

## AEROBIC CAPACITY Overview

Aerobic capacity is evaluated using estimates of VO<sub>2</sub>max (also known as maximal oxygen uptake). This indicator reflects the maximum rate that the respiratory, cardiovascular, and muscular systems can take in, transport, and use oxygen during exercise. Good aerobic capacity (cardiorespiratory fitness) has been shown to **reduce the risk** of high blood pressure, coronary heart disease, obesity, diabetes, the metabolic syndrome, and some forms of cancer. The FITNESSGRAM program provides **three field tests** to assess aerobic capacity; **PACER**, **1-Mile** run, and the **Walk test**. All Aerobic Capacity HFZ scores are reported as estimates of VO<sub>2</sub>max. Higher VO<sub>2</sub>max scores reflect a greater ability to take in and use oxygen and a greater potential to perform endurance exercise.

In the **FITNESSGRAM8 & FITNESSGRAM9** software, the PACER and 1-Mile Run are scored using the same equation. The equation takes into account the child's BMI (which is calculated from height and weight). Therefore, entry of height and weight are required in order to estimate VO<sub>2</sub>max when these tests are used. If not, an *Incomplete* will be recorded.

In the **FITNESSGRAM10** software, estimates of VO<sub>2</sub>max from the PACER test will no longer require the availability of height and weight information. However, the 1-Mile run and Walk test will continue to utilize the same calculations as FG8 & FG9, which requires height and weight. The adoption of a **simplified PACER equation** in FITNESSGRAM10 will facilitate interpretability and use of the PACER by teachers. Schools will note some differences in the percentage of youth achieving the Healthy Fitness Zone with the new PACER equation but no changes would be evident with the use of the 1-mile run or walk tests.