

CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

Some of the contents were adapted from the IAFF CPAT Preparation Guide

MOTIVATION

Physical fitness is the ability to perform physical activities using enough muscular strength, stamina, and cardiopulmonary endurance, to adequately function from the demands of both emergency situations and normal daily activities. Everyone brings to this career their own strengths and weaknesses in regards to physical fitness. The CCSF Academy would like to impress upon all students the importance of developing and maintaining certain physical fitness levels to meet such occupational and life demands.

The major areas of physical fitness include: FLEXIBILITY
CARDIOPULMONARY ENDURANCE
MUSCULAR ENDURANCE
MUSCULAR STRENGTH

PREPARATION

A proper physical fitness program should include all the major areas of physical fitness and be ongoing throughout ones career and for that matter, life. Although this can be better accomplished at a gym, little or no equipment can also be effective.

WARM-UP

A warm up serves to increase blood flow to the joints and muscles, decrease possible injuries, improve overall performance, and enhance flexibility. Generally, a warm up should be similar to the particular physical activity performed, only using a light exertion level. For example, slowly jog a short distance prior to a significant run, or rep with light weights prior to lifting moderate to heavy weights.

FLEXIBILITY

Improving flexibility is the critical to physical performance level especially when career longevity is considered. Most people start performing stretching regiments after their body develops symptoms of pain, stiffness, or disability. Prevention is key and time spent stretching will improve overall ability especially over time. There are two phases of stretching, the easy stretch and the developmental stretch. The easy stretch should be performed well within your range of motion. It should be held for at least 10 seconds and produce only mild tension. The developmental stretch is where you move further in the stretch and feel more tension. This phase should be held for at least another 10 seconds. In this phase you will notice improvement in your overall flexibility.

Basic Stretching Guidelines

1. Stretch slowly
2. No bouncing
3. No significant pain
4. Stretch within your limits, not some one else's
5. Breathe fully and slowly to help relax your body
6. Stretching should "feel good" although this may take time

CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

1. Knee to Chest

Gluteus, Low Back, Hamstrings, Quadriceps

- Lay flat on back with knees bent.
- Grab under right thigh and pull knee toward 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 - Leg Straight

Gluteus, Low Back, Hamstrings, Quadriceps

- Lay flat on back with knees bent.
- Grab under right thigh and straighten right leg. Do not lock knee.
- 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.



3. Knee to Chest - Diagonal

Gluteus, Low Back, Hamstrings, Quadriceps, Piriformis

- Lay flat on back with knees bent.
- Grab 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 slightly more tension.
- Hold this position for 10 seconds.
- Repeat with other leg.
- Repeat sequence 2 or 3 times.



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

4. Leg Cross

Piriformis, Gluteus, Low Back

- Lay flat on back with knees bent.
- Place your right outer ankle on the top of right left thigh.
- Grab under left thigh and pull left knee toward 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



5. Side Quadricep Stretch

Quadriceps, 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 the 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.



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

7. Straddle Stretch

Groin, Hamstrings, Low Back

- Sit upright with legs straight.
- 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, this time take the 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

Gluteus, 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 for 10 seconds then push slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Return to starting position and switch legs.
- Repeat sequence on opposite leg.
- 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.



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

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 until you feel slightly more tension.
- Hold this position for 10 seconds.
- 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 ten 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.



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

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 ten seconds, then push slightly farther until you feel slightly more tension.
- Repeat sequence, this time folding wrist forwards.
- Return to starting position and repeat sequence with left arm.
- Repeat entire sequence 2 or 3 times.



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

CARDIOPULMONARY ENDURANCE AND MUSCULAR ENDURANCE

To balance with muscle development, a cardiopulmonary endurance program will enhance the cardiovascular and respiratory systems in order to better deliver oxygen to the working muscles. It consists of both aerobic and anaerobic energy systems.

In **aerobic** fitness the intensity level of the exercise should be low enough for the cardiopulmonary system to meet the oxygen demands of the muscles. Jogging is a good example of this. Aim for moderately difficult—not difficult—levels of exercise.

In **anaerobic** fitness the intensity level of the exercise is so high that the working muscle’s demand for oxygen exceeds the cardiopulmonary system’s ability to deliver. Sprinting is a good example of this.

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. This provides the recovery necessary to prevent overtraining.

The program targets a series of progressive levels, alternating between aerobic and anaerobic levels of fitness.

PHASE ONE

	Monday	Tuesday	Wednesday	Thursday	Friday
Level 1	Run 1 mile at an easy pace	Run 30 seconds at somewhat hard pace then walk for 30 seconds. Repeat for 1 mile	Run 1 mile at an easy pace	Run 30 seconds at somewhat hard pace then walk for 30 seconds. Repeat for 1 mile	Run 1 mile at an easy pace
Level 2	Run 1.5 miles at an easy pace	Run 30 seconds at somewhat hard pace then walk for 30 seconds. Repeat for 1.5 miles	Run 1.5 miles at an easy pace	Run 30 seconds at somewhat hard pace then walk for 30 seconds. Repeat for 1.5 miles	Run 1.5 miles at an easy pace
Level 3	Run 2 miles at an easy pace	Run 60 seconds at somewhat hard pace then walk for 60 seconds. Repeat for 2 miles	Run 2 miles at an easy pace	Run 60 seconds at somewhat hard pace then walk for 60 seconds. Repeat for 2 miles	Run 2 miles at an easy pace
Level 4	Run 3 miles at an easy pace	Run 60 seconds at somewhat hard pace then walk for 60 seconds. Repeat for 2.5 miles	Run 3 miles at an easy pace	Run 60 seconds at somewhat hard pace then walk for 60 seconds. Repeat for 2.5 miles	Run 3 miles at an easy pace
Level 5	Run 3 miles at an easy pace	Run 90 seconds at somewhat hard pace then walk for 90 seconds. Repeat for 3 miles	Run 3 miles at an easy pace	Run 90 seconds at somewhat hard pace then walk for 90 seconds. Repeat for 3 miles	Run 3 miles at an easy pace

CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

PHASE TWO

Level 6	Run 3 miles at an easy pace	Run at easy pace for 3 minutes then run stair moderately hard for 1 minute	Run 1.5 miles at an easy pace	Run at easy pace for 3 minutes then run stair moderately hard for 1 minute	Run 3 miles at an easy pace
Level 7	Run 3 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 90 seconds	Run 1.5 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 90 seconds	Run 3 miles at an easy pace
Level 8	Run 3 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 2 minutes	Run 1.5 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 2 minutes	Run 3 miles at an easy pace
Level 9	Run 3 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 2.5 minutes	Run 1.5 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 2.5 minutes	Run 3 miles at an easy pace
Level 10	Run 3 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 3 minutes	Run 1.5 miles at an easy pace	Run at easy pace for 3 minutes then run stairs moderately hard for 3 minutes	Run 3 miles at an easy pace



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

MUSCULAR STRENGTH

This program is designed to improve total body strength and endurance. Bodybuilding or powerlifting is not the focus. The program is designed for 3-5 days a week. Steer away from overtraining, as it can lead to injury. Although it is easier to improve strength and endurance with weight equipment, it is also possible to accomplish this with some simple callisthenic exercises.

A **Circuit Workout** can be a very effective way to improve muscular strength, muscular endurance and even cardiovascular endurance. You should perform 10-15 repetitions of each exercise, then move on to the next exercise. Rest between exercises should not exceed 30 seconds, unless you are experiencing some discomfort. An alternative to the Circuit is to perform 3 sets of 10-15 repetitions for each exercise of your choice. For safety purposes, lift with a partner and spot when necessary.

CALISTHENICS CIRCUIT

Abdominal Curls

Abdominal Muscles, Obliques, Back Support

FF Skills: All Job Tasks

1. Flat Foot Crunch

- Keep feet flat on the floor
- Hands crossed on chest or around your ears
- Raise torso to more than a 45-degree angle off the floor
- Slowly return to start position



2. Right Side Crunches

- Lay on your right hip with back flat on the ground
- Knees together
- Place hands around ears lifting torso up



3. Left Side Crunches

- Lay on your left hip with back flat on the ground
- Knees together
- Place hands around ears lifting torso up



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

4. Vertical Crunch

- Lay on your back with legs at a 90-degree angle
- Legs slightly bent, knees together
- With arms extended or behind head, raise torso towards feet



5. Straight Leg Raises

- Lay on your back with hands under butt
- Legs are parallel, 3-5 inches off the ground to start
- Lift straight legs approximately 12-14 inches
- Return to 3-5 inch position



6. Bicycle

- Lay on your back with hands over ears
- Alternate moving between right elbow to left knee, then left elbow to right knee



7. Scissors

- Lay on your back with hands under butt
- Keeping legs straight, raise left leg 14-16 inches, then alternate with right leg
- Do not touch feet to the ground



8. 90-Degree Angle Crunch

- Lay on your back with legs up and bent at a 90-degree angle (you may use a bench)
- Hands over ears, with elbows/arms parallel to the ground or crossed on chest
- Raise torso towards knees



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

9. Leg Curl

- Lay on your back with hands under butt or to side flat on floor
- Legs are parallel, 3-5 inches off the ground to start
- Raise knees to a 90-degree position



10. Combos

- Lay on your back
- Legs are parallel, 3-5 inches off the ground to start
- Raise knees to a 90-degree position while simultaneously lifting your torso up



Swimmers

Lower back, Glutes

FF Skills: All Job Tasks

- Lie face down on ground with feet together
- Place arm straight out in front of you
- Move the right arm and left leg at the same time
- As you return, move left arm and right leg at the same time
- Continue alternating in a moderate cadence



Push-Ups

Pectorals, Deltoids, Abdominals, Triceps, Latissimus Dorsi, Lower Back

FF Skills: Ladder Raise, Forcible Entry, Search, Ceiling Breach/Pull

- Keep your body in a straight plane
- Place your hands at least shoulder length apart
- Lower body until upper arms are at least parallel to the grounds
- Keep arms as close to a 90-degree angle in relation to body



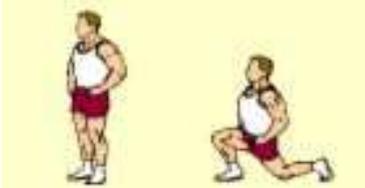
CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

Lunges

Quadriceps, Gluteus, Hamstrings, Calves

FF Skills: Climbing Stairs, Hose Drag, Ladder Raise, Forcible Entry, Search and Rescue, Ceiling Breach/Pull

- Walking forward, lunge into a deep knee bend
- Keep back straight and arms down at the side
- Keep your forward knee directly over ankle to a 90-degree position
- Lunges with or without dumbbells



Burpees/Squat Thrusts

Pectorals, Deltoids, Triceps, Abdominals, Glutes, Quadriceps

FF Skills: Climbing Stairs, Hose Pull, Ladder Raise, Forcible Entry, Search

- Stand erect with feet together
- Quickly bend knees until palms touch the floor, just slightly in front of you
- Support your weight with arms, tighten your abdominal muscles and throw feet backwards
- While in push-up position perform one push-up
- Reverse sequence until you are back at the starting position



Dips

Pectorals, Deltoids, Triceps

FF Skills: Ladder Raise, Forcible Entry, Search, Ceiling Breach/Pull

- Place hands behind you on dip bar or chair with feet straight in front
- Lower body until upper arms are parallel with the floor
- Elbows are straight back in a 90-degree position
- Straighten the arms to return to the starting position



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

Chin-Ups

Latissimus Dorsi, Rhomboids, Posterior Delts, Biceps

FF Skills: **Hose Drag, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach/Pull**

- Hang from the bar with arms fully extended, palms facing towards you
- Pull yourself up, so that your chin is above the bar
- Do not kick or swing your legs
- If you are unable to complete a chin-up, use a partner to elevate yourself and slowly lower yourself down in a controlled manner
- Do as many as you can



Pull-Ups

Latissimus Dorsi, Triceps

FF Skills: **Hose Drag, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach/Pull**

- Hang from the bar with arms fully extended, palms facing away from you at least shoulder width apart
- Pull yourself up, so that your chin is above the bar
- Do not kick or swing your legs
- If you are unable to complete a pull-up, use a partner to elevate yourself and slowly lower yourself down in a controlled manner
- Do as many as you can

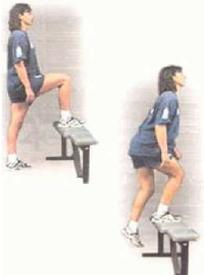


Bench Steps

Glutes, Quadriceps, Hamstrings, Calves

FF Skills: **Climbing Stairs, Hose Drag, Ladder Raise, Forcible Entry, Search and Rescue, Ceiling Breach/Pull**

- Use a step or bench 6 or 8 inches high
- Place right foot flat on bench with left foot flat on the floor
- Step up until both legs are straight
- Lower yourself slowly back down to the starting position
- Repeat entire sequence with other leg
- Start with smaller step and progress to increased height



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

WEIGHT TRAINING CIRCUIT

Seated Leg Press

Quadriceps, Hamstrings, Glutes, Calves

FF Skills: Climbing Stairs, Hose Drag, Ladder Raise, Forcible Entry, Rescue, Ceiling Breach/Pull

- Set appropriate weight
- Place feet flat on platform about hip width apart, toes pointed slightly upward
- Adjust seat so knees are flexed at 90-degrees
- Push weight up through heels
- Stop short of locking your knees
- Keep knees in alignment with feet



Dumbbell Military Press

Deltoids, Triceps, Trapezius

FF Skills: Ladder Raise, Search, Ceiling Breach/Pull

- With palms facing forward, raise dumbbells to height of shoulders
- Bring elbows slightly forward and wrists vertical/straight
- Press each dumbbells upward, towards the ceiling alternating one at a time
- Stop at a 90-degree position
- Use less weight if pressing both dumbbells at the same time
- Seated or standing



Lat Pull Down

Latissimus Dorsi, Rhomboids, Posterior Deltoids

FF Skills: Hose Drag, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach/Pull

- Adjust seat and leg hold to allow full range of motion
- Hold bar at the bend, palms facing out
- Start action with the lat muscles
- Pull bar down to clavicle
- Return to starting position and repeat



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

Dumbbell Chest Press

Pectorals, Deltoids, Triceps

FF Skills: Ladder Raise, Forcible Entry, Search, Ceiling Breach/Pull

- Lie on bench with feet flat on the floor or legs up with feet flat on the bench
- Hold dumbbells at least shoulder width apart, or slightly wider
- Palms facing out
- Lower dumbbells to the top part of the chest, forming 90-degree angles
- Push dumbbells up to starting position

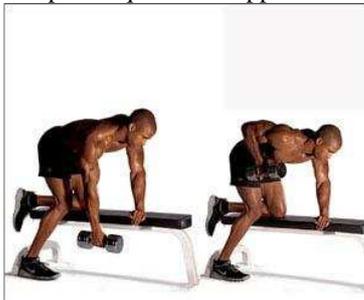


Dumbbell Row

Latisimuss Dorsi, Rhombioids, Posterior Deltoids, Trapezius, Biceps

FF Skills: Hose Pull, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach/Pull

- Standing to the right of the bench, place left knee on the bench and support upper body with left (non-lifting) arm
- Pull dumbbell from ground to waist area with right arm
- Keep a slight bend in elbow and hand in line with shoulder
- Lower dumbbell back to starting position, avoid twisting at waist
- Repeat sequence on opposite side



Seated Row

Latisimuss Dorsi, Rhombioids, Posterior Deltoids, Biceps

FF Skills: Hose Pull, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach/Pull

- Using a wide bar (wider than shoulder) keep your legs bent and feet against metal block
- Extend your arms feeling your lats stretch
- Pull the weight towards your body until the bar touches your abdomen
- Make sure to bring your shoulder blades as far back as you can and keep your back straight



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

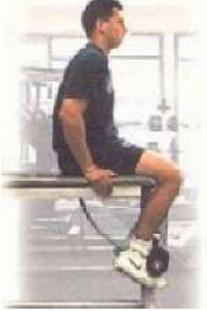
Leg Extension

Quadriceps

FF Skills: Climbing Stairs, Hose Pull, Ladder Raise, Forcible Entry, Search and Rescue

- Adjust machine so that back of knees are against end of the seat and top of the foot under roller
- Extend knees, stopping just before knees lock
- Slowly lower weight to starting position

Note: This exercise should not be performed if you have undergone reconstructive surgery – can substitute with squats or lunges



Leg Curl

Hamstrings

FF Skills: Climbing Stairs, Hose Pull, Ladder Raise, Forcible Entry, Rescue

- Lie flat on machine with top of knees just off the seat and ankle roller places above the heels
- Flex the knee until ankle roller reaches the buttock
- Keep hips down and stomach in contact with the seat throughout the motion
- Slowly lower weight to starting position

Note: Can substitute using one leg at a time



Dumbbell Curl

Biceps, Forearms

FF Skills: Hose Drag, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach/Pull

- Stand up with knees slightly bent (seated position is also acceptable)
- Begin with arms down at the sides, arms rotated slightly outward
- Bend elbows, bring both dumbbells towards the shoulders at the same time
- Lower dumbbells to starting position
- Keep a slightly bent elbow



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

Tricep Extension

Triceps

FF Skills: Ladder Raise, Forcible Entry, Search, Ceiling Breach/Pull

- Stand up with knees slightly bent
- Place hands on bar slightly narrower than shoulder length
- Keeping upper arms at side, pull the bar straight down to mid-thigh
- Slowly return bar to an elbow flexed position at mid-chest level
- Upper arms should remain in contact with sides—do not allow elbows to move forward away from body



Dumbbell Thruster

Glutes, Quadriceps, Hamstrings, Calves, Deltoids, Triceps, Trapezius

FF Skills: Climbing Stairs, Hose Drag, Ladder Raise, Forcible Entry, Search and Rescue, Ceiling Breach/Pull

- Take two dumbbells and hold them shoulder height
- Squat down, keeping the dumbbells on the shoulders
- As you rise up, press the dumbbells to the overhead position, pressing as you rise or using momentum to “kick” the dumbbells overhead
- Lower dumbbells to start position and repeat



CCSF FIRE ACADEMY PHYSICAL FITNESS GUIDE

GENERAL SAFETY TIPS

- Try to work out with a partner
- Ask for help from an expert if you do not know what you are doing
- Progress slowly to avoid injuries
- Do not lift more weights than you normally lift
- Always use proper lifting techniques
- Always control the weights
- Keep head and neck in neutral position
- Adjust your repetitions and cycles to your body's ability, always paying attention to muscle soreness

ACKNOWLEDGEMENT:

Lt. Anita Paratley of the San Francisco Fire Department and City College of San Francisco Fire Science Program is acknowledged for her efforts in putting this Physical Fitness Guide together.