

## Fitness Standards

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Student's aerobic capacity or  $VO_2$ max score is assigned into one of two levels: in the Healthy Fitness Zone (HFZ) or Needs Improvement (NI). The preferred fitness level is the HFZ. A level of NI suggests that the student would benefit from workouts designed to improve aerobic capacity. A level of NI – Health Risk further points to increased health risks due to the student's aerobic capacity score. The aerobic capacity scores along with the standards for all the *FITNESSGRAM* test options have been set according to gender and age. The latest version of these standards is presented on the Oklahoma State Department of Health (OSDH) Web page at <http://www.ok.gov/health/Wellness/FITNESSGRAM/index.html>

It is important to keep in mind that a low  $VO_2$ max may be influenced by any of following factors:

- Aerobic capacity level
- Body composition
- Running or walking efficiency
- Motivation level
- Extreme weather
- Pacing skill

Progress in any of these factors may improve a student's  $VO_2$ max. Further,  $VO_2$ max can be improved by taking part in sustained large-muscle group exercise that follows the FITT Principle, which is based on increasing or varying:

- Frequency – number of days
- Intensity – level of effort or exertion
- Time – number of minutes spent exercising
- Type – exercise that target specific muscle groups

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# Physical Fitness Assessment

## PACER



## Parent and Guardian Guide to the Physical Fitness Assessment and the FITNESSGRAM<sup>1</sup> — Aerobic Capacity

<sup>1</sup>The FITNESSGRAM and the Healthy Fitness Zones (HFZ) are registered trademarks of The Cooper Institute.

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## **FITNESSGRAM**

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The *FITNESSGRAM* assesses five main fitness areas: (1) Aerobic Capacity, (2) Body Composition, and (3) Muscle Strength, (4) Muscle Endurance, (5) and Flexibility. This brochure provides parents and guardians with information about aerobic capacity. Information about the other fitness areas is available in the brochure entitled “Parent and Guardian Guide to the Physical Fitness Assessment and *FITNESSGRAM*.”

### **Aerobic Capacity**

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Aerobic capacity is a sign of how well the body uses air or oxygen during a workout or exercise. Active high-energy exercise improves aerobic capacity by strengthening the heart muscle and improving the function of the rest of the cardiorespiratory system. You may recall that at the start of a workout or exercise plan people often tire quickly and breathe hard because their bodies cannot get enough oxygen. As their fitness levels improve, their aerobic capacity improves, allowing them to exercise with less effort and for longer periods of time. Aerobic capacity may well be the most important physical fitness area, as good aerobic capacity has been connected with a reduced risk of metabolic syndrome. Metabolic syndrome is a group of risk factors that together increase the chance of cardiovascular disease and the risk of diabetes.

These risk factors include:

- High fasting glucose
- High waist circumference
- High triglycerides
- Low high-density lipoprotein cholesterol
- High blood pressure

## **Aerobic Capacity Assessment**

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**PACER.** The purpose of the PACER is to run as long as possible, going back and forth across a 15- or 20-meter distance and at a fixed pace that is set to music that gets faster each minute. The following information is required to evaluate aerobic capacity from the PACER:

- Gender
- Age
- Number of 20-meter laps completed<sup>1</sup>

### **VO<sub>2</sub>max**

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The aerobic capacity assessment is reported in terms of VO<sub>2</sub>max. VO<sub>2</sub>max refers to the maximum oxygen spent during exercise, where V = volume per time; O<sub>2</sub> = oxygen; and max = maximum. VO<sub>2</sub>max, or aerobic capacity, is evaluated using the student’s gender, age, test result (i.e., laps, time, heart rate).

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<sup>1</sup> If the 15-meter PACER is administered, the laps need to be converted to 20-meter laps using a table provided for this purpose