



**LETTER OF
INTRODUCTION**



Pre-Season GOLF Training Manual

Hello Golf Enthusiast,

With the vast amount of people going to the golf course these days it is a wonder why few people are trying to take their game to the next level by getting themselves into better playing shape. Golf requires coordination, balance, and strength like every sport. Why are people not training for golf like they would for any other sport?

Golfers have lived with the fear that strength training would make them tight and inflexible, which in turn would slow down club speed reducing drive distance. The extent of a golfer's workout was to stretch and stay flexible while totally avoiding strength and cardiovascular training. Research has shown that proper strength and flexibility training will only enhance your skills in golf resulting in longer drives and better control. Power is key to improved performance in essentially all sports, including golf. For example, a more powerful golf swing results in a longer golf drive. In simple terms, power is determined by three factors: (1) the muscle force: (2) the distance over which the muscle force is applied: and (3) the movement speed. Who would not want this as part of their game? The key here is proper strength and flexibility training. This will not only improve your game but it will aid in the prevention of unwanted injuries due to weak muscle groups.

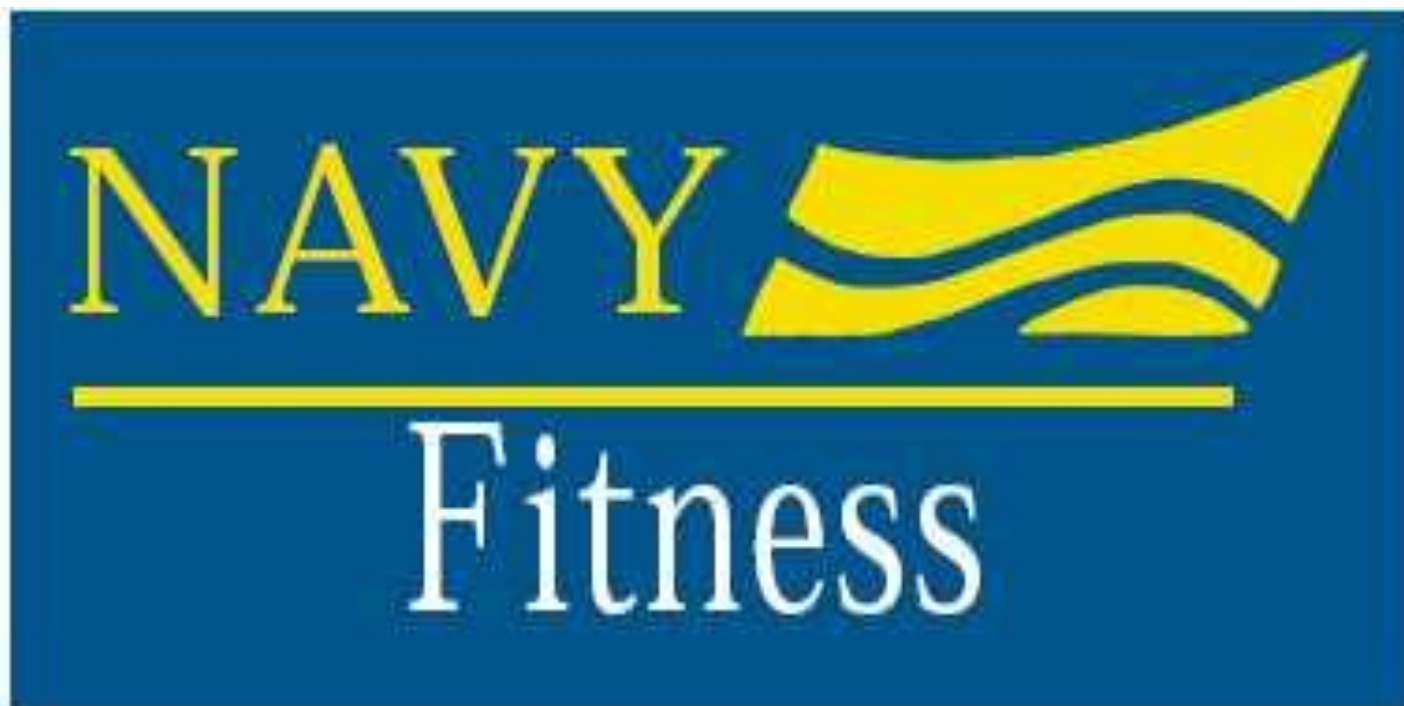
Golf is far from a huffing and puffing activity, cardiovascular conditioning has little practical application for improving golf performance. However, endurance exercise is beneficial with respect to heart health, and may help reduce fatigue during the last hour of play.

This manual is intended to give you a brief program that will help you get in better shape to play golf. It will take you through workouts specifically designed to improve your game. Follow each segment carefully and you will watch your game improve. If you have not already done this please consult a physician before starting any physical activity program.

A special thanks goes out to Dr. Wayne Westcott who aided in the development of the manual.

Good luck and have fun.

Marc J. Meeker
Program Manager Navy Fitness



WARM UP

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The key to beginning any training program is to get the body ready for activity. This is done by doing a combination of static and dynamic movements to bring blood to the muscles that will be worked during the training period. Static Stretching is stretching, using slow, controlled stretches, held in position for a period of time. Dynamic Stretching is repeated, fluid, gentle dynamic-range movements.

You should stretch at the following times:

- Before exercise, practice, and competition
- During exercise, practice, and competition
- Following Exercise, practice, and competition

This is done to increase the following to prepare you for exercise:

- Heart Rate
- Blood Flow
- Deep Muscle Temperature
- Respiration Rate
- Viscosity of Joint Fluids
- Perspiration
- Flexibility

Additionally for those who lack sufficient flexibility, extra stretching sessions during free time may be both relaxing and beneficial. Stretching can be done at night before going to bed, sitting watching TV or after a hot shower when you feel more relaxed

Consistency and time in a stretching program will show improvements in flexibility

Golf requires a large amount of flexibility from the legs, core muscles, and upper body. If any one of these areas is inflexible it could hurt your game tremendously. This is why it is very important to make sure you stretch every time before and after you play, train, and feel tight. Golfers who do strength training alone achieve approximately a 3 percent increase in driving power, but those who performed both strength training and stretching exercises experience a 6 percent increase in driving power. On the next few pages we will go through a basic stretching program that will include both static and dynamic movements to improve your flexibility while on the greens.

GOLF WORKOUT WARM UP

1. Begin a general warm-up period, which may consist of 2-5 minutes of slow jogging or riding a stationary Bike
2. Upon completion of the general warm-up period grab and exercise mat and sit on the floor to perform the static stretching portion of the warm up.

(Done in the following order)

Static Stretches

(Progress from upper body stretch to lower body stretch. Stretches are to be held for approximately 30 seconds)

Upper Body:

1. Neck Stretch
2. Chest Stretch
3. Triceps Stretch
4. Shoulder Stretch & Upper Back Stretch

Lower Body:

1. Knees to Chest
2. Hamstring
3. Knee Falls
4. Kneeling Hip Flexor
5. Quad Stretch
6. Groin Stretch
7. Cat Stretch
8. Right Over Left & Turn

After performing the static stretch portion of the warm-up you will stand up and get either a 2 ½ -5 lb. weight or a similar weighted medicine ball to perform the dynamic stretching portion of the warm-up.

Dynamic Stretches

(Stretches are to be performed for approximately 30 seconds)

Russian Twists
Overhead Throws
Cross Body Wood Choppers
Full Body Circles

UPPER BODY STRETCH EXPLANATION

(Some explanations taken from "Sport Stretch", Alter, 1990)

Neck Stretch-

1. Stand or sit upright on the floor
2. Lower your chin so it is touching your upper chest
3. Look from side to side while your chin remains tight to your chest

4. This should create a “U” movement. Continue movement for approximately 30 seconds.

Chest Stretch-

1. Stand upright facing a corner or open doorway.
2. Raise your arms in a reverse “T” (elbows below your shoulders) to stretch the collarbone section of your pectoral muscles bilaterally.
3. Exhale, and lean your entire body forward.
4. Hold the stretch for approximately 30 seconds.

Triceps Stretch-

1. Sit or stand upright with one arm flexed and raised overhead next to your ear, and your hand resting on your shoulder blade.
2. Grasp your elbow with the opposite hand.
3. Exhale, and pull your elbow behind your head.
4. Hold the stretch for approximately 30 seconds.

Shoulders and Upper Back Stretch-

1. Sit or stand upright while bringing your arm across your body while keeping it straight.
2. Grasp your elbow with the opposite hand.
3. Exhale and press on the elbow
4. Hold stretch for approximately 30 seconds.

LOWER BODY STRETCH EPLANATION

Knees to Chest-

1. Lie flat on your back with your body extended
2. Flex your knees, and slide your feet toward your buttocks.
3. Grasp behind your thighs to prevent hyper extension of the knees
4. Exhale, pull your knees toward your chest and shoulders, and elevate your hips off the floor
5. Hold stretch for approximately 30 seconds
6. Exhale, and extend your legs slowly, one at a time, to prevent possible pain or spasm

Hamstring-

1. Lie flat on your back with the legs flexed and heels close to the butt.
2. Inhale, and extend on e leg upward.
3. Grasp underneath the leg.
4. Exhale, and slowly pull the leg toward your face while keeping the leg straight.
5. Hold the stretch for approximately 30 seconds.

Knee Falls-

1. Lie flat on your back and bring both heels towards your butt
2. Place one foot upon the other bent knee creating a crossed leg position
3. Exhale and let your bent leg fall slowly to the ground bringing the crossed leg with it

4. Hold the stretch for approximately 30 seconds

Kneeling Hip Flexor-

1. Stand upright with the legs straddled 2 feet apart
2. Turn your right foot 90 degrees sideways to the right, keeping your toes and heel in line with your body.
3. Flex your right knee, and roll your left foot under so the top of the instep rests on the floor.
4. Place your hands on your hips. (Some may prefer placing one hand on the forward knee and one hand on the butt.)
5. Exhale, and slowly lean or push your left hip toward the floor.
6. Hold the stretch for approximately 30 seconds then repeat with other leg.

Quad Stretch-

1. Lie face down with your body extended.
2. Flex one leg and bring your heel towards your butt.
3. Exhale, swing your arm back to grasp your ankle, and pull your heel toward your butt without over compressing the knee.
4. Hold the stretch for approximately 30 seconds then repeat with other leg.

Groin Stretch-

1. Sit upright on the floor.
2. Flex your knees and bring the heels and soles of your feet together as you pull them towards your butt.
3. Place your elbows on the inside portion of both upper legs.
4. Exhale, and slowly push your legs to the floor.
5. Hold the stretch for approximately 30 seconds then repeat with other leg.

Cat Stretch-

1. Kneel on all fours
2. Extend your arms forward and lower your chest toward the floor.
3. Exhale, extend your shoulders, and press down on the floor with your arms to produce an arch in your back.
4. Hold the stretch for approximately 30 seconds.

Right Over Left and Turn-

1. Sit up on the floor with both feet flat on the floor
2. Lift your right leg and cross it over your left thigh
3. Place your left hand on your knee and hold it while you twist to your right until you feel a gentle stretch in your hips.
4. Hold the stretch for approximately 30 seconds.

DYNAMIC STRETCH EXPLANATION

Russian Twists-

1. Straddle stand with your knees slightly flexed while the ball is held away from your body
2. Alternate twisting to the right and left, being sure to start slowly and increase speed only after you become familiar with the exercise
3. Move in a controlled manner.

Overhead Throws-

1. Sit on a flat bench or stabilization ball
 2. Hold a medicine ball over your head with arms extended.
 3. Extend arms backward to initiate forward throw of ball.
- * Use the flat bench for this throw until you have strengthened your trunk. Once you have sufficient trunk stability perform the throw while sitting on a stabilization ball.

Cross Body Wood Choppers-

1. Straddle-stand with the ball held over the right shoulder
2. Bend your knees and swing the ball from starting position to the direction of the opposite foot from the shoulder you started with.
3. Complete first movement for 15 seconds then change to the opposite shoulder and foot.

*This movement exercise is similar to chopping wood.

Full Body Circles-

1. Straddle-stand with the medicine ball over head.
2. Start a motion clockwise and slowly take the ball in a circular motion towards your feet bending at your knees as you get closer to your feet.
3. Complete clockwise movements for 15 seconds then change to counterclockwise for the remaining 15 seconds.



PLYOMETRICS

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Plyometrics is defined as exercises that enable a muscle to reach maximum strength in as short a time as possible. In golf the swing is a short duration very powerful movement. Plyometrics will aid in the golf swing by training the muscles used to be faster and stronger thus creating more force resulting in a longer drive. Below is the plyometric workout that will be done on your cardiovascular days. There are two separate workouts, which will be done on opposite days of the week. Any throwing or passing movements will be done with a 5lb. Medicine ball. Golf swing movements will be done with a wedge. Bat swings will be done with a baseball bat.

Plyometric Workout #1

Seated Chest Pass 2x10
Overhead Throw 2x10
Side Pass 2x10
Bat Swings (Both Directions) 2x10 Each Way
Light Golf Swing 2x10

Plyometric Workout #2

Backward Throw 2x10
Underhand Throw 2x10
Over Shoulder Throw 2x10
Reverse Bat Swing 2x10
Light Reverse Golf Swing 2x10

PLYOMETRIC EXPLANATION

Seated Chest Pass-

1. Standing upright with feet about shoulder width apart.
2. Hold a medicine ball at chest level with your palms facing out.
3. Extend your arms and throw the ball to a partner or into a wall.
4. Complete for desired number of repetitions.

Overhead Throw-

1. Standing in a straddled position with your feet.
2. Position a medicine ball above your head.
3. Without stepping forward extend your arms and throw the ball to a partner or against a wall.
4. Complete for desired number of repetitions.

Side Pass-

1. Position yourself in a golf stance.
2. Hold a medicine ball with both hands with elbows bent at 90 degrees.

3. Twist like you would in a back-swing taking the ball just to the side of your hip.
4. While moving only your hips and keeping your arms stationary swing through with the ball and toss it to a partner or against a wall.
5. Complete for desired number of repetitions.

Bat Swings-

1. Stand in a traditional batting stance.
2. Take the bat to the back position.
3. Swing through with a level swing
4. Repeat with both a right and left handed swing.
5. Complete for desired number of repetitions.

Light Golf Club Swing-

1. Grip a golf club at the club head.
2. Take a golf stance.
3. Take the club to the top of the back-swing and pause for one second.
4. Swing through the ball with a normal motion.
5. This drill can be done in both directions.
6. Complete for desired number or repetitions.

Backward Throw –

1. Stand with a shoulder width stance with your knees bent.
2. Hold a medicine ball away from your body with arms extended about chest level
3. Act like you are throwing the ball backward over your head without letting go.
4. Return to beginning position and repeat for desired number of repetitions

Underhand Throw –

1. Stand with your hips slightly wider than hip width.
2. Swing a medicine ball down between your legs, simultaneously bending at the knees and hips
3. Extend the hips, legs, and back, throwing the ball forward into a wall.
4. Complete for desired number of repetitions.

Over Shoulder Throw –

1. Stand with your feet shoulder width apart.
2. Hold a medicine ball with both hands directly over the top of your left leg.
3. Act like you are throwing the ball backward over your right shoulder without letting go.
4. Return to beginning position and repeat for desired number of repetitions.

Reverse Bat Swing –

1. Stand in an upright position with a baseball bat or weighted club.
2. Start with the bat slightly in front of a level impact point.
3. Move the bat as fast as possible in a backward motion.
4. As soon as the bat moves beyond the impact point, stop it from moving any further in the reverse direction.

5. Repeat with both a right and left handed swing.
6. Complete for desired number of repetitions.

Light Reverse Golf Swing-

1. Grip a golf club at the club head.
2. Stand in a golf stance.
3. Start with the club slightly in front of the impact point.
4. Move the club as fast as possible in a backwards motion.
5. As soon as it moves beyond the impact point, stop the club from moving any further and reverse directions.
6. This drill can be done in both directions.
7. Complete for desired number of repetitions.



STRENGTH

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In simplest terms, performance power is muscle force multiplied by movement distance, divided by movement time. That is, your driving power can be improved by increasing your muscle force, increasing your swing distance, or decreasing your swing time. Strength training is the best means for increasing your muscle force, and stretching exercise is the best means for increasing your swing distance. Decreasing your swing time is a more complex task involving practice and coordination, but it is certainly facilitated by stronger muscles and more flexible joints. Below is a three-day workout that will aid in increasing your power for improvement in your game. Remember the warm-up portion of the workout should be performed before doing these workouts.

Day One

Leg Press 3x 8-12
Leg Extension 2x 8-12
Leg Curl 2x 8-12
DB Bench Press 3x 8-12
One Arm DB Rows 2x 8-12
DB Shoulder Press 2x 8-12
Biceps Curl Bar 2x 8-12
Push-Ups 2x 8-12

Day Two

Wall Sits 3x10 (5 seconds a sit)
RDL's 2x 8-12
Standing Calf Raises 2x 8-12
Incline DB Bench Press 2x 8-12
Lateral Pulldowns 2x 8-12
5 Way Shoulder 2x 8
Biceps Curl DB 2x 8-12
Triceps Push Down 2 x 8-12

Day Three

Lunges 3x 6 (each leg)
Leg Extension 2x 8-12
Leg Curl 2x 8-12
Machine Bench Press 2x 8-12
Mid Rows 2x 8-12
Lat Raises 2x 8-12
Biceps Curl Ez-Curl Bar 2x 8-12
Dips 2x10

STRENGTH EXPLANATION

Leg Press – Sit with feet evenly placed on footpad knees bent at a 90-degree angle. Grip handles lightly. Keeping back against the seat push footpad forward until knees are almost fully extended stopping extension short of locking knees. Return slowly to starting position and repeat. Maintain a neutral head position at all times. Exhale throughout the pressing action.

Leg Extension - Sit on seat and place legs behind adjustable movement pad. Align knees with machine axis of rotation. Push seat-adjust lever to bring seat back against hips. Grip handles lightly. Lift movement pad until quadriceps is fully contracted. Return slowly to starting position and repeat. Keep your back against the seat at all times and retain a neutral head position.

Leg Curl – Stand between bench seat and adjustable movement pad. Lie face down with the legs straight and knees just off bench in line with machine axis of rotation. Grip handles lightly. Pull movement pads to hips by contracting hamstrings. Return slowly to starting position and repeat. Keep chin on bench seat at all times. Maintain hip support throughout exercise movement.

Machine Bench Press – Sit with chest directly behind handles. Press handles forward until elbows are almost fully extended. Return slowly to starting position and repeat. Maintain neutral head position. When positioned properly, upper arms move approximately parallel to the floor. Wider handles place greater emphasis on pectoralis major muscles. Narrow handles place greater emphasis on triceps muscles.

Lateral Pulldown – Adjust seat to just reach handles and secure thighs under roller pads. Pull handles downward below chin level. Return slowly to starting position and repeat. Maintain erect posture.

Mid Rows – Sit so that hands can just reach top of handles. Pull handles backward as far as possible. Return slowly to starting position and repeat. Maintain erect posture. Keep chest against support pad throughout exercise.

DB Shoulder Press – Place a flat bench in the 90-degree position creating a flat back seat. Pick up two DB's and walk over to the bench. Before sitting down swing the DB's up to your shoulders hold and sit down on the bench. Align DB's out to the side of your ears with your elbows bent in a 90-degree position. Press DB's upward until elbows are almost fully extended. Return slowly to starting position and repeat. Keep back against seat back.

Standing Calf Raise - While standing on a flat surface and holding two dumbbells in your hand slowly rise up onto your toes in a controlled fashion. Once you reach the full extension on your toes slowly lower yourself to the starting position. Maintain neutral head position and a straight back with your chest up.

Lateral Raise – Squeeze seat-adjust lever to sit with shoulders in line with machine axes of rotation. Place arms against sides inside movement pads. Lift movement pads just above horizontal. Return slowly to starting position and repeat. Keep back against seat back. Lead movements with elbows.

DB Biceps Curls – Stand with feet shoulder-width apart and grasp two dumbbells with an underhand grip, elbows extended. Curl the DB's at the same time to your shoulders. Return slowly to starting position and repeat. Maintain neutral head position. Keep elbows against sides throughout lifting and lowering movements.

Dips – Position your hands on the dip rack so that you are comfortable with your grip. Lower yourself bending at the elbows to 90 degrees. Extend at the elbows to raise yourself up to the starting position then repeat. Going lower than 90 degrees will strengthen other muscle groups but puts you at greater risk for shoulder injury.

Lunges – Starting on a flat surface holding two dumbbells in your hands. Step forward with one leg and bend at the knee. Upon reaching a 90-degree angle at the knee, forcefully push back with the stepping leg. Once returning to the beginning position repeat with the other leg. At no time should the stepping leg knee be past the toes. Keep an erect posture with your chest up and head in a neutral position.

Incline DB Bench Press – Set up a free bench so it is at 45 degrees. Pick up two dumbbells that you will be able to press for the desired amount of repetitions. Lift the dumbbells to your shoulders before you sit down on the bench. After sitting down on the bench press the dumbbells over your head in a slow and controlled manner keeping the dumbbells in alignment with your eyes until you are almost completely extended at the elbow. Lower the weight to the starting position and repeat. This exercise is done to develop the chest and deltoids.

Wall Sits – Stand against a wall. With a shoulder wide foot placement and your chest up slowly lower yourself into a squatting position while keeping your back against a wall. Your butt should extend behind you like you would be sitting in a chair keeping your knees behind your toes. Once you achieve a 90-degree position at the knee hold that position for approximately 5 seconds. After 5 seconds return to the beginning position. Keep a neutral spine and keep your head in alignment with your body.

One Arm DB Rows – Grab a dumbbell and position yourself on a bench so that your knee and arm opposite of the arm being worked are on the bench. The other leg will be in contact with the floor to provide support. The starting position of the weight should be from an extended arm position. Pull the dumbbell up while bending your elbow. Keep your elbow close to you at all times and make sure to keep your head up. Lower the dumbbell back to the starting position and repeat the movement. Do both arms to complete set. Keep your back flat at all times and head in a neutral position.

Triceps Pushdowns - Stand with feet shoulder-width apart in front of a press-down cable. Grasp a V or straight bar with an overhand grip, elbows against sides, and hold at

chest level. Push the bar downward until elbows are fully extended. Return slowly to starting position and repeat. Maintain neutral head position. Return the bar no higher than chest level between repetitions.

Push-Ups- Starting in an up position of the push-up with hands wider than your shoulders lower yourself to the floor and touch your chest. Upon touching your chest push yourself up to the starting position. Perform in control and not in a rapid-fire mode.

Dumbbell Bench Press- Pick up a set of DB's that match your strength level. Carry them over to a flat bench. Sit down with the DB's and place them upright on your knees and slowly pull them to your stomach and lay down at the same time. Take the DB's out to your sides and position them like you would on a regular bench press. Press the DB's up until the elbows are almost in a locked position. Lower slowly and repeat for desired number of repetitions.

RDL's- Stand with feet fairly close together while holding a barbell with a shoulder width grip. Slowly stand erect keeping the bar close to the body. When erect, stick the butt and chest out and keep a slight bend in the knees. From there, all motion should be at the waist while maintaining the slight bend in the knees. From there, all motion should be at the waist while maintaining the slight bend in the knees. Slowly lower the weight as low as you can, focus on a straight back and stretching the hamstring. Begin the upward motion in a slow and controlled manner. Once the bar passes the knees, explode the hips through and shrug the bar straight up. Enough force should be produced to lift the feet off the floor to produce a small jump.

5 Way Shoulder- #1 Grab a 5-10 lb. Weight plate and stand in front of a mirror. While holding a plate in each hand bend your arms to a 90 degrees keeping your elbows tight to your sides. Cross your hands in front of you like you would be hugging yourself then take them uncross your arms and go past the starting position as far as you can without letting your elbows come away from your sides. #2 Position your arms like you are making a human goal post. Both arms should be bent at 90 degrees with your knuckles up still holding on to the plates. Rotating only at the elbow lower the weight so that you have an upside down field goal and the plates are at your sides with your arms still bent at a 90 degree angle. #3 Place your hands on the front of your thighs and rotate your thumb so you are poking the top of your thigh with it. Still holding on to the weight plate perform a front raise with the weight going no higher than eye level. #4 Take both plates back to the original starting position with 90 degrees elbows at your sides. Lift the elbows straight out to the sides like you would be pouring a pitcher of water performing a lateral raise. #5 Bend over at a 45-degree angle and place your palms facing you while your arms are extended. Lift the weights directly out to your sides while squeezing the upper portion of your back together. Repeat all exercises for 8 repetitions before moving on.

Biceps Curl EZ-Curl Bar or Bar- Stand with feet shoulder-width apart and grasp the EZ curl bar with an underhand grip, elbows extended. Curl the bar to your shoulders. Return slowly to starting position and repeat. Maintain neutral head position. Keep elbows against sides throughout lifting and lowering movements.



CORE WORK

CORE WORK

At the base of every good golfer's game is a solid foundation in the mid-section. Without a strong midsection the transition of power from your hips to your arms may not be as effective thus reducing the distance of your drives or control over the ball. Core work can be done at any time during the workout. Preferably it should be done after the warm up and before plyometrics. Core work can be done every day of the week but a minimum of three days is optimal for core strengthening. Below is a simple core strengthening workout that will aid in developing your mid-section.

Core Workout:

1. Crunches x50
2. Leg Lifts x30
3. Superman's x20
4. Planks x 1 min
5. Bridges x 1 min
6. V-Sit Twists x30

Core Work Explanation

Crunches – Lying flat on your back on a padded surface. Bend your knees keeping your feet flat on the floor and bring them close to your butt. Place your hands either across your chest or behind your head. At that point contract your abdominal muscle so you are bringing your chest towards your knees. Make sure you rise up enough that your shoulder blades come up off the ground. Once you feel them come up off the ground return to your starting position and repeat for the desired number of repetitions. Exhale on the contraction portion of the exercise and inhale when you return to the starting position.

Leg Lifts – Lying flat on your back on a padded surface. Place your hands under your butt, elbows out so the small of your back is pressed against the floor, head up shoulder blades off the floor. Then extend your legs straight out, heels resting on the floor. Use the muscles of your lower AB's to raise your legs until they are perpendicular to the body. Then lower the legs in a controlled motion and repeat for the desired number of repetitions.

Superman's – Lie facedown flat on the floor, leaving your arms at your side. Slowly raise your chest and feet off the floor as high as you comfortably can. Hold for two seconds and come back to the floor slowly and repeat for the desired number of repetitions.

Bridges Core Stabilization – Lie on the floor (on your back) hands at your sides. Push with your feet and shoulder blades to lift your butt off the ground and make a shoulder bridge. Your back should not be overly arched but in a flat neutral position. Hold this position for the desired amount of time.

Planks- Lie face down on the floor. Position your elbows at your sides with arms bent. Rise up on your forearms so that the only thing touching the floor is your toes and your forearms. Keep your body in a fairly rigid position keeping the but down. You should look like a flat board from the side not an A frame. Hold for the desired amount of time. A towel or cushion under the arms will aid in the pressure from a hard floor.

V-Sit Twists – Lie flat on your back, legs extended straight (knees unlocked), heels resting on floor, arms extended overhead. Use AB's to simultaneously raise your torso and legs together so you are in a V position balancing on your butt. Rotate your torso to the right and touch the floor beside you while still balancing with your torso and feet in the air. Once you touch one side immediately repeat to the other side. Once you complete both sides that is two repetitions.



**CARDIOVASCULAR
TRAINING**

CARDIOVASCULAR TRAINING

As you may already know golf is not a cardiovascular demanding sport. Being in top cardiovascular conditioning will not help your drive go any further. However, cardiovascular endurance may aid in increasing your resistance to fatigue. If you can still be hitting the ball exactly the same as you did on the first tee on the 18th then your game will definitely be enhanced. Cardiovascular training should be performed a minimum of two days a week preferably 3-5 days a week. Below is a guideline that will help you in your cardiovascular training.

Suggested Exercises:

Light Jogging Outside
Fast Paced Walking
Treadmill Jogging
Biking (Freestyle or Exercise)
Cross Trainer
Rower
Swimming

Day One (Pick One of the Above Exercises)

Performed at 65-75 percent of maximum heart rate training zone for 20 minutes

Day Two (Pick One of the Above Exercises)

Performed at 65-85 percent of maximum heart rate training zone for 25 minutes

Day Three (Pick One of the Above Exercises)

Performed at 65 percent of maximum heart rate training zone for 30 minutes

DETERMINING YOUR MAX HEART RATE AND HEART RATE ZONES

To improve your current cardiovascular levels on the 24 week program you will be using times and heart rates to place stress on your body to make improvements on you current levels. Times are listed in your workouts in the cardiovascular workout plan. Heart Rates are not listed these will be calculated below. Here is how you calculate your Maximum Heart Rate and your Training Zones.

220 – Age = Maximal Heart Rate

220- _____ = _____

Maximal Heart Rate – Resting Heart Rate = Heart Rate

Reserve Your resting heart rate should be taken in the morning before you get out of bed. Sit on the edge of your bed and take your pulse for a one-minute time frame. The total number of beats will be your Resting Heart Rate.

_____ - _____ = _____

(Heart Rate Reserve X 65%) + Resting Heart Rate = Target Heart Rate for 65%

(_____ x .65) + _____ = _____

(Heart Rate Reserve X 70%) + Resting Heart Rate = Target Heart Rate for 70%

(_____ x .70) + _____ = _____

(Heart Rate Reserve X 75%) + Resting Heart Rate = Target Heart Rate 75%

(_____ x .75) + _____ = _____

(Heart Rate Reserve X 80%) + Resting Heart Rate = Target Heart Rate 80%

(_____ x .80) + _____ = _____

Target Heart Rates for Workouts

65% _____ 70% _____ 75% _____
80% _____

Now that you know your heart rates for the given percentages what do you do with them? These numbers will allow you to determine how hard your workout will be. By slowly increasing the intensity of your heart rate you will improve your cardiovascular endurance levels.

If a workout requires you to be exercising at 65% of your Max Heart Rate for 20 minutes you do not start the exercise time until you are at 65% of your Max Heart Rate. It may take 5 minutes to bring your heart rate up to this level of work. Keep adjusting the workload during your brief warm up time until your heart rate is at this level. Then start the clock for the exercise session. Starting the clock early or below your target heart rate for that workout will only hurt yourself in your cardiovascular improvement. If you can exercise at a higher heart rate then do so but never exceed 80% during a workout. If your heart rate is approaching 80% or higher then reduce the workload of the machine. This will let you stay in the training zone where you will make the most cardiovascular improvements. (You can train at higher levels but you may become mentally fatigued



NUTRITION

NUTRITION

Introduction

As you already know athletes use large amounts of energy to perform at a high levels. What most athletes do not realize is that the food they put in their body to produce energy is a major factor in their performance. This means that an athlete must put high quality nutrients into their body to be able to have high quality performances. Teaching an athlete how to eat a balanced diet is just as important as practicing a skill that is needed for their sport. Applying nutritional education to a training program will enhance an athlete's performance along with their skills.

First of all, an athlete must understand some basic principals about nutrition and their body. An athlete who is high in body fat is a slower athlete than one lower in body fat. This fat storage in the body comes from persons nutritional habits. Lower body fat increases mobility where higher body fat decreases mobility. Heavier is not always better when the weight comes from excess body fat. Athletes always want to know how to get faster and one simple way is their diet. By using sound nutrition in their diet it will enable them to reduce body fat and become a quicker and leaner athlete.

A normal diet consists of 50-60% Complex Carbohydrates, 15-25% Fat, and 20-25% Protein. You should try to eat a similar combination of carbohydrates, fat, and protein at each meal. By keeping the nutrients and calories the same for every meal eaten during the day an athlete should feel energized all day. There should never be bouts of sluggishness or hyperactivity due to low or high blood sugar levels.

Remember that an athlete uses nutrients and energy every time they workout, practice, or play a game. After a long bout of exercise you should replenish your body with nutrients within one hour of finishing. After a workout your body is looking for nutrients to replace the ones lost or rebuild what you broke down during a workout. By eating your body will absorb nutrients quickly to replenish it losses. This hour is called the "Hour of Power" because this is where nutrition plays a large part in your strength gains after a workout. Getting nutrients to your body after a workout will aid in the recovery process to build stronger, faster, quicker athletes. On the following pages there are guidelines that will give you some insight on how to become a leaner, stronger, and a faster athlete.

NUTRITIONAL GUIDELINES

A. Eating Enough Quality Calories

One of the biggest problems for most athletes is just getting enough quality calories into their diet. An athlete is very active during their season and moderately active in their off-season. This means an athlete will need sufficient calories throughout the day to meet the need of their activity level. Sufficient quality calories do not mean going to Burger King after a workout and eating a Whopper Value Meal. Sufficient quality calories mean calories that your body can use to rebuild and repair its self. These quality calories come from complex carbohydrates (ex. pasta, vegetables) and lean proteins (ex. fish, chicken).

Meals should be broken up into an even percentage of calories compared to total caloric intake. Let's say you are going to eat 3000 calories in one day. This means that you would be able to eat 1000 calories a meal. If you eat a snack you would just subtract the amount of calories of the snack from your total calories for the day and then divide it by the number of meals you are eating. An example of this is shown below:

Three Meal Scenario

$$3000 \text{ cal} / 3 \text{ meals} = 1000 \text{ Calories /Meal}$$

Three Meal Plus One Snack Scenario

$$500 \text{ cal Snack}$$

$$3000 \text{ cal} - 500 \text{ cal} = 2500 \text{ Cals}$$

$$2500 \text{ cal} / 3 \text{ meals} = 833 \text{ Calories / Meal}$$

Three Meal Plus Two Snack Scenario

$$2 \times 500 \text{ cal snack} = 1000 \text{ Cals}$$

$$3000 \text{ cal} - 1000 \text{ cal} = 2000 \text{ Cals}$$

$$2000 \text{ cal} / 3 \text{ meals} = 667 \text{ Calories / Meal}$$

Four Meal Plus One Snack Scenario

$$500 \text{ cal Snack}$$

$$3000 \text{ cal} - 500 \text{ cal} = 2500 \text{ Cals}$$

$$2500 \text{ cal} / 4 \text{ meals} = 625 \text{ Calories / Meal}$$

Also the percentage of carbohydrates, proteins, and fats should be similar for every meal. (Ex. 55% carbohydrates, 20% protein, and 25% fat) This will aid in maintaining muscle tissue, promoting fat loss, and reduces fatigue or sluggishness throughout the day. By keeping food intake consistent your body will stay in a state of energy equilibrium. An example of this is shown below:

3000 Calorie A Day Diet with Three Meals

Carbohydrates

$$3000 \text{ cal} \times 0.55 = 1650 \text{ Cals From Carbohydrates Per Day}$$

$$1650 \text{ cal} / 3 \text{ meals} = 550 \text{ Cals From Carbohydrates Per Meal}$$

550 Cals / 4 cals per gram of carbohydrate = 138 grams of Carbohydrates Per Meal

Protein

3000 cals x 0.20 = 600 Cals From Protein Per Day

600 cals / 3 meals = 200 Cals From Protein Per Meal

200 Cals / 4 cals per gram of protein = 50 grams of Protein Per Meal

Fat

3000 cals x 0.25 = 750 Cals From Fat Per Day

750 cals / 3 meals = 250 Cals From Protein Per Meal

250 Cals / 9 cals per gram of fat = 28 grams of Fat Per Meal

Along with keeping your calories and nutrients the same percentages per meal, an athlete should eat a minimum of three meals a day with about 4-5 hours in-between meals. This will keep the athlete from getting hungry and bingeing on junk food on the side. Small snacks can be added during the day when needed, but try to make it a snack with similar percentages to your diet plan. These simple tips should allow an athlete to get enough quality calories into their diet and keep them performing at a high level at all times.

B. Food Choices

Now that you know how to break up your meals and snacks what foods should you be eating to meet these *Quality Calorie* needs. Making the right food choices does not mean eating as many wings as you can at the local free happy hour buffet. Remember most Americans get 60% of their calories from simple sugars and fat. Fat and simple sugars do not aid in your performance as an athlete. Foods should be nutrient dense with a majority of the calories from complex carbohydrates which include pastas, breads, potatoes, and rice. Avoid foods that are fried, refined, canned, or processed. These foods may be high in calories, but a majority of the calories are from fat. Below are some suggestions for increasing your quality calorie needs as an athlete.

1. Use Complex Carbohydrates as your major source of Carbohydrates

Examples of Complex Carbohydrates are as follows:

1. Bread
2. Cereals (Watch for sugar content)
3. Oatmeal
4. Pancakes
5. Waffles
6. French Toast

- 7. Grits
- 8. Pasta
- 9. Rice
- 10. Vegetables (potatoes, sweet potatoes, lima beans, peas, corn, squash)
- 11. Fruit and Fruit juices (watch for refined sugar in juices)

Eating Complex Carbohydrates promotes better activity in athletes. By having enough stored glycogen in your muscles from carbohydrates will enable you to perform at higher levels for longer periods. Choosing simple carbohydrates (sugars, pop, and candy) only aid in fueling your body for brief periods of time. They are quickly burned and used in the body. The best choices when choosing carbohydrates are complex carbohydrates to power your high performance body for a long period of time.

2. Use lean protein sources to meet your protein requirements

Protein is the building blocks of all body tissues. By eating quality protein sources that are lean will enable your body to build quality muscle. It is recommended that .45 to .73 grams per day of protein are sufficient for every pound of body weight. Remember that a diet very high in protein may promote the accumulation of body fat from extra calories. Also high intakes of protein also promote the increase in urinary water loss to remove excess waste products. This extra loss of water may promote dehydration, which could lead to cramping. Below is a small list of quality protein sources).

Good Protein Sources

Poultry:

Chicken Breast	Turkey Breast
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Fish:

Catfish	Pollock
Cod	Salmon
Flounder	Scallops
Haddock	Shrimp
Halibut	Sole
Lobster	Snapper
Orange Roughy	Tuna Packed in Water

Dairy:

Cottage Cheese, Lowfat	Skim Milk
Egg Beaters	Yogurt, Lowfat
Egg Whites, Cooked	

Meats:

Beef, Lean	Lamb, Lean
Canadian Bacon	Pork , Lean
Ham , Lean	Veal

Remember that taking protein supplements instead of eating food to meet your protein needs is not a recommended action. If you follow a normal eating diet as discussed earlier you can meet your protein need without any extra from supplementation. In addition, the body cannot store large amounts of protein so immediate consumption after exercise is needed. An example of this would be drinking a recovery drink after a workout like Boost, Whey protein shake, or milk. This is the only time a supplement would be recommended because a liquid protein drink is digested and taken up by your muscle cells faster than solid foods.

3. Fats

Fat is one nutrient that most people never have any problem of getting enough of. As an athlete you should try to eat nutrient sources that are low in fat. Eating a diet that is high in fat will cause unwanted percent fat increases, chronic exhaustion, irritability, restlessness, and muscle tissue decreases. Remember that a diet high in fat and low in carbohydrate slows the process of energy storage in the muscle. If this continues, there will be less fuel for high intensity activity. This will result in poor performance.

Some ways you can cut down on your fat intake are as follows. Start by limiting the amount of red meats and pork products you eat (steak, hamburger, hot dogs, luncheon meats, bacon, sausage etc.). Red meats and pork products are high in fat most of the time. If you do eat red meats try to pick leaner cuts of meat at the grocery. Also dairy products commonly have higher fat percentages for their total calories. Foods like cheese, butter, mayonnaise, ice cream, and cream sauces (Alfredo) all have high fat content. By choosing lower fat dairy products or sauces that are lower in fat for your food choices you will lower the caloric and fat content of some foods by half. Any foods that are based or cooked with oil are also very high in fat. This includes salad dressings, oils, or anything that is fried in animal or vegetable fat (ex. french fries, chips) By substituting low fat dressings, limiting oil use in cooking, and not frying food will aid in the reduction of fat content from some of your foods. Remember as an athlete you are trying to put on lean mass and fat does not aid in the increase of lean mass. This is why fat must be limited to a certain percentage of your diet and kept that way to prevent fat mass increases.

C. Hydration and Fluids

Along with properly planned meals athletes need plenty of fluids to perform at high levels. Your body is composed of 75% water and uses water in all metabolic functions. Once the body experiences a 3% weight loss in water, there is an affect on performance. This loss could cause muscle cramping, pulls, and heat exhaustion. By taking in water you maintain balance in your body. On the average a human being should drink about 4 to 6 glasses of water a day.

To make sure athletes are getting enough water back into their system after a workout, athletes should weigh themselves before and after strenuous activity to determine the amount of water they have lost and need to replace from their body weight. For every pound lost 2-3 cups of water will need to be replaced. Another good idea to get water during the day is to fill up and empty milk jug with water and put about 2 tablespoons of either lemon juice, orange juice, apple juice and shake it up. The juice will give the water a mild citrus taste. Every time you open the refrigerator take a drink and at every meal drink out of the jug. By the end of the day you should finish the gallon jug. Believe me there will be many bathroom breaks if you follow this and your urine should be clear. This will mean you are fully hydrated and ready for maximal performance.

Sport drinks and juice are also excellent ways of getting fluids into your body but watch how much you drink. Sport drinks and juices contain calories in the form of simple sugars. By drinking too much juice or sport drink may give you a sugar high which we are trying to avoid with a well-planned diet. Just remember that every time you take a swig of juice from the fridge you are adding calories to your daily total. It is better to drink water if you just want to quench your thirst and save the juices for meals.

D. Conclusion

Probably after reading all this you will see how much nutrition can affect your performance as an athlete. By eating properly your athletic potential can increase greatly but also with athletic success you will want to enjoy life also. It is important to eat well but also enjoy food at the same time. With all the stress of eating healthy and practice you will have some times where you want to go out and eat a pizza, wings or just some good junk food and “that is OK”, but do so in moderation. Here is an example of how to do this. If you eat 21 meals in one week you should try to eat healthy for 18 of those meals. The other three meals enjoy yourself with moderation. I am not allowing you to eat a whole pizza or order 100 wings and eat them all, but eat something you enjoy like a steak, burger, fries, ect. The next meal however you are right back on the diet plan. This will allow you to enjoy some foods that you like and crave. This should prevent you from straying from your diet that will make you a better athlete.