

# TIME TO EAT: AN EMERGING CONSIDERATION FOR SCHOOL LUNCH DELIVERY AND THE NUTRITION OF COLORADO'S STUDENTS



Hunger has significant impacts on child development and well-being. Research demonstrates that experiencing hunger can alter a child's health, behavior and academic performance. Children who face hunger are more likely to experience iron deficiency, chronic illness and poorer health status overall throughout their lives (Casey et al., 2005; Cook et al., 2004; Kirkpatrick, McIntyre & Potestio, 2010; Skalicky et al., 2006; Weinreb et al., 2002). Among very young children, hunger is linked to delays in cognitive, motor and social-emotional development, as well as hyperactive and inattentive behaviors; when they become adolescents and adults, children who experience hunger may be more likely to deal with depression and suicidal ideation (Ke & Ford-Jones, 2015; McIntyre, Williams, Lavorato & Patten, 2013). Childhood hunger is also associated with lower math scores, a higher likelihood of repeating a grade, and a higher likelihood of exhibiting behavioral problems in the classroom (Alaimo, Olson & Frongillo, 2001).

Healthy school meals are one of the primary tools used to combat child hunger, and federal and state governments invest significant resources into the delivery of school meals each year. Yet providing access to school meals alone is insufficient to meet children's nutritional needs; a growing body of research points to the importance of children also having adequate time to eat as key to ensuring they receive the full benefits of the meal.

## I. SCHOOL LUNCH IN COLORADO

Colorado schools receive funding and guidance for school meals through the National School Lunch Program (NSLP), a federally assisted meal program administered by the U.S. Department of Agriculture (USDA), which operates across the country in public and nonprofit private schools as well as residential child care institutions. Since its inception in 1946, the NSLP has served meals to millions of American children; in 2016 alone, more than 30 million students received lunch through the program (USDA, 2019).

The NSLP underwent substantial changes with the passage of the Healthy Hunger Free Kids Act in 2010, in an effort to improve the nutritional value of school meals. The Healthy Hunger Free Kids Act tasked the USDA with administering guidance to school nutrition providers throughout the nation in the areas of food procurement, food safety, menu planning and school meal eligibility. Importantly, the passage of the Healthy Hunger Free Kids Act gave schools the opportunity to base school meals on established science-based nutrition standards from the Food and Nutrition Board of the National Academy of Sciences. Updates to nutrition standards were aimed at improving the nutritional quality of school meals and students' diets in order to further reduce their risk of chronic disease. Since these changes were implemented in the 2013-2014 school year (SY), findings from the first comprehensive study of school meal programs indicate that the nutritional value of school meals has improved over time, and more American children are participating in school food programs that offer healthier meals (USDA, 2019).

In Colorado, as in many other states, the need for healthy school meals is substantial. Nearly 159,000 of our state's children (13 percent) live in households that are food insecure at some point during the year, where families have limited or uncertain access to adequate nutrition (U.S. Census Bureau, 2018; Anderson, 1990). Approximately 42 percent of Colorado's public school children are eligible for free or reduced-price meals, due to their families' limited income (Colorado Department of Education, 2019). In response to this need, both the federal and state governments make significant investments in the nutrition of Colorado's children each school day. In the 2017-2018 SY, Colorado's public schools served nearly 60 million lunches to students; 38.3 million of those lunches (about 64 percent) went to low-income students who qualified for free or reduced-price lunch (Colorado Department of Education, 2018). On an average school day that year, public schools across the state served 235,000 lunches to children who might not eat otherwise, effectively setting them up to thrive in their classrooms (Food Research and Action Center, 2019).

Colorado has made further progress in ensuring all kids have access to healthy and nutritious school meals. School food authorities are implementing USDA recommended guidelines related to procurement and meal patterns, and school food authorities and providers are working to improve school wellness policies. In 2018 and 2019, the Colorado legislature passed two iterations of the Expanding Child Nutrition Lunch Protection Act, requiring the state to cover the cost associated with reduced-price school lunches for all students in K-12th grade.

## II. THE EMERGING ROLE OF TIME TO EAT

Beyond the considerations of access and nutritional content, an emerging body of research finds that the number of minutes children are given to eat lunch is also an important determinant in whether they are fully benefiting from their meals. For lunch, providing a minimum of 20 minutes of seated time is often cited as a best practice, and is supported by evidence that it takes 20 minutes for the brain to process the feeling of fullness (Centers for Disease Control, 2019). Students with less than 20 minutes for lunch may be likely to eat less: a 2016 study found that children who received less than 20 minutes ate 13 percent less of their entrée, 12 percent less of their vegetables, and drank 10 percent less of their milk compared to students who had 25 minutes or more (Cohen et al., 2016). Plate waste, the amount of food served to students that goes uneaten, may decrease when students receive a longer lunch period; in a 2004 study, plate waste decreased from 44 percent to 27 percent with a longer lunch period (Bergman, Buerger, Englund & Femrite, 2004). Children may also be more likely to overeat when their lunch periods are too short, as they can begin to eat much faster as a response to limited time (Zandian et al., 2012).

The Colorado Healthy Schools Smart Source survey, administered to school staff every other year by the Colorado Department of Public Health and the Environment (CDPHE), is currently the only state tool that attempts to measure the number of minutes public school students receive to consume their meals. However, the survey currently has a limited reach and therefore results are not yet representative of the state. In the 2017-2018 SY, 37 percent of Colorado's K-12 schools voluntarily participated in the survey. That year, elementary staff from schools that participated reported an average total lunch period length of 26.5 minutes, but of that time period, students only received about 18 minutes to eat; secondary school staff who responded to the survey reported an average total lunch period of just over 34 minutes, with nearly 25.5 minutes for students to eat (CDPHE, 2018). Due to the limitations of the Smart Source survey, the authors of the tool recommend the triangulation of survey results with other data collection efforts, in order to obtain a more complete understanding of any school health issue like time to eat (Pulskamp, Williams, Forbes, Dyett & Strickland, 2017).

In the fall of 2019, the Colorado Children's Campaign administered three additional surveys on the issue of time to eat to three convenience samples of participants. These short surveys were created for public school administrators, public school health professionals, and parents of students who attend public schools. The surveys were distributed to members of the Lunch Cabinet and Blueprint to End Hunger workgroups, who in turn distributed them to their professional networks. The Lunch Cabinet, a coalition comprised of 34 diverse organizations, began convening in 2017 to ensure all kids, regardless of their economic circumstances, have access to healthy and nutritious school lunch. The Blueprint to End Hunger, developed with funding from the Colorado Health Foundation, is a multi-year effort to end hunger for all Coloradans; it was developed by individuals and organizations from across the state who are working on or experiencing hunger in their own homes and communities.

For analysis purposes, there are two essential considerations to keep in mind when interpreting the results of these surveys. First, in the case of Smart Source and the surveys administered by the Children's Campaign, survey methods alone are inadequate to arrive at a true measurement of time to eat in Colorado schools. While survey results can inform us of the number of minutes specified in a school or district wellness policy and/or the perceptions and opinions of respondents on the sufficiency of the lunch period length, a time study would need to be administered in a representative sample of schools to arrive at a true estimate. Second, the results of the convenience samples obtained by the Children's Campaign's surveys are not statistically representative of the state or any Colorado region. Convenience samples are highly vulnerable to selection bias and sampling error, the effects of which can skew results. In this case, administrators, school health professionals, and parents who had access to the surveys through their professional networks and who chose to take them may be more likely to hold certain opinions about the issue. Still, acknowledging their limitations, these surveys are the current tools available to provide us with additional evidence on the number of minutes Colorado students typically receive for lunch.



## SURVEY RESULTS: PUBLIC SCHOOL ADMINISTRATORS

Sixty-three administrators from 14 counties in Colorado responded to the Children's Campaign's survey regarding time to eat. More than half of this convenience sample was composed of administrators from Weld and Pitkin counties; other counties with multiple respondents included Denver, Jefferson, Chaffee and La Plata counties. The sample did not have representation from the southeastern portion of the state. The majority of administrator respondents (83 percent) reported working with elementary and/or middle grade levels.

When asked about a time study, the majority of administrators who participated (91 percent) indicated that one had not been administered or that they were unaware of one; the following results are therefore mostly comprised of respondents' interpretations of the amount of time students are given to eat lunch in their school settings.

Most administrators reported that students were receiving between 10 and 20 minutes for lunch. A majority also reported that their district or school wellness policies did not specify the number of lunch minutes students receive, or that they were unaware of whether such a policy existed.



- When asked about the time allocated for students to eat lunch on a typical day, more than half of administrators (63 percent) reported that students received between 10 and 20 minutes, while the next largest group (22 percent) indicated students received between 20 and 30 minutes:

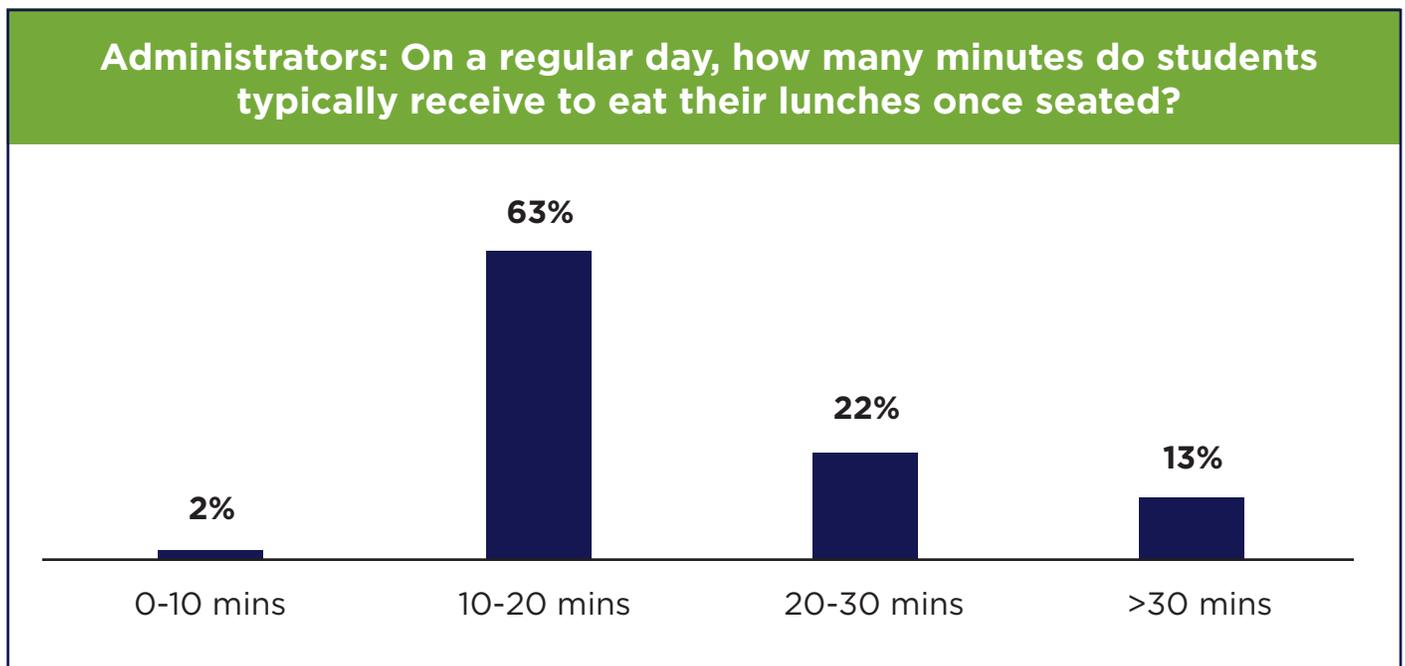


Figure 1. Highlighted results from CCC Time to Eat Administrator Survey

- Only 13 percent of administrator respondents reported that their district or school wellness policy specified a number of minutes for lunch; of that 13 percent, 67 percent reported that the minimum number of seated minutes for lunch in the policy was 20 minutes.

## SURVEY RESULTS: PUBLIC SCHOOL HEALTH PROFESSIONALS

The Children's Campaign's survey for school health professionals was administered in the same timeframe, and 94 professionals from 21 counties across the state responded. Professionals from Weld and Larimer counties made up over half the convenience sample; other counties with multiple respondents included Adams, Douglas, Jefferson, El Paso, Arapahoe, Eagle and La Plata. This sample of school health professionals also lacked representation from the southeastern region of Colorado. Similar to the results from the administrator survey, the majority of school health professional respondents (84 percent) indicated that a time study had not been administered in their schools, or that they were unaware of one, thus results should be understood as respondents' interpretations of time to eat.

Most school health professionals in the sample reported that students received between 10 and 20 minutes for lunch, and they either did not have or were unaware of a minimum number of minutes stipulated for lunch in their school or district wellness policies.



- More than two thirds of respondents (71 percent) reported that students received between 10 and 20 minutes for lunch once seated. However, 14 percent of the sample, the second largest group, reported students received just 0-10 minutes:

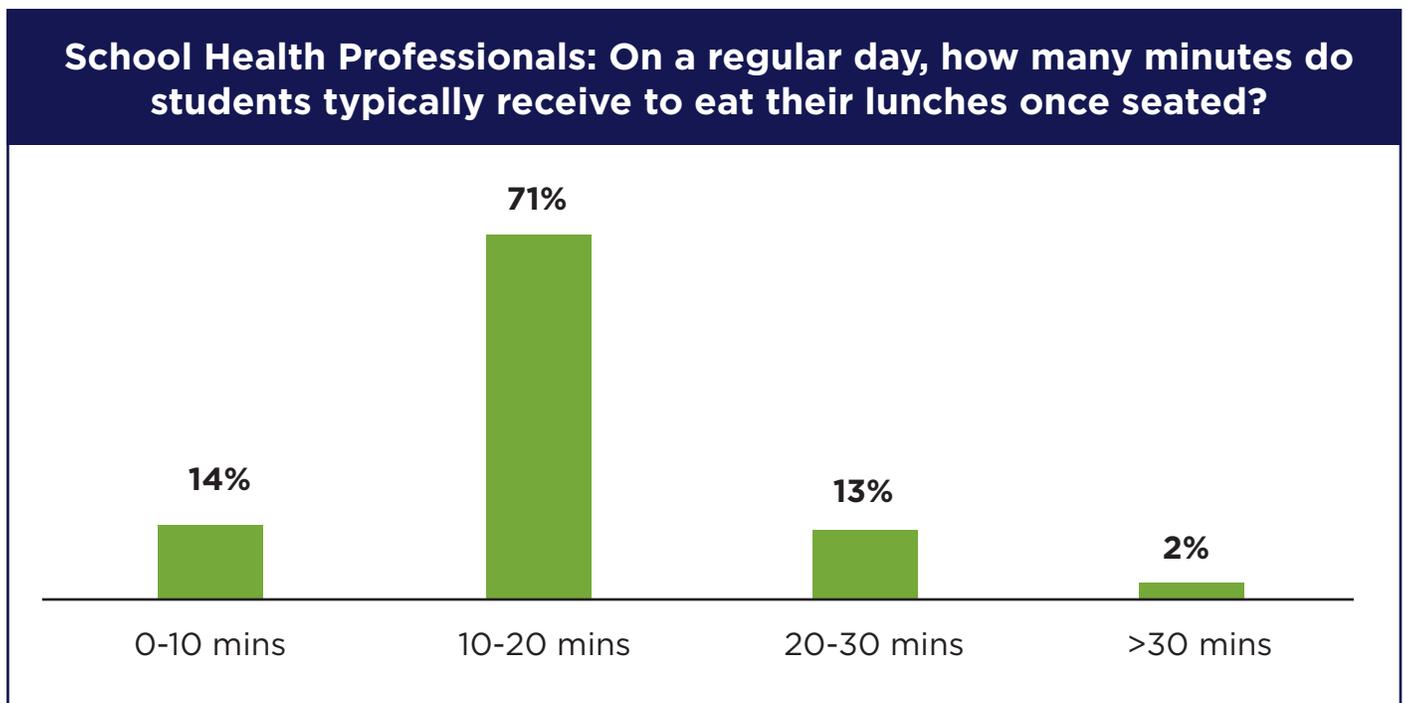


Figure 2. Highlighted results from CCC Time to Eat School Health Professional Survey.

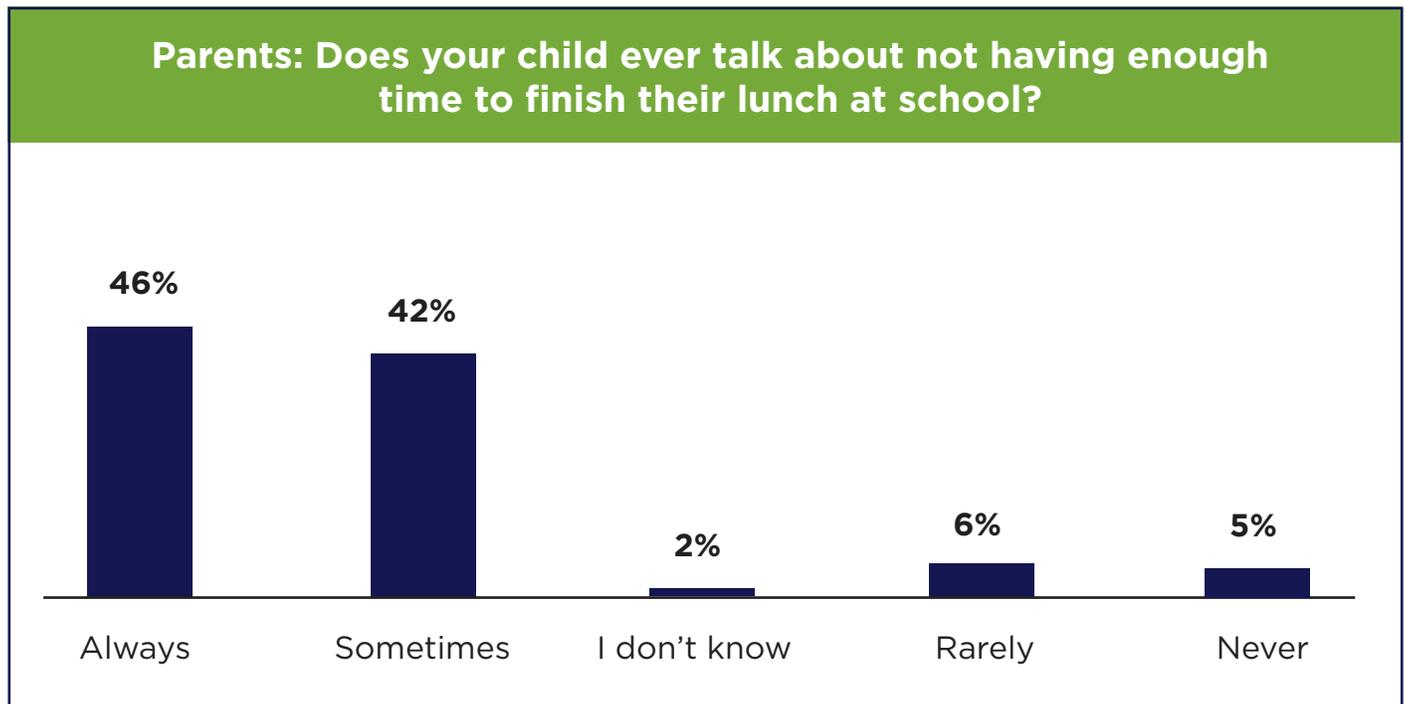
- Of the 30 percent of respondents who reported that a minimum number of minutes was specified in their wellness policy, more than half (59 percent) reported a minimum of 20 minutes, while a quarter (26 percent) reported 15 minutes.

## ***SURVEY RESULTS: PARENTS OF STUDENTS WHO ATTEND PUBLIC SCHOOL***

The parent survey administered by the Children’s Campaign on the issue of time to eat was responded to by a convenience sample of 1,002 Colorado parents. Because parents are not typically with their children during the school day, the questions posed to this group were different than in the other surveys, and parents were asked about what was reported to them regarding time to eat by their children. While the results of the parent survey are important as they represent child and parent experiences, they should be interpreted with caution as they represent both child and parent impressions of time to eat: the results are likely to be more limited than those of the other surveys because of time perceptions and communication practices and/or barriers between parent and child.

Overall, many parents in the convenience sample reported that their children talked about not having enough time to eat lunch:

- Parents were asked whether their child ate their lunch at school (either school lunch or packed lunch) and whether, to the best of their knowledge, their child was able to finish lunch in the time allotted. Almost all parents in the sample (94 percent) reported that their child ate lunch at school, and 74 percent indicated their child did not regularly finish their lunch.
- When asked whether their child spoke to them about insufficient time to eat lunch, the majority of parents (88 percent) indicated this was something their child talked to them about “always” or “sometimes”:



*Figure 3. Highlighted results from CCC Time to Eat Parent Survey.*

While results from all three surveys are not representative of the state and mostly deal with the interpretations of individuals, they provide an idea of time to eat in some Colorado schools, and indicate that many students are likely receiving less than 20 minutes for lunch. Overall, most administrators reported students were typically receiving between 10 and 20 minutes and were either unaware or knew their school or district wellness policy did not specify a number of seated minutes. Similarly, most school health professionals indicated students were receiving between 10 and 20 minutes, and nearly half of the sample was unaware or indicated there was not a minimum number of seated minutes in their wellness policy. The majority of parents reported that their child did not regularly finish lunch at school, and that inadequate time to eat was something their child had mentioned. Going forward, other, more methodologically rigorous measures of time to eat that can reach larger, more representative samples are needed to understand the true nature of time to eat in Colorado schools.

# III. RECOMMENDATIONS

Given the available evidence, time to eat likely varies substantially by district and school, and administrators and school health professionals face various pressures that can interfere with their ability to increase the number of minutes students receive for lunch. Timing decisions are often left to the discretion of school nutrition services directors and administrators, who are also tasked with increasing instructional minutes for teachers and students.

Rather than making lunch an inconvenience to be rushed through, children should be learning to make smart food decisions and forming healthy eating habits. School districts, school food providers, state agencies and legislators can contribute to both the provision of adequate lunch minutes for Colorado students, as well as the effort to gain a better understanding of time to eat on a state level. Currently there are no federal or state regulations regarding the length of time students should receive; however, Colorado has statutory language that ensures students have “adequate time to eat.” Per Colorado State Statute 22-32-136 (2005), “(3) On or before July 1, 2006, each school district board of education is encouraged to adopt policies ensuring that: (a) every student has access to healthful food choices in appropriate portion sizes throughout the school day. At a minimum, this includes the provision of: (i) healthful meals in the school cafeteria made available to students with an adequate time to eat.”

## **FOR SCHOOL DISTRICTS AND SCHOOL FOOD PROVIDERS:**

- **Develop and explicitly incorporate minimum time requirements into school wellness policies.** Research shows that school districts are more likely to have increased seated meal time when the state has a minimum requirement and is included in the school wellness policy (Turner et al., 2018). Examples include:
  - Language from Brighton 27J in Colorado: “If recess is after lunch, it is recommended that there be 20 minutes after lunch is served of seat time to ensure that all children have adequate time to eat their meal.”
  - Language from Westbrook Public Schools in Connecticut: “Students will be allowed at least 10 minutes to eat breakfast and at least 20 minutes to eat lunch, counting from the time they have received their meals and are seated.”
- **Provide food service staff and directors with strategies to actualize recommended seated meal time.**
  - Offer training for food service staff and other paraprofessionals to learn efficient methods of serving students, including offer-versus-serve and other emerging methods.

## **FOR STATE AGENCIES:**

*The Colorado Department of Education – School Nutrition Unit*

- **Post USDA recommended guidelines regarding time to eat online.** As a result, local wellness coordinators and school nutrition providers will have an example of what to incorporate into their school wellness policies.
- **Highlight district and school food authorities that have recommended seat times, as well as other best practices in their school wellness policies online.**
- **Regularly update articles and relevant research online regarding time to eat** so that administrators, service providers, community members and students are informed of the issue.

*The Colorado Department of Public Health and Environment – Prevention Services Division*

- **Consider adding an item to the Healthy Kids Colorado Survey dealing with time to eat** that aligns with the current Smart Source item on this issue. The addition would allow us to hear directly from a student sample that is representative of the state about lunch minutes and their ability to finish their lunches.

## **FOR LEGISLATORS:**

- **Strengthen statutory language to include a minimum time requirement for seated mealtime.** The Centers for Disease Control and Prevention recommends a minimum of 20 minutes of seated lunch time (Centers for Disease Control and Prevention, 2019). Several states have explicit policies in place to address seated meal time. Mississippi, for example, requires schools to provide students a minimum of 20 minutes to eat lunch after sitting down, supported by research on the brain’s ability to process feeling full.

States with seated meal time policies include:

State	At least 20 minutes of seat time mandated in statute	Adequate time to eat referenced in statute
Connecticut	✓	
Colorado		✓
District of Columbia	✓	
Kentucky		✓
Michigan		✓
Mississippi	✓	
New Hampshire		✓
New Mexico	✓	
New Jersey*		
Nevada	✓	
North Carolina	✓	
South Carolina		✓
Washington		✓
West Virginia	✓	

Source: National Association of State Boards of Education.

\*The New Jersey legislature introduced a bill that explicitly names 20 minutes of mandated seat time in statute. As of October 24, 2019, the bill was still being debated at the legislature.

Setting minimum times for breakfast and lunch periods allows children the opportunity to eat all the food they are given or choose their meals more carefully. Children are more likely to eat foods with higher nutritional quality, giving them the energy they need to learn, increasing their attention span, and decreasing hunger (USDA, 2019). Longer lunch periods can also offer an opportunity to teach the importance of healthy eating. Adequate lunch time has also been shown to decrease food waste (Bergman, Buergel, Englund & Femrite, 2004). By providing a sufficient amount of time for students to eat, the money spent on existing nutritional programs will be more effective.

- Prioritize funding for the Healthy Kids Colorado Survey and Smart Source, which are important sources of data on this and other topics related to child and adolescent health.** The Healthy Kids Colorado Survey (HKCS) was developed as our state’s unified youth health survey to lessen the data collection burden on schools while still meeting the data needs of schools, local communities and government agencies. HKCS is a voluntary, anonymous survey that provides vital information about the health and well-being of Colorado’s middle and high school students. The survey is funded by the state and is administered by the Colorado Department of Public Health and Environment. Smart Source is an inventory of school health best practices, completed once per school by school staff for both elementary and secondary schools. It is administered in the fall of odd-numbered years and, when coupled with the HKCS, helps paint a more complete picture of student experience and the supports available at schools.

Feeding Colorado’s children is one of the most basic and essential efforts that our state and federal governments engage in to ensure child well-being. The experience of hunger can have significant negative impacts on a child’s physical and mental health, as well as their behavioral and academic performance in school. While access, quality and the nutritional makeup of school meals continue to be the major considerations of school meal delivery, adequate time to eat is emerging as another important factor in ensuring that children are fully benefitting from school meals. There is much we can do as a state to further understand and promote adequate time to eat in all Colorado schools.

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