



Appropriate and Inappropriate Practices Related to Fitness Testing

To cite this article: (2017) Appropriate and Inappropriate Practices Related to Fitness Testing, Journal of Physical Education, Recreation & Dance, 88:6, 3-9, DOI: [10.1080/07303084.2017.1331636](https://doi.org/10.1080/07303084.2017.1331636)

To link to this article: <http://dx.doi.org/10.1080/07303084.2017.1331636>



Published online: 27 Jul 2017.



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Appropriate and Inappropriate Practices Related to Fitness Testing

SHAPE America's Position

Fitness testing is a valuable part of fitness education when integrated *appropriately* into a comprehensive physical education curriculum, and students' fitness scores should *not* be used to grade students or to evaluate physical education teachers.

Rationale

Fitness education is an important part of a comprehensive physical education program that is designed to teach students why they should and how to participate in physical activity on a regular basis, in addition to adopting other health-enhancing behaviors. Also, fitness education plays an integral role in empowering students to be physically active and to make the healthy choices that contribute to their pursuit of a lifetime of physical activity, which is an important element of SHAPE America's 50 Million Strong by 2029 commitment "to empower all students to live healthy and active lives through effective physical and health education programs."

Fitness testing, as part of fitness education, is woven into many of SHAPE America's curriculum-support resources. For example, fitness is addressed in all five of SHAPE America's National Standards for K–12 Physical Education (2013b) and their corresponding Grade-level Outcomes for K–12 Physical Education (2013a), and it is featured in Standard 3: the physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

In addition, SHAPE America's Instructional Framework for Fitness Education in Physical Education (2012) features grade-level benchmarks for fitness education.



POSITION STATEMENT

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An Eight-step Fitness Education Process

Figure 1 outlines an eight-step process that demonstrates the practices necessary for providing students with meaningful fitness instruction (Corbin, Welk, Corbin, & Welk, 2016). This fitness education process gives students the knowledge and skills necessary for attaining and maintaining a health-enhancing level of physical activity and fitness.

Through fitness education, students first learn key fitness concepts (Step 1). Once they are aware of the reasons for

testing, students can prepare (Step 2) for the tests (e.g., be ready medically, warm up adequately). Before the assessment, students practice the tests (Step 3). In Step 4, students take the fitness assessment, then use the assessment results to determine in what areas their scores are in a healthy zone, set goals and plan personalized programs for improvement (Step 5). Students then track their progress (Step 6) using self-monitoring (e.g., activity tracking). Students retake the fitness assessment periodically (Step 7) and refine their personal goals and fitness programs (Step 8). The teacher continues



Figure 1.
Eight-step fitness education process

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to teach fitness concepts as students continue to refine their goals and programs.

Integrating Fitness Assessment

To integrate fitness assessment into the physical education curriculum appropriately, teachers and administrators should focus on the following areas.

Recognize that fitness education is only a part of physical education. The physical education curriculum should focus on developing physically literate individuals, through SHAPE America's National Standards and Grade-level Outcomes for K–12 Physical Education (2013a, 2013b). Because fitness testing represents only a piece of fitness education, and fitness education represents only a piece of physical education, educators should not use fitness scores alone to determine whether students have met a physical education requirement.

Recognize that fitness education is more than testing. (Step 1). Fitness

education entails helping students understand the health-related components of fitness, training principles, the relationship of fitness to health, which types of physical activities are important in developing each fitness component, and the effect that practice can have on their performance.

Choose and schedule tests appropriately. Teachers should use a fitness assessment program with criterion-referenced, health-related standards that can help students understand more about their individual health status. Also, teachers should schedule fitness testing so that it allows for spending the large majority of class time on education, practice and being active. Teachers should follow test protocols related to students' age and frequency of testing.

Design and evaluate fitness assessment appropriately. Teachers should design efficient, appropriate assessment situations so that students are well prepared for each assessment (Step 2) and have gotten

a chance to practice the test protocols (Step 3).

The most important format for testing (Step 4) is *self-assessment*. With self-assessment, teachers can focus their attention on helping students understand the test and improve their accuracy and performance. Students begin to understand their fitness data and see that they can affect their own health. The purpose of teaching students about fitness assessment is to help them understand themselves and plan appropriate activity throughout their lives. Self-testing is a lifetime skill.

Institutional surveillance testing is conducted by trained testers to determine the fitness levels of groups of students and to provide direction for program planning, in addition to providing information to students and their families.

Of course, assigning a trained tester to conduct an assessment of every student would be time consuming. If

physical education classes meet daily in appropriate class sizes, for a reasonable amount of time, schools could conduct institutional testing yearly to track student progress. If those conditions are not present, schools can conduct institutional testing every three years (e.g., in grades 4, 7 and 10; Corbin, Lambdin, Mahar, Roberts, & Pangrazi, 2013). A teacher's time is best spent providing instruction, feedback and encouragement. Therefore, school administrators and teachers should monitor the time needed to conduct fitness testing to ensure a reasonable balance among class instruction, practice time and assessment time. Self-testing is the testing format used most commonly, because it teaches a lifetime skill, helps personalize the experience for students, is efficient, and, once taught, can occur as often as desired.

Fitness education should be personalized and for everyone. The Brockport Fitness Test manual should be used for students who have disabilities that prevent them from participating appropriately in the FITNESSGRAM® test items.

Use assessment data productively. Students, teachers and administrators should use assessment data that are collected for screening, creating and reflecting on the effectiveness of students' fitness-improvement plans, and for ongoing program and policy development (Steps 5 to 8). Individual student results should be made available to students and their parents/guardians, but they should not be shared publicly.

Although schools and teachers often devote a great deal of time and effort to collecting fitness data, those data are not always used in ways that lead to student learning and improvement. It is not worth spending time collecting data if those data are not put to good use.

Teachers and schools should keep data confidential at all times, including teaching students that fitness data are personal, and that they should respect the confidentiality of one another's data. Scores should never be posted or called out in class. See Table 1 for appropriate and inappropriate instructional practices for implementing an eight-step fitness education process.

Cautions

For a variety of reasons, fitness testing is valuable but also challenging. Factors beyond student effort affect fitness test scores, including genetics, growth timing, environmental conditions, opportunities for physical activity involvement, and the student's starting point (i.e., his or her health and fitness history).

Young children do not respond to training. For that reason, the Fitnessgram test protocols ask that students in grades 3 and below begin to learn form and protocols but not participate in fitness testing. Also, individuals respond differently, both physically and psychologically, to the same training protocols (Astorino & Schubert, 2014; Rankinen & Bouchard, 2011; Swift et al., 2013). Therefore, fitness testing must be individualized to account for individual student differences and should *never* be used to evaluate teacher effectiveness or to grade students.

Even though it comes with challenges, fitness testing is worthwhile because it provides students with information about their health-related fitness and alerts them to potential health risks to which they might not otherwise have access (Corbin et al., 2013). It is important to note, however, that fitness test results do not *diagnose* health risks. Instead, they serve as a screening tool that can provide early warning regarding the development of diabetes, heart disease and high blood pressure, among other conditions.

Assessing body composition is one of the most sensitive areas of fitness testing. Body composition is the amount of lean body mass compared to body fat. Body mass index (BMI) is a popular tool for screening students' body composition because it is simple and non-invasive. It involves entering a student's height and weight into a formula that calculates his or her BMI. The result is categorized as either within the healthy fitness zone (HFZ), needs improvement (NI), or needs improvement–health risk (NI-HR).

It is important to note that BMI, like the other test items, is not a tool for diagnosing health risks among students, but it is simply a screening tool. In a school

setting, calculating BMI is comparable to a vision screening. The vision screener conducts a simple vision test with each student and alerts parents of any warning signs and recommendation to follow up with the family's eye care provider, when appropriate. The vision screener does not diagnose any eye-related conditions or prescribe eye glasses. Similarly, if a student's BMI score signals a warning (too high or too low), the school informs the student's family, with a suggestion to follow up with the family's physician for further evaluation.

Body mass index testing and measuring body composition is particularly sensitive, so educators must take extra precaution when collecting that information. Educators must teach students why it is important to measure body composition and must provide them with as much privacy as possible to help them feel safe and comfortable while their height and weight are being collected and recorded.

All fitness testing must be conducted in a way that is empowering to students if they are to view fitness as a lifelong goal. Although students do not control all aspects of their fitness, in most cases, their behavior does have a significant impact. Too often, only the fittest students find encouragement in fitness testing, and the least fit students develop negative feelings toward the experience and, consequently, their ability to affect their own health.

Additional Resources Regarding BMI:

- *Body Composition Reporting: Position Statement* from the Fitnessgram Scientific Advisory Board, Cooper Institute.
- *Body Mass Index Measurement in Schools*, Centers for Disease Control and Prevention.

Use of Fitnessgram

The Fitnessgram test battery is recognized as the national fitness test and measures the five elements of health-related fitness: cardiorespiratory endurance, muscular strength, muscular endurance, flexibility and body composition. Although Fitnessgram does not measure power, strong research support exists for including it as a health-related component of fitness. For that reason, it

is appropriate to include tests of power in fitness testing and fitness education programs (Baptista, Mil-Homens, Carita, Janz, & Sardinha, 2016; Corbin, Janz, & Baptista, in press; Corbin et al., 2014; Institute of Medicine, 2012; Gunter, Almsteadt, & Janz, 2012; Janz & Francis, 2015; Janz et al., 2006; Janz, Letuchy, Burns, Francis, & Levy, 2015).

SHAPE America has partnered with the President's Council on Fitness, Sports and Nutrition; the Centers for Disease Control and Prevention; the National Foundation for Fitness, Sports and Nutrition; and the Cooper Institute in creating the Presidential Youth Fitness Program (PYFP), a comprehensive school-based program that promotes health and regular physical activity for young people in the United States. The PYFP promotes the concepts expressed in this position statement and provides resources on its website, www.pyfp.org. The PYFP has chosen Fitnessgram as the national fitness test, and the Brockport Fitness Test for students with disabilities, because Fitnessgram is the only fitness test with health-related criteria, developed by a team of experts and based on the best available evidence of the relationships between the components of fitness and health risk.

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Table 1.
**Appropriate and Inappropriate Instructional Practices for Implementing
 an Eight-step Fitness Education Process**

The table that follows identifies appropriate and inappropriate instructional practices for implementing an eight-step fitness process, beginning with instruction on fitness concepts. Some of the practices come from SHAPE America's *Appropriate Instructional Practice Guidelines: A Side-by-Side Comparison* (2009). This table also includes best practices in other aspects of teaching physical education.

Step 1. Fitness Concepts. Before undergoing any fitness assessment, students should demonstrate an age-appropriate understanding of the components of health-related fitness, principles of training, and the importance of health-related fitness to their overall health.	
Appropriate Practices	Inappropriate Practices
The teacher imparts strategies, tactics, exercise science, biomechanical analysis and fitness concepts throughout the physical education curriculum.	The teacher does not help develop student knowledge of the scientific bases for physical activity.
Step 2. Student Preparation. Students participate in conditioning activities, learn the importance of warming up and cooling down, as well as exercises and strategies for preparing for the fitness assessment.	
Appropriate Practices	Inappropriate Practices
The teacher prepares students to be wise consumers of the fitness and wellness industries by applying physical education instruction to real-world settings. For example, elementary students are taught that the heart is a muscle that requires exercise or that a healthy diet can improve fitness, and high school students are taught how to choose a personal trainer.	The teacher fails to link physical education instruction to real-world settings.
The teacher's physical education program is designed to develop students' skills, knowledge and dispositions to be active for a lifetime in a way that is meaningful and fun.	The teacher's physical education program is designed in a way that does not increase student motivation to be physically active. The teacher selects activities that are not meaningful or do not help develop students' skills.
The teacher integrates health-related fitness concepts throughout the physical education program.	The teacher addresses health-related fitness concepts randomly or sporadically in the physical education program, and they are unrelated to lifelong learning benefits.
The teacher encourages all students to experience the satisfaction and joy that can result from learning about and participating regularly in physical activity.	The teacher creates negative experiences in physical education (e.g., uses running as punishment) that are not enjoyable and lead students to lose motivation for being active.
As part of an ongoing program of physical education, the teacher prepares students physically for each fitness component so that they can complete the assessments safely.	The teacher evaluates student fitness only on the day of assessment rather than embedding testing as part of the fitness education process and the ongoing physical education program.
Step 3. Practice Procedures. In preparation for fitness assessment, students should understand the protocols for each assessment item and have multiple opportunities to practice.	
Appropriate Practices	Inappropriate Practices
The teacher helps students understand the need for accuracy and use of appropriate protocols, including making a "best" effort, so that their fitness scores can provide meaningful information.	The teacher does not teach the reasons for using consistent protocols. The teacher allows incorrect protocols, making it difficult to compare data across testing times or to identify accurate fitness levels for program evaluation.
Step 4. Assessment. Students complete a battery of fitness assessments with an understanding of the purpose of each assessment, the component of health-related fitness that it measures, and physical activities that influence it.	
Appropriate Practices	Inappropriate Practices
The teacher announces testing date(s), allowing students to prepare, including wearing appropriate shoes and clothing for comfortable participation. The teacher encourages students daily to nourish themselves properly, be well-rested and hydrated.	The teacher does not announce the testing date(s) and, as a result, student scores are as dependent on the comfort of the shoes or clothes they are wearing as on their physical ability. Students are not encouraged regularly to participate in healthy hydration, sleep or nutrition behaviors.

(continued)

Step 4. Assessment (continued).	
Appropriate Practices	Inappropriate Practices
<p>The teacher mostly uses a self-testing format, as students who learn to assess their own fitness are most empowered with the tools they need to develop and maintain a health-enhancing level of physical fitness.</p> <p>Note: FITNESSGRAM® advisers suggest that institutional testing in which trained testers assess each student should take place only periodically, such as every third year (e.g., grades 5, 8, high school). For information on formats for testing, see Corbin, Lambdin, Mahar, Roberts & Pangrazi, 2013, pp. 2–8.</p>	<p>The teacher does not allow students to self-test their physical fitness. Rather, the teacher uses supervised individual and/or institutional testing exclusively, making it less likely that students will continue attending to their fitness throughout their lives.</p>
<p>The teacher makes every effort to create fitness testing situations that are private, non-threatening, educational, efficient and encouraging.</p>	<p>The teacher creates fitness testing situations that are public, threatening and inefficient (e.g., students observe others completing their tests while they wait for their turn).</p>
<p>The teacher conducts fitness assessment with criterion-referenced tests that have been developed based on the best scientific evidence available on the relationship between fitness score and health risk (Corbin, Lambdin, Mahar, Roberts, & Pangrazi, 2013, pp. 2–5).</p>	<p>The teacher conducts fitness assessment with norm-referenced tests, which can provide information only in comparison to the fitness data of others, rather than providing insight into each student's individual health status.</p>
<p>The teacher follows fitness test guidelines in choosing appropriate grade levels for testing. For example, Fitnessgram recommends that teachers of students in grades K–3 not involve students in fitness testing, but focus on participation in fun physical activity and the development of good form in fitness activities.</p>	<p>The teacher includes students of all ages in fitness testing, regardless of the assessment's guidelines. Institutional fitness testing is conducted on the same time schedule for all students, regardless of the appropriateness of students' age or development status.</p>
<p>The teacher individualizes fitness testing according to student needs and uses the Brockport assessment, as appropriate, for children with disabilities.</p>	<p>The teacher requires students with asthma and other medical conditions or disabilities to perform the same assessment tasks as the other students, or excludes them from fitness testing completely.</p>
Step 5. Program Planning and Goal Setting. Students learn to analyze their fitness assessment results, set appropriate goals, and create individualized plans for improvement.	
Appropriate Practices	Inappropriate Practices
<p>The teacher includes fitness testing as part of a comprehensive fitness education program to teach students to better understand their own individual health risks, to set personal goals, and develop appropriate individualized daily physical activity plans for improvement</p>	<p>The teacher completes fitness assessment once or twice a year, and fitness assessments are not connected with the rest of fitness education or the larger physical education curriculum.</p>
<p>The teacher shares test results privately with students and their parents or guardians as a tool for developing personal goals and strategies for maintaining and increasing respective fitness parameters for personal fitness.</p>	<p>The teacher posts individual student scores publicly, where students can view and compare them. Alternately, the teacher does not share individual student scores, so students receive no feedback on their fitness assessments, and parents and guardians receive no information on their children's fitness or possible health risks.</p>
<p>The teacher discourages students from comparing their scores to other students' scores and, instead, encourages them to use the results as a catalyst for setting goals and developing a personal plan for improvement.</p>	<p>The teacher overlooks student taunting or teasing over test results and fails to address how individual scores are interpreted based on comparison to norms, rather than how they relate to students' current and future health and well-being.</p>
<p>The teacher uses fitness assessment as part of the ongoing process of helping students understand, enjoy, improve or maintain their physical fitness and well-being, as well as for program improvement. For example, students set goals for improvement that are followed and revisited during the school year, and improvement is celebrated.</p>	<p>The teacher uses fitness assessment results to assign a grade, despite the fact that many factors that are beyond students' control affect fitness performance (e.g., genetics, testing environment, growth timing, individual responses to training).</p>

(continued)

Step 5. Program Planning and Goal Setting (continued).	
Appropriate Practices	Inappropriate Practices
The teacher helps students interpret and use assessment data to set goals and develop a lifelong personal fitness plan.	The teacher conducts fitness assessments but fails to help students use the results to set goals or develop a personal fitness plan.
Step 6. Promoting and Tracking Physical Activity (Self-monitoring). Students implement their personal fitness plans and track their progress.	
Appropriate Practices	Inappropriate Practices
The teacher guides students to develop personal fitness plans that include process as well as product goals. The teacher instructs students on tracking their use of the plan.	The teacher instructs students to create personal fitness plans but does not provide feedback as to whether the plans are appropriate to students' fitness levels or whether they are well planned. The teacher provides no opportunity for students to test their plans, and pays no attention as to whether plans are carried out. The teacher makes no effort to help students overcome barriers that they encounter.
Step 7. Reassessment. Students repeat the fitness assessment to check for improvement, and they are recognized for attaining goals.	
Appropriate Practices	Inappropriate Practices
The teacher not only helps students to create their fitness plans, but also helps them execute the plans and to evaluate which parts of their plans work and which parts need to be adjusted based on ongoing self-assessment.	The teacher helps students create fitness plans, but does not see that students follow the plans. The teacher does not compare reassessment data with earlier data, making it impossible to evaluate student-fitness plan effectiveness.
The teacher highlights and celebrates intrinsic motivation, focusing on developing the skills, knowledge and dispositions necessary to be physically active. The teacher also publicly recognizes student effort that is within reach for all students.	The teacher emphasizes extrinsic rewards, providing them to a small number of students who perform better than most others. The teacher makes no attempt to develop intrinsic motivation.
Step 8. Revising and Refining Goals. Students revise or refine fitness goals and their personal fitness plans, using data from the most current assessment.	
Appropriate Practices	Inappropriate Practices
The teacher shares institutional data with the school leadership, and the data are used to document a need to improve policies related to physical education and active school environments (e.g., increasing time for physical education, acquiring a rock wall or overhead ladder for developing muscular strength and endurance).	The teacher records fitness test results but does not share or review them with students.