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JOHN W. GARDNER CENTER *for Youth and Their Communities*

Using the Physical Fitness Test to Measure Changes in Fitness Through Adolescence

Background

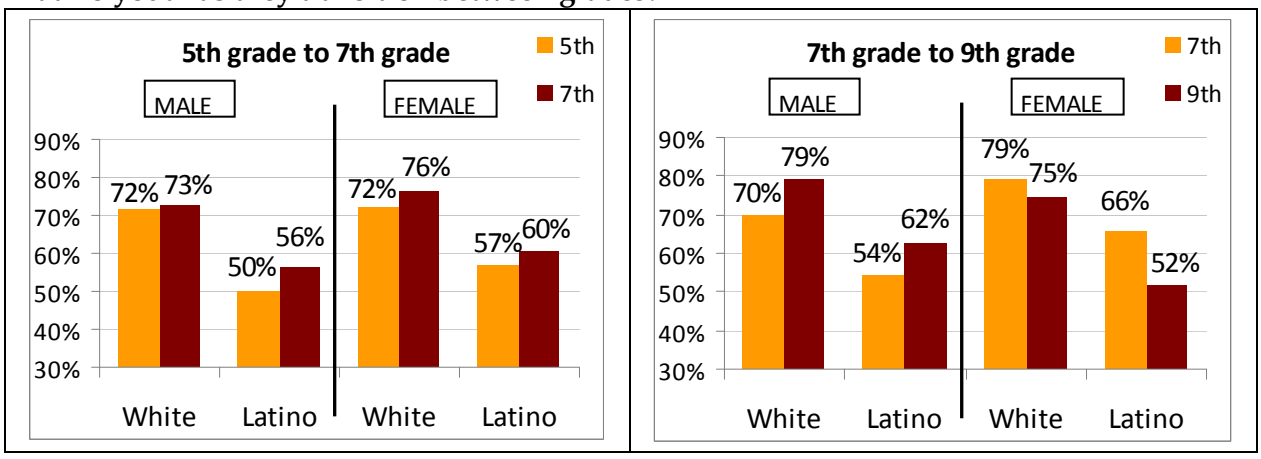
The California Physical Fitness Test (PFT), which consists of six fitness tests taken by all 5th, 7th, and 9th grade public school students, is frequently used to report student fitness at an aggregate level but does not compare the same groups of students from year to year. Using an alternate approach, researchers from the John W. Gardner Center at Stanford University used the Youth Data Archive to match PFT results for the same individuals from 5th to 7th or 7th to 9th grade to provide a more accurate picture of physical fitness changes during adolescence.

Findings and Interpretation

This analysis tracked 1,957 students from Redwood City School District and Sequoia Union High School District who took all six fitness tests in two successive testing periods. Students were considered physically fit if they passed five of six tests. A comparison of PFT scores (Exhibit 1) showed that:

- Overall, physical fitness improved for youth transitioning from 5th to 7th grade. Among students transitioning from 7th to 9th grade, the percent of males passing the PFT increased, but fitness declined for females.
- Consistent with the current literature, we found that fitness levels of White youth were significantly higher than those of Latino youth, but youth trajectories between grade levels appeared primarily influenced by gender.

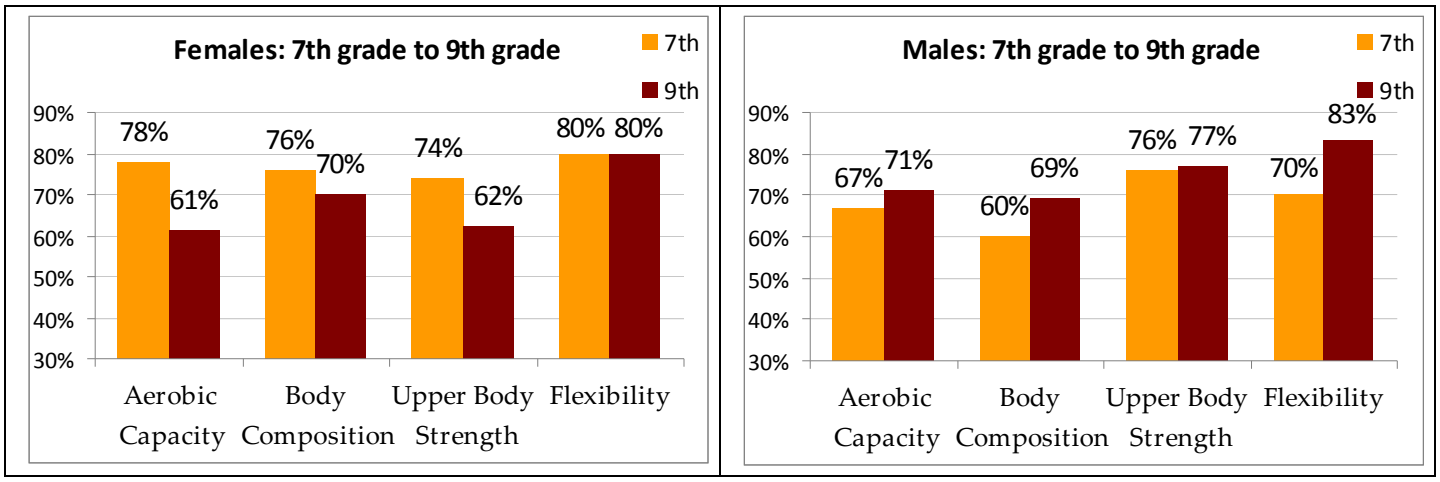
Exhibit 1. Does physical fitness differ between and Male and Female youth and White and Latino youth as they transition between grades?



The gender differences among youth at transition points is dramatic; to understand this divergence in male and female fitness, Exhibit 2 examines four of the six fitness areas for students transitioning between 7th and 9th grade.[1] Results indicate that:

- Females experience declining passing rates in aerobic capacity, body composition, and upper body strength. Males show improvement in aerobic capacity, body composition, and flexibility.
- Body composition, which calculates an individual's Body Mass Index (BMI) to determine whether a child is considered overweight, is likely affected by naturally occurring changes due to the onset of puberty between 7th and 9th grade. Though a change in BMI may determine whether some students are considered physically fit, excluding the BMI test does not change the overall findings in Figure 1.[2]

Exhibit 2. Which tests contribute to differences in overall fitness for females and males?



From Findings to Action

White youth in Redwood City have higher overall fitness levels than Latino youth, but the change in fitness between grades is primarily influenced by gender, not ethnicity. Findings suggest that schools and families should work together to create opportunities for females and Latino youth in particular to stay engaged in athletics and maintain healthy eating habits during this crucial period. Future research should link physical fitness data to information about school-based programs, student participation in athletics, or other health-focused initiatives, to examine whether participants exhibit improved physical fitness over time. These data also allow for better understanding of health-focused initiatives: who participates and whether different youth populations respond differently to available programs and services. Longitudinal fitness test data are an additional tool that policy makers can use in allocating resources towards promising practices to improve youth health.

[1] The fitness tests that determine abdominal strength and trunk strength are omitted because they are almost universally passed and do not significantly contribute to overall improvements or declines in physical fitness.

[2] There are no significant changes in body composition rates for males and females between 5th and 7th grade.