This fact sheet is a compilation of the most up-to-date nutrition-related behaviors and trends being observed in Missouri public schools as collected and analyzed from distinct surveys and data sources. The report shares the highlights and informs policy makers and key stakeholders about current methods and resources available for improving the school nutrition environment.

Surveys and Data Sources:
1. 2017 Youth Risk Behavior Survey (CDC) and 2017 Youth Tobacco Survey (MDHSS)
2. 2017 School Breakfast Rates, MO Department of Elementary and Secondary Education, Food Nutrition Services
3. 2015 National Youth Risk Behavior Survey, Centers for Disease Control and Prevention (CDC)
4. 2018 School Health Profiles (CDC)
5. 2017 School Nutrition Trends Report
6. 2015 Farm to School Census, United States Department of Agriculture
7. The Guide to Community Preventive Success, CDC
8. 2016 Missouri Team Nutrition, Marketing Events for Salad Bars Show an Increase in Student Participation

Missouri School Nutrition Fact Sheet

“The greatest wealth is health.”
Virgil, ancient Roman poet

Nutrition-related Highlights:
The 2017 Health Risk Behaviors among Missouri Middle School and High School Students Report tracks progress of specific health-related behaviors.

- **Fruit and vegetable consumption shows no significant change.** In 2017, 14 percent of high school (HS) students ate fruits and vegetables five or more times per day in the past seven days. However, middle school (MS) students show a modest increase from 17 percent (2007) to 20 percent (2017). The data has not changed significantly from 2007-2017.

- **Students have decreased consumption of non-diet soda or pop.** Students drank less sweetened beverages with 20 percent of MS and 21 percent (2015) of HS students drinking non-diet soda or pop one or more times per day during the past seven days. This trend has been on a significant and continual decrease since 2007. However, in 2017 the survey question changed to include consumption of sports drinks, energy drinks, flavored milk and other sweetened beverages. Results show a significant increase of

Strategically molding our schools into healthy environments with policies and programs that serve the best interest for students is considered the foundation for good health and, consequently, academic success. With the underlying motto that “healthy students make better learners,” schools continue to fall under the scope of public inquiries and expectations on ways they can partake in the health of children during the school day.

This report highlights 1) key dietary and environmental trends observed in Missouri schools known to impact the health of our students and 2) best practices and resources that may serve as road maps to foster healthy schools.

**continued on page 2**
Are Dietary Behaviors linked to Academic Success...?

New evidence shows a significant association between a lack of adequate consumption of specific foods, such as fruits, vegetables or dairy products, with lower grades among students.

**Percentage of high school students who engaged in dietary behaviors, by type of grades earned (mostly A’s, B’s, C’s, D’s/F’s) - United States, Youth Risk Behavior Survey, 2015**

<table>
<thead>
<tr>
<th>Dietary Behaviors</th>
<th>Percentage of students who engaged in each risk behavior, by type of grades mostly earned in school</th>
<th>Significant Association*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not eat breakfast (during the 7 days before the survey)</td>
<td>11 13 17 26</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Fruit and vegetable consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not eat fruit (one or more times during the 7 days before the survey)</td>
<td>7 9 12 19</td>
<td>Yes</td>
</tr>
<tr>
<td>Did not eat salad (during the 7 days before the survey)</td>
<td>33 39 45 48</td>
<td>Yes</td>
</tr>
<tr>
<td>Did not eat vegetables (green salad, potatoes [excluding French fries, fried potatoes, or potato chips], carrots, or other vegetables, during the 7 days before the survey)</td>
<td>4 6 8 13</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Milk consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not drink milk (during the 7 days before the survey)</td>
<td>19 22 24 26</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Soda consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drank a can, bottle, or glass of soda or pop one or more times per day (not including diet soda, or diet pop, during the 7 days before the survey)</td>
<td>13 20 29 39</td>
<td>Yes</td>
</tr>
<tr>
<td>Drank a can, bottle, or glass of soda or pop two or more times per day (not including diet soda, or diet pop, during the 7 days before the survey)</td>
<td>7 12 20 30</td>
<td>Yes</td>
</tr>
<tr>
<td>Drank a can, bottle, or glass of soda or pop three or more times per day (not including diet soda, or diet pop, during the 7 days before the survey)</td>
<td>3 6 11 19</td>
<td>Yes</td>
</tr>
</tbody>
</table>

† YRBS CDC National Data 2015. Percentage of students who engaged in each risk behavior, by type of grades mostly earned in school (mostly A’s, B’s, C’s, D’s/F’s) are row proportions from cross-tabulations. *Based on logistic regression analysis controlling for sex, race/ethnicity, and grade in school, p<0.05.
Healthy Food Environment and Policy Trends in Schools

Vending in Schools

“Whatever good things we build, end up building us.” Jim Rohn

The 2018 School Health Profiles continue to show significant and healthful trends in the types of snack foods and beverages that students can purchase at secondary schools. Eating better today contributes to healthy behaviors tomorrow. It is important to promote a consistent message about good nutrition and healthy eating beyond the cafeteria and across the school campus. Since school year 2014-15, all foods sold at school during the school day are required to meet nutrition standards. The Smart Snacks in School regulation applies to foods sold a la carte, in the school store, vending machines and any other venues where food is sold to students.

<table>
<thead>
<tr>
<th>Percentage of schools allowing students to purchase:</th>
<th>2008</th>
<th>2010</th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate candy</td>
<td>31.3</td>
<td>33.2</td>
<td>38.3</td>
<td>30.8</td>
<td>10.4</td>
<td>11.2*</td>
</tr>
<tr>
<td>Other kinds of candy</td>
<td>36.4</td>
<td>37.5</td>
<td>39.9</td>
<td>34.0</td>
<td>16.2</td>
<td>15.0*</td>
</tr>
<tr>
<td>Salty snacks not low in fat (e.g., regular potato chips)</td>
<td>38.9</td>
<td>38.7</td>
<td>41.4</td>
<td>36.8</td>
<td>18.7</td>
<td>18.4*</td>
</tr>
<tr>
<td>2% or whole milk (plain or flavored)</td>
<td>47.3</td>
<td>37.2</td>
<td>41.4</td>
<td>28.7</td>
<td>17.1</td>
<td>20.5*</td>
</tr>
<tr>
<td>Soda pop or fruit drinks that are not 100% juice</td>
<td>54.9</td>
<td>43.8</td>
<td>46.0</td>
<td>36.2</td>
<td>23.1</td>
<td>29.0*</td>
</tr>
<tr>
<td>Sports drinks (e.g., Gatorade)</td>
<td>75.6</td>
<td>63.9</td>
<td>65.8</td>
<td>56.0</td>
<td>47.3</td>
<td>47.5*</td>
</tr>
<tr>
<td>Foods or beverages containing caffeine</td>
<td>47.9</td>
<td>38.4</td>
<td>39.8</td>
<td>31.9</td>
<td>26.3</td>
<td>25.4*</td>
</tr>
<tr>
<td>Fruits (not fruit juice)</td>
<td>33.9</td>
<td>31.0</td>
<td>34.9</td>
<td>26.6</td>
<td>23.6</td>
<td>29.7</td>
</tr>
<tr>
<td>Non-fried vegetables (not vegetable juice)</td>
<td>25.0</td>
<td>21.0</td>
<td>23.3</td>
<td>20.0</td>
<td>15.2</td>
<td>23.0*</td>
</tr>
<tr>
<td>Crackers, pastries and other baked goods not low in fat</td>
<td>42.7</td>
<td>41.9</td>
<td>43.3</td>
<td>34.1</td>
<td>16.3</td>
<td>19.5*</td>
</tr>
<tr>
<td>Ice cream or frozen yougurt not low in fat</td>
<td>26.3</td>
<td>18.3</td>
<td>20.5</td>
<td>17.4</td>
<td>9.3</td>
<td>11.9*</td>
</tr>
<tr>
<td>Water ices or frozen slushes that do not contain juice</td>
<td>19.7</td>
<td>14.7</td>
<td>17.5</td>
<td>11.9</td>
<td>9.1</td>
<td>20.2*</td>
</tr>
<tr>
<td>Low sodium or “no salt added” pretzels, chips, crackers</td>
<td>43.4</td>
<td>43.4</td>
<td>45.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonfat or 1% (low fat) milk (plain)</td>
<td>40.7</td>
<td>31.9</td>
<td>30.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy drinks (e.g., Red Bull, Monster)</td>
<td>3.6</td>
<td>1.4</td>
<td>3.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottled water</td>
<td>64.7</td>
<td>61.1</td>
<td>63.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% fruit or vegetable juice</td>
<td>43.5</td>
<td>40.6</td>
<td>45.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant downward trend  +Significant increase from 2016

RESOURCES:

Smart Snacks in Schools Calculator is a tool to determine whether a beverage, snack, side or entrée item meets the new USDA Smart Snacks in School Guidelines [https://www.healthiergeneration.org/take_action/schools/snacks_and_beverages/smart_snacks/alliance_product_calculator/](https://www.healthiergeneration.org/take_action/schools/snacks_and_beverages/smart_snacks/alliance_product_calculator/)
Marketing in Schools

A school setting delivers a captive youth audience to advertisers and implies endorsement by educational network. There was no significant change in the percentage of secondary schools that prohibit advertisements for candy, fast food restaurants or soft drinks in buildings, publications and vehicles from 2008 to 2016. Opportunity for progress remains in this area.

<table>
<thead>
<tr>
<th>Percentage of schools prohibiting advertising:</th>
<th>2008</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>In school building</td>
<td>54.5</td>
<td>58.7</td>
</tr>
<tr>
<td>On school grounds</td>
<td>46.6</td>
<td>50.5</td>
</tr>
<tr>
<td>In school publications</td>
<td>55.7</td>
<td>53.4</td>
</tr>
<tr>
<td>On school buses or other vehicles</td>
<td>64.5</td>
<td>63.5</td>
</tr>
</tbody>
</table>

RESOURCES:
The Center for Commercial-Free Public Education [http://ibiblio.org/commercialfree](http://ibiblio.org/commercialfree)
Campaign for a Commercial Free Childhood [http://commercialfreechildhood.org/](http://commercialfreechildhood.org/)

Cafeteria Trends

The 2017 School Nutrition Trends Survey monitors the school food service arena to report working trends, issues and factors impacting school cafeterias. The national survey found the following key trends:

- **International flavors:** Nearly 60 percent of districts report offering a new menu item that features international flavors, with 26 percent of districts considering pilot testing new menu items.

- **Customizable menu options:** Offering menu options in which students select ingredients is the norm with districts providing such options as:
  - Salad/produce bars or made-to-order salads - 69 percent
  - Entrée bars/stations or made-to-order options - 51 percent
  - Flavor stations that allow students to add seasoning (spices or sauces) - 46 percent

- **Cleaner labels (products or ingredients with no artificial flavors, colors or preservatives):** Over half (56 percent) of districts report serving cleaner label menu options. This practice is most common in the largest districts.

- **Other innovative changes:** Food service directors or managers shared innovative changes relating to customization, new menu items and approaches to meet sodium and whole grain rich meal pattern requirements. Innovative changes that were shared were related to:
  - Increasing the amount of scratch cooking
  - Increasing fruit and vegetable options
  - Expanding breakfast venues
  - Increasing grab & go options for lunch
  - Student engagement initiatives
  - Expanding local purchasing or farm to school programs

RESOURCES:
- Culinary Skills Institute sponsors hands-on culinary lab experiences, practicing healthy cooking methods and preparing healthy kid-tested recipes [http://health.mo.gov/living/wellness/nutrition/culinaryskills/](http://health.mo.gov/living/wellness/nutrition/culinaryskills/)
- Salad Bars to Schools provides donation of salad bars to school cafeterias [www.saladbars2schools.org](http://www.saladbars2schools.org)
- The Institute of Child Nutrition provides ongoing training to child nutrition programs [www.theicn.org](http://www.theicn.org)
Farm to School Takes Root

The 2015 USDA Farm to School Census\(^6\) is used to determine the prevalence of farm to school programs in the United States.

27% of Missouri School Districts surveyed by USDA say they participate in farm to school activities.

That’s 143 districts with 911 schools and 431,990 students.

Another 15% of districts surveyed plan to start farm to school activities in the future.

School districts in Missouri are currently buying the following types of local foods:

- 73% Fruits
- 73% Vegetables
- 40% Milk
- 16% Meat or Poultry

43% of Missouri districts surveyed plan to increase local food purchases in the future.

$13,320,000 invested in local food in Missouri.

With the average school district spending 3% of their budget on local products.

Missouri school districts are serving local items throughout the school day. In Missouri local foods are being served at the following times:

- 48% Breakfast
- 81% Lunch
- 4% Supper
- 19% Snacks
- 23% Fresh fruit & vegetable program

School gardens in Missouri schools continue to expand in number as active learning settings from 89 (2012) to at least 116 (2015). Gardening interventions have been shown to increase children’s preferences for, and willingness to try new fruits and vegetables: The Guide to Community Preventive Services, CDC\(^7\)

Missouri Farm to School [https://extension2.missouri.edu/programs/missouri-farm-to-school](https://extension2.missouri.edu/programs/missouri-farm-to-school)

USDA Farm to School [https://www.fns.usda.gov/farmtoschool/farm-school](https://www.fns.usda.gov/farmtoschool/farm-school)
Missouri Nutrition Programs

Growing with MO, Harvest of the Season is a Farm 2 Preschool Program
http://health.mo.gov/living/wellness/nutrition/farmtopreschool/index.php

School wellness campaign that provides resources and programs for parents and schools
https://health.mo.gov/living/wellness/nutrition/schoolwellness/parents.php

Culinary Skills Institute sponsors hands-on culinary lab experiences, practicing healthy cooking methods and preparing healthy kid-tested recipes

health.mo.gov/teamnutrition

Additional Information
Missouri Department of Health and Senior Services
Bureau of Community Health and Wellness
573-522-2820
pat.simmons@health.mo.gov

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