

# BENEFITS OF PHYSICAL ACTIVITY

Mental, Physical and Academic Benefits in Children

**1/3** of

American children and teens are overweight or obese.

## HEALTH BENEFITS OF PHYSICAL ACTIVITY

- Reduced blood pressure, cholesterol levels, anxiety and **depression**
- Reduced risk for **diabetes**, asthma, **cancer**, arthritis
- Increased mental health and **self esteem**

## ACADEMIC PERFORMANCE

- **Higher fitness** levels\* are associated with spelling and math **achievement**
- Daily **physical activity** is associated with **higher school attendance**

**75%** of children 6-15

years do not meet US physical activity recommendations

- Physically fit students had the **best** average **standardized test scores** in reading, math, science, and social studies
- Lack of physical fitness was associated with the **lowest test scores**
- Exercise significantly increased the odds of scoring **>75<sup>th</sup> percentile** on **standardized tests**

\*(measured by number of laps on PACER)

# CHILDREN AND ADOLESCENT HEALTH

“Because of the increasing rates of obesity, unhealthy eating habits and physical inactivity, we may see the first generation that will be less healthy and have a shorter life expectancy than their parents.”

–US Surgeon General Richard Carmona

## BENEFITS OF PHYSICAL ACTIVITY

- Daily physical activity reduces body mass index (BMI) and is associated with cardiovascular and metabolic benefits including:
  - Reduced blood pressure and cholesterol levels<sup>1</sup>
  - Boosts in bone health and development<sup>2</sup>
  - Improvements in mental health, self esteem; lower levels of depression and anxiety<sup>3</sup>
  - Reduced risk for diabetes, coronary artery disease, arthritis, asthma, stroke, and cancer<sup>4</sup>
- Youth who remained active during a 6 year follow-up period had more favorable cardiometabolic risk profiles (lower insulin and triglyceride, lower adiposity, and lower cholesterol) than those who remained inactive.<sup>2</sup>
- A meta-analysis of studies has found that there are consistent negative associations between mental health and sedentary behaviors.<sup>5</sup>

## CHILDREN TODAY

Sedentary behavior is emerging as a serious, independent **chronic disease** risk factor.

**32%** of US children and youth are **overweight**<sup>2</sup>

**17%** of US children are **obese**<sup>2</sup>

Prevalence of obesity **tripled** from 1971 to 2011<sup>6</sup>

**2008 Physical Activity Guidelines for Americans** recommends that children and youth engage in at least **60 minutes of moderate-to-vigorous physical activity per day.**

**75%** of children and youth 6-15 years do not meet the US physical activity requirements<sup>2</sup>

Childhood obesity is the **#1** health concern among parents in the US, topping drug abuse and smoking.<sup>6</sup>

1. “The AHA’s Recommendations for Physical Activity in Children.” *The American Heart Association*. 2014. Web.

2. Dentro, Kara. “The 2014 United States Report Card on Physical Activity for Children and Youth.” *National Physical Activity Plan*. Pentagon Biomedical Research Center. 2014.

3. Janssen, Ian and Allan G LeBlanc. “Systematic review of the health benefits of physical activity and fitness in school-aged children and youth.” *International Journal of Behavioral Nutrition and Physical Activity*. BioMed Central: 2010.

4. “Adolescent and School Health.” *Centers for Disease Control and Prevention*. 2014. Web.

5. Biddle, Stuart JH, and Mavis Asare. “Physical activity and mental health in children and adolescents: a review of reviews.” *British journal of sports medicine* (2011).

# ACADEMIC BENEFITS OF PHYSICAL ACTIVITY

## Standardized Tests

- In a two-year study of fifth graders in West Virginia it was found that students who had the **best average standardized test scores** in reading, math, science, and social studies were **highly physically fit** at the start and end of the study. Furthermore, children who were not physically fit from fifth to seventh grade had the lowest test scores<sup>1</sup>.
- In a study of Chilean School-Age Children it was found that children who **exercised more** than 4 hours/week significantly **increased the odds of scoring in the  $\geq 50$ th percentile and the  $\geq 75$ th percentile** on their SIMCE composite z-scores<sup>2</sup>.

## Grades and Attendance

- In a study of 2nd and 3rd grade students from the Midwest it was found that fitness, measured by number of laps on the PACER, were significantly associated with spelling and math achievement<sup>3</sup>.
- “Children who participated in **daily physical activity** showed **higher rates of school attendance** over a 90 day period”<sup>4</sup>.
- The results from the US National Longitudinal Study of Adolescent Health showed that adolescents who were **active** in school averaged **higher grades**<sup>5</sup>.

<sup>1</sup>American Heart Association. “Students’ physical fitness associated with academic achievement organized physical activity.” ScienceDaily. ScienceDaily, 4 March 2010. <[www.sciencedaily.com/releases/2010/03/1000302185522.htm](http://www.sciencedaily.com/releases/2010/03/1000302185522.htm)>.

<sup>2</sup>Burrows, R., et al. "Scheduled Physical Activity is Associated With Better Academic Performance in Chilean School-Age Children." *Journal of physical activity & health* (2014).

<sup>3</sup>Hansen, David M., et al. "Linear/Nonlinear Relations of Activity and Fitness With Children's Academic Achievement." *Medicine and science in sports and exercise* (2014).

<sup>4</sup>Hillman, C. H., M. B. Pontifex, D. M. Castelli, N. A. Khan, L. B. Raine, M. R. Scudder, E. S. Drollette, R. D. Moore, C.-T. Wu, and K. Kamijo. "Effects of the FITKids Randomized Controlled Trial on Executive Control and Brain Function." *Pediatrics*: E1063-1071. Print.

<sup>5</sup>Nelson, Melissa C., and Penny Gordon-Larsen. "Physical activity and sedentary behavior patterns are associated with selected adolescent health risk behaviors." *Pediatrics* 117.4 (2006): 1281-1290.