

# CPAT



## TEST PREPARATION GUIDE

# **Preparation Guide for the Candidate Physical Ability Test**

The job of a firefighter is one of the most physically demanding jobs in America. It requires high levels of cardiopulmonary endurance, muscular strength and muscular endurance. The Candidate Physical Ability Test (CPAT) consists of eight critical physical tasks that simulate actual job duties on the fireground. This test is physically demanding and requires that you be physically fit to be successful. This guide was developed to assist you with physically preparing yourself for the test.

## **What is physical fitness in the Fire Service?**

Physical fitness is the ability to perform physical activities, such as job tasks, with enough reserve for emergency situations and to enjoy normal activities when off-duty.

## **What are the major areas of fitness?**

The major areas of physical fitness include:

- Flexibility
- Cardiopulmonary Endurance
- Muscular Strength
- Muscular Endurance

Body composition is also considered an area of physical fitness. It should be noted that excess body fat increases the workload placed upon the body and decreases the body's ability to dissipate heat. A proper physical fitness program should be specific for the job of a firefighter. It should include all of the major areas of physical fitness mentioned above and be a total body program. Although this is best accomplished at a gym with an array of equipment, this guide also includes exercises that require little or no equipment.

## **HYDRATION**

Proper hydration is critical. All candidates should drink water before exercise, during exercise and after exercise. Additionally, you should drink at least one liter of water one hour before taking your CPAT.

## **WARM-UP AND FLEXIBILITY**

A warm-up serves several functions, including:

- Increased blood flow to working muscles and joints
- Decreased likelihood of injury
- Decrease in pre-event tension
- Possible improved performance
- Improved flexibility

A proper warm-up should begin with a few of minutes of the same type of activity you are about to do at a very light exertion level. For example, if you are preparing to go running you should run in place or for a short distance at a very easy pace. The next step is to stretch to improve flexibility and further your warm-up. There are two phases of stretching. The first phase is the easy stretch. In this phase, you should hold the stretch for 10 seconds in a range of motion that produces only mild tension. This prepares you for the second phase, the developmental stretch. In this phase, you should move slightly farther to the point where you feel a little more tension. This should be held for another 10 seconds.

### **Flexibility:**

When stretching follow these basic rules:

- Stretch slowly
- No bouncing
- No pain
- Stretching is not competitive
- Breathe slowly to help you relax
- Stretching should feel good



#### **1. Knee to Chest**

*Glutes, Low back, Hamstring, Quadriceps*

- Lay flat on back with knees bent
- Grab under right thigh and pull knee forward chest until you feel mild tension
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension
- Hold this position for 10 seconds
- Repeat with other leg
- Repeat sequence 2 or 3 times



## **2. Knee to Chest**

*Glutes, Low Back, Hamstring, Quadriceps*

- Lay flat on back with knees bent
- Grad under right thigh and straighten right leg – Do not lock knee
- Hold for 10 seconds, then pull slightly farther until you feel more tension
- Hold this position for 10 seconds
- Repeat with other leg
- Repeat sequence 2 or 3 times



## **3. Knee to Chest – Diagonal**

*Glutes, Low Back, Hamstrings, Quadriceps, Piriformis*

- Lay flat on back with knees bent
- Grad under right thigh and pull right knee toward left chest until you feel mild tension
- Hold for 10 seconds, then pull slightly farther until you feel more tension
- Hold this position for 10 seconds
- Repeat with other leg
- Repeat sequence 2 or 3 times



#### 4. Leg Cross

*Glutes, Low Back, Piriformis*

- Lay flat on back with knees bent
- Place your right outer ankle on the top of left thigh
- Grab under left thigh and pull knee toward chest until you feel mild tension
- Hold for 10 seconds, then pull slightly until you feel slightly more tension
- Hold this position for 10 seconds
- Repeat with other leg
- Repeat sequence 2 or 3 times



#### 5. Side Quadricep Stretch

*Quadricep, Hip Flexors, Abdominals*

- Lay on left side
- Grab right shin just above your right ankle
- Slowly pull right foot toward right buttocks while pushing right hip forward
- At the same time, push right hip forward
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension
- Hold this position for 10 seconds
- Repeat with other leg
- Repeat sequence 2 or 3 times



## 6. Butterfly Stretch

*Groin, Low Back,*

- Sit upright with bottoms of feet touching each other
- Bend forward at the waist to a position where you feel mild tension
- Elbows can be used to push down on thighs if you want more stretch
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension
- Hold this position for 10 seconds
- Repeat sequence 2 or 3 times



## 7. Straddle Stretch

*Groin, Low Back, Hamstrings*

- Sit upright with legs straight out
- Spread legs as far as you can comfortably can
- Keeping legs straight but not locking knees, bend forward at the waist
- Hold for 10 seconds, then push down slightly farther until you feel slightly more tension
- Hold this position for 10 seconds
- Return to starting position
- Repeat sequence but this time take chest toward left knee
- Return to the starting position and repeat sequence toward right knee
- Repeat entire sequence 2 or 3 times



## 8. Cross Over Stretch

*Groin, Iliotibial Band*

- Sit with legs straight in front of you
- Bend right leg and cross it over so you can grab around the outside of right thigh
- Slowly pull bent right leg toward chest until you feel mild tension
- Hold this position for 10 seconds
- Return to starting position and switch legs
- Repeat sequence on opposite legs
- Repeat sequence 2 or 3 times



## 9. Calf Stretch

*Calves*

- Squat down on ground with right foot slightly in front of left
- Grasp right shin and rock forward until you feel mild tension
- Hold for 10 seconds then push slightly farther until you feel slightly more tension
- Hold this position for 10 seconds
- Repeat sequence on opposite leg
- Repeat sequence 2 or 3 times



## 10. Upper Back Stretch

*Upper Back, Posterior Deltoids*

- Sit with legs straight in front
- Twist your upper back crossing left arm across chest and place right hand on the floor
- Slowly twist until you feel mild tension
- Hold for 10 seconds then twist slightly farther
- Return to starting position and twist to the left side
- Repeat sequence 2 or 3 times





## 11. Chest Stretch

*Chest, Shoulders, Biceps*

- Stand with right shoulder against a wall
- Place right palm on the wall
- Slowly turn your body away from the wall until you feel mild tension
- Hold for 10 seconds then twist slightly farther until you feel slightly more tension
- Return to starting position and repeat sequence with left arm
- Repeat sequence 2 or 3 times



## 12. Triceps Stretch

*Triceps, Posterior Deltoids*

- Stand upright and extend right arm over head
- Grab right elbow with left hand and place right hand on right shoulder blade
- Slowly push right elbow backward until mild tension is felt
- Hold for 10 seconds then push slightly farther until you feel slightly more tension
- Return to starting position and repeat sequence with left arm
- Repeat sequence 2 or 3 times





### 13. Forearm Stretch

#### *Forearms*

- Stand upright and grab right fingers with left hand
- Slowly fold right wrist backwards until mild tension is felt
- Hold for 10 seconds then push slightly farther until you feel slightly more tension
- Repeat sequence this time folding wrists forward
- Return to starting position and repeat sequence with left arm
- Repeat sequence 2 or 3 times

# General Principles of Exercise

To maximize the results from your training program, several exercise principles should be understood.

## **Adaptation**

Adaptation means that the body can adjust to any overload as long as it is done in small increments. The amount of progress the body can make depends on adequate rest, consistency of workouts, adequate nutrition, and genetic makeup.

## **Overload**

Overload, in exercise training programs, means that a training program causes the body to adapt only when the demands are greater than what the body is accustomed to doing. This does not mean that the overload is greater than your maximum; rather overload is generally greater than 75% of your maximal effort.

## **Progression**

The principle of progression states that as the body adapts to the exercise program you must gradually increase the overload to continue to adapt. It is critical that all progressions are gradual and small in nature to prevent over loading the body's ability to recover.

## **Specificity**

Specificity of training is the principle that your body will adapt to whatever exercises you perform. This means that if you only perform bench presses, your body will not adapt to sit-ups. It may, therefore, be beneficial for you to alter your training to prepare for the Candidate Physical Ability Test.

## **Over-Training**

Over-training addresses the body's need for adequate rest and nutrition following exercise to recuperate before the next exercise session. If recuperation is not adequate, over-training will occur. Signs of over training include: increased injury rate, increased resting heart rate, muscle soreness that does not subside after 48 hours, apathy, insomnia, loss of appetite, lack of adaptation to exercise, and loss of strength. Over-training must be avoided.

## **Balance**

When developing a strength training program, it is important to balance muscle development by including exercises that train all major muscles groups of the body. This means that if the chest is trained so must the back; similarly if the upper body is trained so must the legs. When this principle is not followed, joints become imbalanced, and injuries occur.

## **Cardiopulmonary Endurance Program**

Cardiopulmonary endurance is the ability of the cardiovascular and respiratory systems to deliver oxygen to working muscles. It consists of both aerobic and anaerobic energy systems.

### **Aerobic Fitness**

During aerobic activities, the intensity of the exercise is low enough for the cardiopulmonary system to meet the oxygen demands of the working muscles. Aerobic activities include bicycling, hiking, swimming, climbing stairs, and running when performed at a low enough intensity.

### **Anaerobic Fitness**

During anaerobic activities, the intensity of exercise is so high that the working muscle's demands for oxygen exceed the cardiopulmonary system's ability to deliver it. Because adequate oxygen is not available, waste products accumulate. This type of intense activity can only be short in duration. An example of an anaerobic activity is sprinting.

## **The CPAT Training Program**

The CPAT Training program consists of two training programs. The first program is the aerobic training program and the interval program. Both of these programs complement each other and improve your aerobic and anaerobic fitness specific to the Candidate Physical Ability Test.

### **Aerobic Training**

The cardiopulmonary endurance program should begin at a level that is considered "moderately difficult" but not "difficult." Your intensity should not be so high that you cannot speak during the exercise. The program below consists of a series of progressive levels. As you adapt to each step, you should move up to the next level. This program should be done 3 to 5 days per week.

### **Interval Training**

Interval training involves a repeated series of exercise activities interspersed with rest or relief periods. This is an excellent tool for improving both aerobic and anaerobic endurance. In this program running intervals are performed on Tuesdays and Thursdays. It is important that interval days have at least one day of slow easy running between them. This provides the recovery necessary to prevent over training.