

## Police Fitness Testing, an International Review

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### Abstract

Physical fitness testing has become a common standard following the abandonment of height and weight as a recruiting factor by many police authorities. The purpose of this literature review is to:

1. Discuss the necessity for police physical testing
2. Outline the tests utilised by varying different police authorities in different jurisdictions
3. Highlight the caveats that can be present in physical fitness testing, with a particular focus on discrimination.

Seven different police authorities who utilise seven different physical fitness tests were examined and the details of each test were presented. Research papers were consulted to critically analyse the tests. It was discovered that there are various types of fitness tests utilised by policing authorities today. The test must endeavour to be non-discriminatory and assess physical attributes that will ensure the police officer will be able to perform their duty.

**Keywords:** *Physical Fitness Testing; Height; Weight*

### Introduction

Modern day policing is a diverse and challenging occupation which incorporates the execution of a varied range of physical tasks and duties to be performed. Police officers are faced with completing these tasks on a day to day basis, whether it is patrolling a street on foot, responding to incidents to take reports from members of the public or dealing with threatening, abusive or aggressive individuals. In order to effectively deal with these types of individuals and incidents, police officers are normally equipped with various weapons and restraints, which include handcuffs, oleoresin capsicum (OC) spray (pepper spray), a baton, firearms. A certain amount of physical proficiency is required to operate and effectively utilise these policing aids. This is only one small example of the necessity for an aspiring police officer to possess an adequate level of physical fitness. Taking into account the physical nature of the role a police officer has to perform, many police authorities incorporate a pre-entry physical fitness test for recruits. This review will investigate the physical fitness tests of varying international police authorities and critically discuss the aspects of each test. The necessity for testing will be assessed and the types of testing utilised will be compared. Some limitations to physical testing will be identified and the issue of discrimination on the grounds of gender and age will be examined. The suitability of the test to the role that has to be performed will also be questioned.

### Necessity for physical testing

Modern policing is a physically demanding job. The activities that a police officer may do from day to day can change from one call to the next. Handcock and Dempsey [1] comment that "police work can be extremely physically demanding and dangerous. Although

extreme efforts are not frequently required, a sworn police officer must always be capable of responding”. Police officers are employed on patrol on foot and on pedal cycle as well as in vehicular transport. This aspect of the job itself incorporates physical activity, regardless of any interaction with members of the public. To explain this further, physical activity can be represented numerically by the amount of energy it expends. This is referred to as the Metabolic Equivalent of Task (MET) with 1 MET being considered as the energy cost of a person at rest [2]. Table 1 details the MET values for four police duties as presented in the 2011 Compendium of Physical Activities.

Description	METs
Police, riding in a squad car, sitting	1.3
Police, driving in a squad car, sitting	2.5
Police, directing traffic, standing	2.5
Police, making an arrest, standing	4.0

**Table 1:** MET values of Police Activities [2]

The values outlined show that police duties can be sedentary with light to moderate physical activity at times [2]. Office work is detailed in the 2011 Compendium of Physical Activities as having a MET value of 1.5 [2]. If police work is of this sedentary nature, is there a requirement for physical fitness testing?

In the work of Shell [3] it is noted that police officers are required to make quick adaptations from sedentary activities to more physically demanding roles in hostile environments. The Criminal Justice Commission of Australia [4] discovered that the top four most frequent physical activities performed by operational police officers in Queensland over a one year period were all hostile situations. The activities were detailed as:

1. Carry/move a non-compliant person,
2. Apply physical restraint, other than handcuffs,
3. Put handcuffs on a noncompliant offender, and
4. Break up a fight.

These four physical activities must be considered in the light that officers also reported to spending up to 3.6 hours sitting or driving in a patrol car per shift [4].

All responsibility is not with the police officer to be physically competent. Employers must ensure that their employees are in a position to adequately perform the tasks that the job entails. This is in order to ensure that those wishing to become police officers are physically capable of performing physical skills that will aid them in their job and also to ensure they are capable of undergoing the training required to acquire such skills. Regardless of the overall sedentary nature of policing, officers must be in a physically fit state to satisfy the demands of situations which may arise. They must be prepared to perform to a high level, for example when required to combat an aggressive or assaultive individual.

**Variants of police fitness testing**

Depending on what country or jurisdiction, the physical assessment that a police officer has undertaken can vary greatly. It is fair to comment that there is no standard physical fitness test for police officers. There is no standard day or duty when working as a police officer, it is impossible to predict what incident the officer may attend or what situation they may be faced with. Fitness testing appears to have developed as a result of replacing minimum height and weight guidelines that were utilised by police forces to select recruits in the

past [5]. The purpose of physical fitness testing in police officers must reflect the ability of the individual to perform their duty. Bonneau and Brown [5] comment that the physical fitness of police officers when compared with prison inmates is not acceptable, questioning their physical capacity to deal with the average criminal. This observation was also made by Copay and Charles [6] who described police officers being less fit than the people they arrest. The physical fitness test of each police force should then be somewhat a measurement of the candidates' ability to perform the duties concerned with that role.

**Hong Kong police**

The Hong Kong Police revised their physical fitness test and implemented a new test in October 2015. The test consists of four separate physical tests, each one designed to assess a different physical attribute of the candidate. Each candidate must undergo assessment in an 800m run, a 4 x 10m shuttle run, a vertical jump test and a handgrip strength test. Table 2 outlines the physical aspect that is being tested and the minimum standards to pass. The minimum standards to pass vary only on gender and do not take into account the age of the candidate [7].

Test	Physical Aspect	Pass Standard Male	Pass Standard Female
800m Run	Aerobic and Anaerobic power	3 minutes 11 seconds	4 minutes 29 seconds
4 x 10m Shuttle Run	Agility	10.92 seconds	12.29 seconds
Vertical Jump	Muscular Strength Lower Limbs	49.6 cm (19.5 inches)	36.6 cm (14.5 inches)
Handgrip Strength Test	Muscular Strength Upper Limbs	76.3 kg	49.1 kg

*Table 2: Hong Kong Police Fitness Test [7].*

Each section of the physical fitness test accounts for different aspects of the physicality of a person. The rationale for testing these attributes is explained in training videos available in the public arena for possible candidates to familiarise themselves with. The 4 x 10m shuttle run, for example, is designed to test the candidates' agility for working in Hong Kong. The instructional video describes the necessity for agility in policing work in transitioning from walking to responding to an incident or chasing after a suspect. This is an example of the physical fitness test being role specific. The revised test has omitted the pull-up and sit-up test which was included prior to October 2015 [7].

**Michigan commission on law enforcement standards (MCOLES) test**

The MCOLES Physical Fitness test consists of four parts. The tests are designed to assess different physical attributes of a candidate. The test consists of a vertical jump, sit-ups in a minute, push-ups in a minute and a half mile shuttle run. The pass standards for the tests vary by both age and gender. The minimum standards for the MCOLES Fitness Test are outlined in table 3 [8].

Although the pass standards vary with gender and age, there does not appear to be any drastic difference apart from the drop from the required 28 sit-ups in females aged 18 - 29 to the 19 sit-ups required in females aged 30-39. What is apparent that there are drastic differences between the requirements for males and females in the push-up assessment. Males are required at all times to perform four times better or more than their female equivalent to do the same job. The rationale for the tests are not explained, it is only described what physical aspect each test is focusing on. The obvious difference between the requirements of male and female candidates in relation to the push-up test is not accounted for. Each aspect of this test must be passed in its own right. The MCOLES Physical Fitness test and the physical fitness test utilised by the Honk Kong Police both employ a vertical jump to assess lower body strength and a similar distance half mile/800m run to assess cardio-respiratory fitness.

Test	Physical Aspect	Pass Standard Male 18-29	Pass Standard Male 30-39	Pass Standard Male 40 +	Pass Standard Female 18-29	Pass Standard Female 30-39	Pass Standard Female 40 +
Vertical Jump	Lower Body Strength	17.5 inches	16.0 inches	15.0 inches	11.0 inches	9.0 inches	8.0 inches
Sit-Ups	Core Body Strength	32	30	30	28	19	18
Push-Ups	Upper Body Strength	30	30	28	7	7	7
Half Mile Shuttle Run	Cardiorespiratory Fitness	4 minutes 29.6 seconds	4 minutes 38.2 seconds	4 minutes 54.7 seconds	5 minutes 35.4 seconds	5 minutes 59.1 seconds	6 minutes 13.3 seconds

Table 3: MCOLES test [8].

**Peace officers physical abilities test (POPAT)**

The POPAT is an obstacle course consisting of many different components which was developed in 1986 [9]. Although 30 years in existence, this test is still in use by the Brandon and Delta Police departments in Canada. The POPAT test is a gender neutral test with both males and females having to complete the first three aspects of the course in 4 minutes and 15 seconds. The test consists of four parts, an agility run/obstacle course, a push/pull, a vaulting exercise and weight carry component. The obstacle course consists of a 400 m run with stairs to climb and obstacles to jump over. This part of the test must be completed six times before progressing onto the push/pull section. The push/pull section consists of a 35 kg weight which must be pulled by the participant and manoeuvred in an arc six times. Once the pull aspect is completed the participant must then do the push aspect which involves pushing the 35 kg weight and again completing the six arcs. The third part of the test is performed by vaulting over a 91.5 cm rail after performing a modified push-up or sit-up. This must be performed ten times with nine vaults completed. The last part of the test involves carrying a 45.5 kg bag a distance of 7.62m going around a cone and returning to the start line, totalling a distance of 15.24m in 30 seconds or under (Table 4).

Test	No. of repetitions	Time in which to be completed
1. Agility test/obstacle course	6	Parts 1, 2 and 3 must be completed in under 4 minutes 15 seconds
2. Pull/Push test 35 kg	6 arcs for pull and 6 arcs for push	Parts 1, 2 and 3 must be completed in under 4 minutes 15 seconds
3. Vault test	10 modified push-ups/sit-ups, 9 vaults	Parts 1, 2 and 3 must be completed in under 4 minutes 15 seconds
4. Weight Carry 45.5 kg over a distance of 15.24m	1	30 seconds

Table 4: POPAT Test.

The POPAT has been re-evaluated in the past due to the potential for adverse impact discrimination on females [10]. The Royal Canadian Mounted Police developed the Physical Ability Requirement Evaluation (PARE) as a result of this evaluation which saw the removal of the vaulting aspect of the test [10]. The requirements for the POPAT test are set summarised in table 4.

**Indiana law enforcement police physical fitness standards**

Indiana Law Enforcement physical fitness standards comprise of five different assessments. The standards are universal and do not differ in any way with regards gender or age. The fitness standards that are outlined by the Indiana Law Enforcement Academy (ILEA) are distinct from the other agencies that have been previously discussed. The ILEA sets out guideline for both minimum entry standards and minimum exit standards. The exit standards differ from the entry standards and show that progression must be achieved in each area. This gives motivation for police recruits to not only maintain their level of physical fitness during their training period, but also to improve it. The five assessments are a vertical jump, one minute sit-ups, a 300m run, maximum candidate push-ups and a 1.5 mile (2.4 km) run. The ILEA explains that the test assesses various aspects of the candidate, being jumping/explosive power, abdominal muscular endurance, anaerobic power, upper body muscular endurance and aerobic power. Unlike the Hong Kong Police, there is no rationale as to why these physical requirements are needed to perform the policing function in Indiana, USA. The physical standards required for entry and exit are outlined in table 5 [11].

Test	Physical Aspect	Entry Standard	Exit Standard
Vertical Jump	Jumping/explosive power	13.5 inches (34.29 cm)	16 inches (40.64 cm)
One minutesit-ups	Abdominal muscular endurance	24	29
300m run	Anaerobic power	82 seconds	71 seconds
Max. Push-ups	Upper body muscular endurance	21	25
1.5 mile (2.4 km) run	Aerobic power	18 minutes 56 seconds	16 minutes 28 seconds

**Table 5:** ILEA test [11].

From examining the ILEA test, it can be seen that it attempts to cover all aspects of physicality that may be needed in policing. Anaerobic power is required when struggling with a noncompliant suspect for example. However the reasoning for the minimum standards to pass have not been disclosed.

What also has not been explained is the requirement to progress during the recruits training. The exit physical test is conducted after 15 weeks of training on the ILEA Basic Course. Is it a necessary component to progress in physical fitness while on the job or are the exit standards the physical requirements necessary to be an operational police officer in Indiana? Research conducted by Crawley, Sherman, Crawley and Cosio-Lima [12] tested 55 cadets at baseline, week 8 and week 16 to measure hand grip strength, upper body power, lower body power, agility, sprint ability and flexibility. These cadets also completed the MCOLES test. Hand grip strength was assessed using a hand dynamometer, a Monarck Ergomedic 891E was used to measure upper body power, a 30 second Wingate Anaerobic test using a Monark Ergomedic 894E was used to measure lower body power, a simple test using cones arranged in a “T” shape was used to assess agility, a 40 yard (36.58m) run was used to measure sprint ability and a sit and reach test using an Acuflex I measured flexibility [12].

A specific training program consisting of 1 h-d-1 training sessions 3 d-wk-1 was conducted with the participants which focused on cardiovascular endurance [12]. It was found that significant improvements in agility and sit-ups ( $p < 0.01$ ), upper body, lower body peak power and push-ups ( $p \leq 0.05$ ) after 8 weeks of training were made. It was also seen that significant improvements were made in agility, lower body peak power and push-ups ( $p \leq 0.05$ ) and in sit ups and the half mile shuttle run ( $p < 0.01$ ) over the entire 16 weeks. What is of note however is that no improvements were shown to be made from the 8 week -16 week period [12]. This research was conducted with 55 participants, 49 of which were male and 6 female. As males and females are physiologically different, it would be beneficial if the same research could be conducted with a significantly larger number of female participants or female participants on their own. The total number of participants is quite small also. As a result of this research the ILEA could consider testing the recruits mid way during their training as at week 15 it appears that fitness levels will only be maintained from week 8. Consideration could also be given to using

a Wingate test to assess anaerobic power rather than a 300 m run. The Wingate test has a set protocol and factors such as the quality of running shoes or running surface that could interfere with the 300 m run are eliminated.

#### **Arizona law enforcement academy (ALEA) physical fitness standards**

The ALEA entry physical test comprises of three parts, a 1.5 mile run, sit-ups performed in one minute and a maximal push-up test [13]. The test is assessed both according to gender and age, similar to that of the MCOLES test. The ALEA explain the rationale for these assessments in relation to duties the candidates may need to perform on the job. The 1.5 mile run is used to measure cardiovascular endurance which may be needed to chase an individual followed by a noncompliant arrest procedure. Sit-ups are used to assess abdominal muscular endurance which is required to move objects and not incur a back injury while the maximal push-up test is used to assess muscular endurance of the upper body which is needed for the use of force while on duty. The ALEA also explains that recruits will have to take part in different other physical tests throughout their training, such as the POPAT which has been previously discussed and a full Cooper test [14]. The Cooper test incorporates the first three assessments, 1.5 mile run, sit-up and push-up tests along with a vertical jump, a 330m run and an agility run which involves weaving in and out around cones. Although there has been an explanation for the fitness tests and their necessity for the candidate to perform on the job duties, there is no explanation put forward as to why gender and age are factored into the assessment.

#### **Federal bureau of investigation (FBI)**

The FBI physical fitness test comprises of four different tests which is similar in all aspects to the ILEA fitness test with the omission of the vertical jump. The FBI pass standard however is based on a points system, requiring one point to be earned in each of the four tests and with a total of 12 points being required to pass [15]. The tests are scored differently by gender. What is interesting to note with the FBI physical fitness test is that a minimum standard is required in each test; points can be earned to pass the test in different categories. For example, if a candidate was to score equally in all four tests then a score of three in each test would be required to pass to achieve. If however a candidate was weak in one area of the tests and only scored one then he can compensate by achieving a higher score in another test or tests. The scoring of these tests are significant however as they utilise zero and negative marking. If a candidate were to not meet the criteria for a score of one in a fitness test, he or she could be awarded a score of zero or negative two. This ensures a standard level of fitness of all candidates across all four areas. Candidates must undergo this test a minimum of twice during their application process or training.

#### **Queensland police physical recruit testing**

Candidates who wish to be considered for the Queensland Police must undergo a 20m beep test. In addition to this the Queensland Police physically test their recruits at 4 different stages during their training. The first test consists of a 90 second prone bridge or plank, 10 push ups and a 20m beep test. The second test consists of an obstacle course of 13 different obstacles designed to simulate a chase in an urban environment. The third test consists of the 20m beep test and the obstacle course and the fourth test consists of all the components of the first test with a weighted (75 kg) dummy drag included at the end. The Queensland Police tests are both gender and age determinant in their scoring for the 20 m beep test and the obstacle course. The Queensland Police explain the necessity for the physical test to ensure the health and safety of the police officers and their colleagues to measure if they are physically capable of performing the tasks required of the role of a police officer [16].

#### **Equality in testing**

From examining the physical fitness assessments from some international police authorities, it is apparent that the standards vary from jurisdiction to jurisdiction. Some agencies assess candidates based on gender and age, some on gender and others are gender neutral. The question as to whether which physical test is correct or appropriate and also the way it is assessed needs to be asked. Anderson., *et al.* [10]

notes that many physical fitness or ability tests have been examined in the courts in relation to their validity and their adverse impact on female applicants. The issue appears to revolve around demonstrating the validity of the fitness test when compared to the role of a police officer. Bissett, Bissett and Snell [17] comment that a number of studies have determined that physical agility tests are not strongly related to the actual requirements of the job. To determine what is required of an officer in a particular job is difficult as it can vary from area to area. Copay, *et al.* [6] give an example of this asking, if an officer has to jump over a fence, how high is the average fence? As such, police physical fitness or ability tests need to account for the physical ability that is being tested and also to ensure that it is non-discriminatory in both age and gender.

Prenzler [18] notes that the height and weight selection criteria were removed from police recruit selection due to discrimination that was apparent. The introduction of physical fitness testing did not solve the issue as women failed these tests at a much higher rate than men [18]. In the quantitative research of Cordner and Cordner [19] both police chiefs and female officers in southeast Pennsylvania were surveyed. When asked reasons for the low number of women police in the region when it comes to selection, 57% of the police chiefs and 52 % of the female officers agreed or strongly agreed that physical fitness tests tend to eliminate women and/or push them down the eligibility list [19]. To develop a physical ability or fitness test that is non-discriminatory and job specific appears to be a challenging task. If the test is gender neutral and both male and females must achieve the same minimum standard, it could be seen as discriminatory to either gender. A recent ruling in July 2017 in Colorado found that the physical test being used by the City of Colorado Springs Police was discriminatory as it adversely impacted on women over the age of 40 [20]. Passing or failing this physical fitness test had consequences on the types of duties the officers would be allowed perform and whether or not they would be retained in their position in the future. It appears that one way of overcoming this issue is by “norming” the standards required by each gender to pass. This involves developing different performance standards for males and females by comparing performance tests to each gender on its own which has been upheld as non- discriminatory [17].

## Summary

Physical fitness testing is required by many police authorities and is necessary due to an employer need to ensure that a person is capable of performing their role and acting when a critical incident arises. What has been highlighted is that varying tests are used in different jurisdictions. One such test that has been outlined is the POPAT which was developed in 1986. The question arises, 30 years on, is this test still relevant? With the changing dynamics of populations and of rural and urban areas, can a physical test that was developed 30 years ago determine if a police officer is capable of performing their duty in a modern environment? It appears that a police physical fitness test should assess a candidate’s ability in areas that would represent the physical challenges that an officer may face from day to day. Some physical challenges are universal to all policing jurisdictions such as walking, climbing steps, chasing after a subject, arresting and handcuffing a non-compliant subject and transporting them to a vehicle. Other aspects of the job may be determined by the environment. Some jurisdictions may require a police officer to be able to swim or to cycle a bike, physical skills that may never be required in other jurisdictions.

With the varying testing methods employed by different police jurisdictions, are the pre-entry physical tests of the Irish and UK police relevant in this day and age?

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