

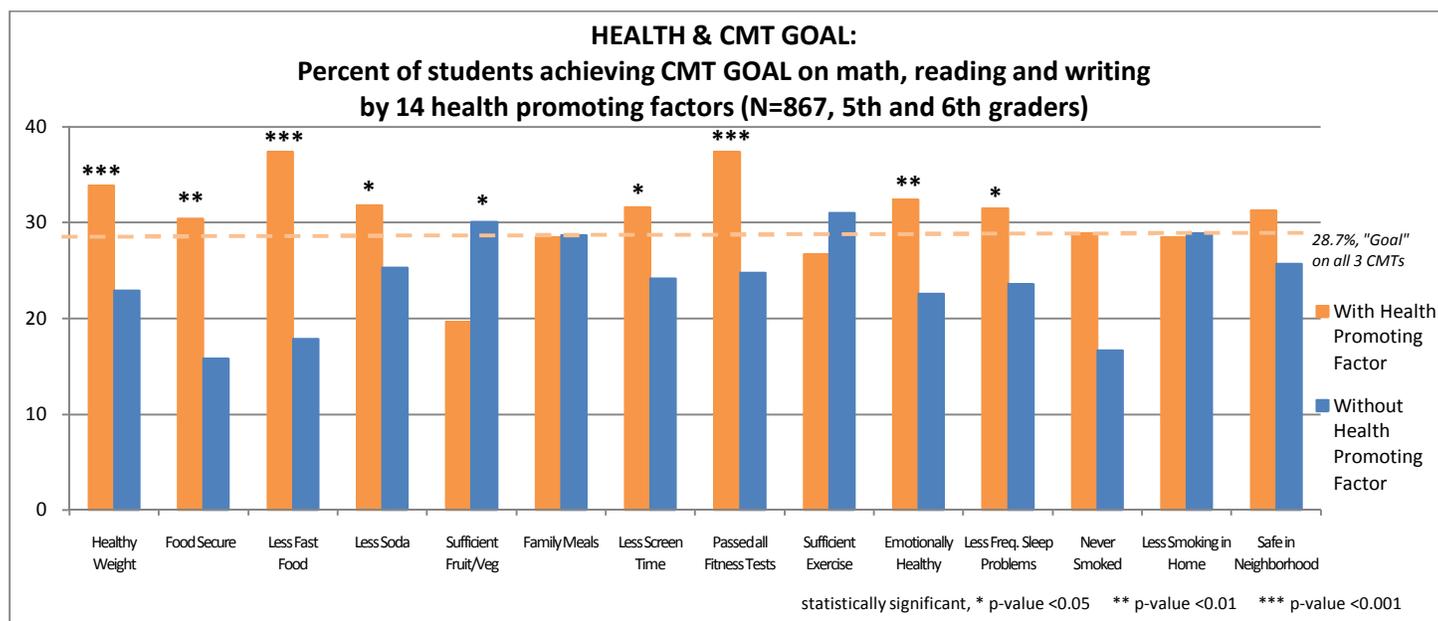
## HEALTH & ACHIEVEMENT

**Health impacts student achievement.** Although evidence to date is limited, previous studies have documented the association of health and student achievement. CARE has collaborated with New Haven Public Schools to determine whether health is related to our students' academic success, as measured by results on the Connecticut Mastery Test (CMT). Given the Board of Education's steadfast dedication to reduce the academic achievement gap in the next five years, it is essential that we identify *all* factors that may impact academic success, so that we can intervene to improve learning and health for all students. These results provide evidence that healthier children achieve greater academic success and that health can and should be part of the district's school change efforts.

**CARE collected health survey data and physical measures from 1,094 5<sup>th</sup> and 6<sup>th</sup> grade students from 12 randomly selected schools in the fall of 2009.** Students were 55% female; 41% African- American; 44% Hispanic; and 13% White. Seventy percent were eligible for the federal free lunch program. Study information was linked to CMT scores from the following spring 2010 to determine if healthier children performed better. **As shown in the bar graph below, students who reported positive health behaviors were more likely to be at Goal on all three CMT's: math, reading and writing.**

### Key Findings:

- Health-promoting factors such as healthy weight and physical fitness are significantly associated with CMT success.
- Students with a greater number of healthy factors are more likely to be at Goal on all 3 CMT tests.
- Students with 10+ health promoting factors were over two times more likely to perform at goal on all three CMT tests—controlling for school, race/ethnicity, gender, and free lunch eligibility (i.e., poverty).



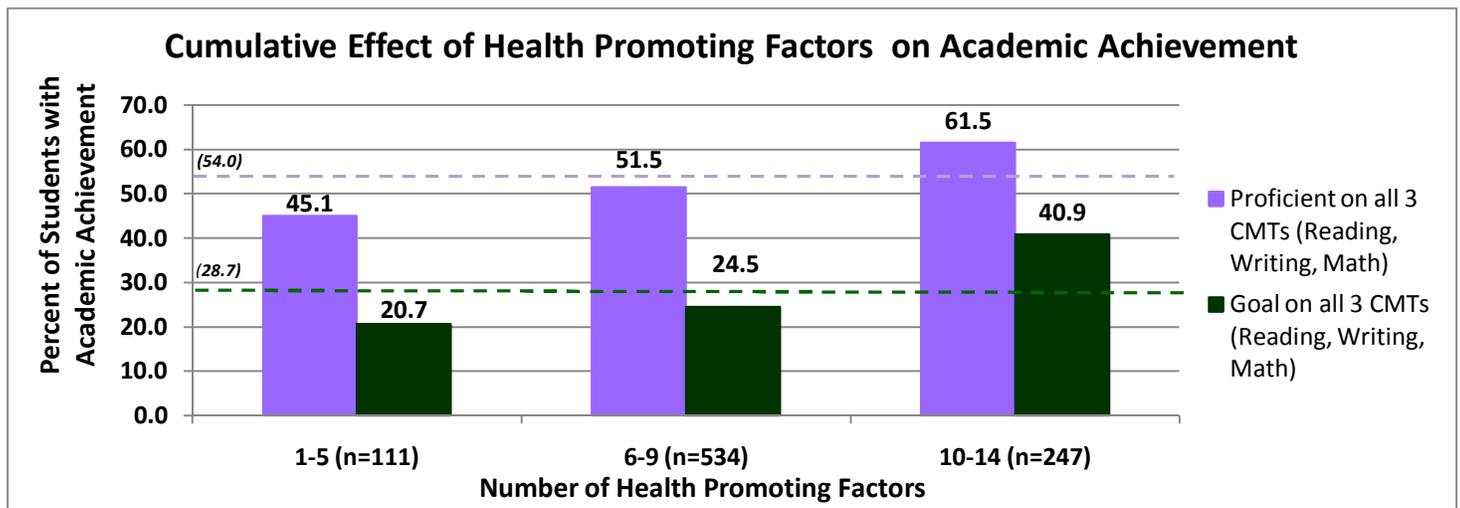
**NOTE:** There are five performance levels reported in the CMTs: Advanced, Goal, Proficient, Basic, and Below Basic. Goal=Goal and above, Proficient=Proficient and above. Meeting goal/above indicates extensive/exceptional understanding of content for each test, whereas proficiency reflects an adequate understanding.

Students were significantly more likely to be at Goal on all CMT tests if they were of healthy weight (not overweight nor obese), were food secure (food/money for food past 30 days), ate at a fast food restaurant no more than once per week, and did not drink soda or other sugar-sweetened beverages more than two times per week. Further, those who were physically active – "screen time" (TV, computer, handheld games) less than two hours each school day and passed all four Presidential Fitness tests (PE teacher testing) – were significantly more likely to achieve goal on all CMTs. Finally, children who were emotionally healthy (0 or 1 symptom related to anxiety or depression) and those with less sleep disturbance (difficulty sleeping <1 time per week) were also significantly more likely to achieve CMT goals. One factor – eating the recommended number of fruits and vegetables each week – was inversely related to achievement, contrary to our expectations. This may be a result of eating more food of all kinds, including fruits and vegetables. Some factors, like less likely to eat at fast food restaurants, may be "a proxy" for other things related to family involvement.

**CUMULATIVE EFFECTS:** Among the 5<sup>th</sup> and 6<sup>th</sup> graders in this study, 54.0% achieved proficiency or above and 28.7% achieved Goal on all three CMT's. We found that regardless of any *specific* healthy practice, those who had more health promoting factors, particularly more than 10, were more likely to be proficient or at goal for all three CMTs (bar graph

below). Considering CMT proficiency: Among those with five or fewer health promoting factors (from the list of 14 on the previous bar graph), only 45.1% achieved proficiency compared to 61.5% of those with ten or more health promoting factors. Considering CMT goal: Among those with five or fewer health promoting factors, only 20.7% achieved goal compared to 40.9% of those with 10 or more health promoting factors. While fewer than 30% of these students achieved goal on all CMT's, this rate was improved to 40.9% for students with the most health promoting factors.

As illustrated, an increase in the number of students achieving both CMT proficiency and goal is seen with  $\geq 6$  health promoting factors, but between 6 and 9, only incremental gains are evident. A substantial increase in targets is noted with 10 or more factors. These findings suggest the need to ensure that all students adopt many health behaviors to realize higher achievement, rather than trying to promote a few targeted interventions. The strategies proposed below, can be considered *non-traditional instructional strategies*, and have the combined potential to bring all students past the goalpost of 10 health-promoting behaviors that are educationally relevant and contribute to enhanced achievement.



*NOTE: Even after controlling for important school and demographic characteristics that also impact CMT scores – school, race/ethnicity, gender, and poverty status (eligible for free lunch) – children with 10 or more health promoting factors were over two times more likely to achieve goal on all three CMTs (OR = 2.3, 95% CI = 1.5, 3.6,  $p < 0.001$ ), when compared with children with 5 or less health promoting factors.*

**Proposed Strategies:** We recommend bringing *evidence to action*, and we are committed to continued collaboration to identify, develop and implement the best policies and programs so that all children can achieve their full potential. These strategies build on district efforts and successes, and can easily be integrated into varied tiered school models to promote learning and health. The potential benefits outweigh the investment of time and resources.

- Implement effective, comprehensive, sequential K-12 Health Education curriculum
- Utilize extended day time available and integrate effective health and learning focused “classes” that allow students to practice and apply concepts in an engaging way
- Implement and enforce District Wellness Plan recommendations in all schools
- Meet the *HealthierUS Challenge* in all schools that includes requirements for school food, physical education and health education
- Integrate physical/emotional health behavior skills into the curriculum during the school day (e.g., Chefs to School, menu boards; Walk Across America, recess, classroom- based physical activity - ABC for Fitness/Take 10! Peer mediation)
- Implement low cost, effective school-wide strategies that promote positive school connection/climate and healthy behaviors that increase achievement (e.g., staff eating with students; fitness bursts; peer leadership)
- Expand School Wellness Teams (PAW) to all schools
- Expand Social Marketing Initiatives and health messaging (e.g. Health Heroes, school food packaging) to all schools
- “Raise the Bar” to maximize learning time with students in after school programs – offer programs that promote health, learning, fitness and positive connections to school and develop evaluation criteria

***Closing the “Health Gap” can help close the “Achievement Gap” and fulfill New Haven’s Promise for success.***