

# FITNESSGRAM® Overview

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# Objectives

- ▶ Review FITNESSGRAM test protocols
- ▶ Review changes in aerobic capacity and body composition standards
- ▶ Respond to questions

# Resources

- ▶ DVD with videos of assessment items is bound into the back of Test Administration Manual.

# FITNESSGRAM Assessment

- ▶ Aerobic Capacity
  - PACER
  - One Mile Run/Walk
  - Walk Test (13 years and over)

# FITNESSGRAM Assessment

- ▶ Body Composition
  - Percent Body Fat from Skinfold Measures
  - Percent Body Fat from Bioelectric Impedance Analyzer (BIA)
  - Body Mass Index from Height/Weight

# FITNESSGRAM Assessment

- ▶ Muscle Strength, Endurance & Flexibility
  - Abdominal – Curl-up
  - Trunk Extensor – Trunk Lift
  - Upper Body – 90<sup>0</sup> Push-up, Modified Pull-up, Flexed Arm Hang
  - Flexibility – Back saver Sit and Reach or Shoulder Stretch

# Abdominal Strength

## ▶ Curl-up



# Trunk Extensor Strength

## ▶ Trunk Lift



# Upper Body Strength

## ▶ 90° Push-up



# Flexibility

## ▶ Back Saver Sit-and-Reach



# Need for New Standards

- ▶ Aerobic Capacity
  - Excessively high passing rates for young girls
  - Classification disagreement between PACER and One Mile Run
  - Health risk information on children is now available
  - Were not using the true aerobic capacity score to classify students into HFZ

# Need for New Standards

- ▶ Body Composition
  - Standards for very young children did not discriminate adequately
  - Much more data for children and children's health risks is now available upon which to base standards
  - Previous standards were very purposefully set very conservatively – the obesity epidemic has changed the culture

# Basis for New Standards

- ▶ Nationally representative data on children from National Health and Nutrition Survey (NHANES)
- ▶ Analyses were conducted to find levels of body fatness and aerobic capacity that are associated with increased risk of metabolic syndrome
- ▶ Age and Gender specific taking into account normal changes during growth and maturation

# What is Metabolic Syndrome?

Considered to have metabolic syndrome if you have three of the five conditions.

- ▶ High blood pressure
- ▶ High fasting glucose
- ▶ High waist circumference
- ▶ High triglycerides
- ▶ Low HDL cholesterol

# Characteristics of New Standards

- ▶ Young boys and girls do not differ substantially but follow different patterns as age increases
- ▶ New standards will classify children into three zones:
  - Healthy Fitness Zone
  - Needs Improvement – Some Risk
  - Needs Improvement – High Risk
- ▶ Three zones allow messaging to be much more specific

# Unique to New Body Composition Standards

- ▶ These are not the CDC percentile standards, they are criterion standards
- ▶ Body Composition standards were established based on levels of body fatness associated with increased risk of health problems
- ▶ Levels of Body Mass Index were equated with these levels of body fatness
- ▶ There will still be a Very Lean zone

# Unique to New Aerobic Capacity Standards

- ▶ All output will be expressed as Aerobic Capacity ( $VO_{2max}$ ) rather than as PACER laps or One Mile Run time.
- ▶ Calculation of Aerobic Capacity requires the input of height and weight – Body Mass Index is a very critical factor in one's ability to perform aerobically. Without BMI many students are actually classified incorrectly.

# Changes in the Aerobic Capacity Standards

- ▶ Actual VO<sub>2</sub>max standards have changed
  - Girls standards are higher than in the past
  - Young boys are lower than in the past but older boys are higher
- ▶ Method of classifying and expressing aerobic output has changed
- ▶ Must have a minimum score to get a calculation of VO<sub>2</sub>max
  - At least 10 laps on PACER or Less than 13:00 on the mile run

# How Will the New Standards Change Test Administration

- ▶ Test administration does not change
  - The test items are still the same
  - The data that is entered in the computer is the same
- ▶ The one thing that will be different is that motivation for children on the aerobic test cannot be based on how much they have to do. Children will have to “do their best”
- ▶ Minimum scores required to get VO<sub>2</sub>max calculation
- ▶ There are lookup tables posted online
- ▶ Changes will show up when you print reports – group and individual

# How Do I Get the New Standards

- ▶ Posted at [www.fitnessgram.net](http://www.fitnessgram.net)
  - FAQ documents for teachers, parents and students
  - Link to Cooper Institute
    - Copy of new standards
    - Overview documents
    - Powerpoint
    - Lookup tables
- ▶ In version 8.6 and 9.1 of the FITNESSGRAM software

# Questions in the Future

Content Questions:

[fitnessgram@cooperinst.org](mailto:fitnessgram@cooperinst.org)

Techsupport:

[Support@hkusa.com](mailto:Support@hkusa.com)

800-747-4457, option 3

# Reports for Students

**Jason Jogger**  
 Grade: 5 Age: 10  
 FG All-level School  
**Instructor(s): Mary Anderson**  
**Date**      **Height**      **Weight**  
 Current: 9/21/2010      5'5"      122 lbs  
 Past: 9/18/2009      5'4"      120 lbs

## MESSAGES

Although your aerobic capacity score is in the Healthy Fitness Zone now, you are not doing enough physical activity. Try to do more physical activity (60 minutes every day) to feel good and remain healthy.

Your abdominal, trunk, and upper-body strength are all in the Healthy Fitness Zone. To maintain your fitness, you should begin doing strength-training activities that include exercises for each of these areas. Abdominal and trunk exercises should be done 3 to 5 days each week. Strength activities for other areas should be done 3 days.

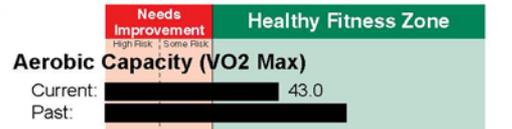
Improve your flexibility by doing slow stretches 3 or 4 days each week, holding the stretch 20-30 seconds.

Jason, your body composition score needs improvement. If it stays at this level it could lead to health problems. You also report low levels of physical activity. To improve, do the following:  
 - Try to get more activity (at least 60 minutes every day).

- Limit time spent watching TV or playing video games.
  - Eat a healthy diet including fresh fruits and vegetables.
  - Reduce your calories from foods with solid fats and added sugars.
- Improving your body composition score will improve your health and may help increase other fitness scores.

**Healthy Fitness Zone** for 10 year-old boys  
 Aerobic Capacity: >= 40.2 ml/kg/min  
 Curl-Up: >= 12 repetitions  
 Trunk Lift: 9-12 inches  
 Push-Up: >= 7 repetitions  
 Back-Saver Sit and Reach: At least 8 inches on R & L  
 Percent Body Fat: 8.9% - 22.4%

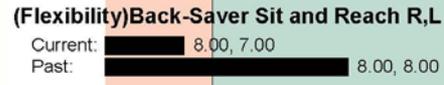
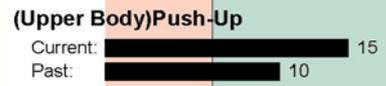
### AEROBIC CAPACITY



Your score for Aerobic Capacity is based on the number of PACER laps and your BMI. It shows your ability to do activities such as running, cycling, and sports at a high level.

	PACER Laps	BMI
Current:	23	20.3
Past:	16	20.6

### MUSCLE STRENGTH, ENDURANCE, & FLEXIBILITY



### BODY COMPOSITION



Being too lean or too heavy may be a sign of (or lead to) health problems.

### ACTIVITY

	Number of Days
On how many of the past 7 days did you participate in physical activity for a total of 30-60 minutes, or more, over the course of the day?	3
On how many of the past 7 days did you do exercises to strengthen or tone your muscles?	0
On how many of the past 7 days did you do exercises to loosen up or relax your muscles?	2

To be healthy and fit it is important to do some physical activity almost every day. Aerobic exercise is good for your heart and body composition. Strength and flexibility exercises are good for your muscles and joints.

Good job! You are doing some aerobic activity. Do aerobic activity each day and add strength and flexibility exercises to improve your overall fitness.

# Reports for Parents



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## Report for Parents

People come in all shapes and sizes, but everyone can benefit from regular physical activity and a healthy level of physical fitness. The FITNESSGRAM fitness test battery evaluates five different parts of health-related fitness, including aerobic capacity, muscular strength, muscular endurance, flexibility, and body composition. Parents play an important role in shaping children's physical activity and dietary habits. This report will help you evaluate your child's current level of health-related fitness and help you identify ways to promote healthy lifestyles in your family.

### AEROBIC CAPACITY

Aerobic capacity is a measure of the ability of the heart, lungs, and muscles to perform sustained physical activity. In general, the more your child exercises, the higher his or her aerobic capacity level will be. Aerobic capacity is measured with the PACER test, the one-mile run, or the walk test.

*Importance:* Good aerobic capacity can reduce risks of heart disease, stroke, and diabetes. Although generally not present in children, these diseases can begin during childhood and adolescence.

**Healthy Fitness Zone** for 10 year-old boys  
Aerobic Capacity:  $\geq 40.2$  ml/kg/min

### MUSCLE STRENGTH, ENDURANCE, & FLEXIBILITY

These components of health-related fitness measure the overall fitness of the musculoskeletal system. A variety of tests are used to assess these different components.

*Importance:* The fitness level of muscles is important for injury prevention and overall body function. Strength, endurance, and flexibility are important for maintaining good posture, low back health, and total body function.

**Healthy Fitness Zone** for 10 year-old boys  
Curl-Up:  $\geq 12$  repetitions  
Trunk Lift: 9-12 inches  
Push Up:  $\geq 7$  repetitions  
Back-Saver Sit and Reach: At least 4 inches on R & L

### BODY COMPOSITION

The body composition measure refers to the relative proportion of fat and lean tissue in the body. Body fat percentage can be estimated by skinfold caliper or other measuring devices.

*Importance:* Overweight youth are at high risk for being overweight adults. Adult obesity is associated with a number of health problems. Many of these problems can begin early in life.

Jason's level of body fat is in the lower end of the Health Risk category. There is some risk of future health problems. Regular physical activity can reduce health risks and may also help with fat loss. To improve body composition, encourage your child to do the following:

- Be active every day (60 minutes is the goal but some is better than none).
- Limit time watching TV or playing video games.
- Adopt a healthy diet containing fresh fruits and vegetables.
- Eat limited amounts of foods with solid fats and added sugars. P02s

**Healthy Fitness Zone** for 10 year-old boys  
Percent Body Fat: 8.8% - 22.5%

With regular physical activity most children will be able to score in the Healthy Fitness Zone for most tests. Children in the Needs Improvement area should have additional opportunities to be active. See back of page for more information.

Jason Jogger  
Grade: 5 Age: 10  
FG All-level School  
Instructor(s): Mary Anderson

	Date	Height	Weight
Current:	9/21/2010	5'5"	122 lbs
Past:	9/18/2009	5'4"	120 lbs

Needs Improvement	Healthy Fitness Zone
High Risk   Some Risk	

### Aerobic Capacity (VO2 Max)

Current:	43.0
Past:	

Your score for Aerobic Capacity is based on the number of PACER laps and your BMI. It shows your ability to do activities such as running, cycling, and sports at a high level.

PACER Laps	BMI
Current: 23	20.3
Past: 16	20.6

Needs Improvement	Healthy Fitness Zone
High Risk   Some Risk	

### (Abdominal)Curl-Up

Current:	14
Past:	5

### (Trunk Extension)Trunk Lift

Current:	11
Past:	8

### (Upper Body)Push-Up

Current:	15
Past:	10

### (Flexibility)Back-Saver Sit and Reach R,L

Current:	8.00, 7.00
Past:	8.00, 8.00

### Percent Body Fat

Healthy Fitness Zone	Needs Improvement
	Some Risk   High Risk

Current:	23.0
Past:	23.0

Being too lean or too heavy may be a sign of (or lead to) health problems. However, not all people who are outside the Healthy Fitness Zone are at risk for health problems. For example, a person with a lot of muscle may have a high BMI without excess fat.