elementary school system.

³ For more information on BMI-for-age, including measurement and interpretation guidelines, visit <https://www.cdc.gov/obesity/childhood/defining.html>

⁴ <http://childhealthdata.org/docs/nsch-docs/virginia-pdf.pdf?sfvrsn=0>

Compared to national statistics, children living in Roanoke experience higher rates of underweight (8% compared to 4% nationally), lower rates of healthy weight (54% vs. 63% nationally) and overweight (15% vs. 17% nationally), and higher rates of obesity (23% vs. 17% nationally). When viewed collectively, 46% of children in Roanoke are at an increased health risk due to unhealthy weight compared to 38% nationally. With considerable variations in prevalence across Roanoke city neighborhoods, higher concentrations of overweight and obesity trend toward the northwest quadrant of the city (see Figure 1; prevalence rates are displayed by quantile).

Since citywide estimates of youth health status have been included as a component of the Roanoke Valley Community Healthy Living Index since 2017, temporal patterns in youth weight status can also be observed (see Figure 2). Since 2017, the prevalence of healthy weight among Roanoke city youth has increased slightly, due largely to a reduction in overweight.

Figure 1: Prevalence of overweight and obesity in Roanoke city youth

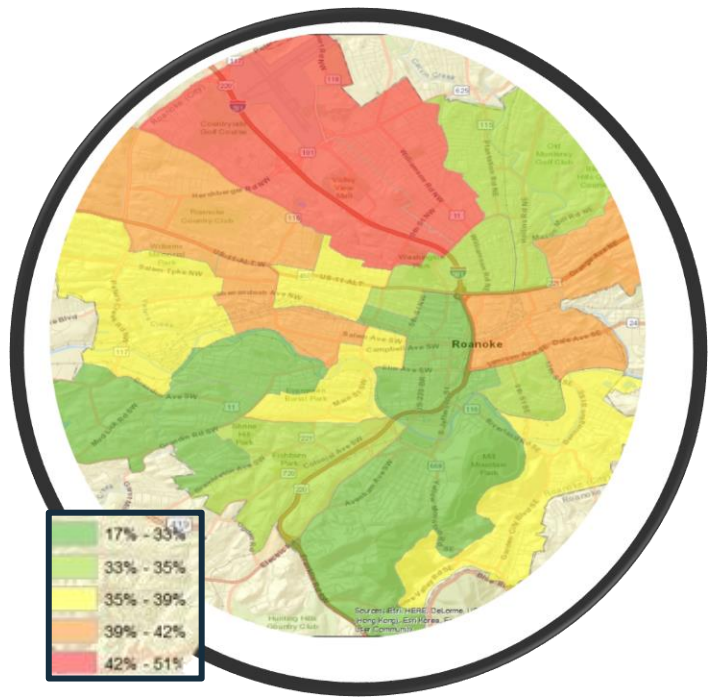
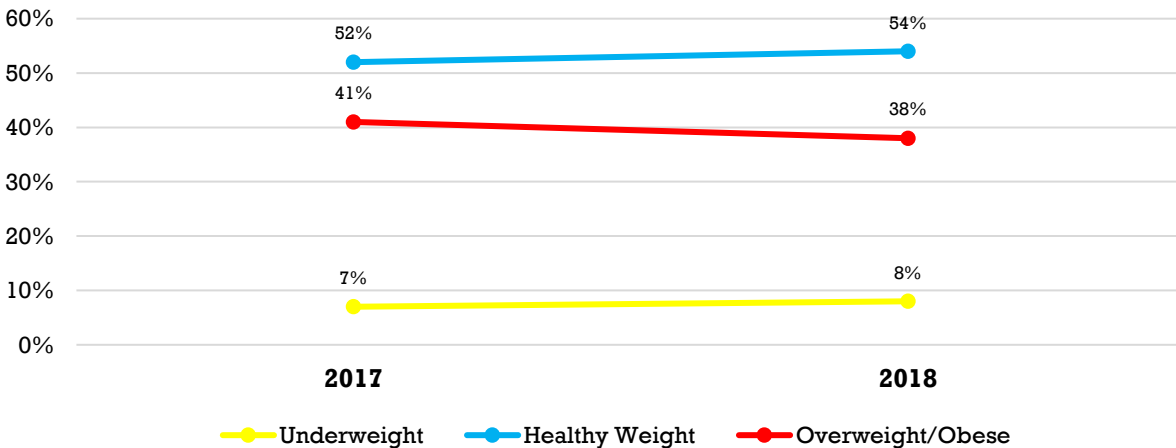
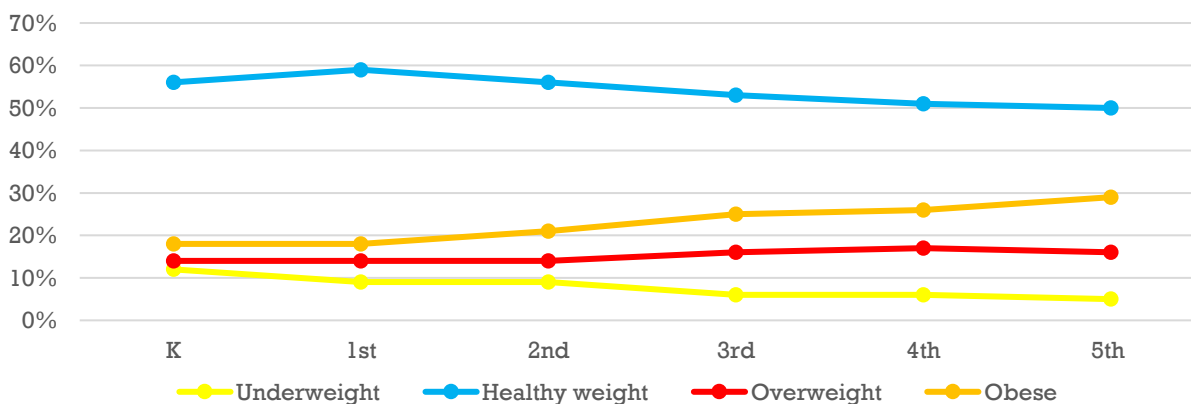


Figure 2. Temporal patterns in weight status among Roanoke city youth (2017-2018)



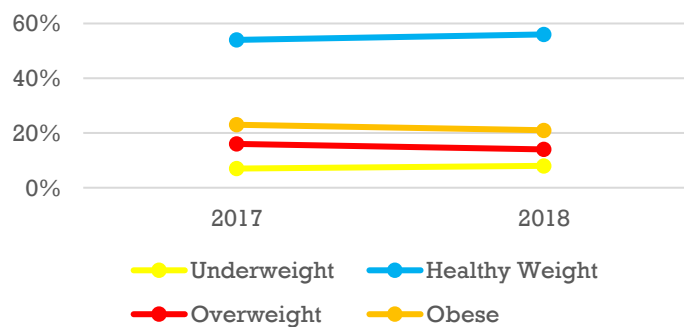
To examine these trends more closely, BMI-for-age percentiles were also examined temporally by grade level and sex (see Figures 3-5). Since BMI-for-age percentiles control for maturation as children age, healthy weight status should be maintained over time. When considering age-related trends in weight status at a national level, the prevalence of obesity gradually increases with age, from 9% among youth aged 2-5 years, to 17% among youth aged 6-11 years, to 21% among adolescents aged 12-19 years³. Across Roanoke, elementary school-aged youth experience a similar trend (with rates of obesity increasing from kindergarten to fifth grade), but display higher rates of obesity across age groups compared to national estimates (see Figure 3).

Figure 3. Youth weight status by grade level



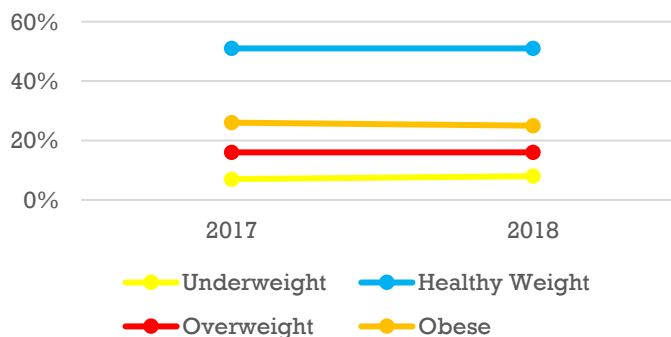
When examining sex-based trends in weight status among a nationally-representative cohort of school-aged youth (6-11 years), approximately 16% of boys and girls classify as overweight and approximately 17% of boys and girls classify as obese⁴. In Roanoke, 8% of boys are underweight, 56% are of healthy weight, 15% are overweight, and 21% are obese. When compared to national estimates, the incidence of obesity is higher among boys in Roanoke, and has remained stable since 2017.

Figure 4. Trends in weight status among boys



Among girls in Roanoke, the incidence of overweight is slightly lower than national estimates, yet obesity is considerably higher. In Roanoke, 8% of girls are underweight, 51% are of healthy weight, 16% are overweight, and 25% are obese. Since 2017, the incidence of all classifications of weight status among girls has remained stable (Figure 5).

Figure 5. Trends in weight status among girls





Nutrition-Related Beliefs and Behaviors

An individual's health status is influenced by several determinants, including (but not limited to) family education attainment, income and employment, genetics, the physical environment, safety, social support, access to clinical and wellness services, and engagement in healthy behaviors. Not surprisingly, as much as 20-50% of the variation in health status between individuals can be explained by healthy behaviors⁵, yet the ability to engage in healthy behaviors is largely influenced by access to healthy living resources (such as supportive infrastructure and services). To evaluate beliefs and behaviors involving healthy eating, families were asked to describe their familial food culture, level of engagement in healthy eating behaviors, and level of access to resources supporting healthy eating, both at home and at school. **Due to the voluntary nature of the survey, attention should be given to the sample size before generalizing this data.**

In 2018, 1,350 elementary school-aged students volunteered to complete the Nutrition-Related Beliefs and Behaviors Assessment, representing 18% of eligible students and their families.



Healthy Eating at Home

To better understand family culture involving healthy eating behaviors, students were asked to describe how frequently they prepare meals at home versus eat already prepared foods (e.g., fast food/restaurants/prepackaged foods; Figure 6), how often they prepare their own meals at home (Figure 7), and how frequently they eat meals together as a family (Figure 8). In general, families consume 1-3 already prepared meals each week, but prepare the majority of meals on their own at home. More than 50% of Roanoke city families eat dinner together nearly every night.

Figure 6. How often during the week does your family eat already prepared foods?

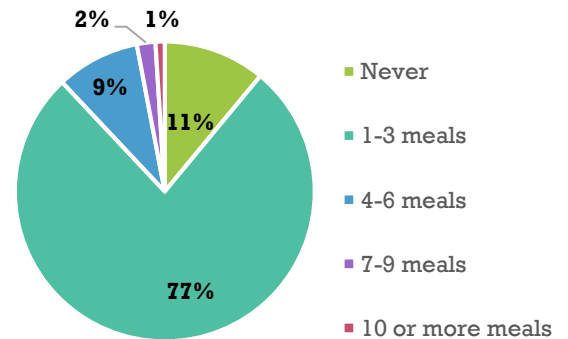


Figure 7. How often during the week does your family prepare your own meals at home?

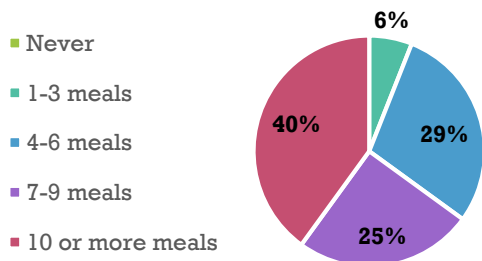
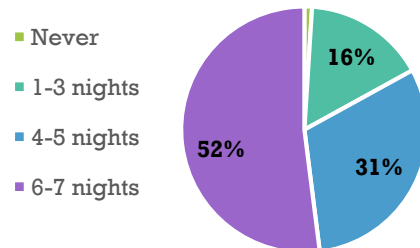


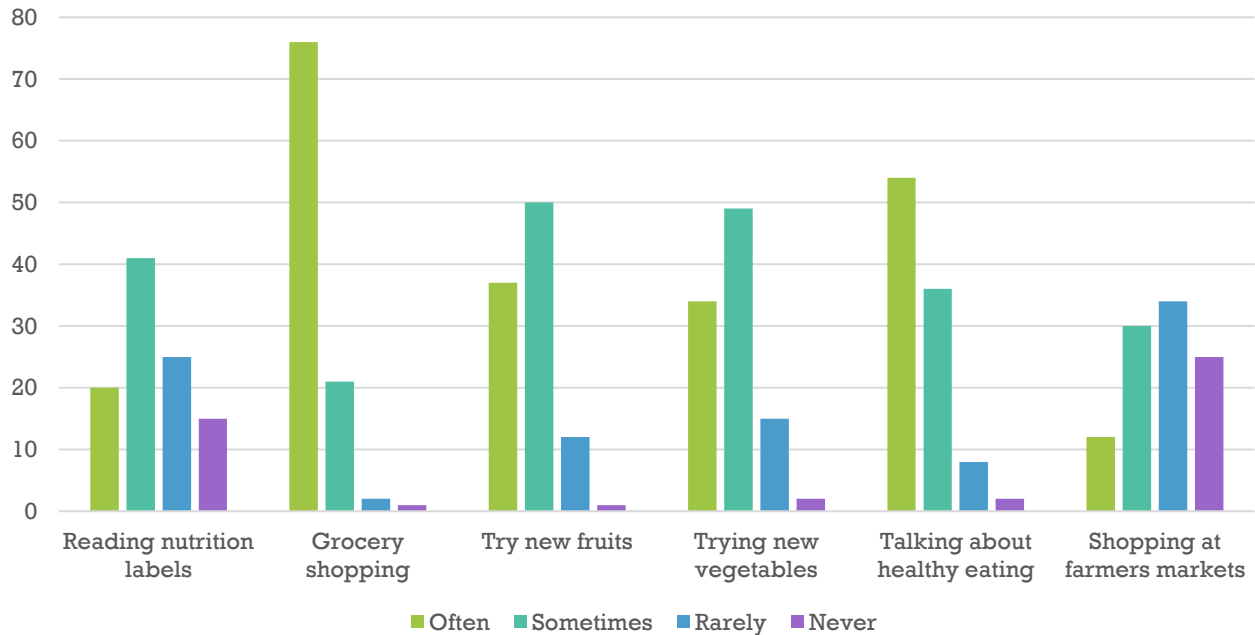
Figure 8. How often during the week do you eat dinner together as a family?



⁵ Infographic developed by the Bipartisan Policy Center: <https://bipartisanpolicy.org/library/what-makes-us-healthy-vs-what-we-spend-on-being-healthy/>.

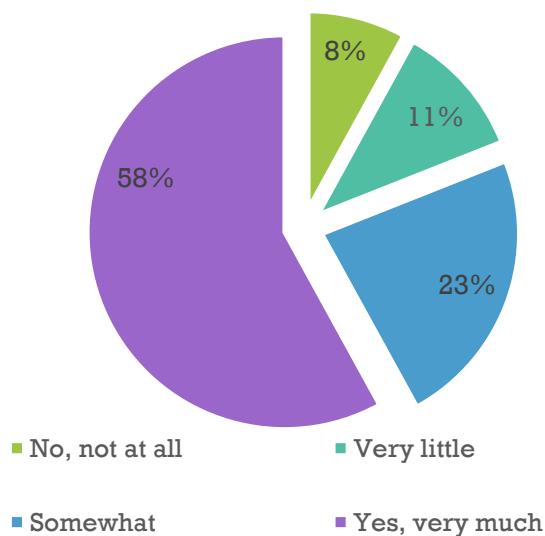
Students were also asked to describe the types of nutrition-related behaviors they engage in with their families (see Figure 9). The most commonly reported nutrition-related behaviors included grocery shopping together (98% of respondents reporting “frequently” or “often”), talking about healthy eating (90%), and trying new fruits or vegetables (87% and 83%, respectively).

Figure 9. Family engagement in nutrition-related activities



Students were also asked to describe their family culture toward the impact of food on physical health. Among participating families, 58% indicated that they believe the foods they eat greatly affect their physical health, while nearly 20% of families perceive food has little to no impact on health.

Figure 10. Do you think the foods you eat affect your physical health?



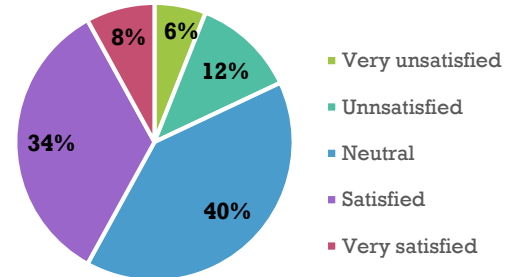
Healthy Eating at School



In addition to family culture supporting healthy eating, the school environment serves as an important context for nutrition-related activities. In order to understand school-based resources supporting healthy eating and nutrition education, students (with the help of their parents/guardians) were asked to rank their level of satisfaction with the nutritional value of foods served at school (Figure 11) and provide ideas for improving nutrition-related programs and activities (Figure 12). Most families with elementary-school aged children are satisfied with (42%) or impartial toward (40%) the nutritional value of foods served at school. The most prominent recommendations for improving nutrition programming include: healthier options at meal time (21%; including less soda, less sugar and more vegetables and salads), more fresh, non-processed foods (12%; including more fresh fruit and vegetables, more hot foods, and more local produce), more opportunities for nutrition education (10%), and more cooking classes (9%).

Figure 11: Satisfaction with nutritional value

"How satisfied are you and your parents/guardians with the nutritional value of foods served at school?"



Students were also asked to describe their perceptions of existing nutrition-related programs at school (Figure 13) and whether their parent/guardian had volunteered to support a school-based program. In general, 81% of respondent families perceive school nutrition programs as being successful, and 5% of parents/guardians reported some level of involvement in school programming.

Figure 12. Ideas for improving school nutrition

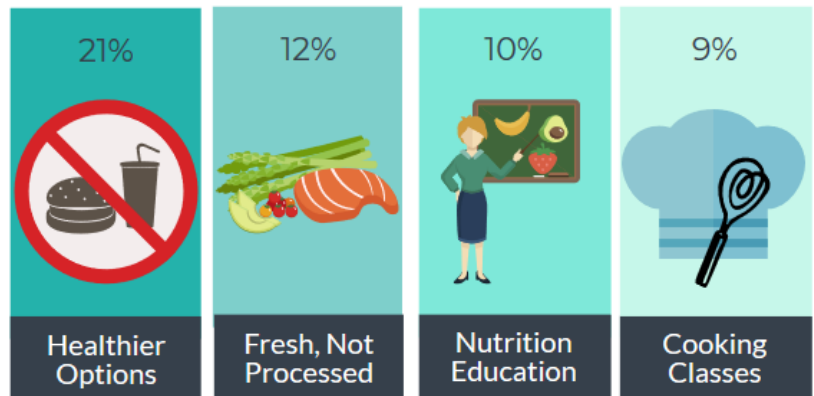
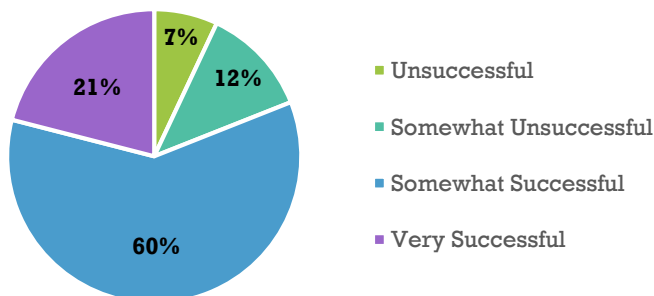


Figure 13. Perceptions of existing nutrition programs

"How successful do you think school programs have been at improving your overall knowledge of nutrition?"





The Neighborhood Food Environment

Due in large part to a national rise in unhealthy weight status, more attention is being given to the impact of neighborhood environments on healthy behaviors in youth. To explore this relationship across the city of Roanoke, students were asked to describe their level of access to healthy foods within the context of their home neighborhood (Figure 14). Collectively, 82% of families perceive they have easy access to healthy foods in their neighborhood, although disparity in access is evident by neighborhood (Figure 15; data represents percent of families responding “not difficult” when prompted, “How difficult is it to purchase healthy foods in your neighborhood?”).



Figure 14: Neighborhood-level food access

"How difficult is it to purchase healthy foods in your neighborhood?"

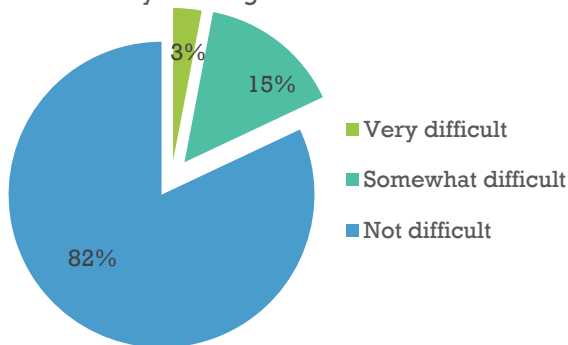
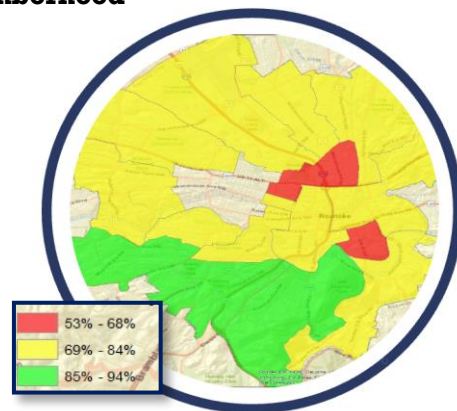
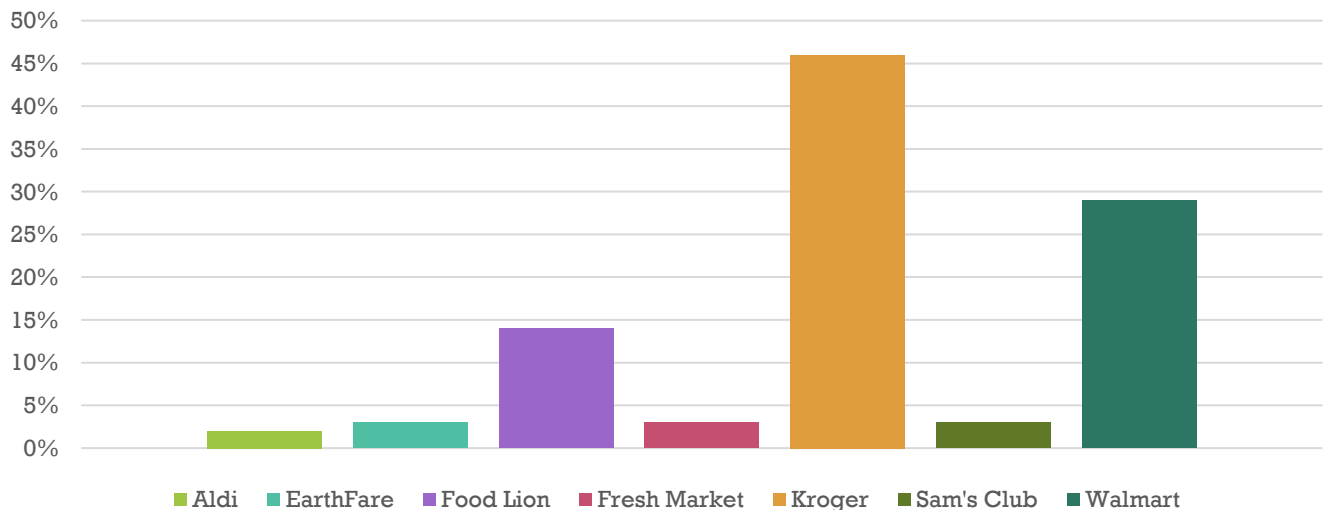


Figure 15: Perceived food access by neighborhood



Despite differences in perceived levels of food access, the majority of Roanoke families report shopping at large food retailers, including Kroger, Walmart and Food Lion (see Figure 16).

Figure 16: Most commonly reported grocery retailers



Recommendations for Promoting Neighborhood-Level Food Access

In reference to neighborhood-level access to healthy foods, 79% of families indicated they would like to see changes in their neighborhood to enhance access to healthy foods (Figure 17). Across the city of Roanoke, families suggested better affordability (32%), more farmers markets/mobile markets (22%), more/closer grocery retail (14%), and more community gardens (12%) as the most common recommendations for enhancing access (Figure 17). Additional recommendations included better variety in healthy food options (including cultural foods), a reduction in fast food retail (e.g., healthier zoning) or access to healthier fast food, and improvements in transportation to encourage healthy eating.

Figure 17: Recommendations for enhancing neighborhood-level access to healthy foods



When prompted to provide recommendations for improving neighborhood-level programs and activities, families identified access to community gardens (24%), nutrition education programs (21%), farmers markets / mobile markets (11%), exercise programs (8%), and community activities (8%) as the greatest areas of need. In addition, families commented on the need to improve affordability of healthy foods (5%) across the city.

Figure 18: Ideas for improving nutrition programs and activities at home



Actionable Recommendations



GET INVOLVED!

The **Roanoke Valley Community Healthy Living Index** was developed to support actionable planning across Roanoke's diverse neighborhoods.

There are numerous ways to engage in the community to make our neighborhoods and families healthier. Consider taking advantage of the resources listed on this page.



EAT HEALTHY AND SUPPORT OUR LOCAL FOOD SYSTEM

Looking for locally-sourced, fresh produce? Traditional farmers markets and mobile farmers markets are available across the city. To find a site near you, or to join a farm share, visit:

<https://leapforlocalfood.org/markets/>



PARTICIPATE IN NUTRITION EDUCATION PROGRAMS

A number of local programs are offered to teach families how to prepare healthy meals on a budget. For more information on current programs, visit:

<https://ext.vt.edu/food-health/family-nutrition-program.html>



SHARE YOUR IDEAS

The **Center for Community Health Innovation** supports the work of numerous partner organizations in the Roanoke Valley. If you have an idea to enhance access to healthy living resources across Roanoke city neighborhoods, contact our team at healthinnovation@roanoke.edu or visit our website for more resources:

www.roanoke.edu/healthinnovation