

# Arizona Law Enforcement Academy

## Physical Fitness Preparation Guide



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## **INTRODUCTION:**

This guide is a resource but targets pre-applicants or those individuals preparing to attend the Arizona Law Enforcement Academy (ALEA). Active personnel within the criminal justice profession who wish to improve their personal level of physical fitness can also use this guide. **Individuals should consult with a medical or health professional before beginning any new exercise, nutrition, or supplementation program or if any personal health questions arise after reviewing the contents of this guide.**

ALEA provides basic peace officer training for a number of law enforcement agencies from throughout Arizona. The training and command staff encourages pre-applicants and individuals who have been selected to attend ALEA be provided a copy of this guide. A typical physical fitness routine for recruits includes an up to four mile run at a 10 minute per mile pace, 20 to 40 sit-ups or crunches, 20 to 40 push-ups, 10 to 20 chin-ups, and 10 to 20 dips.

ALEA provides recruits with a basic foundation for fitness that includes stretching and exercise techniques and suggestions on improving cardiovascular endurance. Recruits participate in a moderately strenuous physical conditioning program to prepare for both the occupation and to pass the Peace Officer Physical Aptitude Test (**POPAT**), the state of Arizona's mandated physical fitness evaluation to become a certified peace officer.

## **Academy Physical Fitness Test Process**

During the first week of training and continuing throughout the class schedule, recruits participate in a number of physical fitness events and tests. Recruits who have a solid foundation in physical fitness or those who have been actively participating in a physical fitness program just prior to entering into recruit training, in most cases, score higher than those recruits who have not been active.

Physical fitness events and tests include:

### **Cooper / Fit Force Assessment Test**

Cooper/Fit Force Assessments measure health related components to fitness. Components are important to quality of life and can determine performance levels (e.g. ability to participate in vigorous activity or performing essential job functions).

#### **Event #1: 1.5 Mile Run**

The 1.5-mile run measures cardiovascular endurance. This fitness area is related to performing tasks that may involve sustained activity such as a long foot pursuit followed by a physical confrontation (taking someone into custody). The test is conducted on a 440-yard track; one lap equals one-quarter mile/six laps equals 1.5 miles. There is no walking or stopping allowed during the test.

#### **Event #2: One minute Sit-ups**

Sit-ups measure muscular endurance of the abdominal muscles. This fitness area is related to performing tasks that may involve the use of force and maintaining good posture that minimize lower back problems. Performance sit-ups are not crunches. Recruits lie on a mat with knees bent and hands behind the head. Another recruit holds the feet down during the test. The recruit completes as many sit-ups as possible in one minute.

**Event #3: Maximum Push-up test**

Push-ups measure muscular endurance of the upper body muscles to include shoulders, chest, and back of the upper arms. This fitness area is related to the use of force involving pushing motion. Standard push-ups are continued until failure (e.g. inability to continue due to muscle fatigue). Recruits assume a push-up position with feet together or up to twelve inches apart. Hands are placed approximately shoulder-width apart with fingers facing forward. A partner recruit is in a position to extend a fist on the floor directly underneath the testing recruit's sternum. A proper push-up is when the testing recruit lowers the body and touches the fist with the sternum then returns up to the starting position with the elbows in a soft lock. Proper form is closely monitored.

**Event #4: Vertical Jump**

Vertical jumps, the difference between the standing reach and the jumping reach, measure explosive power. This fitness area is related to operational or pursuit tasks that require jumping and vaulting. With the use of a Vertec Jump Apparatus a recruit's standing reach is measured with a standard tape measure. Recruits conduct three standing jumps reaching as high as possible with the highest jump being recorded.

**Event #5: 300-meter Run**

The 300-meter run measures anaerobic capacity. This fitness area is related to performing short intense bursts of effort such as foot pursuits. Recruits sprint 300 meters (approximately  $\frac{3}{4}$  of a lap around the track) for this event.

**Event #6: Agility Run**

Agility runs measure coordinated movement and speed. This fitness area is related to performance of tasks requiring quick movements around obstacles. Recruits shuttle through traffic cones that have been set up in a 30-foot line as quickly as possible.

**Event: POPAT**

**A passing score of this validated Job Task evaluation is required for graduation.** POPAT is based on a point score and a minimum of 384 points is required to successfully complete the event. POPAT is structured into a number of events that have specific scoring criteria. The total sum of all the events is considered for the final score. It is possible to struggle in one area but excel in another and still pass the test. As an example, the dummy drag requires that a recruit drag a 165-pound dummy 32 feet. Smaller or lighter recruits may not score as high as a recruit who is taller or heavier but the smaller recruit may be faster and more agile therefore performing better on the six-foot walls or the 99-yard obstacle course.

**PREPARATION GUIDE FOR THE PHYSICAL FITNESS TEST**

The job of a peace officer requires reasonable levels of cardiopulmonary endurance, muscular strength, and muscular endurance. The ALEA physical fitness test includes six events that determine the level of a recruit's fitness based on the Cooper Institute's law enforcement single standard. The test is physically demanding and requires that recruits be reasonably physically fit to successfully complete the test. This guide provides direction to prepare recruits and identify ALEA's expectations.

## **What is physical fitness?**

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.

## **Major areas of fitness:**

Major areas of physical fitness include:

- flexibility
- cardiopulmonary endurance
- muscular strength
- muscular endurance

Body composition is also considered an area of physical fitness. Recruits should note that excessive body fat increases the workload placed upon the body and decreases the body's ability to dissipate heat.

A proper physical fitness program can be and should be specific for the job of a peace officer. The program should include all of the major areas of physical fitness as noted and be a total body program. Although physical fitness improvements may be best accomplished at a gym equipped with an array of weights and fitness machines, this guide includes exercises that require little or no equipment.

## **Hydration**

Proper hydration is critical to proper physical fitness and a requirement at ALEA. All recruits should drink water before, during, and after exercise. Recruits are instructed that fluids need ample time to saturate the cells of the human body, therefore, they should begin hydrating the day before intense activity. Additionally, recruits are encouraged to drink at least one liter of water one hour prior to the test.

## **Warm-up & 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 includes a few minutes of the same type of activity at a very light exertion level. For example, if a recruit is warming up in preparation to go running, the recruit should run in place or for a short distance at a very easy pace.

The next step is to stretch with the intent to improve flexibility and continue the warm-up process. Stretching includes two phases. The first phase is the easy stretch. Recruits hold the stretch for 10 seconds in a range of motion that produces only mild tension. The second phase described as the developmental stretch requires the recruit to move slightly farther to the point where there is a more tension. Second phase stretches should be held for another 10 seconds.

## Flexibility

When stretching, recruits are directed to follow these basic rules:

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

**Each stretching sequence should be repeated 2 or 3 times**

### 1. Knee to Chest

*Glutes, Low Back, Hamstrings, Quadriceps*

- Lay flat on back with knees bent.
- To experience mild tension, grab under right thigh and pull knee toward chest.
- Hold for 10 seconds, then pull farther to slightly increase tension.
- Hold this position for 10 seconds.
- Repeat with other leg.



### 2. Knee to Chest -Leg Straight

*Glutes, 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 farther to slightly increase tension.
- Hold this position for 10 seconds.
- Repeat with other leg.



### 3. Knee to Chest -Diagonal

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

- Lay flat on back with knees bent.
- To experience mild tension, grab under right thigh and pull right knee toward left chest.
- Hold for 10 seconds, then pull farther to slightly increase tension.
- Hold this position for 10 seconds.
- Repeat with other leg.



### 4. Leg Cross

*Piriformis, Glutes, Low Back*

- Lay flat on back with knees bent.
- Place right outer ankle on the top of right left thigh.
- To experience mild tension, grab under left thigh and pull left knee toward chest.
- Hold for 10 seconds, then pull farther to slightly increase tension.
- Hold this position for 10 seconds.
- Repeat with other leg.



### 5. Side Quadriceps Stretch

*Quadriceps, Hip Flexors, Abdominals*



- Lay on left side.
  - Grab right shin, just above the right ankle.
  - Slowly pull right foot toward right buttock
  - While pushing right hip forward.
  - At the same time, push right hip forward.
- Hold for 10 seconds, then pull farther to slightly increase tension.
  - Hold this position for 10 seconds. .
  - Repeat with other leg.

## 6. Butterfly Stretch

*Groin, Low Back*

- Sit upright with the bottoms of feet touching each other.
- Bend forward at the waist to a position to feel mild tension.
- To increase stretch, elbows can be used to push down on thighs.
- Hold for 10 seconds, then pull farther to slightly increase tension.
- Hold this position for 10 seconds.



## 7. Straddle Stretch

*Groin, Hamstrings, Low Back*

- Sit upright with legs straight.
  - Spread legs as far as comfortable.
  - Keeping legs straight, but not locking knees, bend forward at the waist.
- Hold for 10 seconds then push down farther to experience 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.

## 8. Cross Over Stretch

*Glutes, Iliotibial Band*

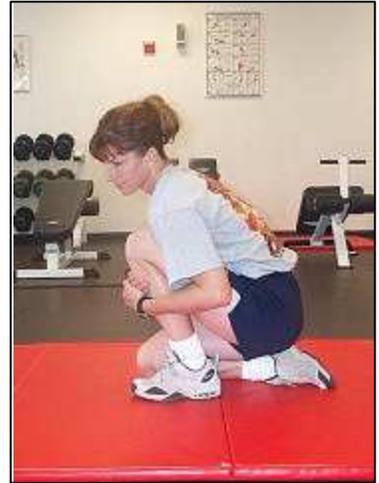
- Sit with legs straight in front.
- Bend right leg and cross it over to grab around the outside of right thigh.
- To experience mild tension, slowly pull bent right leg toward chest.
- Hold for 10 seconds then push slightly farther to slightly increase tension.
- Hold this position for 10 seconds.
- Return to starting position, switch legs, and repeat sequence.



## 9. Calf Stretch

### *Calves*

- Squat down on ground with right foot slightly in front of left.
- Grasp right shin and rock forward to feel mild tension.
- Hold for 10 seconds, then push slightly farther to slightly increase tension.
- Hold this position for 10 seconds.
- Repeat sequence on opposite leg.



### **10. Chest Stretch**

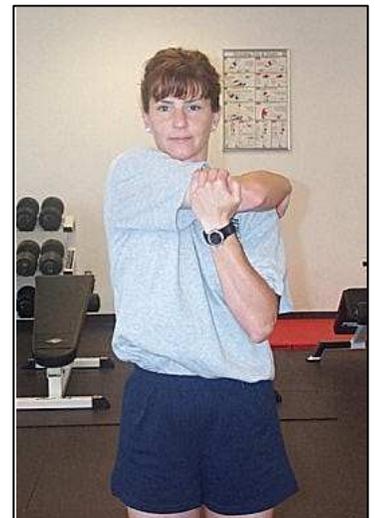
*Chest, Shoulders, Biceps*

- Stand with right shoulder against a wall.
- Place right palm on the wall.
  - To experience mild tension, slowly turn your body away from the wall
- Hold for 10 seconds, then twist slightly farther to slightly increase tension.
- Return to starting position and repeat sequence with left arm.

### **11. 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.
- To experience mild tension, slowly push right elbow backward.
- Hold for ten seconds, then push farther to slightly increase tension.
- Return to starting position and repeat sequence with left arm.



## 12. Forearm Stretch

### *Forearms*

- Stand upright and grab right fingers with left hand.
- To experience mild tension, slowly fold right wrist backwards.
- Hold for 10 seconds, then push slightly farther to slightly increase tension.
- Repeat sequence, this time folding wrist forwards.
- Return to starting position and repeat sequence with left arm.



## General Principles of Exercise

To maximize physical fitness results from a training program, several exercise principles should be incorporated into a fitness program.

### **Adaptation**

Adaptation means that the human 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 the adequate rest, consistency of workouts, adequate nutrition, and genetic makeup.

### **Overload**

Overload in an exercise training program means that the training program has caused the human body to adapt only when the demands are greater than what the body is accustomed to doing. This definition does not mean that the overload is greater than the maximum, rather that the overload is generally greater than 75% of the maximal effort.

### **Progression**

The principle of progression states that as the body adapts to the exercise program one 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 the body will adapt to whatever exercises it performs. This means that if a person only performs on a bench press, the body will not adapt to sit-ups. Therefore, it may be beneficial to alter personal fitness training to prepare for a more comprehensive Physical Agility Test.

### **Over-Training**

Over-training identifies the body's need for adequate rest and nutrition following exercise to recuperate before the next exercise session. If a recuperation period 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 if the chest is trained so must the back. Similarly, if the upper body is trained so must the legs be trained. If this principle is not followed, an imbalance occurs in the joints, 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 muscles demand for oxygen exceed the cardiopulmonary system's ability to deliver it. Since adequate oxygen is not available, waste products such as lactic acid accumulate. This type of intense activity can only be short in duration. An example of an anaerobic activity is sprinting.

### **Cardiovascular Training Program**

Aerobic and speed training are two cardiovascular training programs listed within this guide. Both aerobic and speed training complement each other and improve aerobic and anaerobic fitness. This program is designed to specifically improve the 1.5-mile run.

### **Aerobic Training**

A cardiopulmonary endurance program should begin at a level that is considered "moderately difficult" but not "difficult." Initial intensity levels should allow recruits to be able to speak during exercise. During the first four weeks of aerobic training, aerobic endurance will improve. Recruits should warm-up with a slow jog and 10-15 minutes of light stretching and cool down after the aerobic training with a walk or slow jog and 15-20 minutes of stretching. This program should be done 3 days per week. Off days should include cross training exercise such as biking, hiking or swimming or complete rest from exercise.

### Speed Training

Speed training involves a repeated series of exercise activities interspersed with rest or relief periods. Speed training is an excellent exercise for improving both aerobic and anaerobic endurance. Running intervals are performed on a track or a marked course with intensity at a rate much higher than the aerobic phase. Once again, recruits should warm-up and cool down properly when exercising.

After setting reasonable goal times for each distance, recruits may keep a log to chart progress. The “true time” will determine the “recovery time” in the speed training exercise. An example is provided below:

Week	Day	Distance (Yards)	Repetitions (# times)	Rest Ratio* # times true	Total Distance (Day'sMiles)	Goal Time Min:Sec	True Time Min:Sec
1							
	1	880	3	2	1.5	4:00	4:05

\*Recovery time equals the true time multiplied by the rest ratio. In this case, the recovery time is 8 minutes and 10 seconds. Use this time to stretch or walk.

*Using a 440 yard track – one lap equals 440 yards or one-quarter of a mile. The straight-aways and the curves are 110 yards each.*

**Aerobic Phase**

<b>Week</b>	<b>Day</b>	<b>Distance (Miles)</b>	<b>Repetitions (# times)</b>	<b>Relief Walk (Minutes)</b>	<b>Total Distance (Miles)</b>	<b>Goal Time</b>	<b>True Time</b>
<b>1</b>							
	1	0.5	2	4	1.5		
		0.25	2	2			
	2	0.5	3	4	1.5		
<b>2</b>	3	1.5	1		1.5		
	1	0.75	2	4	2		
		0.25	2	2			
	2	0.75	2	4	2		
<b>3</b>		0.5	1				
	3	2	1		2		
	1	1	2	4	2.5		
		0.5	1				
<b>4</b>							
	2	1	1	4	2.5		
		0.75	2	4			
	3	2.5	1		2.5		
<b>4</b>							
	1	1.5	1	5	3		
		1	1	4			
		0.5	1				
	2	1.5	2	5	3		
<b>4</b>				12			
	3	3	1		3		

**Speed Training Phase**

<b>Week</b>	<b>Day</b>	<b>Distance</b>	<b>Repetitions</b>	<b>Rest Ratio*</b>	<b>Total Distance</b>	<b>Goal Time</b>	<b>True Time</b>
		<b>(Yards)</b>	<b>(# times)</b>	<b># times true</b>	<b>(Day'sMiles)</b>	<b>Min:Sec</b>	<b>Min:Sec</b>
<b>1</b>							
	1	880	3	2	1.5		
	2	220	6	3	0.75		
	3	440	4	3	1		
<b>2</b>							
	1	880	2	2	1.5		
		220	4	3			
	2	330	4	3	0.75		
	3	220	6	3	0.75		
<b>3</b>							
	1	660	2	2	1.25		
		440	2	3			
	2	220	6	3	0.75		
	3	110	10	3	0.65		
<b>4</b>							
	1	880	1	2	1.5		
		660	1	2			
		440	1	3			
	2	330	5	3	0.95		
	3	110	12	3	0.75		

## **Muscular Strength/Endurance Program**

Muscular Strength/Endurance is a resistance program designed to improve total body strength and endurance. This is not a bodybuilding or a power-lifting program but designed to prepare a recruit specifically for the physical agility test of both hiring processes and the physical conditioning at the ALEA. Recruits not familiar with lifting programs or recruits that have any joint pain or feel uncomfortable performing these exercises should seek the advice and instruction of a professional trainer.

This program is designed to be performed three days a week with four days of rest between workouts. Recruits often make critical mistakes when over training in preparation for the physical agility test. If a recruit feels the symptoms of over training as explained within this guide further review of exercise principles is necessary. In addition, consider slowing down the progression, reducing overload, and allow for adequate rest between workouts.

This program should follow the warm-up and stretching program.

The program workout is designed to be a circuit workout. Circuit training is a very effective and efficient method to improve muscular strength, muscular endurance and cardiovascular endurance. The workout consists of weight lifting at a station for 10-12 repetitions and then moving on to the next exercise station. Rest between exercises should not exceed 30 seconds unless there is discomfort. In cases of discomfort, recruits should determine the need to cease activity if an injury is apparent or suspected. **For safety purposes, it is recommended to lift with a partner and spot each other when necessary.**

### **General Safety Tips While Performing Resistance Training**

- Always lift with a partner.
- Ask for help from an expert if uncertain on proper protocol or operation
- Progress slowly to avoid injuries.
- Never show off by attempting to lift more weight than normal.
- Use proper lifting technique when lifting weight plates and dumbbells.
- Never drink alcohol or take medications that may cause drowsiness prior to lifting weights.
- Do not lift too quickly and always be in control of the weights.
- Always use strict form. Proper technique is more important than the amount of weight lifted.
- Keep head in a neutral position, looking straight ahead and not upwards or downwards.

### **Progression**

Only experienced weightlifters should complete more than one cycle through a circuit during a workout. After the first week and depending on muscle soreness, workouts can increase to two circuits. After three to four weeks, recruits may increase to three circuits. Although it is not critical to success, ALEA staff recommends recruits follow the exercises in order. If, recruits experience soreness after progressing to a higher level of exercise, a decrease in weight and/or the number of circuits performed is recommended.

## **Weight Training Circuit Workout**

### **1. Seated Leg Press**

*Quadriceps, Hamstrings, Glutes, Calves*

Set appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

Place feet flat on push platform about shoulder width apart and toes pointed slightly outward.

- Adjust seat so knees are flexed at 90 degrees.
- Push weight up while exhaling.
- Stop just short of locking knees.
- Keep knees in alignment with feet.
- Keep head in neutral position.



### **2. DB Military Press**

*Deltoids, Triceps, Trapezius*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Raise two dumbbells to height of shoulders.
- With palms facing forward, alternate pressing each dumbbell upward toward the ceiling, one at a time.
- Exhale while lifting.
- Keep head in neutral position.
- Using slight leg push is acceptable.
- Repeat with other arm.



### 3. Lat Pull Down

*Latissimusdorsi, Rhomboids, Posterior Deltoids, Biceps*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Adjust seat and leg hold to allow full range of motion.
- Hold bar in chin up grip
- Pull bar straight down to just below the chin.
- Exhale while pulling weight down.
- Maintain proper form; do not bring the bar to the rear of the neck or head.
- Return to starting position.



### 4. DB Split-Squats

*Glutes, Quadriceps, Hamstrings, Calves*

Select a light weight not over 10 pounds (many people can start with no weights at all).

- Stand with feet together then step backward with one foot about 26 inches.
- Keep back straight and arms down at side with head neutral, slowly bend both legs.
- Lower slowly until the left knee barely touches the floor.
- Forward leg should remain vertical throughout motion with knee directly over ankle. If knee tends to move forward over the toes, adjust back foot further backward.
- Return to the starting position.
- Inhale while lowering and exhale while pushing back up into upright position.
- Repeat with opposite leg.



## 5. Bench Press

*Pectorals, Deltoids, Triceps*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Lie on bench, feet flat on floor.
- Hold bar with arms shoulder width apart or slightly wider.
- Lower bar to middle of chest.
- Push bar up to starting position.
- Inhale while lowering and exhale while pushing back up.
- **Beginners should use a spotter or a chest press machine**



## 6. DB Row

*Latisimussdorsi, Rhomboids, Posterior Deltoids, Trapezius, Biceps*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Standing to right of bench, place left knee on bench and support upper body with left (non- lifting) arm.
- Keep head in neutral position.
- Pull DB from ground into waist area with right arm.
- Lower DB back to starting position.
- Avoid twisting at waist.
- Inhale while lowering weight and exhale while lifting weight.
- Repeat sequence on opposite side.



## 7. Leg Extension

### *Quadriceps*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Adjust machine so that backs of knees are against pad and back pad is supporting lower back.
- Extend knees stopping just before the knees lock.
- Slowly lower weight to starting position.
- Exhale while pushing weight and inhale while lowering weight.



**Note: Individuals who have undergone reconstructive knee surgery should not perform this exercise.**

## 8. Seated Leg Curl

### *Hamstrings*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Adjust the back of the seat; the back of the heel should rest on the ankle pad
- Match the knee joint to the pivot point.
- Lower knee pad into place
- Flex the knee, keeping hips down
- Slowly ease the weight to starting position.
- Inhale while flexing the weight down and exhale while letting the weight rise.



## 9. DB Curl

### *Biceps, Forearms*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Stand up with knees slightly bent.
- Begin with arms down at sides.
- Bend right elbow bringing the dumbbell toward right shoulder.
- Slowly lower dumbbell to starting position.
- Exhale while raising weight and inhale while lowering weight.
- Repeat sequence on opposite side.



## 10. Triceps Extension

### *Triceps*

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Stand up with knees slightly bent.
- Place hands on bar about 6 inches apart.
- Keeping upper arms at sides, extend the elbows until arms are almost straight and bar is at 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.
- Exhale while pushing bar down and inhale while returning bar back up.



## 11. Abdominal Curls

### *Abdominal Muscles*

Sit on ground with knees bent at 90 degrees.

- Keeping feet flat on floor and hands to the side, slowly curl the torso so the chin approaches the chest.
- Do not raise torso to more than a 45-degree angle off the floor.
- Slowly return to slightly above your starting position, keeping tension on abdominal muscles at all times.
- Exhale while curling up and inhale while lowering torso back down.



## 12. Swimmers

### *Erector Spinae (Lower back), Glutes*

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



## Exercises without Weights

Although it is easier to improve muscular strength and endurance with weight equipment, it is also possible to accomplish muscular strength and endurance with some weight free simple exercises. These exercises require minimum equipment and can be done almost anywhere. Recruits should perform these exercises in a circuit moving from one exercise to the next with minimal rest.

Initially, exercise should be in the somewhat hard range. This range means do not exercise to failure but start by going through the circuit one time and then gradually progress until the circuit can be completed times in a row with minimum rest.

### Calisthenics Circuit Workout

#### 1. Chair Squats

*Glutes, Quadriceps, Hamstrings*

- Stand in front of a sturdy and stable chair with legs shoulder width apart and toes pointing slightly outward.
- Hold arms straight out in front.
- Slowly lower the buttocks into the chair.
- As soon as the slightest contact with the chair, slowly stand back up to the starting position.
- The head should be kept in a neutral position.
- Inhale while lowering and exhale while standing up.



#### 2. Push Ups

*Pectorals, Deltoids, Triceps, Abdominals, Low Back*

Place hands on ground shoulder width apart or slightly more. Keep feet together and back straight throughout the exercise.

- Lower the body until the upper arms are at least parallel to the ground.
- Push up to the initial position by completely straightening arms.
- Inhale while lowering and exhale while pushing.



### 3. Split-Squats

*Glutes, Quadriceps, Hamstrings, Calves*

Stand with feet together, then step backward with right foot about 26 inches behind the left foot.

- Keep back straight and arms down at side with head neutral, slowly lower right knee straight down onto the floor.
- Inhale while lowering and exhale while pushing back up into upright position.
- Forward leg should remain vertical throughout motion, with knee directly over ankle. If knee tends to move forward over the toes, adjust back foot further backward.
- Repeat with other leg.



### 4. Chin Ups

*Latissimusdorsi, Rhomboids, Posterior Delts, Biceps*

- Grasp horizontal bar with palms facing away and hands 6 inches apart.
- Hang from bar with arms fully extended.
- Pull upward until chin is above the bar.
- Do not kick or swing legs.
- Return to the starting position.
- Inhale while lowering and exhale while pulling up.
- If unable to complete 3 chin-ups, elevate to the bar with a stool or a partner, and slowly lower down in a slow and controlled fashion.



## 5. Bench Steps

*Glutes, Quadriceps, Hamstrings, Calves*

**This requires good balance, so initially set the step next to a wall or use a partner for safety.**

- Use a step or bench 6 inches to 18 inches high (no higher than 18 inches).
- Place right foot flat on the bench; left foot flat on the floor.
- Push down with the right foot and step up until both legs are straight.
- Slowly lower back down to the starting position.
- Exhale while pushing up and inhale while lowering down.
- Repeat entire sequence with other leg.



## 6. Dips

*Pectorals, Deltoids, Triceps*

- Place hands behind on dip bar or chair with feet straight in front.
- Bend arms and lower body in a controlled manner until the upper arms are parallel with the floor.
- Straighten the arms to return to the starting position.
- Legs can be bent to keep feet from touching the floor.
- If unable to perform 3 dips, use a stool or a partner to help up and then lower down slowly.
- Inhale while lowering and exhale while pushing up.



## 7. Abdominal Curls

### *Abdominal Muscles*

- Sit on ground with knees bent at 90 degrees.
- Keeping feet flat on floor and hands at side, slowly curl torso so chin approaches chest.
- Do not raise torso to more than a 45-degree angle off the floor.
- Slowly return to slightly above your starting position, keeping tension on abdominal muscles at all times.
- Exhale while curling up and inhale while lowering torso back down.



## 8. Swimmers

### *Erector Spinae (Lower back), Glutes*

- Lie face down on ground with feet together.
- Place arms straight out in front.
- Move the right arm and left leg up at the same time.
- While the right arm and left leg move down, the left arm and right leg move up at the same time.
- Continue alternating in a moderate cadence.



## **Nutrition**

Proper nutrition begins with providing the body with all the essential nutrients including carbohydrates, protein, fats, vitamins, minerals and water.

### **Carbohydrates**

Carbohydrates or “carbs,” the primary fuel for energy, come as complex (starches) or simple (sugars). Some carbohydrates (mostly complex) may contain fiber that keeps the intestinal tract healthy. Carbohydrates should make up approximately sixty percent (**60%**) of the total caloric intake, with the majority coming from complex sources.

### **Proteins**

Proteins are complex chains of molecules called amino acids that are essential for tissue growth and muscle development. They have a secondary purpose as fuel in the absence of carbohydrates and fats. Protein should be approximately fifteen percent (**15%**) of the daily caloric intake. Age, body weight, and athletic activity should also determine the amount.

To determine protein needs, convert body weight in kilograms by dividing the body weight by 2.2. Children need 2.2 grams per kilogram of body weight per day but adults only need .8 grams per kilogram of body weight. Athletes need 1.0 to 1.2 grams per kilogram per day.

### **Fats**

The primary purpose of fats is to serve as body fuel. Fats also help absorb certain vitamins, build cells, provide insulation and cushion vital organs. The daily caloric intake should contain **20-30%** fat.

There are three types of fat, saturated, monounsaturated and polyunsaturated. Studies have shown that monounsaturated fats increase the levels of high-density lipoprotein (a.k.a. good cholesterol) and lower levels of low-density lipoprotein (a.k.a. bad cholesterol). Saturated fats lower the good cholesterol while increasing the bad cholesterol. **Limit saturated fats for a more healthful diet.**

### **Vitamins and Minerals**

Vitamins are organic substances that act as regulators for the various physiological processes of the body. Minerals are inorganic elements with similar responsibilities. There are different minimum amounts for each vitamin and mineral.

### **Water**

Water is the major component of blood plasma and makes up 60% of the human body. Water transports everything in the body and helps regulate body temperature. Water is lost through urine and sweat and must be replaced with at least 8-10 glasses of water a day. The more active an individual is, the more water should be consumed. Larger individuals also need more than the recommended 8-10 glasses of water. To calculate water intake needs, divide body weight by two. The answer relates to the number of ounces of water to drink per day.

### **Weight Control**

There are many conflicting theories, principles, books, articles, etc. on how to lose weight. Be cautious of the “too good to be true” fad diets or supplements. More harm than good usually is the end result. A “prudent diet” contains all the essential nutrients and food eaten in moderation (based on intake and outtake of energy requirements as stated within this guide).

## **Conclusion**

A career in law enforcement is both physically and mentally challenging. Success depends on individual desires and personal drive. While ALEA staff may not be able to personally address each issue with every potential applicant or recruit, the staff encourages each individual to prepare for physical fitness with knowledge and information. Individuals must constantly be careful of fads or slick marketing ploys to improving health. Quality of life improvement can result from activities as simple as drinking more water, eating more complex carbohydrates and staying active (walking, running, hiking, biking, swimming, etc) most days of the week.

ALEA hopes this guide can provide potential applicants, recruits and active peace officers with a resource to be “fit for duty.”



## **References**

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PUSH-UP IMPROVEMENT PROGRAM

Mon-Wed-Fri

Week One

Type	Time (in seconds)	Rest (in seconds)
Regular with reg. Hands	30	60
Regular with wide hands	30	60
Regular with close hands	30	60
Regular with reg. Hands	20	60
Regular from knees	30	End
<b>Total time: 6:20</b>		

Week Two

Type	Time	Rest
Feet elevated with reg. Hands	30	45
Regular with wide hands	30	45
Regular with close hands	30	45
Regular with reg. Hands	30	45
Regular with reg. Hands	20	End
<b>Total time: 5:20</b>		

Week Three

Type	Time	Rest
Feet elevated with reg hands	30	30
Regular with close hands	30	30
Regular with wide hands	30	30
Regular with reg hands	30	30
Regular with close hands	20	30
Regular from knees	20	End
<b>Total time: 5:10</b>		

Week Four

Type	Time	Rest
Partner resisted with reg hands	20	20
Partner resisted with wide hands	20	20
Partner resisted with close hands	20	20
Regular with reg hands	30	20
Regular with reg hands	25	20
Regular with reg hands	20	End
<b>Total time: 3:55</b>		

Week Five

Type	Time	Rest
Partner resisted with reg hands	30	15
Feet elevated with wide hands	30	15
Feet elevated with reg hands	30	15
Regular with reg hands	15	10
Regular with close hands	15	10
Regular from knees	15	End
<b>Total time: 3:20</b>		

Week Six

Type	Time	Rest
Partner resisted with reg hands	40	15
Regular with reg hands	30	15
Regular with close hands	30	15
Regular with wide hands	30	15
Regular from knees	30	15
Regular from kness	30	End
<b>Total time: 4:25</b>		

1. The program includes resistance exercises involving the pectorals, anterior deltoids and the triceps. One set each; 8-12 repetitions to muscle failure.
2. Participants should try to follow the program on a week-to-week basis. Participant's performance is monitored to try to get them to do as much as possible for each set of push-ups. If participants cannot finish the work period with the type of push-up they are performing, they should try an easier type of push-up (knees, hands on bench, negatives, wall push-ups) to complete the work period. It is imperative that participants continue to perform the push-up movement, including easier types of push-ups, throughout the entire work period to ensure maximum results.
3. If a participant misses a workout, they should make it up as soon as possible before the next training session to ensure adequate rest and recovery.
4. This training program can be altered as necessary. The key elements are providing a certain amount of work each session and increasing the intensity or duration (or both) from week to week.