

# THE COMPLETE FITNESS



# HANDBOOK

## Table of Contents

Introduction.....	3
-------------------	---

Physical Fitness.....	4
Principals.....	4
Fitness Assessment.....	5
Fitness Questionnaire .....	6
Diagnostic Test Scorecard.....	12
Flexibility.....	13
Program Description.....	14
The Road to Fitness.....	15
Building your Strength Program/Tracking.....	17
Get Stronger in 4 Weeks.....	19
Prepare for Airborne School.....	21
Prepare for NALC & Air Assault School.....	23
Cardiovascular Endurance.....	52
Training Heart Rates.....	52
Interval Work Outs.....	55
Pace Chart.....	61

## **Introduction**

Cadet Command would like to thank the Dr. Todd A. Crowder from the United States Military Academy (USMA) Department of Physical Education for his work in assisting us in this project. He graciously allowed us to edit his work on cardio-respiratory training in order to tailor it towards ROTC cadets who have varying fitness needs at over 270 schools. Cadet Command would not have been successful in writing this Fitness Handbook without his help and the help of other fitness experts at the USMA and from the United States Army Physical Fitness School.

### **Before You Begin**

It is imperative that cadets learn an easy way to reduce the likelihood of injury while using this Fitness Handbook. Cadets need to recognize that they have an increased risk of lower body injuries than upper body injuries during summer training events. The leading causes of this are improperly sized or poorly broken-in boots and inadequate running shoes. Boots that hurt or uncomfortable to you at school will cause significantly more discomfort and increase the chance of injury during rigorous summer training events like the National Advanced Leadership Camp, Airborne School or Air Assault School. A broken in pair of boots should feel as comfortable as your most comfortable pair of shoes. To put it simply, you should be able to walk or run in them comfortably.

Similarly running shoes should fit comfortably and not show significant tread wear. Running places different wear on your shoes than walking does. Using shoes you walk in for running can place undo stress on your lower body. This stress can increase the risk of injury. Field Manual 21-20 divides running shoes into three categories. Select an impact control shoe if you have high arches or notice that your running shoes tend to wear unevenly on the outside edge. Select a motion control shoe if you have flat feet or notice that excessive wear on both the extreme outside and inside of the sole of the running shoe. Select a balanced shoe if you have normal arches or only see wear on the outside sole beneath the ankle.

Other factors that reduce the likelihood of injuries include adequate warm-ups prior to high intensity exercise, proper nutrition and hydration, maintaining recovery periods following exercise, and cool-down periods concluding the exercise.

Editors Ms. Sheila Visconti  
Major Paul Baker  
CPT Ellis Goins

## Physical Fitness

### TRAINING VARIABLES

Before explaining what a physical fitness program should look like, there are some basic terms that must be discussed. These principals apply to all programs in general and must be addressed in the development of any fitness program.

**INTENSITY** – The amount of effort put into each workout, usually measured by heartbeats per minute. For the maximum benefit in each workout, plan on exercising at a minimum of 70 percent of the heart rate reserve. There are several scientific ways to your heart rate reserve. The simplest way is to begin with you maximum heart rate (220-Age). Next, measure your resting heart rate. The heart rate reserve is found by Max heart rate - resting heart rate. To train at 70% of the heart rate reserve you would multiply 70% by the heart rate reserve and then add your resting heart rate. **For a 20 year old with a resting heart rate of 60 to determine your training heart rate in beats per minute would be  $70\% \times \text{Heart Rate Reserve} = .70 \times (200-60) + 60$  (Resting Heart Rate) = a training heart rate of 158 beats per min.**

**DURATION** – The length each exercise period should last. There has been a great deal of research on this topic. Most experts believe that when working on your cardiovascular endurance a minimum of 20 to 30 minutes is needed to obtain maximum benefit. This holds true for the majority of the population. The only notable exception occurs for long distance or endurance athletes (e.g. marathon runners or [triathletes](#)).

**FREQUENCY** – The number of workouts one should have per week. Once again experts agree that the average person requires a minimum of three workouts per week to improve their current level of fitness. Working out less frequently will only maintain a level of fitness; it will not improve the level of fitness. When exercising only three times a week, each period should be medium to high intensity. Exercising with consistent frequency can also be referred to as **REGULARITY**. Exercise must be done regularly to produce a training effect. Sporadic exercise may cause more harm in the form of injury than benefit from exercise. The same is true for extremely intense workouts. They may create injuries.

**RECOVERY** – **Do not work the same muscle groups hard day after day.** Muscles need recovery time. People frequently misunderstand this point. Providing inadequate recovery can explain the reason why most people see little or no gain from excessive exercise. You can work the same muscle groups each day, however, you should work hard one day and easy the next. This is a critical point because this fitness program is based on a six days a week exercise program.

**GENERAL ADAPTATION PRINCIPAL (GAP)** – Muscles as well as your cardiovascular system in the body will adapt to the increasing stress placed upon it through exercise. To see gains in a fitness program one must stress the existing muscular and cardiovascular systems. This can also be called the **OVERLOAD** principal. For a muscle to increase in strength, the workload during exercise must be larger than what it normally experiences.

**SPECIFICITY** – There are several different exercises and events that can develop your muscular strength as well as cardiovascular fitness. To increase the number of push-ups you can do, simply increase upper body strength through a number of strength exercises and weights. However, the best way to improve push-ups requires doing push-ups. Similarly one can improve cardiovascular fitness by biking swimming, or walking. However, if the goal remains an improved ability to run, the best exercise will be running.

**MAJOR COMPONENTS OF PHYSICAL FITNESS** – There are several components of any fitness program. The three major components of most programs are *flexibility*, *strength*, *muscular endurance*, and *cardiovascular endurance*. These components are the essential elements of the Army Physical Fitness Program.

### **How to Use These Workout Programs**

These programs are designed as four week plans. Each program has a workout A & B. Alternate workouts daily for 6 days, then rest. For example, perform workout A on Monday, Wednesday, and Friday; perform workout B on Tuesday, Thursday, and Saturday. Different muscles are trained in workouts A & B, which means you are training each muscle group 3 days per week. Rest Sunday. Work cardiovascular exercises into your workouts at least 3 times per week. You may attempt to eventually work up to doing cardio 6 days a week using the hard/easy technique mentioned under the recovery principle.

### **Fitness Assessment**

Before starting any new fitness program it is important to assess ones abilities. This includes knowing strengths as well as weaknesses. Ideally, a fitness program would improve weak areas and maintain or improve strength areas. However, before explaining the diagnostic test there are other important factors and preferences that should be identified. These factors and preferences may include the time of day to workout, how much time is available each day to workout, individual or team sports, and finally the goal of the fitness program.

The questionnaire attached (FORM 1-1) is intended to give a fitness trainer the basics they need to personalize a fitness program that will works.

## Fitness Assessment Questionnaire

NAME \_\_\_\_\_ AGE \_\_\_\_\_ DATE \_\_\_\_\_

ACADEMIC SCHEDULE: Monday \_\_\_\_\_  
(this Semester) Tuesday \_\_\_\_\_  
Wednesday \_\_\_\_\_  
Thursday \_\_\_\_\_  
Friday \_\_\_\_\_  
Saturday \_\_\_\_\_

### EXERCISE HABITS/ PREFERENCES (Select One)

I \_\_\_\_\_ to exercise and \_\_\_\_\_ access to a gym  
(like, sometimes like, never want) (have, do not have)

I like to workout \_\_\_\_\_  
(alone, in a small group, in a large group)

I have \_\_\_\_\_ discipline to stick to a fitness program  
( a little, some, a lot of)

I need \_\_\_\_\_ to stick to my fitness program  
(no help, some help, a lot of help)

I \_\_\_\_\_ to lift weights  
(like, have tried, have never tried)

I prefer to \_\_\_\_\_ for my cardiovascular endurance training  
(run, walk, bike, swim, skate)

### GOALS

I want to:     A. Improve my overall personal fitness  
                  B. Just pass the APFT  
                  C. Just improve a particular weakness

### STATE YOUR PERSONAL GOALS

---

---

---

---

---

### SELF ASSESSMENT (Select: None, Beginner, Average, Above Average, Excellent)

Flexibility \_\_\_\_\_

Strength \_\_\_\_\_

Cardiovascular Endurance \_\_\_\_\_

List your weakness

---

---

List your strengths

---

---

## Diagnostic Test

The purpose of the diagnostic test is to assess one's level of flexibility, strength and cardiovascular endurance. This diagnostic test is composed of 6 events. The six events are as follows and will be performed in order. A brief warm-up period will precede the administration of the test. **The warm up should consist of a combination of stretching exercises and jogging in place for 3 to 5 minutes.** ~~The warm up may consists of jogging in place for 3 minutes, starting slowly and increasing intensity to warm the body's muscles and ligaments. Light stretching should follow the warm up.~~

**1. First event: Bench Press.** Cadets will perform a 1-rep maximum of this exercise to determine chest, shoulders, and triceps strength. A cadet should begin with a weight which they are confident they can press. Allow at least 1 minute rest between attempts. The weight will be increased at the cadet's request and he will perform the exercise again. Allow no more than 5 attempts to reach the 1-rep maximum. Any failed attempt terminates the exercise. The last correct repetition will count as the 1-rep maximum.



Figure 1

(1) **Equipment.** Flat weight bench. At least 1, preferably 2 spotters. Lifting gloves are authorized. Bench press shirts are not authorized. (2) **Performance.** Lie in a supine position on a flat bench with your legs positioned at the sides of the bench and your feet flat on the floor. Using a handgrip that is about 6 inches wider than your shoulder width, bring the barbell to arms length above the chest but in line with the shoulders (see fig 1). If two spotters are available they will position themselves on each side of the bar. The spotters may assist in the liftoff. If only one spotter is available, he/she will be at the lifter's head to assist. Once the bar is at the start position the spotter will release the bar. Lower the barbell to the chest and make a definite pause. As soon as momentum has ceased the grader will yell press. Press the barbell to the start position to complete the repetition. The spotter will not touch the barbell during the repetition

unless absolutely necessary. If the spotter has to assist the lifter during the repetition the event is terminated.

Upper Body Strength = 1 rep max in pounds divided by body weight in pounds

	<b><u>Males</u></b>		<b><u>Females</u></b>
5	greater than 1.26	5	greater than .78
4	1.17 - 1.25	4	.72 - .77
3	.97 - 1.16	3	.59 - .71
2	.88 - .96	2	.53 - .58
1	less than .87	1	less than .52

**2. Second Event: Push-up.** Cadets will perform as many push-ups as they can to determine the muscular endurance of the chest shoulder, and triceps muscles.

(1) **Equipment.** Flat area.

(2) **Performance.** On the command 'get set,' assume the front-leaning rest position by placing your hands where they are comfortable for you. Your feet may be together or up to 12 inches apart. When viewed from the side, your body should form a generally straight line from your shoulders to your ankles. On the command 'go,' begin the push-up by bending your elbows and lowering your entire body as a single unit until your upper arms are at least parallel to the ground. Then, return to the starting position by raising your entire body until your arms are fully extended. Your body must remain rigid in a generally straight line and move as a unit while performing each repetition. At the end of each repetition, the scorer will state the number of repetitions you have completed correctly. If you fail to keep your body generally straight, to lower your whole body until your upper arms are at least parallel to the ground, or to extend your arms completely, that repetition will not count, and the scorer will repeat the number of the last correctly performed repetition. An altered, front-leaning rest position is the only authorized rest position. That is, you may sag in the middle or flex your back. When flexing your back, you may bend your knees, but not to such an extent that you are supporting most of your body weight with your legs. If this occurs, your performance will be terminated. You must return to, and pause in, the correct starting position before continuing. If you rest on the ground or raise either hand or foot from the ground, your performance will be terminated. You may reposition your hands and/or feet during the event as long as they remain in contact with the ground at all times. Correct performance is important. You will do as many push-ups as you can; there is no time limit.

**3. Third Event: Curl-up.** Cadets will perform the curl-up exercise to assess abdominal strength and endurance.

(1) **Equipment.** Mat, Ruler, metronome, stop watch

(2) **Performance.** Start with your back on the floor with your knees bent at a 90 degree angle (feet 12 to 18 inches away from the buttocks). Place your arms by your sides with palms down on the floor, elbows locked, and fingers straight. The grader will place a ruler or draw a line 12 cm away from the longest finger tip and set metronome to a cadence of 50 beats per



minute. Curl your head and upper back upward, keeping arms stiff, reaching forward along the floor to touch the line. Your fingers, feet and buttocks must stay on the floor during the entire curl-up. Slide the palms of the hands (extended arms) along the mat until the fingertips of both hands just touch the 12 cm line. Keep the arms straight. Lower your body until the back is flat against the ground. Perform the movement following the cadence of the metronome (25 curl-ups per minute). Take the same amount of time to perform the raising and lowering phases. The test score is the number of complete touches on the line until the rhythm cannot be followed. If you do not have a Metronome, conduct standard bent knee sit-ups with your hands crossed over your chest. Do as many as you can in a 2 minute period.

<b>Male</b>			
<b>AGE</b>	<b>15-19</b>	<b>20-29</b>	<b>30-39</b>
<b>Excellent</b>	>74	>74	>74
<b>Above Average</b>	35 - 74	31 - 74	36 - 74
<b>Average</b>	24 - 34	24 - 30	26 - 35
<b>Below Average</b>	8 - 23	4 - 23	0 - 23

<b>Female</b>			
<b>AGE</b>	<b>15-19</b>	<b>20-29</b>	<b>30-39</b>
<b>Excellent</b>	>74	>69	>54
<b>Above Average</b>	30 - 74	30 - 69	28 - 54
<b>Average</b>	24 - 29	21 - 29	15 - 27
<b>Below Average</b>	10 - 23	5 - 20	0 - 14

**Fourth Event: Step Test.** Cadets will perform the 3-minute step test to determine cardiovascular endurance.

(1) **Equipment.** Metronome, 12 inch step, stopwatch.

(2) **Performance.** Cadets will step up (1-2) and down (3-4) in cadence with the metronome which is set at 96 beats per minute (4 clicks = one step cycle) for a stepping rate of 24 steps per minute. Cadets will step up and down on the 12-inch bench for 3 minutes. Immediately after the 3-minute stepping exercise, the cadet is to sit down and within 5 seconds, the tester is to take the subject's heart rate for one minute. The total one-minute post-exercise heart rate is the subject's score for the test. Compare to YMCA Norms below. In the event you do not have a Metronome, the tester will count one step-two step-three step-four step in an attempt to come close to 96 beats per minute. Needless to say, this will result in a less accurate evaluation. **Example:** A 18-year old female performs the step test with a final heart rate of 95. Looking at the table she falls under the above average profile.

**Physical Fitness Evaluation on Profile for 3-Minute Step Test** (Heart Rate values in beats per minute)

<b>MALE</b>			
<b>AGE</b>	<b>18-25</b>	<b>26-35</b>	<b>36-45</b>
<b><u>Classification</u></b>			
<b>Excellent</b>	70-78	73-79	72-81
<b>Good</b>	79-88	80-88	82-94
<b>Above Average</b>	89-97	89-97	95-102
<b>Average</b>	98-104	98-106	103-111
<b>Below Average</b>	105-114	109-116	112-118
<b>Poor</b>	115-128	117-126	119-128
<b>Very Poor</b>	129-164	127-164	129-168
<b>FEMALE</b>			
<b>AGE</b>	<b>18-25</b>	<b>26-35</b>	<b>36-45</b>
<b><u>Classification</u></b>			
<b>Excellent</b>	70-78	73-79	72-81
<b>Good</b>	79-88	80-88	82-94
<b>Above Average</b>	89-97	89-97	95-102
<b>Average</b>	98-104	98-106	103-111
<b>Below Average</b>	105-114	109-116	112-118
<b>Poor</b>	115-128	117-126	119-128
<b>Very Poor</b>	129-164	127-164	129-168

**5. Fifth Event: Sit & Reach.** Cadets will perform the sit and reach to determine hamstring and lower back flexibility.

(1) **Equipment.** Ruler.

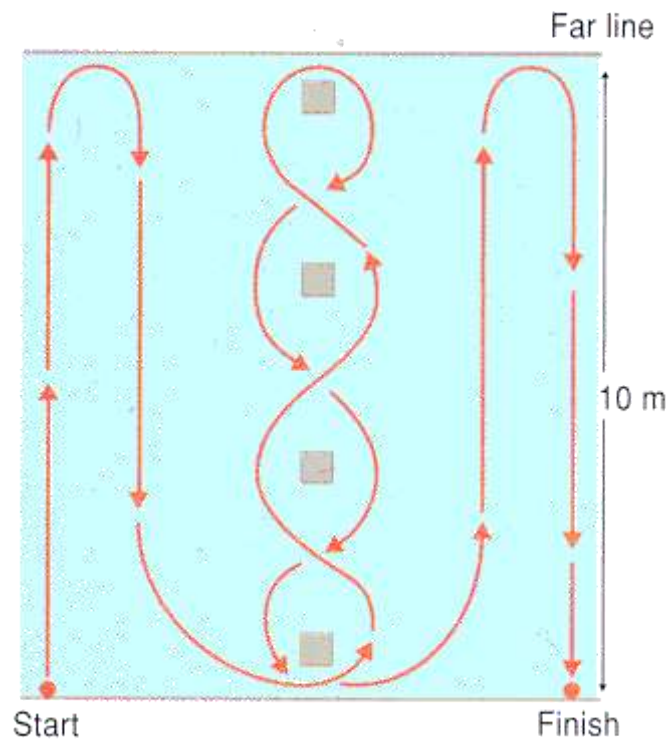
(2) **Performance.** Sit on the floor with legs out straight ahead and shoes off. The tester holds both knees flat against the floor. Lean forward slowly as far as possible and hold the greatest stretch for two seconds. Make sure there is no jerky movements, and that the fingertips remain level and the legs flat. The score is recorded as the distance before (negative) or beyond (positive) from the toes. Repeat twice and record the best score. The table below (figure 3) gives you a guide for expected scores in cm for adults.

	<b>Men (cm from toes)</b>	<b>Women (cm from toes)</b>
<b>Super</b>	> +27	> +30
<b>Excellent</b>	+17 to +27	+21 to +30
<b>Good</b>	+6 to +16	+11 to +20
<b>Average</b>	0 to +5	+1 to +10
<b>Fair</b>	-8 to -1	-7 to 0
<b>Poor</b>	-19 to -9	-14 to -8
<b>Very poor</b>	< -20	< -15

**6. Sixth Event: Illinois Agility Run Test.** Cadets will perform the Illinois Agility Run Test to test agility.

(1) **Equipment.** flat surface (minimum 20m x10m area), 8 cones, a stop watch.

(2) **Course.** The length of the course is 10 meters and the width (distance between the start and finish points) is 5 meters. On the track you could use 5 lanes. 4 cones can be used to mark the start, finish and the two turning points. Each cone in the center is spaced 3.3 meters apart.



Gender	Excellent	Above Average	Average	Below Average	Poor
Male	<15.2 secs	15.2 - 16.1 secs	16.2 - 18.1 secs	18.2 - 18.3 secs	>18.3 secs
Female	<17.0 secs	17.0 - 17.9 secs	18.0 - 21.7 secs	21.8 - 23.0 secs	>23.0 secs

**Administration.** Professors of Military Science & Leadership (PMS) should administer the diagnostic test in the assessment phase of the fitness program development. Use the Diagnostic Test Score Card provided. The next diagnostic test should occur no later than week six. Subsequent diagnostic tests should be given every six weeks. After the initial diagnostic it is acceptable to substitute the APFT as a diagnostic tool. PMSs or their designated fitness expert should regularly monitor the fitness logs of cadets and provide guidance as needed.

## Diagnostic Test Score Card

<b>Last Name</b>	<b>First Name</b>	<b>MI</b>
<b>Gender M or F</b>	<b>Age</b>	
<b>Height _____ inches</b>	<b>Weight _____ lbs</b>	<b>Body Fat _____ %</b>
<b>Bench Press</b>	Lift 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 1-RM = _____ lbs	<b>1 Rep Maximum Divided by Bodyweight =</b>
<b>Push-up</b>	<b>Repetitions _____</b>	
<b>Curl-up</b>	<b>Repetitions _____</b>	
<b>Step Test</b>	<b>1-minute post-exercise heart rate _____ beats</b>	
<b>Sit &amp; Reach</b>	<b>Distance from toes (+ or -) _____ cm</b>	
<b>Illinois Agility Run Test</b>	<b>Time _____</b>	

## **Flexibility**

Flexibility is an important component of your fitness program. Many activity-related injuries have their root in lack of flexibility. Think of your muscles as rubber bands. When they are cold they are rigid and brittle. When warm they stretch and retract more easily. Conducting a good warm-up prior to exercising and a good cool-down upon completion will help prevent injury and reduce muscle soreness.

No matter what your current fitness level, you should always begin your exercise sessions with a warm-up. A good warm-up sequence is as follows. Jog in place or a specified location for one to two minutes. This causes a gradual increase in the heart rate, blood pressure, circulation, and increases the temperature of the active muscles. Next, perform slow joint rotation exercises (for example, arm circles, knee/ankle rotations) to gradually increase the joint's range of motion. Work each major joint for 5 to 10 seconds. Finally, stretch the muscles to be used during the upcoming activity slowly. This will "loosen up" muscles and tendons so they can achieve greater ranges of motion with less risk of injury. Hold each stretch position for 10 to 15 seconds, and do not bounce or bob.

Immediately following your exercise session stretch as part of your cool-down. After exercising, when your muscles are their warmest is the best time to improve your flexibility. Do not limit flexibility exercises to warm-up and cool-down only. Take the time to dedicate sessions to flexibility. Stretching throughout the day is also a great idea. Stretching is one form of exercise that takes very little time relative to the benefits gained. Some of the more common flexibility exercises are listed under the flexibility exercises. Assume all stretching positions slowly until you feel tension or slight discomfort. Hold each position for at least 10 to 15 seconds during the warm-up and cool-down. Developmental stretching to improve flexibility requires holding each stretch for 30 seconds or longer.

## PROGRAM DESCRIPTION

These Fitness Work-out sheets are designed to be implemented on a workout plan A followed the next day by a workout plan B. Workout A will focus on lower body strength and endurance while workout plan B will focus on upper body strength and endurance. Both days incorporate some abdominal work. Remember it is important to maintain a period of recovery for the abdominal muscles. Trying to overachieve early in a workout program can lead to injury. The reason there is a range within the abdominal exercises is to promote recovery. If you are providing yourself adequate time to recover, over time you should see your abilities increasing.

The cardiorespiratory workouts need to be included into the program. If the program selected is exclusively running (e.g. group run, fartlek, or interval) it should replace the A workout plan. However, if you choose a guerrilla or grass drill workout plan it could substitute for either the A or the B Workout plan. The minimum frequency of cardiorespiratory workouts is **two to three** per week. For borderline runners the number of workouts may be as high as three to five per week and may consist of a combination of intervals, grass, and guerrilla drills. The determining factor for the intensity and frequency of cardiorespiratory training will depend on the ability and fitness level of the cadet and the intensity of the workout.

For some reason if you miss A workout then the next workout would be the A workout. In a week you should expect to do a total of six workouts per week.

# The Road to Fitness

## WORKOUT A

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>SQUAT</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>LEG CURLS</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>Deadlifts</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>LEG EXTENSION</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>CALF RAISES</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>ABDOMINAL</b>				
SIT-UP 1 minute				
SWISS-BALL CRUNCH 1 minute				
REVERSE CRUNCH 1 minute				

**Beginner Routine:** Do one set of 12-15 reps of each exercise. Use a weight that you can lift at least 12 times. When you complete 15 reps, increase the weight at your next workout. Move quickly from exercise to exercise, resting at most 30 seconds between exercises unless you are exceeding your training heart rate. If you are, increase the rest period between exercises. As you progress, you should be able to decrease the rest between exercises while maintaining your training heart rate.

**SPEED:** Perform each rep deliberately slower than what seems like your natural speed. This keeps your muscles under tension longer and helps build them faster.



# The Road to Fitness

## WORKOUT B

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>BENCH PRESS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>INCLINE BENCH PRESS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>DUMBELL SHOULDER PRESS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>LATERAL RAISES</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>DIPS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15 reps	/	/	/	/
Set 2 12-15 reps	/	/	/	/
Set 3 12-15 reps	/	/	/	/
<b>ABDOMINAL</b>				
WEIGHTED SIT-UP	15-25			
REVERSE CRUNCH	15-25			
BODY TWIST	15-25			

**Beginner Goals:** Exercise consistently with short focused workouts. Build endurance through high-repetition strength training and moderate intensity cardiovascular exercise. See rapid increases in strength and modest gains in muscle mass. **Advanced Goals:** You'll focus more energy on strength training. Help your body recover from nagging injuries with short, low volume routines. You should leave the gym feeling as if you could have done a lot more. Give your muscle building systems a boost responding from a higher-volume routine to a change in volume.

# Increase Muscle Mass

## WORKOUT A

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>Leg Press</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Lunges</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Leg Curls</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Leg Extensions</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Seated Calves</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>ABDOMINAL</b>				
Crunch Circuit	25-30			
Oblique Crunches	30-40 each side			
Superman	20-25			

# Increase Muscle Mass

## WORKOUT B

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>CHEST Triset 1</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Incline Dumbbell Bench	/	/	/	/
Flat Dumbbell Bench	/	/	/	/
Decline Dumbbell Bench	/	/	/	/
<b>BACK Triset 2</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Lat Pull Down	/	/	/	/
Upright Row	/	/	/	/
Straight Arm Lat Pull-down	/	/	/	/
<b>SHOULDER Triset 3</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Dumbbell Shoulder Press	/	/	/	/
Cleans	/	/	/	/
Seated Bent Over Row	/	/	/	/
<b>ARM/BICEPS Triset 4</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Standing Bicep Curl	/	/	/	/
Preacher Curl	/	/	/	/
Hammer-Grip Bicep Curl	/	/	/	/
<b>ARM/TRICEPS Triset 5</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Tricep Pushdown	/	/	/	/
French Curls	/	/	/	/
Tricep Kickbacks	/	/	/	/
<b>ABDOMINAL</b>				
Crunch Circuit	25-30			
Oblique Crunches	30-40 each side			
Superman	20-25			

**Beginner Goals:** Perform equal volumes of work for all upper-body parts to strengthen stabilizer muscles. Start to see significant increases in muscle size and definition. Combine cardiovascular training with resistance training to maximize benefit.

**Advanced Goals:** Bolster upper-body muscle and strength with multiple upper-body workouts in the same week. Increase your body's ability to tolerate max cardiovascular effort in order to improve endurance and increase metabolism.

# Get Stronger

## WORKOUT A

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>Squats</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Warm-up Set 1&2 6 reps	/	/	/	/
Set 3 5-8 reps	/	/	/	/
Set 4 5-8 reps	/	/	/	/
Set 5 5-8 reps	/	/	/	/
<b>Lunges</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Warm-up Set 1&2 6 reps	/	/	/	/
Set 3 5-8 reps	/	/	/	/
Set 4 5-8 reps	/	/	/	/
Set 5 5-8 reps	/	/	/	/
<b>Leg Curls</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Warm-up Set 1&2 6 reps	/	/	/	/
Set 3 5-8 reps	/	/	/	/
Set 4 5-8 reps	/	/	/	/
Set 5 5-8 reps	/	/	/	/
<b>Leg Extensions</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Warm-up Set 1&2 6 reps	/	/	/	/
Set 3 5-8 reps	/	/	/	/
Set 4 5-8 reps	/	/	/	/
Set 5 5-8 reps	/	/	/	/
<b>Seated Calves</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Warm-up Set 1&2 6 reps	/	/	/	/
Set 3 5-8 reps	/	/	/	/
Set 4 5-8 reps	/	/	/	/
Set 5 5-8 reps	/	/	/	/
<b>ABDOMINAL</b>				
Sit-ups	90 sec max			
Weighted sit-ups	45 sec max			
Incline sit-ups	30 sec max			

# Get Stronger in 4 WEEKS

## WORKOUT B

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>ROPE CLIMB</b>				
Set 1 30 FT				
Set 2 (Drop) 20 FT				
<b>CURL AND PRESS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>LATERAL RAISE</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>90-Degree Lateral Raise</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>Dumbbell Shoulder Press</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>Lateral Raise</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>Dumbbell Row</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>Triceps Kickback</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 15 reps	/	/	/	/
Set 2 (Drop) 10 reps	/	/	/	/
<b>ABDOMINAL</b>				
CRUNCH	35-40			
REVERSE CRUNCH	20-25			
FLUTTER KICKS	35-50			

**Goals:** Perform low-repetition sets with heavier weights than you've been using (This will rapidly improve your strength). Do longer cardiovascular intervals. Improve shoulder-joint integrity to help keep yourself injury-free.

# Prepare for Airborne School

## WORKOUT A

<b>EXERCISE</b>	<b>WEEK 1</b>	<b>WEEK 2</b>	<b>WEEK 3</b>	<b>WEEK 4</b>
<b>Jump Squat</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Leg Curls</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Dumbbell Step-ups</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Standing Calf Raises</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>	<b>Weight/Reps</b>
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>ABDOMINAL</b>				
Sit-ups	50-100			
Crunches	50-100			
Flutter Kicks	25-50			

\* Practice jump squats with feet and knees together. Reduce the rest time between work sets to fatigue muscles and stimulate muscle growth.

# Prepare for Airborne School

## WORKOUT B

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>Pull-ups</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Reverse Close-grip Lat Pull-downs Using Rope</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Deadlift</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>Push-ups (Regular)</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 25-50	/	/	/	/
Set 2 25-50	/	/	/	/
Set 3 25-50	/	/	/	/
<b>Push-ups (Close)</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 25-50	/	/	/	/
Set 2 25-50	/	/	/	/
Set 3 25-50	/	/	/	/
<b>Front Raises</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Set 1 12-15	/	/	/	/
Set 2 12-15	/	/	/	/
Set 3 12-15	/	/	/	/
<b>ABDOMINAL</b>				
Crunches	50-100			
Reverse Crunches	25-50			
Flutter Kicks	25-50			

For push-ups and pull-ups adjust repetitions to ability. Do negative repetitions with assistance to achieve muscle failure. Rest 2 minutes between sets

# Prepare for NALC/Air-Assault School

## WORKOUT A

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>OBSTACLE COURSE OR CIRCUIT</b> The ideal Obstacle Course would replicate what is found at Air-Assault School. If this is not available, develop a Circuit that includes a rope climb and 6 foot wall at a minimum. Run a minimum of 30 seconds between obstacles.				
<b>GUERRILLA CIRCUIT</b> Conduct each exercise for 20-40 seconds with no rest between				
All Fours Run	20-40 sec	20-40 sec	20-40 sec	20-40 sec
Broad Jump	20-40 sec	20-40 sec	20-40 sec	20-40 sec
Crab Walk	20-40 sec	20-40 sec	20-40 sec	20-40 sec
Jump Squat	12-15 Reps	12-15 Reps	12-15 Reps	12-15 Reps
<b>AGILITY EXERCISES</b>				
Hour Glass Drill				
Tree Line Shuffle Drill				
Ski Hops				
Star Drill				
<b>ABDOMINAL</b>				
SIT-UPS	50-100			
SIDE RAISE (Left)	15-25			
SIDE RAISE (Right)	15-25			

\*Run the Obstacle Course or Circuit at least twice. Work up to doing 3 sets (warm-up, moderate and full speed). Rest 2-5 minutes between sets



# Prepare for NALC & Air-Assault School

## WORKOUT B

EXERCISE	WEEK 1	WEEK 2	WEEK 3	WEEK 4
<b>BENCH PRESS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Flat 5-8 Reps	/	/	/	/
Incline 5-8 Reps	/	/	/	/
Decline 5-8 Reps	/	/	/	/
<b>Dumbbell Shoulder Press</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Work Set 1 5-8 Reps	/	/	/	/
Work Set 2 5-8 Reps	/	/	/	/
Work Set 3 5-8 Reps	/	/	/	/
<b>BICEPS CURL</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Work Set 1 5-8 Reps	/	/	/	/
Work Set 2 5-8 Reps	/	/	/	/
Work Set 3	/	/	/	/
<b>TRICEPS PUSHDOWN</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Work Set 1 5-8 Reps	/	/	/	/
Work Set 2 5-8 Reps	/	/	/	/
Work Set 3 5-8 Reps	/	/	/	/
<b>MACHINE ROW</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Work Set 1 5-8 Reps	/	/	/	/
Work Set 2 5-8 Reps	/	/	/	/
Work Set 3 5-8 Reps	/	/	/	/
<b>PULL-UPS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Wide 8-10 Reps	/	/	/	/
Wrist-out 8-10 Reps	/	/	/	/
Wrist-in 8-10 Reps	/	/	/	/
<b>PUSH-UPS</b>	Weight/Reps	Weight/Reps	Weight/Reps	Weight/Reps
Wide 25-50 Reps	/	/	/	/
Regular 25-50 Reps	/	/	/	/
Close 25-50 Reps	/	/	/	/
<b>ABDOMINAL</b>				
ELEVATED SIT-UPS	50-100			
INCLINE KNEE-UP	25-50			
CYCLING TWIST	25-50			



# Resistance Exercises

## LEGS

### Quadriceps

#### **Front Barbell Squat**

##### Preparation

From a rack with barbell upper chest height, position bar on front of the shoulders. Cross arms and place hands on top of barbell with upper arms parallel to floor. Dismount bar from rack. Can also be performed on the Smith machine.

##### Execution

Descend until thighs are just past parallel. Extend knees and hips until legs are straight.

##### Return and repeat.

##### Comments

Keep head forward, back straight and feet flat on the floor; equal distribution of weight through fore foot and heel.

#### **Barbell Squat**

##### Preparation

From a rack with barbell upper chest height, position bar on the back of the shoulders and grasp barbell to sides. Dismount bar from rack. Can also be performed on a squat machine, Smith machine, or with dumbbells.

##### Execution

Descend until thighs are just past parallel to floor. Extend knees and hips until legs are straight. Return and repeat.

##### Comments

Keep head forward, back straight and feet flat on the floor; equal distribution of weight throughout forefoot and heel.

#### **Jump Squat**

##### Preparation

Assume the squat position on a flat surface. You need squat no further than parallel to the ground.

##### Execution

Jump vertically as high as you can and land in the start position. Repeat.

#### **Hack Squat**

##### Preparation

Position barbell just behind legs. With feet flat on floor, squat down and grasp barbell from behind with an overhand grip. Can also be performed on a hack squat machine or Smith machine.

#### Execution

Lift bar by extending hips and knees to full extension. Descend until thighs are close to parallel to floor. Repeat.

#### Comments

Throughout lift keep hips low, shoulders high, arms and back straight.

## **Lunge**

#### Preparation

From a rack with barbell upper chest height, position bar on the back of the shoulders and grasp barbell to sides. Dismount bar from rack. Can also be performed with dumbbells.

#### Execution

Lunge forward with first leg. Land on heel then forefoot. Lower body by flexing knee and hip of front leg until knee of rear leg is almost in contact with floor. Return to original standing position by forcibly extending the hip and knee of the forward leg. Repeat by alternating lunge with opposite leg.

#### Comments

Keep torso upright during lunge.

## **Rear Lunge**

#### Preparation

From a rack with barbell upper chest height, position bar on the back of the shoulders and grasp barbell to sides. Dismount bar from rack. Can also be performed with dumbbells.

#### Execution

Extend one leg back on forefoot. Lower body on other leg by flexing knee and hip of front leg until knee of rear leg is almost in contact with floor. Return to original standing position by extending the hip and knee of the forward leg. Repeat by alternating lunge with opposite leg.

#### Comments

Keep torso upright during lunge; flexible hip flexors are important. A long lunge emphasizes the Gluteus Maximus; a short lunge emphasizes Quadriceps.

## **Step-up**

#### Preparation

Stand facing the side of a bench. Position bar on the back of the shoulders or grasp barbell to sides.

#### Execution

Place foot of first leg on bench. Stand on bench by extending the hip and knee of the first leg and place the foot of second leg on bench. Step down with second leg by flexing the hip and knee of first leg. Return to original standing position by placing foot of first leg to floor. Repeat first step with opposite leg alternating first steps between legs.

#### Comments

Keep torso upright during exercise. Stepping a distance from the bench emphasizes the Gluteus Maximus; stepping close to the bench emphasizes Quadriceps.

## **45° Leg Press**

### Preparation

Sit on machine with back on padded support. Place feet on platform. Extend hips and knees. Release dock lever and grasp handles to sides.

### Execution

Lower platform by flexing hips and knees until hips are completely flexed. Return by extending knees and hips. Repeat.

### Comments

Adjust safety brace and back support to accommodate near full range of motion without forcing hips to bend at waist.

## **Leg Extension**

### Preparation

Sit on apparatus with back against padded back support. Place front of lower leg under padded lever. Position knee articulation at same axis as lever fulcrum. Grasp handles to sides for support.

### Execution

Move lever forward by extending knees until leg are straight. Return lever to original position by bending knees. Repeat.

### Comments

Stabilizers are used during heavy resistances to prevent body rising off of seat.

## **Seated Leg Press**

### Preparation

Sit on machine with back on padded support. Place feet on platform. Grasp handles to sides.

### Execution

Push platform away by extending knees and hips. Return until hips are completely flexed. Repeat.

### Comments

Adjust seat and back support to accommodate near full range of motion without forcing hips to bend at waist.

## **Hamstrings**

### **Good-morning**

#### Preparation

Position barbell on back of shoulders and grasp bar to sides.

#### Execution

Bend hips to lower torso forward until parallel to the floor. Raise torso until hips are extended. Repeat.

#### Comments

Throughout lift keep back and knees straight

## **Straight-leg Deadlift**

### Preparation

Stand with a shoulder width or narrower stance. Grasp barbell with a shoulder width mixed grip or slightly wider; or hold dumbbells at side.

### Execution

With knees straight, lower bar by bending hips until hamstrings are tight, or just before lower back bends. Lift the bar by extending hips until straight. Pull shoulders back at top of lift if rounded. Repeat.

### Comments

Throughout lift keep arms, knees, and back straight.

## **Lying Leg Curl Machine**

### Preparation

Facing bench, stand between bench and lever pads. Lie prone on bench with knees just beyond edge of bench and lower legs under lever pads. Grasp handles.

### Execution

Raise lever pads to back of thighs by flexing knees. Lower lever pads until knees are straight. Repeat.

### Comments

Keep torso on bench to reduce hyperextension of the lower back. Most machines are angled at the users hip to position the hamstring in a more favorable mechanical position.

## **Seated Leg Curl Machine**

### Preparation

Sit on apparatus with back against padded back support. Place back of lower leg on top of padded lever. Secure lap pad against thigh just above knees. Grasp handles on lap support.

### Execution

Pull lever to back of thighs by flexing knees. Return lever until knees are straight. Repeat.

## **Standing Leg Curl Machine**

### Preparation

Stand in machine with one or both legs against pads dependent upon design. Stand foot of resting leg on elevated platform. Position exercising leg: lower leg against lever pad and knee just below thigh pad. Bend over by bending hips and grasp handles for support if available.

### Execution

Pull lever up to back of thigh by flexing knee. Return lever until knee is straight. Repeat. Continue with opposite leg.

### Comments

If hips are not significantly bent, hip flexors act as antagonist stabilizers.

## **Thigh Adduction - Cable**

### Preparation

Stand in front of low pulley facing to one side. Attach cable cuff to near ankle. Step out away from the stack with a wide stance and grasp ballet bar. Stand on far foot and allow near leg to be pulled toward low pulley.

#### Execution

Move near leg just in front of far leg by abduction the hip. Return and repeat. Turn around and continue with opposite leg.

### **Seated Thigh Adduction Machine**

#### Preparation

Sit in machine with heels on bars. Pull in on lever to position legs apart. Release lever into position and grasp bars to sides.

#### Execution

Move legs toward one another by adduction of the hip. Return and repeat.

### **Seated Thigh Abduction Machine**

#### Preparation

Sit in machine with heels on bars. Pull in on lever to position legs together. release lever into position and grasp bars to sides.

#### Execution

Move legs away from one another by abduction of the hip. Return and repeat.

## **Calves**

### **Standing Calf Raise**

#### Preparation

Set barbell on power rack upper chest height with calf block under barbell. Position back of shoulders under barbell with both hands to sides. Position toes and balls of feet on calf block with arches and heels extending off. Lean barbell against rack and raise from supports by extending knees and hips. Support barbell against verticals with both hands to sides. Can be done on the leg press machine, with dumbbells, standing one-legged, donkey machine, seated calf machine, and standing calf machine.

#### Execution

Raise heels by extending ankles as high as possible. Lower heels by bending ankles until calves are stretched. Repeat.

#### Comments

Keep knees straight throughout exercise or bend knees slightly only during stretch.

## **Back**

### **Bent-over Row**

#### Preparation

Bend knees slightly and bend over bar with back straight. Grasp bar with a wide overhand grip. Can also be performed on machine.

#### Execution

Pull bar to upper waist. Return until arms are extended and shoulders are stretched forward. Repeat.

### **Bent-over Row w/Dumbbells**

#### Preparation

Kneel over side of bench with arm and leg to side. Grasp dumbbell.

#### Execution

Pull dumbbell to side until upper arm is just beyond horizontal or height of back. Return until arm is extended and shoulder is stretched forward. Repeat. Continue with opposite arm.

#### Comments

Allow scapula to articulate but do not rotate torso in an effort to throw weight up.

### **Bent Knee Good-morning**

#### Preparation

Position barbell on back of shoulders and grasp bar to sides.

#### Execution

Bend hips to lower torso forward until parallel to the floor. Bend the knees slightly during the decent. Raise torso until hips are extended. Repeat.

#### Comments

Target muscle is exercised isometrically. Throughout lift keep back straight. Quadriceps can be kept bent throughout movement.

### **Deadlift**

#### Preparation

With feet flat beneath bar squat down and grasp bar with a shoulder width or slightly wider over hand or mixed grip. May use dumbbells also.

#### Execution

Lift bar by extending hips and knees to full extension. Pull shoulders back at top of lift if rounded. Return and repeat.

#### Comments

Target muscle is exercised isometrically. Throughout lift keep hips low, shoulders high, arms and back straight. Keep bar close to body to improve mechanical leverage.

### **Stiff-leg Deadlift**

#### Preparation

Stand with a shoulder width or narrower stance on an 8" platform with feet flat beneath bar. Bend over and grasp barbell with a shoulder width or slightly wider overhand or mixed grip. May use dumbbells also.

#### Execution

With knees bent, lift the bar by extending at hips until standing upright. Pull shoulders back at top of lift if rounded. Extend knees at top if desired. Lower bar to the top of the feet by bending hips. Bend the knees slightly during the decent and keep waist straight, flexing only slightly at the bottom. Repeat.

#### Comments

Lower back may bend slightly during full hip flexion. Target muscle is exercised isometrically if lower back does not bend. Throughout lift keep arms and back straight. Quadriceps can be kept bent throughout movement.

### **Shrug**

#### Preparation

Stand holding barbell with a overhand or mixed grip; shoulder width or slightly wider. May use dumbbells, cable or machine also.



#### Execution

Elevate shoulders as high as possible. Lower and repeat.

#### Comments

Since this movement becomes more difficult as full shoulder elevation is achieved, a height criteria for shoulder elevation may be needed. For example, raising the shoulders until the slope of the shoulders become horizontal may be considered adequate depending upon individual body structure.

### **Lying Row**

#### Preparation

Lie chest down on elevated bench. Grasp dumbbells below.

#### Execution

Pull dumbbells to sides until upper arm is just beyond horizontal or height of back. Return until arms are extended and shoulders are stretched forward. Repeat.

#### Comments

Bench should be high enough to allow shoulders to stretch forward without dumbbells hitting floor.

### **Back Extension Machine**

#### Preparation

Sit in machine with back against padded lever. Push hips back against back of seat by pushing feet against platform. Arch back in "C" shape.

#### Execution

Extend spine until fully hyperextended. Return and repeat.

#### Comments

To avoid hip movement, push hips back into seat by pushing feet into platform throughout exercise. Position foot platform so a small space remains between edge of seat and back of lower thigh. Use seat belt if it becomes difficult to stabilize hips.

### **Hyper-extension bench**

#### Preparation

Position thighs prone on padding. Hook heels on platform lip or under padded brace. Hold weight to chest or behind neck.

#### Execution

Lower body by bending waist until fully flexed. Raise, or extend waist until torso is parallel to legs. Repeat.

#### Comments

Although articulation of the waist is emphasized, some hip extension may accommodate movement. If weight is positioned behind head, neck extensors act as stabilizers

### **Pullover Machine**

#### Preparation

Adjust seat height so lever is near shoulder axis. Sit on machine and Push foot lever. Place elbows in pads and grasp bar from behind. Release foot lever and place feet on platform or to sides.

#### Execution

Pull over until elbows are to sides. Return until shoulder is fully flexed, or upper arm is parallel to torso. Repeat.

#### Comments

When finished Push foot lever before releasing arm from lever. Release foot lever after releasing arm from lever.

### **One Arm High Row**

#### Preparation

Sit on platform or bench with knees bent. Grasp cable stirrup with one hand. Straighten lower back and position knees with a slight bend. Allow shoulder with stirrup to be pulled forward with a slight twist through waist. Also done on machine.

#### Execution

Pull cable attachment to side, slightly twisting through waist. Pull shoulders back and push chest forward during contraction. Return until arm is extended and shoulder is stretched forward. Repeat.

#### Comments

It is optional to bend the lower back forward during the stretch and pull it upright during contraction. In which case, the Erector Spinae becomes a synergist muscle.

### **One Arm Row**

#### Preparation

Sit on platform or bench with knees bent. Grasp cable stirrup with one hand. Straighten lower back and position knees with a slight bend. Allow shoulder with stirrup to be pulled forward with a slight twist through waist. Also done on machine.

#### Execution

Pull cable attachment to side, slightly twisting through waist. Pull shoulders back and push chest forward during contraction. Return until arm is extended and shoulder is stretched forward. Repeat.

#### Comments

It is optional to bend the lower back forward during the stretch and pull it upright during contraction. In which case, the Erector Spinae becomes a synergist muscle.

### **Seated High Row**

#### Preparation

Sit on platform with knees bent and grasp cable attachment. Straighten lower back and position knees with a slight bend. Also done on machine.

#### Execution

Pull cable attachment to waist. Pull shoulders back and push chest forward during contraction. Return until arms are extended and shoulders are stretched forward. Repeat.

#### Comments

It is optional to bend the lower back forward during the stretch and pull it upright during contraction. In which case, the Erector Spinae becomes a Synergists muscle.

### **Seated Row**

#### Preparation

Sit on platform with knees bent and grasp cable attachment. Straighten lower back and position knees with a slight bend. Also done on machine.

#### Execution

Pull cable attachment to waist. Pull shoulders back and push chest forward during contraction. Return until arms are extended and shoulders are stretched forward. Repeat.

Comments

It is optional to bend the lower back forward during the stretch and pull it upright during contraction.

## **Close Grip Pull-down**

Preparation

Grasp parallel cable attachment. Sit with thighs under supports. Also done on machine.

Execution

Pull down cable attachment to upper chest. Return until arms and shoulders are fully extended. Repeat.

## **Front Pull-down**

Preparation

Grasp cable bar with a wide grip. Sit with thighs under supports. Also done on machine.

Execution

Pull down cable bar to upper chest. Return until arms and shoulders are fully extended. Repeat.

## **Rear Pull-down**

Preparation

Grasp cable bar with a wide grip. Sit with thighs under supports.

Execution

Pull down cable bar behind neck. Return until arms and shoulders are fully extended. Repeat.

## **Underhand Pull-down**

Preparation

Grasp cable bar with a underhand grip. Sit with thighs under supports. Also done on machine.

Execution

Pull down cable bar to upper chest until elbows are to the sides. Return until arms and shoulders are fully extended. Repeat.

## **Chin-up**

Preparation

Step up and grasp bar with wide overhand grip. Step down onto assistance lever or platform. Also done on machine.

Execution

Pull body up until the chin is just above the bar. Lower body until arms and shoulders are fully extended. Repeat.

Comments

If no assisted machine is used, assist as needed by allowing training partner to pull feet up behind legs or push self up with legs on elevation.

## **Close Grip Chin-up**

### Preparation

Step up and grasp parallel grips. Step down onto assistance lever or platform. Also done on machine.

### Execution

Pull body up until elbows are to the sides. Lower body until arms and shoulders are fully extended. Repeat.

### Comments

If no assisted machine is used, assist as needed by allowing training partner to pull feet up behind legs or push self up with legs on elevation.

## **Pull-up**

### Preparation

Step up and grasp bar with an wide overhand grip. Step down onto assistance lever or platform. Also done on machine.

### Execution

Pull body up until neck reaches the height of the hands. Lower body until arms and shoulders are fully extended. Repeat.

### Comments

If no assisted machine is used, assist as needed by allowing training partner to pull feet up behind legs or push self up with legs on elevation.

## **Rear Pull-up**

### Preparation

Step up and grasp bar with an overhand wide grip. Step down onto assistance lever or platform.

### Execution

Pull body up until the bar touches the back of the neck. Lower body until arms and shoulders are fully extended. Repeat.

### Comments

If no assisted machine is used, assist as needed by allowing training partner to pull feet up behind legs or push self up with legs on elevation.

# **Chest**

## **Bench Press**

### Preparation

Lie supine on bench. Dismount barbell from rack over the upper chest using a wide oblique overhand grip. Can be performed with dumbbells, on smith machine or press machine.

### Execution

Lower weight to upper chest. Press bar until arms are extended. Repeat.

## **Decline Bench Press**

### Preparation

Lie supine on decline bench with feet under leg brace. Dismount barbell from rack over the chest using a wide oblique overhand grip. Can be performed with dumbbells, on smith machine or decline bench machine.

Execution

Lower weight to upper chest. Press bar until arms are extended. Repeat.

### **Incline Bench Press**

Preparation

Lie supine on incline bench. Dismount barbell from rack over the upper chest using a wide oblique overhand grip. Can be performed with dumbbells, on smith machine or incline bench machine.

Execution

Lower weight to upper chest. Press bar until arms are extended. Repeat.

### **Incline Shoulder Raise**

Preparation

Lie supine on incline bench. Dismount barbell from rack with a shoulder width overhand grip. Position barbell over the upper chest with elbows extended. Can be performed with dumbbells, on smith machine or incline press machine.

Execution

Raise shoulders toward bar as high as possible. Lower shoulders to bench and repeat.

### **Chest Dip Machine**

Preparation

Mount a wide dip bar with an oblique grip. Step down onto assistance lever. Can also be performed on parallel bars, with or without weight.

Execution

Push body up with elbows away from body and hips slightly bent. Lower body until chest is slightly stretched. Repeat.

### **Lying Fly**

Preparation

Grasp two opposing high pulley dumbbell attachments. Lie supine on bench, in the middle and perpendicular to both pulleys. Slightly bend elbows and internally rotate shoulders so elbows are back. Can also be performed on lying fly machine.

Execution

Bring cable attachments together in a hugging motion with elbows in a fixed position and shoulders internally rotated so elbows are to the sides. Return to starting position until chest muscle are stretched. Repeat.

### **Cable Crossover**

Preparation

Grasp two opposing high pulley dumbbell attachments. Stand in the middle and perpendicular to both pulleys. Bend hips, knees and elbows slightly. Internally rotate shoulders so elbows are back initially.

Execution

Bring cable attachments together in a hugging motion with elbows in a fixed position and shoulders internally rotated so elbows are to the sides. Return to starting position until chest muscles are stretched. Repeat.

## **Pullover**

### Preparation

Lie upper back perpendicular on bench. Flex hips slightly. Grasp one dumbbell from behind or from side with both hands under inner plate of dumbbell. Position over chest and fix elbows 15° to 30° throughout exercise.

### Execution

Lower dumbbell over and beyond head until upper arm is parallel to torso. Return and repeat.

## **Pec Deck Fly**

### Preparation

Sit in machine with back on pad. If available, push foot lever until padded lever moves forward. Place forearms on padded lever. Position upper arms approximately parallel. Release foot lever.

### Execution

Push levers together. Return until chest muscles are stretched. Repeat.

# **Shoulders**

## **Behind Neck Press**

### Preparation

Grasp barbell with overhand grip from rack or clean from floor. Position bar behind neck. Can be done on machine or using dumbbells.

### Execution

Press bar until arms are extended overhead. Return behind neck and repeat.

## **Front Raise**

### Preparation

Grasp barbell with overhand grip. Can be done on machine or using dumbbells.

### Execution

Raise barbell with elbows fixed in a 10° to 30° angle throughout until upper arm is parallel to the floor. Lower and repeat

## **Military Press**

### Preparation

Grasp barbell from rack or clean barbell from floor with overhand grip, slightly wider than shoulder width. Position bar in front of neck. Can also be done on machine or using dumbbells.

### Execution

Press bar until arms are extended overhead. Lower to front of neck and repeat

## **Upright Row**

### Preparation

Grasp bar with shoulder width or slightly narrower overhand grip. Can be done on machine or using dumbbells.

Execution

Pull bar to neck with elbows leading. Allow wrists to flex as bar rises. Lower and repeat.

## **Lateral Raise**

Preparation

Grasp stirrup cable attachment. Stand facing with side of resting arm toward low pulley.

Grasp ballet bar if available. Can be done using dumbbells, seated, or standing.

Execution

With elbow slightly bent, raise arm to side away from low Pulley until elbow is shoulder height. Lower and repeat.

## **Lying Rear Lateral Raise**

Preparation

Lie chest down on elevated bench. Grasp dumbbells or cable attachment below to each side.

Execution

Raise upper arms to sides until shoulder height. Maintain upper arms perpendicular to torso and a fixed elbow position (10° to 30° angle) throughout exercise. Maintain height of elbows above wrists by raising "pinkie" side up. Lower and repeat.

Comments

Bench should be high enough to prevent dumbbells from hitting floor.

# **Arms**

## **Triceps**

### **Triceps Dip**

Preparation

Mount a shoulder width dip bar. Step down onto assistance lever if needed.

Execution

Push body up with elbows close to body and hips straight. Lower body until shoulders are slightly stretched. Repeat.

### **Close Grip Bench Press**

Preparation

Lie on bench and grasp barbell from rack with a close grip.

Execution

Lower weight to chest with elbows close to body. Return and repeat.

Variation

Can be done with cables or using dumbbells.

### **Lying Triceps Extension**

Preparation

Lie on bench with a narrow overhand grip on the barbell. Position barbell over the forehead with arms extended.

#### Execution

Lower the bar by bending the elbow. As the bar nears the head move the elbows slightly back just enough to allow the bar to clear around the curvature of the head. Extend the arm. As the bar clears the head reposition the elbows to its former position until the arm is fully extended. Repeat.

#### Comments

With the arms fully extended, the bar can be brought back over the upper chest and the shoulders can be internally rotated between repetitions as needed to allow for a relative release of tension in the muscles.

#### Variation

Can be done with cable or using dumbbell.

### **Triceps Extension**

#### Preparation

Position barbell overhead with a narrow overhand grip. Can be done on machine or using dumbbells.

#### Execution

Lower forearm behind upper arm with elbows remaining overhead. Extend forearm overhead. Lower and repeat.

#### Comments

Let the barbell pull the arm back to maintain full shoulder flexion.

### **Pushdown**

#### Preparation

Grasp cable attachment with overhand grip. Position elbow to side.

#### Execution

Extend arm down. Return until forearm is close to upper arm. Repeat.

#### Comments

The elbow can travel up a few inches at the top of the motion. Step close to cable to provide resistance at the top of the motion.

### **Kickback**

#### Preparation

Kneel over bench with arm supporting body. Grasp dumbbell. Position upper arm parallel to floor. Can also be done using cables.

#### Execution

Extend arm until it is straight. Return and repeat. Continue with opposite arm.

#### Comments

For greater range of motion, upper arm can be positioned with elbow slightly higher than shoulder.

### **Bench Dip**

#### Preparation

Place weight on lap. Place hands on the edge of a bench, feet on adjacent bench.

#### Execution

Lower body until full stretch or rear end touches floor. Raise body and repeat.



# **Biceps**

## **Curl**

### Preparation

Grasp bar with a shoulder width under hand grip. Can be done on machine, with cables, or using dumbbells.

### Execution

With the elbows to the side, raise the bar until forearms are vertical. Lower until the arms are fully extended. Repeat.

### Comments

When the elbow is fully flexed, the elbow should only travel forward a few inches allowing the forearm to be no more than perpendicular to the floor to allow for a relative release of tension in the muscles between repetitions.

## **Incline Curl**

### Preparation

Sit back on a 45-60 degree incline bench. With arms hanging down straight, position two dumbbells with palms facing in.

### Execution

With elbows back to the sides, raise one dumbbell and rotate forearm until forearm is vertical to the floor and the palm faces the shoulder. Lower to original position and repeat with alternative arm.

### Comments

The biceps may be exercised alternating (as described), simultaneous, or in a simultaneous-alternating fashion. When the elbow is fully flexed, the elbow should only travel forward a few inches allowing the forearm to be no more than perpendicular to the floor to allow for a relative release of tension in the muscles between repetitions.

## **Preacher Curl**

### Preparation

Sit on preacher bench placing back of arms on pad. The seat should be adjusted to allow the arm pit to rest near the top of the pad. Grasp curl bar with shoulder width underhand grip. Can be done on machine or using dumbbells.

### Execution

Raise the bar until forearms are perpendicular to floor with the back of the upper arm remaining on the pad. Lower the barbell until arm is fully extended. Repeat.

## **Concentration Curl**

### Preparation

Sit on bench. Grasp dumbbell between feet. Place back of upper arm to inner thigh. Lean into leg to raise elbow slightly.

### Execution

Raise dumbbell to front of shoulder. Lower dumbbell until arm is fully extended. Repeat.

# **Forearms**

## **Reverse Curl**

### Preparation

Grasp bar with a shoulder width over hand grip. Can be done on machine or using dumbbells.

### Execution

With the elbows to the side, raise the bar until forearms are vertical. Lower until the arms are fully extended. Repeat.

### Comments

When the elbow is fully flexed, the elbow should only travel forward a few inches allowing the forearm to be no more than perpendicular to the floor to allow for a relative release of tension in the muscles between repetitions.

## **Reverse Preacher Curl**

### Preparation

Sit on preacher bench placing back of arms on pad. The seat should be adjusted to allow the arm pit to rest near the top of the pad. Grasp curl bar with shoulder width overhand grip. Can be done on machine or using dumbbells.

### Execution

Raise the bar until forearms are perpendicular to floor with the back of the upper arm remaining on the pad. Lower the barbell until arm is fully extended. Repeat.

## **Hammer Curl**

### Preparation

Position two dumbbells to sides, palms facing in, arms straight.

### Execution

With elbows to the sides, raise one dumbbell until forearm is vertical to the floor and the thumb faces the shoulder. Lower to original position and repeat with alternative arm.

### Comments

The biceps may be exercised alternating (as described), simultaneous, or in a simultaneous-alternating fashion. When the elbow is fully flexed, the elbow should only travel forward a few inches allowing the forearm to be no more than perpendicular to the floor to allow for a relative release of tension in the muscles between repetitions.

## **Wrist Curl**

### Preparation

Sit and grasp bar with narrow to shoulder width underhand grip. Rest forearms on thighs with wrists just beyond knees. Can be done on machine or using dumbbells.

### Execution

Allow the barbell to roll out of the palms down to the fingers. Grip barbell back up and flex wrists. Lower and repeat.

## **Reverse Wrist Curl**

### Preparation

Sit and grasp bar with narrow to shoulder width overhand grip. Rest forearms on thighs with wrists just beyond knees. Can be done on machine or using dumbbells.

#### Execution

Hyperextend wrist and return until wrist are fully flexed. Repeat.

## Abdominal

### Inline Sit-up

#### Preparation

Sit on apparatus with lower leg secured under padded bar. Hold weight to front of chest or behind neck or use no weight.

#### Execution

Lower body back until hips are almost extended. Raise body by flexing hips until torso is upright. Repeat.

#### Comments

Exercise can be performed without added weight until more resistance is needed. Raise incline to increase resistance.

### Hanging Leg Raise

#### Preparation

Place weight between ankles or use no weight. Grasp and hang from high bar.

#### Execution

Raise legs by flexing hips and knees until thighs are just pass parallel to floor. Return until hips and knees are extended. Repeat.

#### Comments

Exercise can be performed without added weight until more resistance is needed. Knees may be kept extended throughout leg raise to increase intensity.

### Incline Leg Raise

#### Preparation

Sit on incline board. Place weight between ankles or use no weight. Lie supine on incline board with torso elevated. Grasp foot hooks or sides of board for support.

#### Execution

Raise legs by flexing hips and knees until thighs are just past perpendicular to torso. Return until hips and knees are extended. Repeat.

#### Comments

Exercise can be performed without added weight until more resistance is needed. Elevate incline to increase resistance. Knees may be kept extended throughout leg raise to increase intensity.

### Leg Raise

#### Preparation

Sit on end of bench. Place weight between ankles, hook feet to cable attachment, or use no weight. Lie supine on bench with torso elevated. Grasp bench for support.

#### Execution

Raise legs by flexing hips and knees until thighs are just past perpendicular to torso. Return until hips and knees are extended. Repeat.

Comments

Exercise can be performed without added weight until more resistance is needed. Knees may be kept extended throughout leg raise to increase intensity.

## **Roman Chair Sit-up**

Preparation

Sit on apparatus with lower leg secured under padded bar. Hold weight to front of chest or behind neck or use no weight.

Execution

Lower body back until hips are almost extended. Raise body by flexing hips until torso is upright. Repeat.

Comments

Exercise can be performed without added weight until more resistance is needed. Rectus Abdominis and Obliques only contract dynamically if actual waist flexion occurs. With no waist flexion, Rectus Abdominis and External Oblique will only act to stabilize the pelvis and waist during hip flexion.

## **Vertical Leg Raise**

Preparation

Place weight between ankles or use no weight. Position body on padded parallel bars with hands on handles, back on vertical pad, and body weight supported on forearms.

Execution

Raise legs by flexing hips and knees until thighs are just past parallel to floor. Return until hips and knees are extended. Repeat.

Comments

Exercise can be performed without added weight until more resistance is needed. Knees may be kept extended throughout leg raise to increase intensity.

## **Kneeling Crunch**

Preparation

Kneel below a high pulley. Grasp cable rope attachment and place wrists against the head. Flex hips slightly and allow the weight to hyperextend the lower back.

Execution

With the hips stationary, flex the waist so the elbows travel toward the middle of the thighs. Return and repeat.

Variation

Can be done on machine.

## **Seated Crunch**

Preparation

Seat with back support away from a medium high Pulley. Grasp cable rope attachment with both hands and place securely over the both shoulders. Allow the weight to hyperextend the lower back slightly.

Execution

With the hips stationary, flex the waist so the elbows travel toward the hips. Return and repeat.

Can be done on machine.

## **Incline Crunch**

### **Preparation**

Hook feet under padding and lie supine on incline bench with hips bent. Hold plate behind neck or on chest with both hands or use no weight.

### **Execution**

Flex waist to raise upper torso from bench. Return until the back of the shoulders contact the padded incline board. Repeat.

### **Comments**

Exercise can be performed without added weight until more resistance is needed. Elevate incline to increase resistance.

Hip and knee flexors may be involved as stabilizers if incline is steep and no calf support is used.

## **Incline Hip Raise**

### **Preparation**

Sit on incline board. Place weight between ankles or use no weight. Lie supine on incline board with torso elevated. Grasp feet hooks or sides of board by head for support.

### **Execution**

Raise legs by flexing hips while flexing knees until hips are fully flexed. Continue to raise knees toward shoulders by flexing waist, raising hips from board. Return until waist, hips and knees are extended. Repeat.

### **Comments**

Exercise can be performed without added weight until more resistance is needed. Elevate incline to increase resistance. When raising hips, keep knees fully flexed as not to throw weight of lower legs over head.

## **Incline Twisting Crunch**

### **Preparation**

Hook feet under padding and lie supine on incline bench with hips bent. Hold plate behind neck or on chest with both hands or use no weight.

### **Execution**

Flex and twist waist to raise upper torso from bench to one side. Return until the back of the shoulders contact the padded incline board. Repeat to the opposite side alternating twists.

### **Comments**

Exercise can be performed without added weight until more resistance is needed. Elevate incline to increase resistance.

Hip and knee flexors may be involved as stabilizers if incline is steep and no calf support is used.

## **Incline Twisting Sit-up**

### **Preparation**

Hook feet under padding and lie supine on incline bench with hips bent. Hold plate behind neck or on chest with both hands.

#### Execution

Flex and twist the waist to one direction while raising the torso from bench by bending hips. Return until the back of the shoulders contact the padded incline board. Repeat to the opposite side alternating twists.

#### Comments

Pectineus, Adductor Longus, and Brevis do not assist in hip flexion since hips are already initially bent. Knee flexors may be involved as stabilizers if incline is steep and no calf support is used.

### **Twisting Crunch**

#### Preparation

Lie supine on bench with head hanging off and knees and hips bent. Hold plate behind neck or on chest with both hands.

#### Execution

Flex and twist waist to raise upper torso from bench to one side. Return until the back of the shoulders contact the padded board. Repeat to the opposite side alternating twists.

### **Side Bend**

#### Preparation

With side to low Pulley, grasp dumbbell cable with near arm. Stand with arm straight.

#### Execution

Bend waist to opposite side of cable. Lower and repeat. Turn around and continue with opposite side.

Can also be done with dumbbell.

### **Crunch Circuit**

#### Preparation

Lie flat on your back with your legs straight and raised so that the bottom of your feet are pointed towards the sky

#### Execution

Crunch for set number of repetitions then without resting. Bend knees so that legs are at 90°, continue to crunch for set number of repetitions, then without resting lower bent legs to the left 45° from the floor, continue to crunch for set number of repetitions, then without resting lower legs to the right 45° from the floor, continue to crunch for set number of repetitions, then without resting repeat first two steps.

### **Cycling Twist**

#### Preparation

Lie flat on the ground with your legs fully extended to the front 6 inches off the ground and your upper body raised at a 30 degree angle off the ground. Your hands are joined together at the waist.

#### Execution

On alternating movements you will turn your body to one side while bringing the opposite side knee toward your chest. Without allowing your feet to touch the ground, twist your body alternating to the other side. Your legs will alternate with your body twist in a similar movement to cycling. Your hands remain joined the entire time.

## Flutter Kicks

### Preparation

Lie on your back and place your hands under your buttocks for support. Lift your head, just enough to see your feet and then lift both legs 6 inches off the ground.

### Execution

Lift one leg at least 25 degrees then alternate your legs at a quick tempo.

# Flexibility Exercises

**Neck Rotation** - Stand with the back straight and feet shoulder width apart. Place the hands on hips. Roll the head slowly to the left, making a complete circle with the path of the head. Reverse direction. See figure



**Arm and Shoulder Rotation** - Stand with the back straight and feet shoulder width apart. Extend the arms outward to shoulder height. Rotate the shoulders forward, making a large circular motion with the arms. Reverse direction.



**Hip Rotation** - Stand with the back straight and feet shoulder width apart. Place the hands on hips. Rotate the hips clockwise while keeping the back straight. Reverse direction.



**Knee and Ankle Rotation** - Stand with the feet together, and bend at the waist with the knees slightly bent. Place the hands above the knees, and rotate the legs in a clockwise direction. Reverse direction.



**Neck and Shoulder Stretch** - Stand with the feet shoulder width apart and the arms behind the body. Grasp the left wrist with the right hand. Pull the left arm down and to the right. Tilt the head to the right. Hold this position for 10 to 15 seconds. Repeat the action with the right wrist, pulling the right arm down and to the left. Tilt the head to the left.



**Abdominal Stretch** - Stand and extend the arms upward and over the head. Interlace the fingers with palms turned upward. Stretch the arms up and slightly back. Hold this position for 10 to 15 seconds.





**Chest Stretch** - Stand and interlace the fingers behind the back. Lift the arms behind so that they move outward and away from the body. Lean forward from the waist. Hold this position for 10 to 15 seconds. Bend the knees before moving to the upright position. Return to the starting position.



**Upper-back Stretch** - Stand with the arms extended to the front at shoulder height with the fingers interlaced and palms facing outward. Extend the arms and shoulders forward. Hold this position for 10 to 15 seconds. Return to the starting position.



**Overhead Arm Pull** - Stand with the feet shoulder width apart. Raise the right arm, bending the right elbow and touching the right elbow and touching the right hand to the back of the neck. Grab the right elbow with the left hand, and pull to the left. Hold this position for 10 to 15 seconds. Return to the starting position. Do the same stretch, and pull the left elbow with the right hand for 10 to 15 seconds.



**Thigh Stretch** - Stand or lie on the stomach. Bend the left leg up toward the buttocks. Grasp the toes of the left foot with the right hand, and the heel to the left buttock. Extend the left arm to the side for balance. Hold this position for 10 to 15 seconds. Return to the starting position. Switch sides.



**Hamstring Stretch (Standing)** - Stand with the knees slightly bent. Bend forward keeping the head up, and reach toward the toes. Straighten the legs, and hold this position for 10 to 15 seconds.



**Hamstring Stretch (Seated)** - Sit on the ground with both legs straight and extended forward with the feet upright about six inches apart. Put the hands on the ankles or toes. Bend from the hips, keeping the back and head in a comfortable, straight line. Hold this position for 10 to 15 seconds.



**Groin Stretch (Standing)** - Lunge over to the left while keeping the right leg straight, the right foot facing straight ahead and entirely on the floor. Lean over the left leg while stretching the right groin muscles. Hold this position for 10 to 15 seconds. Repeat with the opposite leg.



**Groin Stretch (Seated)** - Sit on the ground with the soles together. Place the hands on or near the feet. Bend forward from the hips, keeping the head up. Hold this position for 10 to 15 seconds.



**Calf Stretch** - Stand straight with the feet together, arms extended downward, elbows locked, palms facing backward, fingers extended and joined, and head and eyes facing front. Move the right foot to the rear about two feet, and place the ball of the foot on the ground. Slowly press the right heel to the ground. Slowly bend the left knee while pushing the hips forward and arching the back slightly. Hold this position for 10 to 15 seconds. Return to the starting position. Repeat with the left foot.



**Hip and Back Stretch (Seated)** – Sit on the ground with the right leg forward and straight. Cross the left leg over the right while sitting erect. Keep the heels of both feet in contact with the ground. Slowly rotate the upper body to the left and look over the left shoulder. Reach across the left leg with the right arm, and push the left leg to your right. Use the left hand for support by placing it on the ground. Hold this position for 10 to 15 seconds. Repeat this stretch for the other side by crossing and turning in the opposite direction.



**Hip and Back Stretch (Lying Down)** - Lie on the back with the arms straight beside the body. Keep the legs straight and the knees and feet together. Bring the left leg straight back toward the head, leaving the right leg in the starting position. Bring the head and arms up. Grab the bent left leg below the knee, and pull it gradually to the chest. Hold this position for 10 to 15 seconds. Gradually return to the starting position. Repeat these motions with the opposite leg. Variation - Pull both knees to the chest. Pull the head up to the knees. Hold for 10 to 15 seconds. Return to the starting position.



## Agility Exercises

### **All fours run**

Place your hands in front of you and run using your hands and feet.

### **Broad Jump**

Jump forward on both feet in a series of broad jumps. Swing the arms vigorously to help with the jumps.

### **Crab Walk**

Place your hands and feet on the ground, hands behind you and stomach facing the sky. Walk on hands and feet from this position.

### **Hour Glass Drill**

Mark out a box 10 meters x 10 meters. Start at the front left corner of the box. Run across the front (shoulders square to the front) to the front right corner. Back peddle to the center spot, then out to the back right corner. Run across the back to the back left corner. Run forward to the center spot, then out to the left corner.

### **Three Line Shuffle Drill**

Mark three parallel lines on the floor, 4 feet apart. Straddle the center line. Begin by shuffling to the far left line, then to the far right, then left, etc. for the allotted time, crossing each line with the foot.

### **Bench Jumps**

From a standing position, bend your knees slightly and jump to the side (laterally), pushing off with both feet and landing up on a low bench/step. (Beginners may start out without the bench and simply land on the floor.) Come to a full stop, then jump off the other side of the bench and repeat.

### **Ski Hops**

Mark out lines approximately 3 feet apart and 10 meters in length. Start on one side of the paired lines and jump across to the outside of the other line, progressing down the 10 meters. At the end of the 10 meter, immediately jump across the two lines working backward to the original starting point. Forward; Back.

### **Star Drill**

Mark out eight points 3 to 5 steps from a center mark, creating a star pattern. Begin with standing at the center point. Now run out to the first point of the star then back to the center point. Continue to run to each point in the star coming back to the center each time.