



FREQUENTLY ASKED QUESTIONS REGARDING FITNESS STANDARDS IN LAW ENFORCEMENT

Introduction

The Cooper Institute (CI) has worked with physical fitness programs in law enforcement, public safety, and military settings since 1976. Over the years, CI has considered this work as part of its mission to help shape and influence fitness programs throughout the nation. We have seen **significant legal, scientific, program, and policy changes** during the past four decades. Because of our leadership role in the area of public safety fitness, we frequently receive questions regarding these changes. This chapter will address many of these common questions and provide direction for your agency based upon the most current information available. While what public safety agencies did in the past may have been acceptable at the time of implementation, recent legislation and new validation studies have provided **new direction**. This section will include specific recommendations that will help your agency move toward implementing fitness tests, standards, and programs which not only help ensure a **fit workforce**, but are also **valid and defensible** if challenged in court.

Please note that CI does not perform law enforcement fitness testing validation studies at the present time. Rather, we report findings that we receive from other organizations that perform these types of studies.

Background

The nature of police work can contribute to a lack of both physical fitness and overall wellness. Long ago, it was common for police officers to ‘walk a beat’ within their assigned patrol area during their shift. There was not an issue with lack of physical activity on the job during that time. Today’s law enforcement professionals have little day-to-day physical activity while on the job. Many spend the majority of their work day behind the wheel of a patrol car or at a desk completing paperwork. Oftentimes, law enforcement professionals are asked to work an irregular schedule with unpredictable meal times. Because fast food is both convenient and inexpensive, this can lead to poor dietary habits while on duty. Additionally, there are many potential sources of stress, including but not limited to potentially dangerous situations such as dealing with citizens who are upset or violent, and making the switch from inactivity to vigorous activity in a rapid manner. Many of these sources of stress are applicable to firefighters and other first responders as well. The following quote from the Law Enforcement Technology (August 1993) group sums it up well: “The majority of police work is done with a pad, pencil, and radio until the lid comes off and hell breaks loose, at which time the officer may need the physical attributes of an athlete to survive.” The stress that is inherent among first responders may lead to overeating, tobacco use, abuse of alcohol, or use of drugs as a coping mechanism. In turn, this has a direct bearing not only on health, but also on job performance.



Currently, no national database exists regarding the physical fitness level of first responders. For such a database to be developed, a random sample of several thousand in-service first responders from several hundred agencies would need to be selected and tested. The cost and logistical issues for such a project, as well as potential resistance from unions make it very unlikely that such a large database will ever be developed. The Cooper Institute has a very large data base on physical fitness and health; the data base should be helpful to the first responder population. The data base is described below.

The Cooper Institute, a not-for-profit entity of the Cooper Aerobics Center, has the world's largest database regarding measures of cardiorespiratory fitness and body composition. Since 1971, over 110,000 patients have undergone comprehensive physical examinations at the Cooper Clinic. These exams include a maximal treadmill stress test, which is the gold standard in terms of assessing cardiorespiratory fitness level. Most Cooper Clinic patients also undergo some measure of body fatness, such as skinfolds or underwater weighing. A much smaller number of patients have undergone tests of flexibility, as well as muscular strength and endurance. The Cooper Institute stores Cooper Clinic data and has used this data to publish over 700 papers in the scientific literature since 1971.

The Cooper Center Longitudinal Study (CCLS) is the oldest and largest study of its kind. As mentioned above, all Cooper Clinic patient data is stored in The Cooper Institute. Patients are followed over time for morbidity (illness) and mortality (death) using phone and mail surveys, as well as by using the National Death Index (NDI). When a Cooper Clinic patient dies, the NDI provides a copy of the death certificate to Cooper Institute scientists. Over the past 40+ years, the CCLS has shown repeatedly that cardiorespiratory fitness (CRF) level is a strong predictor of future health outcomes. For example, having a moderate to high CRF level significantly decreases the risk of developing premature cardiovascular disease, type 2 diabetes, metabolic syndrome, and certain cancers. These and other findings have been published in many top-tier medical journals such as *The Journal of the American Medical Association*, *Annals of Internal Medicine*, *Obesity Research*, *Circulation*, *The American Journal of Epidemiology*, *Archives of Internal Medicine*, *Medicine and Science in Sports and Exercise*, and *Diabetes Care*.

It is important to note that Cooper Clinic patients do not represent a random sample of the U.S. population, and that the database contains few first responders. Clinic patients are primarily white and college educated. However, a study (Wang et al., 2010) published by the Centers for Disease Control and Prevention (CDC) showed that median cardiorespiratory fitness levels of men and women who were randomly selected to participate in the National Health and Nutrition Examination Survey (NHANES) were actually similar to median values obtained in Cooper Clinic patients.



Background Questions Regarding Physical Fitness Testing

1. Why be concerned with physical fitness?

- It relates to the ability of officers to perform essential functions of the job.
- It relates to minimizing the risk of excessive force situations.
- It relates to minimizing the known health risks associated with the public safety job.
- It relates to meeting many legal requirements to avoid litigation and having a defensible position if challenged in court.
- It relates to the ability to **perform the emergency function.**

Studies performed by the FBI (Pinizotto, 1997) have shown that a key factor for police survival in shooting situations is physical fitness level. A California POST study (2001) showed physical conditioning as being significant in reducing police injuries and deaths. It is often stated that the question is not if a physical confrontation will occur, but when. In short, physical fitness is a proven component of law enforcement readiness, and one of the officers prime street encounter survival tools.

2. What is the difference between mandatory and voluntary fitness testing?

With mandatory testing, all sworn officers must be tested, and typically there is a standard that must be met. With voluntary testing, individuals can choose whether or not they want to be tested, and there is no standard to be met. Oftentimes with voluntary testing, only those who are currently physically fit choose to be tested. Thus, voluntary testing does not typically address the issue of low physical fitness levels within an agency.

3. What constitutes valid and defensible physical fitness tests, standards and programs?

There are legal requirements regarding physical fitness testing. The Civil Rights Acts of 1964 and 1991, as well as the Americans With Disabilities Act and other legislation requires that fitness tests, standards, and programs must be:

- job related
- scientifically valid (the test must measure what you say it is measuring)

An important component of this legislation is that physical fitness tests and standards can discriminate if job-relatedness is established and documented. In fact, the very purpose of physical fitness testing and standards is to identify who can and who cannot perform critical and essential physical job functions.

4. Is physical fitness job related and can it be scientifically validated?

Yes. Results of several public safety validation studies consistently show 20-30 moderate to



strenuous and critical physical tasks that are job related. These tasks are necessary to perform essential functions of the job. There is ample data to document that physical fitness components are the underlying and predictive factors for performing tasks such as:

Underlying Task	Predictive Factor
Sustained Pursuit	Aerobic Power
Sprints	Anaerobic Power
Dodging	Aerobic/Anaerobic Power/Flexibility
Lifting and Carrying	Muscular Strength/Muscular Endurance/Anaerobic Power
Dragging and Pulling	Muscular Strength/Muscular Endurance/Anaerobic Power
Pushing	Muscular Strength/Muscular Endurance/Anaerobic Power
Jumping and Vaulting	Anaerobic Power/Leg Power and Strength
Crawling	Flexibility/Muscular Endurance/Body Fat Composition
Use of Force <2 minutes	Anaerobic Power/Muscular Strength/Muscular Endurance
Use of Force >2 minutes	Aerobic Power/Muscular Strength/Muscular Endurance

More Specific Questions Regarding Physical Fitness Assessment

1. What fitness tests accurately measure the underlying fitness areas?

Aerobic Capacity (Cardiorespiratory)	1.5 Mile Run ***
Anaerobic Power (Sprinting Ability)	300 Meter Run ***
Anaerobic Power (Explosive Leg Strength)	Vertical Jump***
Muscular Strength (Upper Body)	1 RM Bench Press ***
Muscular Endurance (Upper Body)	1 Minute Push-Ups **
Muscular Endurance (Core Body)	1 Minute Sit-Ups **
Muscular Strength (Lower Body)	1RM Leg Press*
Flexibility (Lower Back and Hamstrings)	Sit-and-Reach*
Body Composition (Percent Body Fat)	% Fat (caliper/underwater weighing/impedance)*

*** Is highly predictive of performing job tasks in all cases

** Is predictive of performing job tasks in most cases

* Is not predictive or is predictive in only a few cases

The Cooper Institute Law Enforcement Fitness Specialist course trains individuals to properly administer fitness assessments within a program and provides instruction on how to increase or maintain needed fitness levels.

2. What about using job task simulation (JTS) tests?

We generally do not recommend job task simulation (JTS) tests because they are not as accurate and predictive of physical ability as fitness tests. A job task simulation test battery, which is also known as an obstacle course or agility test, accounts for only 20-25% of performance for



all critical and essential physical tasks. These tests do not discriminate or predict well, and do not measure fitness. A fitness test battery is far more predictive of an officer's ability to perform critical and essential job tasks and is more defensible if challenged in court. If your department chooses to use job task simulation tests, then we recommend that it be used in combination with fitness testing. Agencies should use only job task simulation tests that have been validated in a research study.

Terminology

1. Cutpoint or Standard: A minimum score that must be attained on each physical fitness or job task simulation test to indicate that an individual can perform his/her job.

Organizations generally determine which standards they choose to use. The Cooper Institute provides options for developing different cutpoints or standards that can be used (as will be discussed later in the text) and appropriate tests to measure job-related performance. The Cooper Institute does not actually set the standards for agencies; this is up to each individual department. As will be discussed in more depth later in the text, agencies often use data from validation studies, normative data, and other sources to determine a standard. An example of a potential standard would be that law enforcement personnel are required to run 1.5 miles in 15:54 or faster. Another example might be that law enforcement personnel are required to run 1.5 miles faster than the 30th percentile from the Cooper age and gender norms.

2. Fitness Norms or Normative Data: A representation of how individuals compare to one another with regard to performance on physical fitness tests. Normative data can be used to show where one stands in relation to others of similar age, gender, weight, or other classifications.

Questions Regarding Legal Issues

1. What are the legal requirements regarding tests, standards, and programs?

Tests/standards/programs cannot discriminate against protected classes (females, minorities, handicapped, or older adults) as defined by the Civil Rights Acts of 1964 and 1991, the Americans with Disabilities Act (ADA) and the Age Discrimination in Employment Act (ADEA).

However, if job relatedness is established and documented, then the fitness tests, standards and programs can discriminate against anybody. It is important to implement tests/standards/programs that do discriminate between those who can and cannot do the job regardless of age, gender, ethnicity, or handicap condition.

2. What about legal concerns of liability and negligence?

There are two levels of legal concern:

- The *first* concern revolves around potential negligence by the agency in the delivery of



the fitness tests/standards/programs. The concern here is safety. The agency must document in writing the policies and procedures that meet the “standard of ordinary care” as demonstrated by following ACSM guidelines.

- The *second* concern revolves around the liability of an agency for not having tests, standards, and programs. An agency that does not address the fitness requirements and needs of officers is susceptible to litigation for the following:
 - a. Negligent hiring: failure to hire applicants who are fit to do the job.
 - b. Negligent training: failure to train recruits and incumbents so that they are physically capable of doing the job.
 - c. Negligent supervision: failure to supervise incumbents to ensure that they can meet the physical demands of the job.
 - d. Negligent retention: failure to reassign officers who cannot meet the physical demands of the job.

Note: There has been one court case (Parker vs Washington, DC Police Department, 1988) in which the agency was found negligent for not requiring a physical fitness program for officers.

Questions Regarding Fitness Standards

1. Are separate age and gender standards acceptable for mandatory programs?

Not according to the Civil Rights Act of 1991. Section 106 of this law addresses the issue of Same Job=Same Standard:

“It shall be unlawful employment practice for a respondent, in the connection with the selection of referral of applicants or candidates for employment or promotion, to adjust the scores of, use different cutoff scores for, or otherwise alter the results of, employment related tests on the basis of race, color, religion, sex or national origin.” In 1993, “gender” was added to this statement.

We at The Cooper Institute are fitness experts, not legal experts. However, in our opinion it would appear that the use of age and gender standards with percentile rankings are in conflict with this law if applied as mandatory standards for selection (academy entrance), completion of training (academy exit) or maintenance programs for incumbents.

The age and gender based fitness norms were commonly used in the past to set standards because there was no data to suggest an absolute standard. Likewise, agencies and the court accepted age and gender based norms because they did appear reasonable and they minimized adverse impact against protected classes. However, with a required emphasis on job-relatedness brought about by the Civil Rights Act of 1991 and the ADA, the age and gender based norms are not as defensible in court as they were prior to this legislation.



2. What standards are recommended?

If the goal of your agency is to be in compliance with the Civil Rights Act of 1991, absolute standards (single cutpoints for everyone) are recommended. Same job=same standard makes sense to most people. However, the use of absolute fitness standards will likely demonstrate adverse impact against females. Thus, it is important that the standards be validated and that the test cutpoints predict who can and cannot do the job. Even if adverse impact is shown, if the standards have evidence for their validity, they should be upheld if challenged in court.

If the goal of your agency is to promote diversity, then the use of age-gender norms as a fitness standard is probably the best approach. Although the use of such norms appears to violate the Civil Rights Act of 1991, these types of norms are much less likely to result in adverse impact against women. Consequently, there is less likelihood of litigation when agencies use age-gender norms. However, agencies need to be aware that the use of age-gender norms as a fitness standard is not as predictive of the ability to do the job as absolute standards.

Summary of Validation Studies

Colleagues of The Cooper Institute (Fitness Intervention Technologies and FitForce) have conducted validation studies for nearly 180 federal, state, and municipal agencies. A summary of how their validation studies on 77 federal, state, and municipal agencies were performed was reported in Police Chief magazine (Collingwood, Hoffman, and Smith, March 2004, pages 32-37). While not a part of the article per se, the studies defined specific job-related fitness standards for each agency. There was a range of scores defined as standards for the various agencies. In other words, different standards were validated (identified) for each agency. However, the range was not very large. Subsequently, these same colleagues of The Cooper Institute performed several additional validation studies. The following table shows the range of absolute standards recommended for each test for 178 federal, state, and municipal agencies combined:

Test	Range
1.5 Mile Run	14:40 - 15:54 minutes
300 Meter Run	64.3 - 66.0 sec
1RM freeweight bench press raw score	151 – 165 lbs
1RM freeweight bench press ratio	.78 - .84 of body weight
Push-Up	25 – 34 reps
Sit-Up	30 – 38 reps
Vertical Jump	15.5 – 16 inches

3. What standards should be applied within an agency?

There are three approaches that agencies have applied for setting standards. The approaches vary as to the degree that job-relatedness is documented and to the extent that they can be defended in



court. In evaluating the different approaches, it is important to keep in mind that the defensibility of any physical fitness standard is dependent upon the degree of documentation (data) that supports the standard as being predictive of performing critical physical job tasks for the specific agency.

- *Approach 1—Construct/Criterion Validation Study:* The **most defensible** fitness standards are those in which a validation study is performed for a specific agency. The results of the study should document which specific fitness test cutpoints should be the job standard. Those standards would be the same for academy graduation (recruits) and for maintenance (incumbents). Assuming a valid, safe, and effective PT program is part of the academy experience, improvements in recruit fitness levels are likely to take place during the weeks spent in the academy. Thus, the selection standards for academy entrance can be set at a score that is lower than the exit standard for test items. For example, if performing 30 sit-ups in one minute is required for academy exit and for maintenance, then a reasonable selection standard for entrance into the academy might be approximately 20 sit-ups.

It should be noted at this point that a validation study is the most expensive option for an agency to choose.

- *Approach 2—Transferability Study:* The next most defensible fitness standards are those which have been based on a “commonality study.” This study documents that an agency has a strong degree of commonality (or similarity) to an agency (federal, state, or municipal) for which there are validated standards. This can be accomplished by doing a commonality analysis. An evaluation is made by comparing job analysis information and job descriptions. After the study is complete, then the agency simply “adopts” the standards of another agency that has completed a validation study. This approach is less expensive, but is also somewhat less defensible than a validation study.
- *Approach 3—Applying Another Agency’s Absolute Standards:* With this approach, an agency applies the standards validated from another agency that is considered to be a “similar” type department (i.e., a municipal agency adopts another municipal agency’s standards). This approach has no cost associated with it because there is no commonality analysis and no validation study conducted to provide cutpoints specific to that agency. Therefore, this approach is the least defensible of the three approaches discussed thus far. If challenged, the agency’s only defense is to provide documentation (with data) that the physical demands of the job are essentially the same as the agency whose standards were adopted. Without those data, there is no defensibility.

4. What about using percentile rankings of the age-gender fitness norms as standards?

The Cooper Institute does not recommend using percentile rankings of the age-gender fitness



norms and standards. Several years ago, The Cooper Institute recommended using age and gender norms with the 40th percentile as the standard for academy entrance and the 50th percentile as the standard for academy exit and for incumbents. In other words, there were different standards for various age-gender groups. Because of legislative changes requiring same job = same standard, CI feels that this approach is no longer defensible. At the request of many agencies, we collapsed our age-gender general population norms and our age-gender law enforcement norms into two separate tables. Thus, the physical fitness scores of men and women of all ages are contained in these tables; which contain percentile rankings. This type of table is sometimes known as a 'single norm'. Some agencies have chosen to use the single norm tables, with the 40th or 50th percentile often used as the fitness standard. The age and gender norms and single norms represent a ranking of fitness scores from the 99th to the 1st percentile. The percentile scores (whether age and gender norms or single norms) have limited validity data for predicting who can and who cannot do the job. Consequently, they pose problems if used as a *mandatory* standard for selection, training or maintenance. They do not pose a significant legal problem if used to set *voluntary* standards.

- **Age and Gender Norm Standards Using Percentile Ranking**

Description: The standard is dependent on the individuals age and gender. As an example, the fitness standard for 20-29 year old males is different than for 20-29 year old females.

Most agencies use the 40th or 50th percentile as the standard when utilizing this approach

Advantage: These standards should minimize adverse impact against females and thus avoid potential litigation. In other words, these standards help ensure diversity.

Disadvantages: If challenged in court, there is no defense that the age-gender percentile rankings effectively identify who can and who cannot perform essential physical job tasks. Furthermore, this approach appears to be in violation of the Civil Rights Act of 1991.

- **Single Norm Standards Using Percentile Ranking**

Advantage: These standards require the same level of performance regardless of age and gender (Same Job = Same Standard).

Disadvantages: These standards will probably demonstrate adverse impact on females and, if challenged, there is limited data to support that the percentile rankings are job related. There is limited data to support that these standards predict capability to do the job.

5. Can an average of scores on the fitness battery be used as standards?

This is not recommended by The Cooper Institute. If fitness test scores are used as mandatory standards, then each test must be treated separately. Each fitness test measures a specific fitness component required by the officer to perform the essential job functions. Therefore, the officer must meet the cutpoint score for each fitness test. For voluntary standards, however, an average score is acceptable.



Options for Fitness Testing and Standards In Law Enforcement

Law enforcement, military, and other public safety organizations often require their applicants, trainees, and incumbents to maintain a certain level of physical fitness to be “fit for duty.” Job-related duties require an individual to be prepared to perform optimally in certain situations with strength, stamina, speed, and power.

There is no governing body that dictates to organizations how they are to implement fitness tests, choose their fitness standards, or implement their fitness programs.

Some organizations have voluntary fitness testing with recommended standards that are not enforced (voluntary compliance). Other organizations have mandatory compliance for fitness tests and standards, meaning that the individual will not be hired or will be fired if fitness standards are not met or maintained. Still others have mandatory testing but voluntary compliance to fitness standards.

Furthermore, organizations often differ in fitness requirements for applicants, trainees, and incumbents. For example, some law enforcement departments require their academy graduates to meet a fitness standard, but the incumbent officer is never tested for fitness again. The Cooper Institute has the opinion that fitness should be maintained throughout an individual’s career, if his or her job requires a readiness to respond physically. Currently, there are many approaches that are being used successfully to accomplish this purpose. One of the main concerns, however, is to avoid litigation brought about because of unfair standards or perceived inequalities. There is no *foolproof* solution to avoid litigation, but we hope to provide you with the pros and cons to each approach through this document and training, such as the Law Enforcement Fitness Specialist course.

Definitions

Absolute Standards: minimal scores or “cutpoints” that have been determined in law enforcement validation studies as the fitness standard that must be attained by everyone regardless of age, gender, or handicapping conditions for the person to be considered “fit for duty.” Note: Organizations determine absolute standards by three methods: 1) they conduct a “validation study” for their own department; 2) they perform a “transferability study” by comparing their commonalities to an organization that has completed a validation study and (if comparable) they adopt or “transfer” those absolute standards; or 3) they informally adopt absolute standards conducted by other organizations if they perceive their organization to be similar in job tasks.

Age & Gender Norms: a representation of how individuals in a specific age and gender group compare to one another with regard to performance on physical fitness tests. Example: a norm chart of males 20-29 years old will contain fitness scores for individuals in this age and gender



group and indicate if they have scored Superior, Excellent, Good, Fair, Poor, or Very Poor. The chart will give percentile rankings for each category as well.

Fitness Norms: a representation of how individuals compare to one another with regard to performance on physical fitness tests. The Cooper Institute has one of the largest and most valid databases in the world with respect to fitness norms for age and gender.

Fitness Standards: minimal scores that must be attained on each physical fitness or job task simulation test to indicate that an individual can perform his/her job. Organizations generally determine which standards they choose to use.

Job-Task Simulation: a test that incorporates specific physical tasks that an individual is likely to perform on the job. In law enforcement, such a test might include tasks such as climbing a wall, pushing a vehicle, dragging a dummy, and so on. These tests are often called obstacle courses or agility tests. Some departments develop a test and set a standard while others conduct a formal Job Task Simulation Validation Study.

Percentile Rankings: a number that tells individuals what percentage of the group scored higher or lower than them. For example, if someone scores at the 40th percentile, then 40% of the group scored lower and 60% of the group scored higher.

Single Norms: use of percentile rankings after all ages and both genders are combined into a single norm chart.



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