# Welcome to the Tae Bo® Nation!

Welcome to the Tae Bo® Nation Certification/Re-Certification Camp!

First, I would like to thank you all for your passion for teaching Tae Bo® Fitness, your dedication to your students and your desire to learn, improve and better yourselves to be the best possible teachers you can be. Tae Bo® Fitness is a conduit to the person's mind, body and soul, and is used by each of you in your own way to change the world. That is what I love about Tae Bo® - its ability to evolve and adapt through instructors like yourselves. We each have an individual purpose, a unique way to change the world, through a unanimous source – Tae Bo® Fitness.

I am so excited to share the next evolution of Tae Bo® Fitness with you all; Tae Bo® Nation. My goal is that we all are united under the foundation of Tae Bo® and that we grow together. When we began, Tae Bo® stood for **T**otal **A**wareness of **E**xcellent **B**ody **O**bedience. This still rings true today! Our mission has grown however, and as we come together as the Tae Bo ® Nation, I want us to **T**ake **A**ction, **E**xecute**, B**elieve and **O**vercome. This is what the world needs, and this is what we as instructors need.

**Take Action, Execute, Believe, Overcome**

I am looking forward to this Tae Bo® Nation camp, it is the beginning of an amazing next step in Tae Bo® Fitness and you as instructors are the foundation. Let's have a great camp! All things are possible! This world needs your heart and passion, and together, the Tae Bo® Nation will do great things!

Sincerely,

Billy Blanks®

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The Tae Bo® Fitness exercise program was created to challenge not only your body and your mind but your will as well. The rewards for joining the Tae Bo® Nation™ will be felt from the inside out. It will give you the knowledge that will allow you to master this world---renowned exercise program and give you the skills to continue educating others.

Tae Bo® Fitness was created in a Pennsylvania basement during the 80's and has touched the lives of people everywhere. It instantly became known as the original total---body workout in the fitness industry as well as a common household name, popping up in living rooms across the world. The worldwide success of Tae Bo® Fitness through the years is due to the commitment, dedication, and determination of one family.

Today Tae Bo® Fitness has evolved into the Tae Bo® Nation™ and operates through Celebrity Sweat Corporate Offices with Billy Blanks leading the way. We are excited to have joined forces with Celebrity Sweat, we firmly believe that the quality and standards of our program are of upmost importance, and Celebrity Sweat has become vital in ensuring these standards. In addition, the corporate offices will provide continuous support to all our Tae Bo® Nation™ certified Instructors, as well as maintain our website www.Taebo.com keeping all information re Certification/Re-Certification camps up to date, as well as Billy's travel schedule. If he will be in your area, please send us an email – we would love to have you be a part of events as it is possible. The more energy and joy we can spread, the better! Upon successfully completing this first Tae Bo® Nation Certification Camp, you will have up to date knowledge and a new solid source of support to continue changing your life and to become the best instructor possible!

The Tae Bo® Nation Instructor Manual has four main objectives:

1. To educate you on the new Tae Bo® Nation and where Tae Bo® is headed.
2. To provide you with continued comprehensive understanding of group exercise and the ability to properly instruct a Tae Bo® Basic Class.
3. To expand your knowledge on health and exercise so you can become a wellness expert with the ability to ensure a safe and appropriate fitness environment.
4. To outline the basic responsibilities of a Certified Tae Bo® Instructor, provide information on where to locate corporate policies and/or updates, and to explain the Tae Bo® Nation Trademark & Usage Policy.

## CHAPTER 1: WHAT IS TAE BO® NATION™?

Tae Bo® Nation™ is the ground-breaking group of Certified Tae Bo® Fitness Instructors that are helping to take Tae Bo® Fitness to its next level. These instructors have been teaching Tae Bo® in their area for at least a year, and are committed to continuing their personal growth in Tae Bo® Fitness as well as life in general.

Tae Bo® Fitness was the first exercise program to incorporate the "Mind, Body, and Will" and millions of people around the world have proven it works. Tae Bo® Fitness works from the inside out, not only affecting your appearance but also your --confidence so you can achieve more physically and mentally.

Tae Bo® Basic enhances your strength, speed, agility, and mental awareness by combining aspects from Boxing and Martial Arts with the rhythm of dance. Adding this trio of technique and skill to adrenaline racing music gives the workout energy and rhythm, which improves coordination, cardiovascular health and its lots of fun! Tae Bo® Basic teaches perseverance, self---awareness and how to communicate with your own body. The combination of these practices encourages the five Tae Bo® Fitness virtues.

**T** --- **TOTAL** commitment to whatever you do

**A** --- **AWARENESS** of yourself and the world around you

**E** --- **EXCELLENCE**, the truest goal in anything you do

**B** --- **BODY** as a force of total change

**O** --- **OBEDIENCE** to your will and your desire to change

With the creation of the Tae Bo® Nation™, Billy also created a new mantra for the team:

**T – TAKE**

**A – ACTION**

**E – EXECUTE**

**B – BELIEVE**

**O – OVERCOME**

**Together, the Tae Bo® Nation™ will Take Action, Execute, Believe and Overcome!**

As you train with the Tae Bo® Nation™, you will continue to assist your students and help them break through their personal barriers and challenges to be the best that they can be. You can help motivate your students to believe in their full potential, giving them the power to change their life for the better. With knowledge, patience, practice, awareness, common sense – and a lot of sweat, you will help them experience the rewards of Tae Bo® Fitness in every aspect of their life!

**WHO SHOULD PRACTICE TAE BO® BASIC?**

Tae Bo® Basic is perfect for anyone who is willing to improve their health and wellness. It doesn't matter who you are, how old you are, what kind of shape you are in or how much you weigh. It doesn't matter how many exercise programs you've started and quit. It doesn't even matter if you think that you hate exercise, the Tae Bo® Fitness promise is the same for everyone. If you give Tae Bo® Basic a chance to show you how powerful you truly are, how committed you can be and how great you can feel, this manual will show you the way --- the Tae Bo® Fitness way!

Tae Bo® Basic is appropriate for fitness enthusiasts looking to gain:

- Strength
- Endurance
- Flexibility
- Clarity
- Community
- Bone Density
- Total Body Wellness

Tae Bo® Basic is effective in three key areas:

- The intense aerobic activity burns calories and reduces stored fat, which is beneficial in maintaining or decreasing total body weight.
- The aerobic activity provides a good workout for your heart, making it stronger and more efficient.
- The controlled movements tone and strengthen muscles, a necessity in order to lose weight and re-shape the body.

Please be advised that Tae Bo® Basic is NOT appropriate for individuals suffering from a serious medical condition or recovering from injury. Also, regardless of your age or fitness level, it is highly recommended that you discuss starting Tae Bo® Basic, or any exercise program, with your doctor before beginning it. In addition, if a student experiences any of the following symptoms, exercising should be immediately stopped to seek medical attention:

- Pain in the chest, arm, jaw or shoulder
- Sudden lightheadedness, faintness, or dizziness
- Sudden unusual or rapid heartbeat
- Sudden loss of breath
- Nausea
- Symptoms that are unusual, uncomfortable or worrisome

As an instructor, it is important that you constantly monitor your students to ensure that your exercise class is suitable for everyone participating, regardless if it is their first class or their one hundredth.

WHOSE TIME IS IT?

## CHAPTER 2: THE CREATOR OF TAE BO® FITNESS

Tae Bo® Fitness, the revolutionary total body workout, was created by Grand Master Billy Blanks® in the 80's and his dedication, desire, and commitment to help others has maintained his determination since that time. Billy's extraordinary achievements as a world---renowned fitness guru, a world karate champion, actor, author, motivator, philanthropist and humanitarian continue to earn him acclaim.

Billy Blanks® has built a worldwide reputation as one of the most trusted names in fitness. As a 7---time Martial Arts Champion, creator of Tae Bo® Fitness, husband, and father, Billy Blanks is a man of many talents. But he also is a man of a singular goal --- helping others discover the power within themselves to achieve and do anything they want to.

Billy is the fourth of fifteen children from Erie Pennsylvania. He faced struggles early on in life, beginning with living in the hard neighborhood where he grew up. He also had an extremely difficult time in school due to undiagnosed dyslexia and was additionally burdened with a hip problem. Through martial arts classes and incredible determination, Billy became an eight--- degree black belt in Tae Kwon Do going on to win 36 gold medals in international competition, becoming a 7---time world karate champion and earning admissions to the Karate Hall of Fame in 1982.

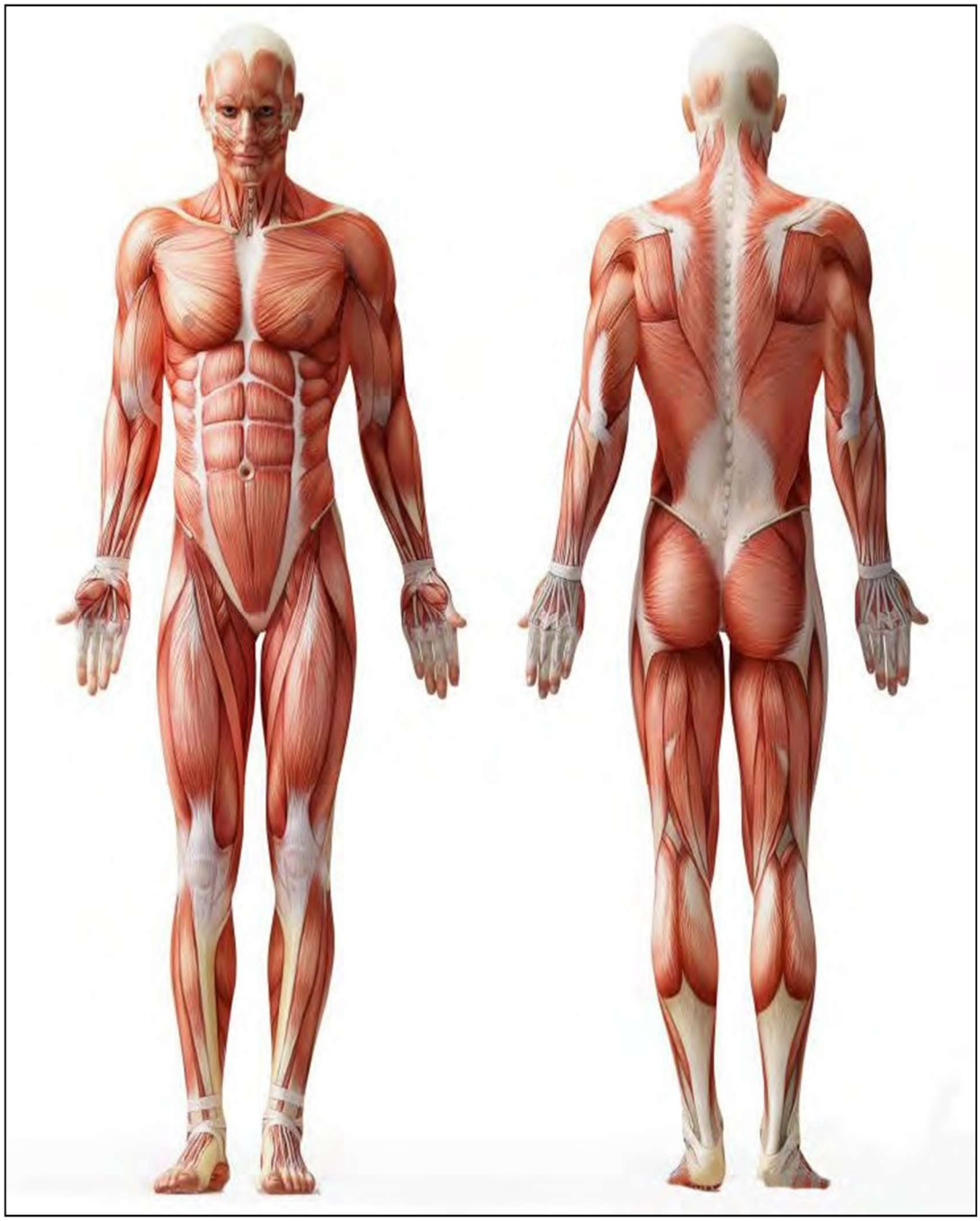
Billy Blanks® has devoted much of his life to helping millions of people around the world get in shape and feel great. He has trained numerous celebrities, athletes, military personnel, and fitness enthusiasts worldwide in his revolutionary Tae Bo® Workout. Billy Blanks started Tae Bo® Fitness in his basement during the 80's, produced the first Tae Bo® Fitness Video in the early 90's, has expanded the love of Tae Bo® Fitness worldwide, and he has not stopped yet! Tae Bo® Fitness has survived through the years because of his dedication, his commitment and because it is the best of the best! Billy not only created a fitness program that benefits the health and wellness of everyone, regardless of their fitness level, but he has created a fitness lifestyle complete with a support system that guarantees the success of every certified instructor while at the same time keeping it a 'family business'.

Tae Bo® Fitness is much more than an exercise program; it is a way of life. Tae Bo® Fitness Workouts challenge your mind, body, and will so you can reach new heights.

Everything you need to know about Tae Bo® Basic is in this instructor manual, don't skip a word or a picture. Always remember that you are your own coach. Knowing when to slow down, modify your workout, or even stop, can be more important than knowing when to push ahead. The desire to move ahead, to challenge you, and to achieve what you never before thought possible is what makes us human. But don't forget that your first responsibility is not just to working out, but to working out safely.

**HUMAN ANATOMY AND PHYSICAL FITNESS**

Chapters 3, 4 and 5 provide information on anatomy, key systems of the body, and how exercise affects it all.



## CHAPTER 3: BASIC PHYSIOLOGY

The objective of this chapter is to review the anatomy and the functions of the bodies key physical systems, such as the cardiovascular system, respiratory system, renal system, gastrointestinal system, and lymphatic system. As a Tae Bo® Fitness Basic Instructor it is important that you are aware of the body's individual components and their functions. Finally, this chapter will teach you how these systems participate in health and exercise.

### CARDIOVASCULAR SYSTEM

The cardiovascular system is a crucial part of the human body and literally keeps life pumping. This system is composed of the heart, blood vessels, and blood. It has FOUR basic functions: transportation, elimination, regulation, and protection.

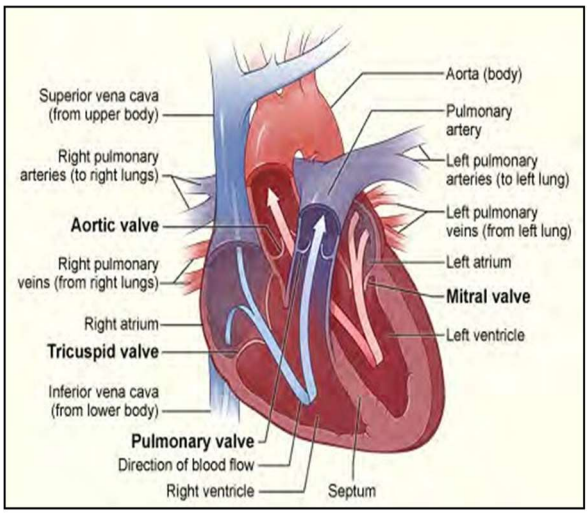
- TRANSPORTION of nutrients, oxygen, and hormones.
- ELIMINATION of waste (i.e. carbon dioxide and nitrogenous wastes).
- PROTECTION for the body by:
    - Circulating white blood cells and antibodies that fight against pathogens and toxins.
    - Providing clotting mechanisms to protect the body from blood loss after injury.
    - REGULATION of body temperature, pH, and water balance.

### HEART ANATOMY

The heart is the pump responsible for the propulsion of blood throughout the entire body. The heart helps with the TRANSPORTATION of all the essential nutrients needed to keep us going!

The heart is located behind the breastbone in the middle of the chest. It is composed of four chambers: two atria and two ventricles. The left and right atria are at the top of the heart while the left and right ventricles are at the bottom of the heart.

- Blood flows from an atrium to a ventricle with the use of valves. Valves are like doorways that open when blood is needed to fill up the heart chambers or leave the heart to nourish the body. Valves also help regulate the direction of blood flow.
- Mitral Valve (MV) - connects the left atrium to the left ventricle.
- Tricuspid Valve (TV) - connects the right atrium to the right ventricle.




The right side of the heart pushes blood to the lungs for proper carbon dioxide and oxygen filtration, whereas the left side of the heart receives blood from the lungs and pushes it to the rest of the body.

**COOL FUN FACT:**

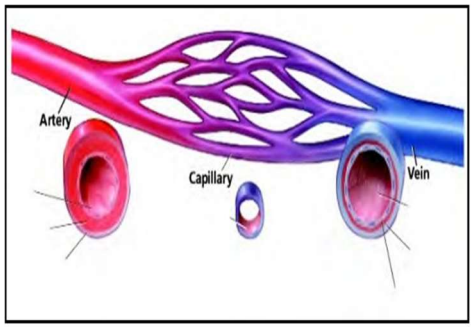
**The left side of the heart produces more force than the right side of the heart. Why you ask? The right side of the heart only has to propel blood to the lungs, whereas the left side has to push blood to the remaining parts of the body, which requires more force.**

**ARTERY ANATOMY**

The arteries carry blood away from the heart. There are THREE major arteries to remember: the aorta, the coronary artery, and the pulmonary artery.

The AORTA is the major artery that stems off the left ventricle. The aorta carries OXYGEN RICH blood to the coronary arteries. The CORONARY ARTIERIES deliver blood throughout the body. The PULMONARY ARTERY is the only artery that carries OXYGEN POOR blood. The pulmonary artery transports deoxygenated blood from the right side of the heart to the lungs.

**CAPILLARY ANATOMY**




The capillaries are small; thin blood vessels that exchange carbon dioxide and oxygen. The arteries bring oxygen and nutrients to the capillaries. The capillaries deliver these essential components to the cells for proper cell nourishment and function. After which, the cells release carbon dioxide and waste materials for the capillaries to collect and carry to the veins for elimination.

**VEIN ANATOMY**

The veins are blood vessels that carry OXYGEN POOR blood back to the right side of the heart. Two structures called the superior vena cava and the inferior vena cava receive deoxygenated blood from the veins and deliver the blood back into the right atria.

**SIMPLE CARDIOVASCULAR EXERCISE BREAKDOWN:**

- An exercising muscle, such as the calf during cycling, requires more oxygen and nutrients than a resting muscle.
- The heart must send more blood to the muscle for nourishment.
- Heart rate and blood flow increases.
- Blood from the LEFT side of the heart (oxygen rich blood) travels through the aorta and into the coronary arteries.
- From the coronary arteries blood travels into the capillaries and muscle tissue where oxygen and important nutrients are deposited.
- During exercise, the muscle releases nitrogenous waste.
- The capillaries absorb these waste products for elimination.
- Waste products move from the capillaries into the veins and into the right side of the heart.

- The right side of the heart pushes the oxygen poor blood into the lungs for waste elimination and or oxygen absorption.
- Newly oxygenated clean blood will now travel to more exercising muscles.

**HOW DOES THE CARDIOVASCULAR SYSTEM INFLUENCE EXERCISE?**

The cardiovascular system brings blood, oxygen, and nutrients to the exercising muscle and carries waste products away from the exercising muscle.

**THE RESPIRATORY SYSTEM**

The respiratory system takes in oxygen and then replaces it with carbon dioxide with every breath you take. Therefore, the respiratory tract is very important in exercise for the following reasons:

- Oxygen is necessary for all physiological functions.
- Oxygen is a necessary metabolic component and is required for converting food and stored energy (fat) into a usable form of energy.
- The respiratory tract will increase oxygen influx during exercise to increase the amount of energy the muscle has available.

There are two forms of respiration. The first is **EXTERNAL RESPIRATION**, which is the exchange of oxygen and carbon dioxide between the environment and your lungs. The second form is **INTERNAL RESPIRATION**, which is the metabolic process that takes place in the cells and tissue, during which energy is released and carbon dioxide is produced and absorbed by the blood and transported to the lungs. External Respiration is responsible for the introduction of oxygen to the body, whereas Internal Respiration is responsible for utilization of oxygen for energy production.

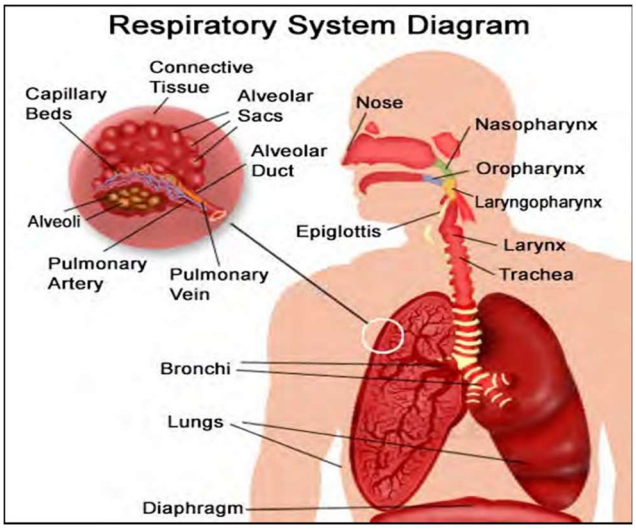
Internal respiration generates energy in the form of ATP. All physiological functions such as eating, breathing, and blinking, require energy in the form of ATP. Breathing efficiently during exercise improves both external and internal respiration and increases the amount of ATP available for muscular use.

**SUPER IMPORTANT NOTE:**

Breathing is the most effective way of resisting fatigue because it provides instantaneous energy! Remind your students to remain focused on their breathing to help withstand the demands of the workout.

**RESPIRATORY ANATOMY**

The external respiratory system consists of the nasal cavity, pharynx, larynx, epiglottis, trachea, bronchi, bronchioles, and alveoli. During inhalation, air passes through the nasal cavity and is filtered by a lining of hair, mucus, and cilia within the nostrils. Air then travels through the pharynx, past the tonsils and into the larynx, where sound is produced. The air continues to travel down the trachea into the primary bronchi, down into the bronchioles, and into the alveolar ducts. The absorption of oxygen and elimination of carbon dioxide occurs in the alveolar ducts.




**BREATHING MECHANICS**

The mechanics of breathing utilizes the basic principles of physics: force, pressure, and volume. The force applied is the contraction and relaxation of the respiratory muscles. This change in muscle tension directly affects lung volume and lung pressure. The relationship between lung volume and pressure dictates the direction of airflow in or out of the lungs.

**INHALATION**

Inhalation occurs when the inhalation muscles (the diaphragm and the external intercostal muscles) contract. Contraction of the diaphragm increases the size of the thoracic cavity (the space where the lungs reside), which allows more room for the lungs to expand and increase in volume. As physics dictates, when volume increases, pressure decreases. Physics also dictates that gases, such as oxygen and carbon dioxide, move from regions of high pressure to low pressure. During inhalation, the pressure inside the lungs drops below the pressure outside of the body. Since the atmospheric pressure is greater than lung pressure, atmospheric air moves into the lungs.

**Inhalation Broken Down:**

- Applied Force – the diaphragm and the external intercostal muscles CONTRACT.
- Change in Volume – the lungs expand and INCREASE in volume.
- Change in Pressure – as lung volume increases, lung pressure DECREASES.
- Differences in Pressure – lung pressure falls BELOW atmospheric pressure.
- Air Flow – air moves from high pressure to low pressure; air moves from the atmosphere into the lungs.

Now that the lungs have taken in air, the alveolar ducts can absorb the necessary amount of oxygen to nourish the body.

**EXHALATION:**

Exhalation occurs when the diaphragm and external intercostal muscles relax. This change in force decreases lung volume. As lung volume decreases, lung pressure increases. The pressure of the air inside the lungs increases above the air pressure outside the body, forcing air to rush outwards (exhalation).

**Exhalation Broken Down:**

- Applied Force – the diaphragm and the external intercostal muscles RELAX.
- Change in Volume – the lungs decompress and DECREASE in volume.
- Change in Pressure – as lung volume decreases, lung pressure INCREASES.
- Differences in Pressure – lung pressure is GREATER than atmospheric pressure.
- Air Flow – air moves from high pressure to low pressure; air moves from the lungs into the atmosphere.

The body absorbs oxygen and releases carbon dioxide in between inhalation and exhalation. Practices like yoga incorporate four count breathing, meaning individuals are advised to hold their breath before and after exhalation. This hold allows the time for proper gas exchange and maximizes the amount of oxygen taken in by the body and the amount of waste released.

Exercising muscles require more oxygen for energy production. Additionally, exercising muscles secrete more waste products from protein breakdown. Proper breathing practices are an important part of training and maintaining energy. Breathing improperly, such as breathing too fast or too deep can limit the amount of oxygen inhaled and the amount of carbon dioxide exhaled. Elevated levels of carbon dioxide during exercise can cause individuals to hyperventilate and faint.

Exercising increases the amount of carbon dioxide released into the blood. Elevated levels of carbon dioxide reduce blood pH levels and make the blood more acidic. As pH levels decrease, nerve impulses trigger the diaphragm and the intercostal muscles to contract and relax. The goal of this impulse is to increase the amount of exhaled carbon dioxide. When exercise ceases blood pH levels increase back to normal and breathing normalizes. Breathing should be natural, relaxed, and rhythmic when exercising.

**HOW DOES THE RESPIRATORY TRACT PARTICIPATE IN EXERCISE?**

The respiratory system provides a physics-based mechanism for absorbing oxygen and eliminating carbon dioxide. Oxygen is necessary for creating energy and maintaining proper muscle function.

**THE RENAL SYSTEM**

The renal system consists of the kidneys, ureters, and bladder. It is responsible for regulating body fluid composition.

**The kidneys' main roles are:**

- Removal of wastes (urea, creatinine, foreign substances, and drugs)
- Maintenance of total body water volume and blood pressure
- Regulation of electrolyte concentration (sodium (Na+), Calcium (Ca2+), and Potassium (K+))

The kidneys are a very simple structure in that they are just sacs of capillaries. Blood travels to the capillaries of the kidneys to be filtered. Any impurity in the blood, such as nitrogenous waste brought on by exercise, is immediately filtered from the capillaries and is assimilated with urine in the bladder.

The kidneys also maintain blood volume. These two bean shaped organs regulate how much fluid within the blood is kept and how much is excreted through urine. Regulating blood volume is an important part of regulating blood pressure. Simply put, the more blood volume the more pressure exerted on blood vessels. The kidneys can decrease blood volume as a method of decreasing blood pressure.

The kidneys are also responsible for maintaining electrolyte balance. Electrolytes must be in proper alignment with water volume. Whenever the kidneys eliminate water they must also alter electrolyte concentrations. Proper electrolyte concentrations are extremely important for exercise because muscular contractions cannot occur without electrolytes. This relationship will be discussed further during the muscular---skeletal chapter.

**WHY IS THE RENAL SYSTEM IMPORTANT FOR EXERCISE?**

- Responsible for eliminating waste brought on by exercise.
- Responsible for maintaining water volume for the proper hydration required for sweating during exercise.
- Participates in maintaining blood pressure and heart rate during exercise.
- Responsible for maintaining electrolyte balance for muscular contractions.

Students suffering from renal disease MUST have a medical clearance to attend a Tae Bo® Basic Workout.

**THE GASTRO-INTESTINAL TRACT**

The gastro---intestinal (GI) system is important for the digestion and leave absorption of nutrients. Without proper digestion and absorption nutrients cannot enter the body and thus cannot feed the muscles. Digestion issues, such as accumulated candida or Crohn's Disease, typically lead to nutrient deficiencies, which instigates muscular fatigue. Therefore, maintaining gut health is an important part of preserving athleticism.

Timing your meals and snacks appropriately before exercise is also an important part of maintaining athleticism. For instance, it is important to rest after eating to allow blood to redirect to the stomach and small intestine for proper digestion. Exercising after eating forces blood to circulate to the muscles rather than to the stomach. This shift in blood can cause cramps, poor digestion, or other problems.

Eating too soon before exercise:

- Limit the amount of blood circulating to the exercising muscle.
- Reduces the amount of blood available to the stomach and small intestine for necessary digestion.
- Cause nutrient deficiencies from poor digestion.

As an instructor, you should encourage students to drink fresh juices before class, rather than consuming solid snacks for energy. Fluids pass through the GI tract relatively quickly, and do not require as much blood for digestion.

**HOW DOES THE GI TRACT PARTICPATE IN EXERCISE?**

The GI Tract provides a mechanism to absorb nutrients to feed and energize the muscles.

**LYMPHATIC SYSTEM**

The lymphatic system contributes to our immune system by defending the body against diseases, infections, and foreign substances. This system includes lymph glands, lymph fluid, lymph nodes, and lymph vessels. Like the cardiovascular system, the lymphatic system is responsible for the **CIRCULATION** of lymph fluid. However, the lymph system does not have a heart or pump to propel lymph fluid throughout the body. Instead the lymph system relies on the body's muscular contractions to compress against lymph vessels and push lymph fluid. This is one reason why exercise is so important for health - exercise improves the circulation of lymph fluid and thus immunity! Lymph vessels travel up and down the entire body.

**The Lymph System:**

- Supports the immune system by defending the body against diseases, infections, and foreign substances.
- Picks up fat from the small intestine, and delivers it to the blood.
- Carries any extra fluid and returns it to the blood.

**IN SUMMARY**

**CARDIOVASCULAR SYSTEM**

The cardiovascular system has 4 main functions:

- Transport essential nutrients throughout the body.
- Eliminate waste products.
- Protects the body against toxins and pathogens.
- Regulate water, heat, oxygen, and pH balance.

The cardiovascular system is made up of the heart, arteries, veins, and capillaries.

The right side of the heart contains deoxygenated blood, while the left side of the heart contains oxygenated blood.

**RESPIRATORY SYSTEM**

- There are two forms of respiration – **external** and **internal**.
- The lungs are responsible for gas exchange, allowing for the release of carbon dioxide and the influx of oxygen.
- Drops in the blood pH levels trigger accelerated breathing during exercise.

**RENAL SYSTEM**

- The kidneys regulate the composition of bodily fluids.
- The kidneys help regulate fluid volume and blood pressure.
- The kidneys maintain electrolyte balance.

**GASTROINTESTINAL SYSTEM**

- The gastrointestinal tract breaks down and absorbs food for nutrient assimilation.
- Digestion redirects blood from the external muscles to the digestive organs.
- Eating before exercise can promote indigestion and cramping.

**LYMPHATIC SYSTEM**

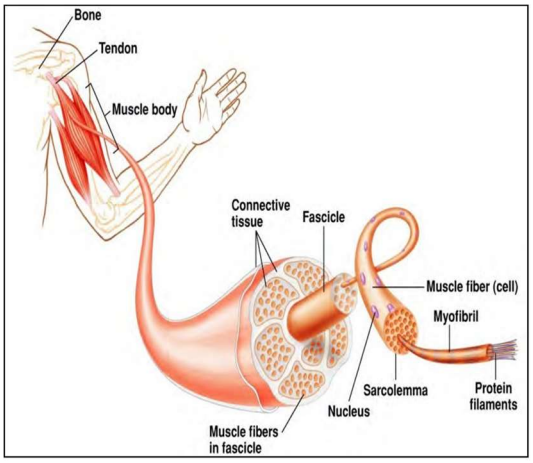
- The lymph system contributes to the improvement of the body's immune system.
- The lymph system is composed of lymph fluid, lymph vessels, and lymph glands.
- The lymph system relies on muscular contractions to circulate lymph fluid throughout the body.

## CHAPTER 4: THE MUSCULAR SKELETAL SYSTEM

A basic understanding of how each body system functions is important to know; however, the muscular skeletal system is by far the most crucial for you to understand. The objective of this chapter is to provide you an in - depth understanding of the physical and chemical mechanics of the muscular -skeletal system. In addition, this chapter will cover the anatomy of the muscular - skeletal system and its involvement during Tae Bo® Fitness Workout. By the end of this chapter you will be a muscle master!

### MUSCLE STRUCTURE

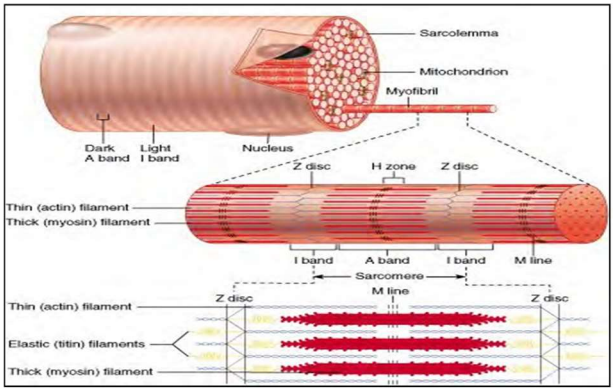
Skeletal muscle is a form of striated muscle tissue. It is voluntarily controlled and is one of three major muscle types along with the cardiac and smooth muscles. Skeletal muscles are attached to bones by bundles of collagen fibers known as tendons.



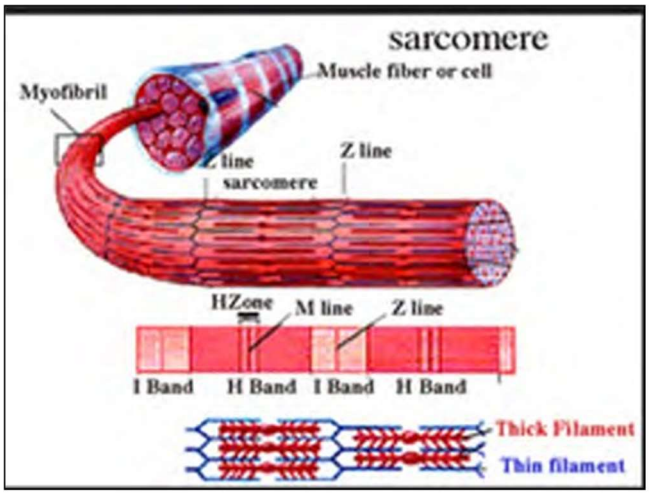

### SKELETAL MUSCLE ORGANIZATION

- Skeletal muscles are made up of muscular fascicles, which are groups of bundled muscle fibers.
- Muscle fibers are composed of long cylindrical muscle cells called myofibrils.
- Myofibrils are made up of actin and myosin.
- Myosin and actin are responsible for initiating muscular contractions.
- The repeated composition of actin and myosin is called a sarcomere, which is the basic functional unit of the muscle fiber.

Myosin is a thick filament that is hugged by the thinner actin filaments. The state of the sarcomere (contracted or relaxed) is described by the bands and patterns formed.



**MUSCLE BAND FORMATION**




**I Band** - The portion of the sarcomere that only contains the thin actin.

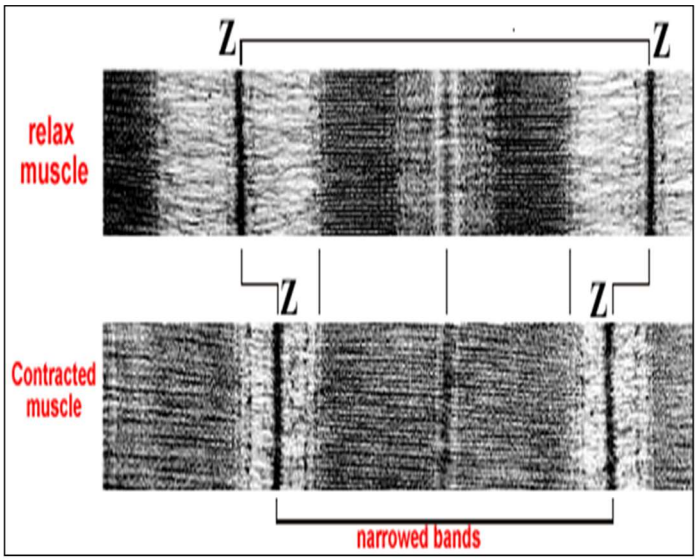
**A Band** - The portion of the sarcomere that contains thick myosin filaments. This Band does not change.

**H Band** - The portion of the sarcomere that only contains the thick myosin, which is not superimposed by the thin actin filaments.

Why is sarcomere physiology important?

The sarcomere contains all the necessary components for muscular contractions. Upon a muscle contraction, the thin actin filaments are pulled inward by the thicker myosin filaments, thereby changing band length. For example, the I- bands and the H - bands shorten as myosin and actin move closer together. This action causes the entire sarcomere to compress and shorten, which is how contracting muscles shorten. These bands widen as actin and myosin move farther apart, which is how relaxed muscles lengthen.

**BASIC MUSCLE CONTRACTION**




The series of events that must take place for a muscle contraction to occur may seem very complicated, however, under close inspection muscle contractions are a very simple phenomenon. A muscle contraction takes place when a brain stimulus causes an electrolyte shift in the muscle.

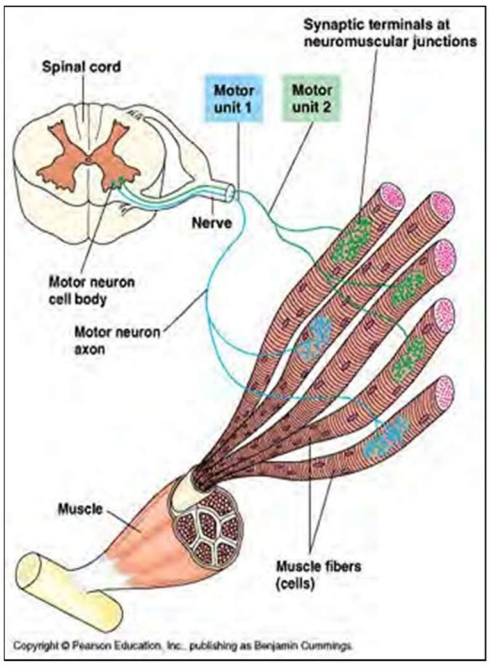
This electrolyte shift causes the actin and myosin to interact. As a result, the muscle fibers shorten and the entire muscle contracts. Although it is important to be aware of all the actual steps preceding a muscle contraction, try not to get lost in the details.

Remember muscle contractions require 3 basic steps.

- Brain Stimulus
- Electrolyte/Ion Shifts
- Actin & Myosin Interaction

**A CLOSER LOOK AT MUSCLE CONTRACTIONS:**

A voluntary muscle contraction is controlled by the central nervous system. The conscious brain sends signals through the nervous system to a motor neuron, which is a brain cell that travels from the brain to the muscle. The impulse sent from the brain down the spinal cord to the muscle fiber stimulates the muscle to either contract or relax.




**MUSCULAR CONTRACTION SERIES OF EVENTS**

- The brain sends a signal to a muscle neuron: an electrical impulse known as an action potential stimulates a motor neuron, which connects to multiple muscle fibers.
- Calcium concentration changes: the mentioned stimulation propagates a change in calcium ion concentration (electrolyte shift). As a result, the neurotransmitter acetylcholine is released from the motor neuron.
- Acetylcholine stimulates the muscle fiber: Acetylcholine moves from the motor neuron to the muscle fiber. More specifically Acetylcholine diffuses across the synapse of the motor neuron and activates nicotinic acetylcholine receptors on the muscle fibers.
- Sodium and potassium concentrations shift: Activation of the nicotinic receptor causes sodium to rush in and potassium to trickle out (electrolyte shift).
- Muscle fiber T---Tubules Activate: Changes in sodium and potassium concentrations stimulate the muscle fiber's network of T---tubules. T---Tubules are tube like structures that help excite the inner portion of the muscle's muscle fibers.
- More Calcium Is Released: This stimulation causes more calcium (electrolyte shift).

Let's summarize what has happened so far. Conscious thought forces a signal to travel down the spinal cord to a particular nerve ending. This signal stimulated the release of calcium, which motivated the neurotransmitter acetylcholine to pass from a neuron to a muscle fiber.

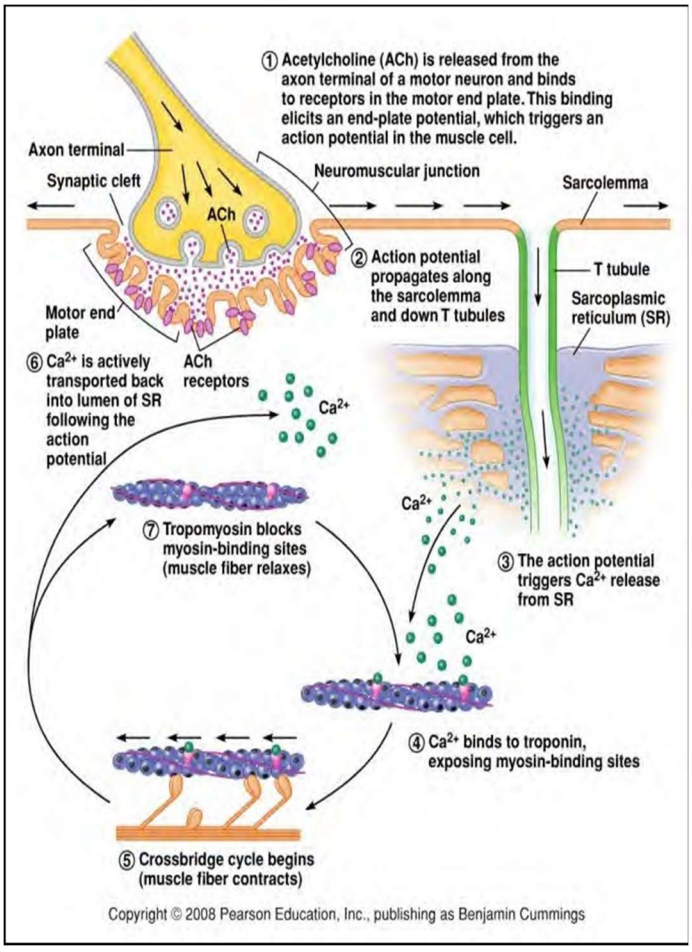
Acetylcholine triggered a change in calcium ion concentration in the muscle. This last step is really important because calcium is a necessary ingredient for all muscle contractions.

Again, try not to get lost in the details. Remember muscle contractions require 3 basic steps.

1. Brain Stimulus
2. Electrolyte/Ion Shifts
3. Actin & Myosin Interaction

So far, we have discussed the necessary steps leading to a muscular contraction, not the muscular contraction itself. A contraction occurs when actin and myosin join and come closer together to shorten the muscle fiber and create tension. This process is instigated by calcium.

**ACTIN & MYOSIN INTERACTION**




- Calcium binds to a structure called troponin C
- Troponin C is normally attached to the actin filament.
- Troponin C blocks myosin from interacting with actin.
- The interaction between calcium and troponin C causes troponin C to let go of actin.
- Now the actin is freed up and can interact with myosin.
- Myosin attaches to the actin fiber.
- Myosin pulls the actin inward.
    - Myosin and actin interaction can be compared to a person pulling on a rope, where myosin is the person and actin is the rope. Myosin has 'hands' that grab onto the actin 'rope' and pulls it inward.
    - Continuing the rope analogy, in order to pull in more rope a person must
    - release the rope several times to grab a farther piece of rope to pull in. Thus, the myosin will attach and release the actin several times during a contraction further shortening the muscle fiber and increasing tension.
    - In summary, myosin and actin interaction causes the muscle to shorten and contract.

So far, we have discussed:

- Muscle fiber anatomy.
- Sarcomere bands.
- The series of events involved in muscle contraction.

All the above sub-topics are an important part of understanding muscle physiology. The next step in becoming a muscle master is to understand the different types of muscle fiber.

**MUSCLE FIBER TYPES**

Skeletal muscle fibers are not all the same and were not created equal. Muscle fibers are categorized based on two unique characteristics: color and the speed of muscle twitch.

Muscle Fiber Color: The color is a reflection of myoglobin content. Myoglobin is an iron and oxygen rich protein found within the muscle. Muscle fibers can either be classified as RED or WHITE. RED fibers are rich in myoglobin and have an abundance of oxygen available for energy production.

WHITE fibers lack myoglobin and do not have sufficient oxygen for energy production.

Type 1 RED Fibers can generate more energy and are LESS resistant to fatigue as they have more oxygen and mitochondria (energy structures) available for ATP production. Type 2 WHITE Fibers do not generate as much energy and are MORE resistant to fatigue, as they do not have enough oxygen and mitochondria to generate energy.

**Which muscle fiber would a triathlete benefit from the most?**

Since triathletes spend hours in competition, they want to utilize the muscle fibers that are less resistant to fatigue. RED Fibers are least resistant to fatigue and benefit endurance athletes the most.

**Muscle Twitch**: Muscle twitch refers to the rate at which a muscle uses energy. Muscle fibers can either be classified as FAST twitch or SLOW twitch.

**FAST Twitch:** FAST twitch fibers are efficient fibers and utilize energy in the form of ATP relatively quickly. FAST twitch fibers can contract and develop tension at 2---3 times the rate of SLOW twitch fibers. These fibers rely on sugars for quick energy. Although these fibers can generate energy relatively quickly their effect is short lived, as they are LESS resistant to fatigue.

**SLOW Twitch:** SLOW twitch fibers generate energy at a slower pace. SLOW twitch fibers rely on a long---term system of aerobic energy. Since energy is generated slower, these fibers tend to have a slower speed of contraction. In addition, these fibers are MORE resistant to fatigue as they contain an abundance of mitochondria and oxygen.

**PUTTING IT ALL TOGETHER, FINALLY!**

There are THREE types of muscle fibers. Each muscle fiber is characterized by its color and twitch. As previously mentioned, these terms refer to the muscles':

- Oxygen availability
- Ability to generate energy
- Speed of contraction
- Resistance to fatigue

**TYPE I RED SLOW TWITCH FIBERS**

Type I RED Fibers are SLOW twitch fibers and rely on aerobic (oxygen) respiration for energy. These muscle fibers utilize the most energy and are the most resistant to fatigue. In spite of this, Type I Red Fibers utilize their energy at a much slower rate than the other fibers, and cannot contract as fast.

These muscle fibers are used to maintain posture (an important technique in Tae Bo® Fitness) and participate in aerobic activities like walking and light jogging.

**TYPE IIA RED FAST TWITCH FIBERS**

Type llA RED fibers are FAST twitch, fatigue resistant fibers. These fibers have a large amount of energy available to them and are able to utilize both aerobic respiration and glycogen reserves. Glycogen is an efficient form of stored sugar that the body converts into ATP. Because of their ability to utilize energy quickly, these fibers are considered fast twitch fibers.

Type IIA muscle fibers are used during sports like swimming and running. These fibers produce more muscle tension than Type I Red Fibers, but are less resistant to fatigue. This explains why you can walk for a longer period of time than you can run or swim. The Type IIA Red Fast Twitch muscle fibers used during swimming will burn out faster than the Type 1 Red Slow Twitch muscle fibers used during walking.

**TYPE IIX WHITE FAST TWITCH FIBERS**

Type llX WHITE Fibers are FAST twitch fibers that are easily prone to fatigue. These fibers rely on creatine phosphate for energy. Creatine phosphate anaerobically (without oxygen) provides ATP to the skeletal muscle during the first few seconds of intense exercise. The muscle has a limited supply of creatine phosphate and can only generate enough energy for 10 seconds of muscle use.

Regardless of their limited energy, these fibers utilize ATP relatively quickly and can provide significant muscle tension. Since these muscle fibers can generate quick short-lasting energy, these fibers are typically used for sports like sprinting and lifting.

**THE MUSCLE AS A WHOLE**

A muscle is a mixture of all three different muscle fibers:

1. Type I Red Slow Twitch Fibers
2. Type llA Red Fast Twitch Fibers
3. Type llX White Fast Twitch Fibers

Muscle fiber utilization depends on activity. For example, if a weak contraction is needed only Type I Fibers will be activated. If a stronger contraction is required Type llA Fibers will be activated.

Different muscle fibers can also be activated at the same time. For example, during Tae Bo® Basic kicks, both posture and speed are fundamental elements of each move. Type 1 Red Slow Twitch Fibers in one's back and abdominals will be activated in order to maintain posture, while Type 2 Red Fast Twitch Fibers in the kicking leg will be activated for speed. Furthermore, Type llX Fast Twitch Fibers are used during ballistic exercises like sprinting and extreme lifting.

Muscle fiber types are not set in stone and can change. Participating in repeated and specific exercise can alter muscle fiber type ratios. For example, the more an individual participates in an activity that requires Type I Red Slow Twitch Fibers like walking, the more Type I Red fibers he or she will develop. The more an individual participates in exercises like jogging and Tae Bo® Basic the more Type 2A Red Fast Twitch Fibers he or she will develop. The more an individual participates in exercises like lifting and sprinting the more Type 2X White Fast Twitch Fibers he or she will develop.

Your muscles will evolve to perform more efficiently in the type of activities you participate the most in. So, the more a person participates in Tae Bo® Basic, the more capable their body will become at performing all the steps and moves required. Explain this muscle phenomenon to your students to help increase their desire to participate in class. Explain that with Tae Bo® Basic they can retrain their muscle chemistry and become a lean, mean, fatigue---resistant machine!

**THE MUSCULAR BODY**

This section of the muscular chapter will highlight key muscle groups and their participation in Tae Bo® Basic. It is important for you to understand the mechanics of the human body so you can become a master in your craft. Knowing the muscle groups and their subsequent actions is important when planning the outline of a class. For example, you may have a class request to tone specific muscles during the work out. Therefore, you will have to know the types of moves that utilize the muscles your students are interested in toning.

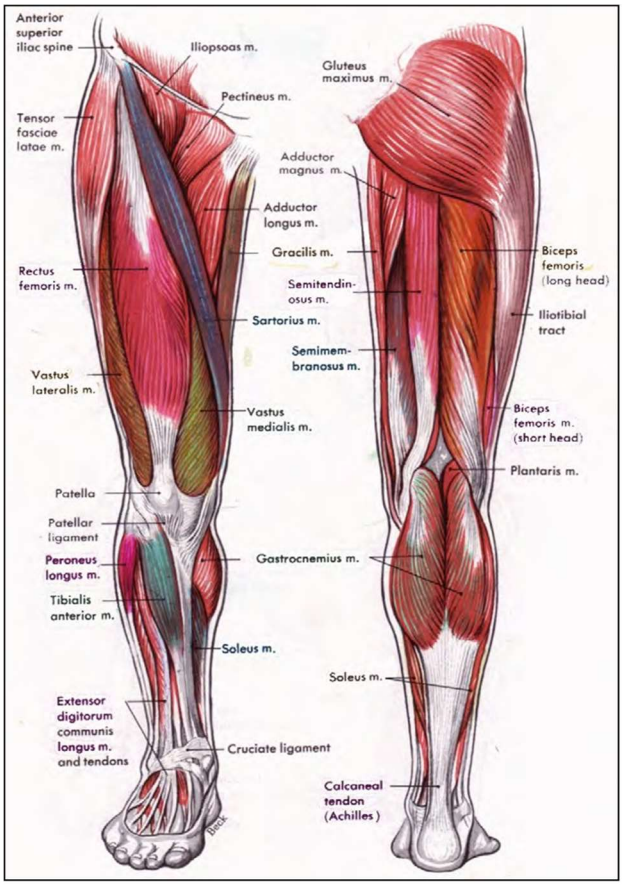
**MUSCLES OF THE HIPS, LEG, AND THIGH**

There are a few challenges when exercising the leg muscles during Tae Bo® Basic.

1. Leg muscles require more blood and heart rate acceleration than other muscles. This is only a challenge for beginners, as beginners are not as used to the heightened heart rate output.
2. Leg muscles are not typically trained to perform kicks.

As mentioned earlier, practice conditions the muscle causing these challenges to diminish. Your legs consist of many muscles, but the ones most important in a Tae Bo® Workout include:

- Hamstrings
- Quadriceps
- Abductors
- Adductors
- Calves
- Glutes




These muscles can work individually or collectively to move the leg.

**HAMSTRINGS:**

- The hamstrings are the muscles that go up the back of the Leg from the knee to the hip.
- They help control knee movement when walking, running, kicking, and jumping.
- They are used during Tae Bo® Basic moves like stances including squatting exercises, kicks, horse stances, and the Tae Bo® Basic warm up exercises.

**ADDUCTORS & ABDUCTORS:**

- The adductors (inner thigh muscles) and the abductors (outer thigh muscles) help to mov and lift the leg away from and closer to the body.
- Adductors move the leg towards the centerline of the body and are used when returning the leg to the body after a kick.
- Abductors move the leg away from the centerline of the body and are used to kick the leg out to the side.
- They are used during Tae Bo® Basic sidekicks for raising and lowering the legs.
- They are also used during Tae Bo® Basic floor exercises involving leg lifts.

**CALVES:**

- The calf muscle is positioned at the back of the leg and works to point and flex the foot.
- The calf includes the gastrocnemius and soleus muscles.
- These muscles are used throughout most of the Tae Bo® Basic combinations, more specifically Tae Bo® Basic footwork and kicks.

**QUADRICEPS:**

- The quadriceps consist of four muscles at the front of the thigh.
- They are crucial for walking, running, jumping and squatting.
- They are used during the Tae Bo® Basic stances, front kicks, sidekicks, roundhouse kicks, back kicks, and squatting exercises.

**GLUTES (Gluteals):**

- Glutes are composed of the gluteus maximus, gluteus mediums, and gluteus minimus.
- They are involved in Tae Bo® Basic stances, back kicks, and squats.

The table below reviews the point where each hip and leg muscle connect to the skeletal system (point of origin and insertion), as well the movement each muscle is responsible for.

**Leg Muscles & Their Subsequent Action**

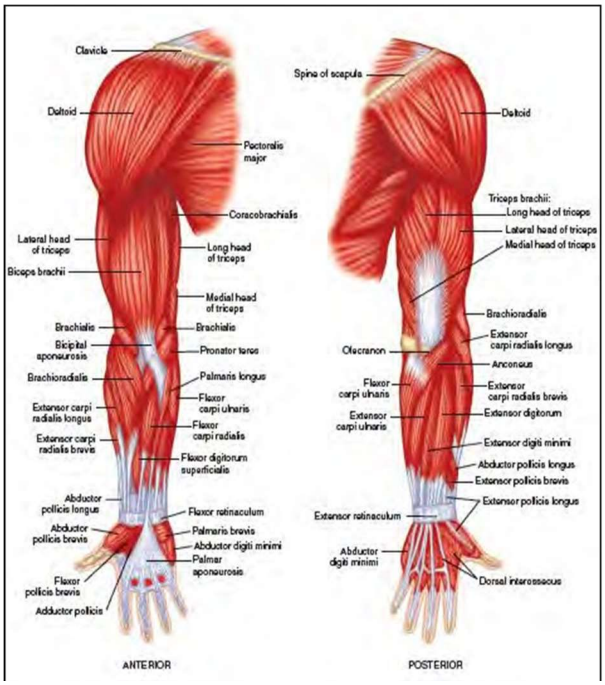
| Muscle | Origin/Insertion | Action |
|---|---|---|
| Gluteus Maximus | o: ilium, sacrum, coccyx<br>i: femur | Extends and rotates thigh |
| Gluteus Medius | o: ilium<br>i: femur | Abducts and rotates thigh |
| Pectineus | o: pubis<br>i: femur | Adducts and flexes thigh |
| Adductor Longus | o: pubis<br>i: femur | Adducts, flexes, and rotates thigh |
| Adductor Brevis | o: pubis<br>i: femur | Adducts, flexes, and rotates thigh |
| Adductor Magnus | o: pubis, ischium<br>i: femur | Adducts, flexes, and rotates thigh |
| Gracilis | o: pubis<br>i: tibia | Adducts thigh and flexes leg |

| Muscle | Origin/Insertion | Action |
|---|---|---|
| Sartorius | o: ilium<br>i: tibia | Flexes and rotates thigh; flexes leg |
| Quadriceps Femoris: Rectus Femoris | o: ilium, femur<br>i: patella, tibia | Extends leg; flexes thigh |
| Quadriceps Femoris: Vastus Lateralis | o: ilium, femur<br>i: patella, tibia | Extends leg |
| Quadriceps Femoris: Vastus Medialis | o: ilium, femur<br>i: patella, tibia | Extends leg |
| Quadriceps Femoris: Vastus Intermedius | o: ilium, femur<br>i: patella, tibia | Extends leg |
| Biceps Femoris (hamstrings) | o: ischium, femur<br>i: fibula | Flexes and rotates leg; extends thigh |
| Semitendinosus (hamstrings) | o: ischium<br>i: tibia | Flexes and rotates leg; extends thigh |
| Semimembranosus (hamstrings) | o: ischium<br>i: tibia | Flexes and rotates leg; extends thigh |
| Tibialis Anterior | o: tibia<br>i: 1st metatarsal and cuneiform | Dorsiflexes and inverts foot |
| Extensor Digitorum Longus | o: tibia, fibula<br>i: phalanges of toes | Dorsiflexes and everts foot; extends toes |
| Gastrocnemius | o: femur<br>i: calcaneus | Plantar flexes foot; flexes leg |
| Soleus | o: tibia, fibula<br>i: calcaneus | Plantar flexes foot |

**ARM MUSCLES**

There are 20 muscles in the arm. The most important muscles for a Tae Bo® Workout that you to be familiar with are:

- Biceps
- Triceps
- Deltoids




**BICEPS:**

- Biceps are the muscles located at the front, upper portion of the arm.
- These muscles are used during Tae Bo® Basic punches, speed bag, crosses, and jabs.

**TRICEPS:**

- Triceps are the muscles located at the back, upper portion of the arm.
- These muscles are used to extend the arm to deliver Tae Bo® Basic punches, crosses, and jabs.

**DELTOIDS:**

- Deltoids are under the chest and back muscles but are also part of the upper arm and shoulder.
- The deltoids are responsible for raising the arm away from the side of the body during a Tae Bo® Side Punch.

The table below reviews the point where each arm muscle connects to the skeletal system (point of origin and insertion), as well the movement each muscle is responsible for.

**Arm Muscles & Their Subsequent Action**

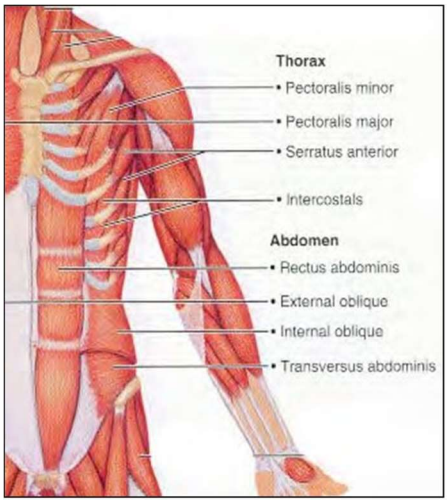
| Muscle | Origin/Insertion | Action |
|---|---|---|
| Coracobrachialis | o: scapula<br>i: humerus | Flexes and adducts arm |
| Biceps Brachii | o: scapula, glenoid cavity<br>i: radius | Flexes arm, flexes forearm, rotates hand |
| Triceps Brachii | o: humerus<br>i: ulna | Extends forearm |
| Anconeus | o: humerus<br>i: ulna | Extends forearm |
| Pronator Teres | o: humerus, ulna<br>i: radius | Medial rotation of forearm pronate hand |
| Pronator Quadratus | o: ulna<br>i: radius | Medial rotation of forearm pronate hand |
| Supinator | o: ulna<br>i: radius | Lateral rotation of forearm |

**MUSCLES OF THE MIDDLE BODY: SHOULDER, THORAX, BACK, AND ABDOMINAL WALL**

Many muscles in the neck, shoulder, thorax, and abdominal wall are utilized in Tae Bo® Basic. It is necessary that each of these muscle groups be engaged properly. For example, it is necessary that the abdominals remain engaged throughout each Tae Bo® Basic Move. These muscles support the entire body and provide a strong foundation for all movement.

The important muscles of the middle - body that you need be familiar with for a Tae Bo® Workout are:

- Rectus Abdominis
- Obliques
- Pectoralis Muscles
- Deltoids
- Rhomboids
- Latissimus Dorsi
- Trapezius
- Erector Spinae

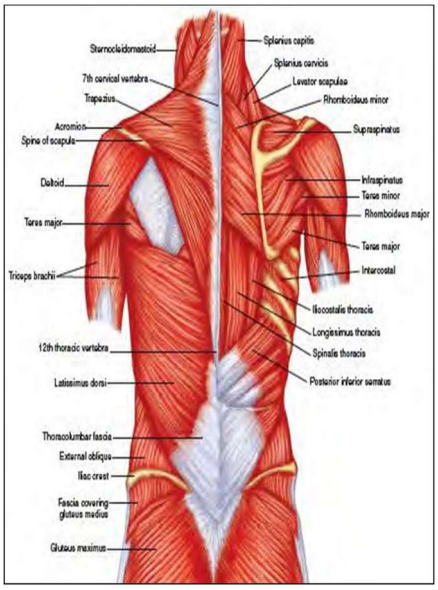



**RECTUS ABDOMINUS:**

- The Rectus Abdominis is a large muscle group located vertically across the abdomen.
- It is the flat muscle in the front of the body that spans from the lower ribs to the pubic bone.
- The rectus allows you to bend forward, stay upright, and maintain balance.

**OBLIQUES:**

- The external obliques are the muscles located down the sides of the upper body that help perform bends, twists, and pivots.




**PECTORALIS:**

- The major muscles of the chest are the pectorals.
- The pectoralis major and the pectoralis minor are involved in flexing and rotating the arm in the shoulder joint.
- They allow the shoulders to go forward and down.
- They assist in adducting the arm and are used during Tae Bo® Basic push---ups, punches, and most moves involving the upper body.
- The pectoralis major is one of the most influential muscles when delivering a punch.

**DELTOIDS:**

- The delts are the muscles that allow you to rotate and move your arm up, down, forward, and backward.
- These muscles may become strained if a punch is not executed properly.

**TRAPEZIUS:**

- The upper back muscles are the trapezius that attach from the lower neck to the middle of the back.
- The traps allow you to hold your body upright and lift your arms up.
- They are used during the Tae Bo® Shoulder Rolls and Butterfly Lateral Arm Moves.

**RHOMBOIDS:**

- These muscles span across the inner shoulder blades.
- They allow you to pull your shoulders back.
- They are used during the Tae Bo® Shoulder Rolls and Butterfly Lateral Arm Movements.

**LATISSIMUS DORSI (lats):**

- The lats form a triangle across the back.
- It is a very broad muscle, which originates on the vertebrae and ribs of the middle to lower back and move to the upper body.
- They are used in extension and adduction of the arm.
- The lats work every time you punch, move your arms up and backward, and stand straight and are used during Tae Bo® jabs, kicks, hooks, and crosses.

**ERECTOR SPINAE:**

Erector Spinae are muscles located at the shoulder cap and support the lower back muscles.

They have three sections, the anterior (front), medial (middle), and posterior (back).

They are used to abduct and medially rotate the arm up, down, forward, and backward.

These muscles are used during Tae Bo® Basic squats, abdominal twists, and push---ups.

If pushing moves, such as punches or push---ups, are not performed properly and with control, these muscles may become strained.

**INSTRUCTOR TIPS:**

It is important that the chest and back are in proper alignment throughout the entire Tae Bo® Workout to avoid injury. For example, upper body moves must be performed correctly to avoid tearing or over stretching the rotator cuff. Remind students to maintain good posture and avoid over extending the arm when punching or the leg when kicking.

**Muscles of the Shoulder, Thorax, Back, and Abdominal Wall & Their Subsequent Action**

| Muscle | Origin/Insertion | Action |
|---|---|---|
| Deltoid | o: clavicle and scapula<br>i: humerus | Abducts, flexes, extends, and rotates arm |
| Pectoralis Major | o: clavicle, sternum, ribs<br>i: humerus | Flexes, adducts, and rotates arm |
| Infraspinatus | o: scapula<br>i: humerus | Rotates arm |
| Teres Major | o: scapula<br>i: humerus | Extends and rotates arm |
| Latissimus Dorsi | o: vertebrae, ribs, ilium<br>i: humerus | Extends, adducts, and rotates arm |
| Levator Scapulae | o: cervical vertebrae<br>i: scapula | Elevates scapula |
| Pectoralis Minor | o: ribs<br>i: scapula | Stabilizes scapula; elevates ribs |
| Serratus Anterior | o: ribs<br>i: scapula | Stabilizes scapula; elevates ribs |
| Trapezius | o: occipital bone and cervical/thoracic vertebrae<br>i: scapula and clavicle | Elevates, adducts, and rotates scapula |
| Rhomboideus Major / Rhomboideus Minor | o: cervical/thoracic vertebrae<br>i: scapula | Adducts and rotates scapula |

| Muscle | Origin/Insertion | Action |
|---|---|---|
| Rectus Abdominis | o: pubic crest and symphysis<br>i: xiphoid process and ribs | Flexes vertebral column; compresses abdomen |
| External Oblique | o: ribs<br>i: linea alba, ilium | Compresses abdomen; rotates trunk |
| Transverse Abdominis | o: ilium, ribs<br>i: linea alba, xiphoid process | Compresses abdomen |
| External Intercostals | o: lower border of rib above<br>i: upper border of rib below | Elevates ribs; aids inspiration |
| Internal Intercostals | o: upper border of rib below<br>i: lower border of rib above | Pulls ribs together; aids expiration |
| Diaphragm | o: lower ribs, sternum<br>i: central tendon | Aids inspiration |
| Spinalis | o: lumbar and thoracic vertebrae<br>i: thoracic and cervical vertebrae | Extends vertebral column |
| Longissimus | o: lumbar and cervical vertebrae<br>i: temporal bone, vertebrae | Extends vertebral column |
| Iliocostalis | o: ilium, ribs<br>i: ribs | Extends vertebral column |

**MOVEMENT AND MUSCLE TONE**

Now you know the essential steps of a muscle contraction. You also know about different muscle groups and the movements they initiate. But how does movement actually occur, and how is it maintained?

Movement is the result of opposition! One muscle must relax, and an opposing muscle must contract for sufficient movement to occur. For instance, you are able to lift your leg upward into a Tae Bo® Roundhouse Kick when the quads contract and the hamstrings relax. In addition, you are able to curl your arm inward when the biceps contract and the triceps relax.

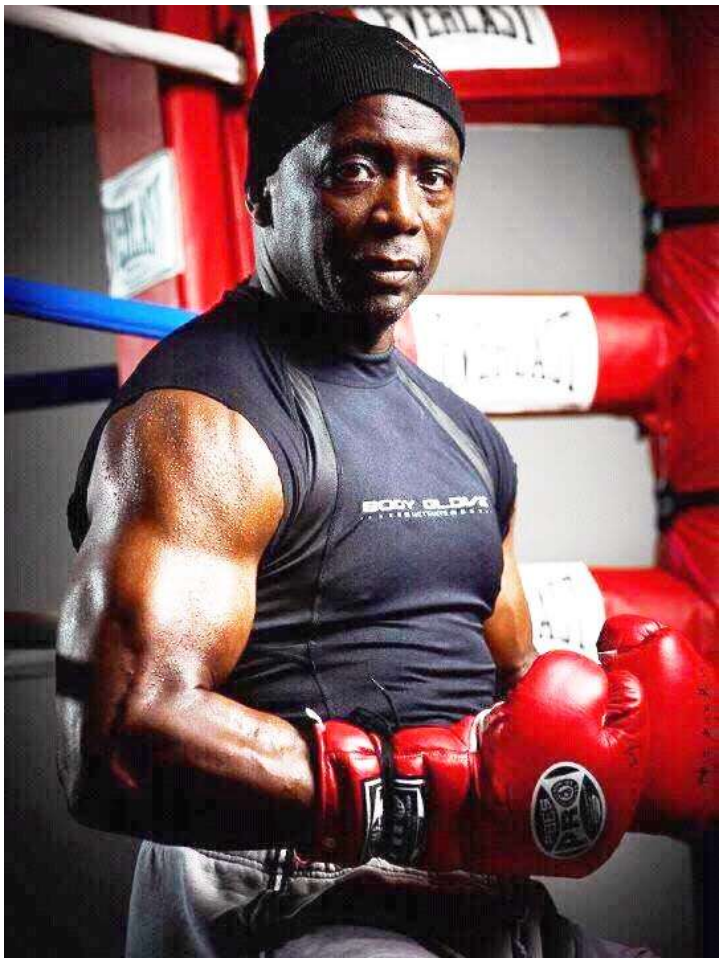
When muscles contract and the opposing muscles relax, muscle tone develops. Muscle tone refers to the tension maintained within the muscle at rest. Unconscious nerve impulses hold the muscles in a partially contracted state, which helps the body to guard against danger and maintain balance. Muscle tone is also used while in a standing position to control the muscle fibers of the neck, back, and legs that hold the body up straight. Without muscle tone, the body would be too relaxed, become limp, and would collapse.

**IN SUMMARY**

1. **Basic Muscular Structure:**
    a. The sarcomere is the basic unit of the skeletal muscle and consists of actin (thin) and myosin (thick) filaments.
    b. A muscular contraction occurs when a brain stimulus propagates an electrolyte/ion shift, which causes myosin to connect and pull on actin.
2. **There are three types of muscle fibers:**
    a. Type I Red Fibers are slow twitch fibers and rely on aerobic respiration for energy.
    b. Type llA Red Fibers are fast twitch and fatigue resistant fibers. These fibers tap into the body's glycogen reserves.
    c. Type llX White Fibers are fast twitch fibers and are easily prone to fatigue. These fibers rely on creatine phosphate for energy.
3. **The major arm muscles utilized in Tae Bo® Basic are:**
    a. Biceps
    b. Triceps
    c. Deltoids
4. **The major chest, back, and abdominal muscles utilized in Tae Bo® Basic are:**
    a. Rectus Abdominis
    b. Obliques
    c. Pectoralis Muscles
    d. Deltoids
    e. Rhomboids
    f. Latissimus Dorsi
    g. Trapezius
    h. Erector Spinae

5. **The major leg muscles utilized in Tae Bo® Basic are:**
    a. Hamstrings
    b. Quadriceps
    c. Abductors
    d. Adductors
    e. Calves
    f. Glutes

**Muscle tone refers to the tension maintained between opposing muscles at rest.**



**FIGHT TO WIN, NEVER GIVE UP!**

## CHAPTER 5: EXERCISE PRINCIPLES

An effective fitness instructor must have an understanding of how the body functions in unison. The objective of this chapter is to review the fundamentals of exercise that every instructor must be aware of before instructing a class. These topics include:

- Heart Rate
- Training Intensity Level
- Karvonen Formula
- Assessing Student Exertion
- Aerobic and Anaerobic Exercise

### HEART RATE

Heart rate refers to the number of beats per minute. Typically, heart rate increases as exertion increases. Certain heart rates should be maintained during exercise. This maintenance zone is referred to as the **TRAINING HEART RATE RANGE**. Exercise focused on maintaining an appropriate and consistent heart rate acts to improve cardiovascular function overall. Maintaining this range will assist students in maintaining their aerobic exercise and will also prevent them from working anaerobically (without sufficient oxygen). It is important for instructors to educate students about heart rates.

As an instructor, your goal is to assist your students in avoiding the anaerobic level of a workout. Anaerobic exercise promotes fatigue and shortness of breath. Resulting in students doing one of the following:

- Slow down – exercise intensity and speed should be maintained throughout the entire work out.
- Stop altogether – a quitter's mentality should not be promoted or encouraged.
- Yo-yo exercising – which is the fluctuation of intensity levels from lack of energy –exercise intensity and speed should be maintained throughout the entire work out.

Recognize these behaviors in your students so you can and help them maintain an aerobic state.

### RESTING HEART RATE

Understanding how to measure the resting and exercising heart rate is an important part in measuring appropriate intensity levels. The resting heart rate is the number of beats your heart produces per minute while at rest.

**MEASURING RESTING HEART RATE:**

At rest, preferably upon rising in the morning, take two fingers (index and middle finger) and place them on your wrist to measure your radial pulse or approximately ½ inch over from the center of your throat to measure your carotid pulse. Use the seconds' hand on your watch and count the number of heartbeats for 1 minute. Take this measurement 2-3 times to get an average reading.

Teach your students how to do this in class and then have them record their resting heart rate first thing next morning.

**EXERCISING HEART RATE**

Exercising heart rate is the heart rate recorded during exercise. It is an optional measurement but can provide great insight as to how your body is reacting to the class. Your students should take their heart rate throughout class to ensure they are working within their limits to avoid over or under exertion.

**MEASURING EXERCISING HEART RATE:**

The best place to measure exercising heart rate is by the carotid artery. Advise your students not to press too hard as the applied force can diminish the measured rate and produce inaccurate results.

To take exercising heart rate, count the number of beats for ten seconds and multiply by 6.

**INTENSITY LEVEL**

Students should keep their training heart rate in the 50% --- 90% range of their maximum heart rate to improve cardiovascular function. The Karvonen Formula will help you determine an individual's ideal training heart rate range. An ideal range keeps the heart rate constant, allowing for a variation of up to 5%. For example, if a student decides to exercise at a 70% intensity level then he or she should either maintain a training heart rate range of 65---70% intensity or 70---75% intensity. Many students may want to work at a higher than appropriate intensity level and it is the instructor's responsibility to educate them properly. Make sure your students start with a low intensity and slowly work their way up to one they feel comfortable with.

**TRAINING LEVEL RECOMMENDATIONS:**

Beginner – 50% --- 60%

Average – 60% --- 70%

Athletic Level – 75% --- 90%

There are different ways to measure exercise levels:

- Karvonen Formula
- Ratings of Perceived Exertion
- Talk Test

**KARVONEN FORMULA**

- 220 – Age = Maximum Heart Rate
- Max Heart Rate – Resting Heart Rate (RHR) = χ
- χ x Intensity (training level) + Resting Heart Rate = Training Heart Rate

**EXAMPLE OF CALCULATING TRAINING HEART RATE RANGE:**

Sarah is 38 years old with a resting heart rate of 69. She works out aerobically twice a week and wants to begin with an intensity level of 60---65%

**HER TRAINING HEART RATE RANGE IS:**

**LOWEST LEVEL OF TRAINING:**

- 220 --- 38 (age) = 182
- 182 --- 69 (RHR) = 113
- 113 x .6 (%) = 68
- 68 + 69 (RHR) = **137 beats per minute**

**HIGHEST LEVEL OF TRAINING:**

- 220 --- 38 (age) = 182
- 182 --- 69 (RHR) = 113
- 113 x .65 (%) = 73
- 73 + 69 (RHR) = **142 beats per minute**

So, in order for Sarah to be within her optimal training range, **she must maintain a heart rate between 137 to 142 beats per minute**. Students should monitor their heart rate during a workout to determine if they are within, above, or below their optimal intensity level.

If you have a student that is too high above their range, you should advise them to step in place every few combinations to reduce their exercising heart rate. New students should take their heart rate about every 10 minutes to ensure that they are working in range.

**COMPUTE YOUR TRAINING HEART RATE (THR) RANGE:**

**LOWEST LEVEL OF TRAINING:**

220 – Age = (Max Heart Rate)

(Max Heart Rate) - Resting Heart Rate) = X

(X) ____ x Intensity (select from 60---90%) = B

(B) _____ + _____ (Resting Heart Rate) = _____ (Training Heart Rate)

To find THR range, repeat the calculation using an intensity level of 5% above your first number.

**HIGHEST LEVEL OF TRAINING:**

220 – Age = (Max Heart Rate)

(Max Heart Rate) - (Resting Heart Rate) = X

(X) ____ x Intensity (select from 60---90%) = B

(B) _____ + _____ (Resting Heart Rate) = _____ (Training Heart Rate)

First THR: _____ Second THR: _____ THR Range: _____

**RATING OF PERCEIVED EXERTION**

Rating of Perceived Exertion (RPE) is another way to determine perceived intensity level. It can be used to assess if the workout is too hard for students. This method asks students to subjectively rate how mentally and physically fatigued they feel during class on a scale from 0 – 10. The normal response should be an RPE of 4 to 6. This method is particularly useful for students with unique exercising heart rates, like students who are pregnant, diabetic, or take beta---blockers.

**RATINGS OF PERCEIVED EXERTION (RPE OR BORG SCALE)**

- 0 – Nothing at all
- 1 – Very Weak
- 2 – Weak
- 3 – Moderate

- 4 – Somewhat Strong
- 5 – Strong
- 7 – Very Strong
- 10 – Very, very Strong (maximum)

**THE TALK TEST METHOD**

This method of monitoring exercise intensity simply requires instructors to talk to their students during the work out. Ask them a question or two. If they can talk without discomfort then it would appear that they are operating in the optimal zone. The objective is to monitor students so they are working at a safe and comfortable intensity.

**AEROBIC VS ANAEROBIC EXERCISE**

**AEROBIC EXERCISE:**

- Abundant oxygen available
- Training heart rate range can be maintained for extended periods of time
- Does NOT promote fatigue
- Includes exercises such as walking, jogging, swimming, Tae Bo® Basic, certain interval exercises, and other exercises that allow for steady and controlled respiration.

**ANAEROBIC EXERCISE:**

- Promotes oxygen deficiency
- Form of exercise that cannot be maintained for extended periods of time
- Promotes fatigue
- Form of exercise that does not allow for steady and controlled respiration
- Can include exercises such as walking, jogging, swimming, and even Tae Bo® Basic if breathing is not properly maintained
- Includes exercises such as sprinting, lifting, and certain interval exercises

Tae Bo® Basic provides AEROBIC Interval Training. Aerobic Interval Training is a series of repeated aerobic combinations. For example, an interval series may consist of 10 minutes of Tae Bo® Basic combinations, followed by a series of punches and kicks performed at moderate speed. These two combinations can be repeated two to three time. Another interval example is a step routine performed for 10 minutes followed by a marching series for 5 minutes.

Aerobic Interval Training increases the amount of calories burned during exercise, while simultaneously fighting off fatigue. Students who are not as experienced may over exert themselves during interval training and may unintentionally shift into an anaerobic state. Instructors are encouraged monitor their students for signs of over---exertion. Since you will have students of varying skill levels, make sure you provide modifications for each individual student's abilities accordingly.

**SYPMTOMS OF ANAEROBIC WORK:**

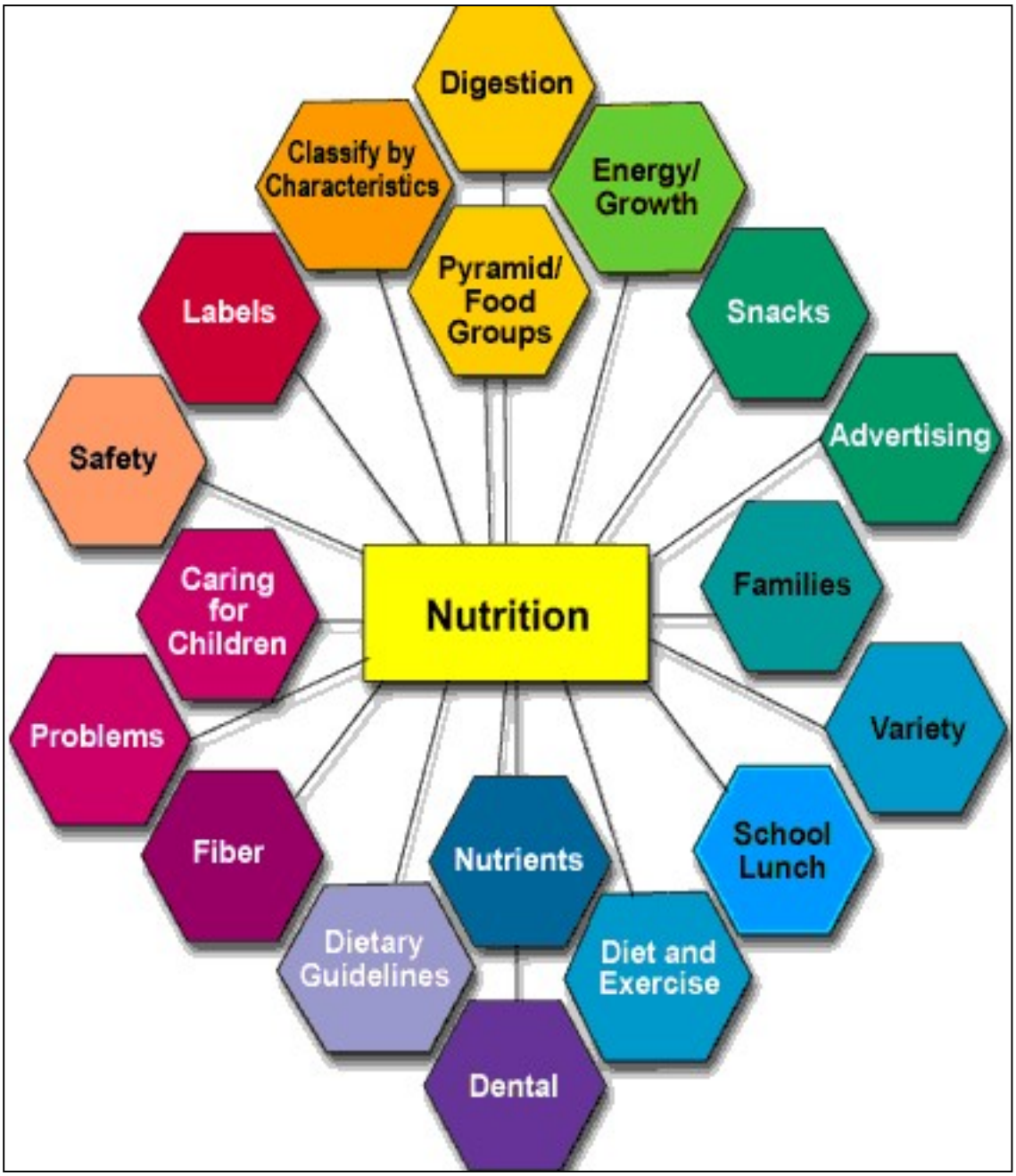
- Hyperventilation
- Quick to Fatigue
- Accelerated Heart Rate
- Heavy Perspiration
- Burning Pain in Arms and Legs

**IN SUMMARY**

1. Training Heart Rate Range – describes the heart rate needed to improve cardiovascular function.
2. Resting Heart Rate – describes the heart rate at rest, which should be measured in the morning.
3. The Karvonen Formula can determine the intensity level and heart rate that should be maintained during exercise. Students should be encouraged to maintain the following intensity levels:
    a. Beginner – 50% --- 60%
    b. Average – 60% --- 70%
    c. Athletic Level – 75% --- 90%
4. Rating of Perceived Exertion (RPE) is a scale that helps to evaluate a student's intensity levels. Students should have an RPE of 4---6.
5. The Talk Test Method assesses student intensity levels. Students are above their appropriate exercise intensity level if they cannot talk during class and are out of breath.
6. Aerobic exercise is the presence of oxygen and should be maintained throughout the entire work out. Anaerobic exercise is deficient in oxygen and will cause students to yo-yo exercise. Anaerobic exercise should be avoided at all times.

**PROPER NUTRITION AND PHYSICAL FITNESS**

Chapters 6 and 7 provide information on metabolism, nutrition and the roles they have during exercise as well as maintaining a healthy lifestyle.



## CHAPTER 6: METABOLISM

Metabolism is a commonly referenced nutrition and physiology term, yet few people understand it. The objective of this chapter is to explain what metabolism is and why is it so important?

Metabolism encompasses the chemical reactions in the body that are responsible for producing energy. Why is metabolism important? Because we cannot produce energy without it! Chemical reactions involved in metabolism are organized into a series of 'pathways'. The body's ability to carry out these chemical reactions and pathways determines the body's metabolic rate. For example, if these reactions are inhibited, regardless of the reason, the metabolic process can slow down. As a result, the body's ability to utilize energy decreases and weight gain and fatigue will manifest.

The efficiency of metabolism is heavily dependent on the presence of two key nutrients: water and oxygen. Without proper respiration and hydration metabolism will not produce energy. Essential nutrients in the form of carbohydrates, fats, and proteins all supply the body metabolic fuel. These nutrients participate in five major energy producing pathways. Remember, pathways are simply a series of related chemical reactions involved in metabolism. These five pathways include:

- Glycolysis
- Krebs Cycle
- Electron Transport Chain
- Lipolysis
- Beta Oxidation

Again, try to focus on the bigger picture rather than the details. Metabolism is a complicated process that involves a lot of components and chemical reactions. However, the metabolic process as a whole boils down to ENERGY PRODUCTION. Metabolism produces energy by taking foods like proteins, carbohydrates, and fats, and turning them into useable fuel.

### CARBOHYDRATES AND METABOLISM

There are two forms of usable carbohydrates for energy production: starches & sugars. During digestion carbohydrates are broken down into singular units of sugar called glucose. Glucose is funneled through the metabolic process to create ATP.

**ATP IS ENERGY!** The goal of metabolism is to make ATP. It is one of the most important chemicals in the body because it provides energy.

The first metabolic pathway necessary to convert glucose into ATP is referred to as Glycolysis. Although Glycolysis is an important energy---producing pathway, it largely functions to convert glucose into a compound called pyruvate. The pyruvate formed from Glycolysis is used in the metabolic pathway referred to as the Krebs Cycle or Citric Acid Cycle. The Krebs Cycle functions to generate ATP and convert pyruvate into a compound called acetyl CoA.

The next pathway in carbohydrate metabolism is referred to as Electron Transport Phosphorylation or the Electron Transport Chain. This pathway generates the most ATP.

In summary, carbohydrates breakdown into glucose, which initiates three major metabolic pathways: Glycolysis, Krebs Cycle, and the Electron Transport Chain. These three pathways are responsible for generating ATP. And, **what is ATP? ENERGY!!!**

It is important to point out that carbohydrates can only generate adequate amounts of ATP when oxygen is readily available. In the absence of oxygen, pyruvate, (the end product of glycolysis), cannot be utilized by the Krebs Cycle. Rather than turning into acetyl CoA, pyruvate is converted into lactate or lactic acid, which provides extremely small amounts of energy. If an individual does not practice proper breathing habits he or she can limit the amount of oxygen inhaled and inhibit acetyl CoA production. This inhibition slows down the entire metabolic system. Poor breathing practices can slow down the metabolic process, causing weight gain and promoting fatigue. Individuals aiming to rev up their metabolism should incorporate deep breathing exercises to integrate more oxygen into their system.

**FATS AND METABOLISM**

Fats and carbohydrates metabolize into ATP differently.

- Glucose generates ATP with the initiation of Glycolysis
- Fat generates ATP with the initiation of LIPOLYSIS.

Lipolysis is the metabolic use of fat for energy. Lipolysis involves the breakdown of triglycerides, the storage form of fat, into free fatty acids. A process called BETA OXIDATION converts these free fatty acids into acetyl CoA. Just like in carbohydrate metabolism, acetyl CoA is shuttled into the electron transport chain to generate ATP.

**Let's compare:**

**CARBOHYDRATE METABOLISM:**

Glucose → Glycolysis → Pyruvate → Krebs Cycle → Acetyl CoA → Electron Transport Chain → ATP!

**FAT METABOLISM:**

Triglycerides (stored fat) → Lipolysis → Free Fatty Acids→ Beta Oxidation → Acetyl CoA → Electron Transport Chain→ ATP!

As you can see, both carbohydrates and fats initiate energy production. Both processes also produce acetyl CoA, which shuttles through the electron transport chain to produce ATP.

## CHAPTER 7: NUTRITION

Proper nutrition is a fundamental part of good health and longevity. Humans rely on the nutrients extracted from food to build essential physiological structures, such as red blood cells, hormones, neurotransmitters, etc. Meeting our body's nutritional requirements reduces the risk of disease, stress, and trauma. In addition, poor nutrition can have negative effects on health such as obesity, depression, heart disease, and cancer.

The world is filled with inaccurate nutritional chatter that is often fueled by trendy fad diet marketing. Many individuals are misinformed about proper eating habits and piece together most of their nutritional information from magazine articles, uneducated bloggers, or propaganda produced by big name food brands. The objective for this chapter is to review the fundamental principles of proper, healthy nutrition.

### CONSUME ALL THREE MACRONUTRIENTS IN CORRECT PROPROTIONS

Macronutrients are nutrients needed for growth and energy. There are three forms of macronutrients: carbohydrates, proteins, and fats. All three macronutrients contribute to optimal wellness.

### PRINCIPLES OF PROPER NUTRITION

### CARBOHYDRATES

Carbohydrates are a group of nutrients that include sugar, starch, and cellulose (plant fiber). Carbohydrates are largely responsible for providing the body with quick energy. However, carbohydrates are actually unnecessary nutrients and humans can survive without them.

Carbohydrates improve the quality of life, brain function, longevity and also reduce the risk of disease when eaten properly. Carbohydrate dense foods are loaded with antioxidants, which also promote overall good health.

The best forms of carbohydrates are unprocessed whole grains, fruits, vegetables, legumes, nuts, and seeds. These whole foods provide the muscles and brain with a quick boost of energy.

### CARBOHYDRATE SOURCES:

- WHOLE GRAINS: barley, bulgur, kamut, millet, oats, rice, rye, wheat, etc.
- FRUITS: apples, apricots, bananas, berries, citrus fruits, melons, pears, plums, etc. VEGETABLES: acorn squash, butternut squash, corn, peas, potatoes, sweet potatoes, yams, etc. LEGUMES: black beans, butter beans, garbanzo beans, lima beans, mung beans, peanuts, etc.
- NUTS: cashews, chestnuts, hazelnuts, pecans, walnuts, etc. SEEDS: almonds, coconuts, pumpkin seeds, sunflower seeds, etc.

Carbohydrates can be placed into two categories:

- **SIMPLE** carbohydrates
- **COMPLEX** carbohydrates

**SIMPLE CARBOHYDRATES:**

- Consist of one or two sugar molecules: MONOSACCHARIDES and DISACCHARIDES
    - Monosaccharides: fructose, galactose, and glucose.
    - Disaccharides: lactose, maltose, and sucrose.
- Simple carbohydrates can be found in
    - Fruit
    - Honey
    - Dairy
    - Table sugar
    - Processed packaged foods: candy, cereal, cookies, etc.

Despite the fact that simple sugars can be beneficial, most processed foods containing simple sugars have harmful health effects. Simple carbohydrates digest relatively quickly and provide the body with immediate sugar. When excessively high amounts of simple sugars are ingested it causes sugar and insulin levels to spike and cause hyperglycemic (sugar high) or hypoglycemic (sugar low) effects.

**COMPLEX CARBOHYDRATES:**

Complex carbohydrates are much larger than simple carbohydrates.

Consist of one or two sugar molecules: OLIGOSACCHARIDES & POLYSACCHARIDES.

- Oligosaccharides:
    - Smaller complex carbohydrates
    - Important for the absorption of certain minerals and fatty acids
- Polysaccharides:
    - Larger complex carbohydrates (i.e. cellulose and starch)
    - Take the longest time to digest
    - Do not raise blood sugar levels as drastically as simple sugars

It is recommended that carbohydrates should make up 60---80 percent of your diet.

**PROTEINS:**

Like carbohydrates, proteins energize the body. However, proteins require nutrients from the body in order to survive.

- Chemical Structures created by proteins: enzymes, cell membranes, transport carriers, hormones, etc.
- Physical Structures created by proteins: tissues, nails, hair, etc.

Proteins are complex molecules that are made up of a combination of amino acids. Visualize a protein as a large beaded necklace that is made up of many beads of varying color and size, and is only complete when there are enough beads to cover the entire length of the string. The beads represent amino acids. Like in the necklace analogy, a large quantity and variety of amino acids are required to make a whole protein. There are 20 known amino acids. Nine of these amino acids are known as 'essential' amino acids and cannot be made by the human body and must be consumed through food.

Proteins can be divided into two categories: **COMPLETE** and **INCOMPLETE**

**COMPLETE PROTEINS**

- Contain all nine essential amino acids
- Contain sufficient amounts of all nine amino acids needed
- 'Make a full beaded necklace'
- Found in:
    - Animal Products, Seeds (i.e. Quinoa, Buckwheat, Sesame Seeds, Sunflower Seeds), Avocado, and Soy

**INCOMPLETE PROTEINS**

- Lack one or more of the essential amino acids
- Do not have sufficient amounts of all nine amino acids needed
- 'Make an incomplete beaded necklace'
- Must be combined with other incomplete proteins to meet amino acid requirements
- Found in:
    - Legumes (Lentils, Garbanzo Beans), Grains (Bulgur, Rice, Oats), Vegetables (Corn, Peas, Spinach), Fruits (Figs, Strawberries, Cantaloupe)

**It is recommended that protein should make up 10---20 percent of the human diet.**

Protein rich diets have recently become very common. Many dieters have been led to believe that avoiding carbohydrates accelerates weight loss, and that extra protein consumption accelerates muscle gain. Unfortunately, these misconceptions have dire consequences such as protein toxicity. Protein toxicity occurs when the body is unable to eliminate the toxic wastes generated from protein metabolism. Over many years, an excessive intake of protein may lead to kidney problems and/or accelerated bone loss that can lead to osteoporosis. Excessive protein consumption can also accelerate cancer growth. Protein consumption should not regularly exceed 20 percent of the total diet.

**FATS**

Although fats have received a bad reputation for causing weight gain, fat is an essential component of the human diet and is needed for survival. Fat is necessary for:

- Normal growth and development
- Energy
- The absorption of fat soluble vitamins (vitamin A, D, E, K, and other carotenoids)
- Maintaining cell membranes
- Encouraging cell signaling
- Maintaining nervous tissue health
- Gene expression

Much like carbohydrates, there are different sub---categories of fats: monounsaturated fats, polyunsaturated fats, and saturated fats, and all are necessary for proper physiological function.

**MONOUNSATURATED FATS:**

- Contain 1 carbon double bond
- Responsible for cell membrane integrity and neuron insulation
- Found in: avocados, olive oil, sunflower oil, etc.

**POLYUNSATURATED FATS:**

- Contains more than 1 carbon double bond
- Responsible for proper gene expression and enzyme utilization
- Found in: chia seeds, flax seeds, walnuts, etc.

**SATURATED FATS:**

- Contains ZERO carbon double bonds
- Responsible for making important cell structures and generating energy.
- Found in: coconut oil, animal products, nuts, etc.

Plant based fats are more suited for the human body than animal-based fats. For example, coconut oil is a better saturated fat source than lard. In addition, chia seeds are a better omega---3 polyunsaturated fat source than salmon.

**For optimal health fats should contribute to 10 to 20 percent of the human diet.**

Individuals suffering from neurological conditions (such as epilepsy or Alzheimer's), women who are pregnant or nursing, and individuals suffering from inflammation, will benefit if the percentage of plant-based fat in their diet is increased.

**CALORIE --- THE UNIT OF ENERGY**

The calorie has become a household word, yet it remains a mystery. A calorie is a unit of heat energy. The dietary calorie (kilogram calorie) is the energy needed to increase the temperature of 1 kilogram of water by 1 Kelvin. The important message to take away from this definition is the word energy. The calorie content in food defines the amount of energy that can be extracted and used by the body.

How much energy do **CARBOHYDRATES** provide?

- 1 gram of glucose is equivalent to 4 calories.

How much energy does **PROTEIN** provide?

- 1 gram of protein is equivalent to 4 calories.

How much energy does **FAT** provide?

- 1 gram of fat is equivalent to 9 calories.

**EAT FIBER**

Dietary fiber, also known as roughage, is food that cannot be digested or absorbed. Fiber passes through the stomach, small intestine, colon, and out of the body in the same form it was ingested.

There are two forms of fiber: SOLUBLE and INSOLUBLE.

**SOLUBLE FIBER:**

- Attracts water to form a gel
- Slows digestion
- Delays the stomach's ability to empty food into the small intestine
- Helps maintain even blood sugar levels
- Increases the feeling of being 'full'
- Helps promote and maintain weight loss
- **FOUND IN:**
    - GRAINS: barley, oats, rye, etc.
    - FRUITS: apples, bananas, berries, prunes, etc.
    - VEGETABLES: broccoli, carrots, Jerusalem artichokes, etc.
    - NUTS & SEEDS: chia seeds, flax seeds, psyllium husk, almonds, etc.

**INSOLUBLE FIBER:**

- Does not attract water
- Has a laxative effect
- Speeds digestion in the small intestine and colon
- **FOUND IN:**
    - GRAINS: corn, rice, wheat bran, etc.
    - FRUITS: apples, grapes, persimmons, etc.
    - VEGETABLES: cabbage, celery, cauliflower, etc.
    - NUTS & SEEDS: hazelnuts, pumpkin seeds, sunflower seeds, etc.

How much fiber should people consume? Individuals should consume between 25---50 grams of fiber per day. Individuals do not have to eat more of one fiber type than another but should focus on eating a diet rich in fruits, vegetables, whole grains, legumes, nuts, and seeds. This practice will provide an abundance and variety of soluble and insoluble fibers to benefit the body.

**EAT & DRINK YOUR WATER!!! CONSUME AN ABUNDANCE OF MICRONUTRIENTS!**

Micronutrients cover a large variety of essential vitamins and minerals. Vitamins and minerals are essential nutrients that are not sufficiently produced by the human body and must be replenished on a daily basis through food. Unfortunately, people are commonly deficient in many of these essential nutrients. The table below lists a variety of micronutrients, their function in the body, their average recommended daily value, and examples of the amount of food necessary to fulfill these requirements.

| MICRONUTRIENT | NUTRIENT FUNCTION | AVERAGE DAILY REQUIREMENT | AMOUNT OF FOOD REQUIRED TO FULFILL AVERAGE DAILY REQUIREMENT |
|---|---|---|---|
| Calcium | --- Nerve transmission<br>--- Muscle contractions<br>--- Glandular secretions<br>--- Contraction and dilation of blood vessels | 1200 mg per day | Equivalent to 9 cups of leafy greens or 8 tablespoons tahini (sesame paste) |
| Phosphorus | ---Component of cell membranes, bones, and teeth<br>--- Balances blood pH | 700 mg per day | Equivalent to 1 cup oats or 1/3 cup raw pumpkin seeds |
| Magnesium | --- Nerve transmission<br>--- Muscle contractions<br>--- Contraction and dilation of blood vessels | 320 mg per day | Equivalent to 1/3 cup raw pumpkin seeds |
| Vitamin B1 (Thiamin) | --- Regulates carbohydrate and protein metabolism | 1.2 mg per day | Equivalent to 1/3 cup flax seed or 6 tbsp. tahini or 1/2 cup wheat germ |
| Vitamin B2 (Riboflavin) | --- Regulates energy production | 1.3 mg per day | Equivalent to 1 cup almonds or 1/2 cup seaweed |
| Vitamin B3 (Niacin) | --- Regulates energy production and carbohydrate metabolism<br>-Synthesizes fatty acids and steroids | 16 mg per day | Equivalent to 2 cups rice bran or 6 tbsp. natural peanut butter |
| Vitamin B5 (Pantothenic Acid) | -Energy production<br>-Fatty acid metabolism,<br>-Hormone & neurotransmitter production | 5 mg per day | Equivalent to 1 1/2 cups mushrooms or 2/3 cup rice bran |

| | | | |
|---|---|---|---|
| Vitamin B6 (Pyridoxine) | -Regulates protein metabolism<br>-Forms red blood cells and neurotransmitters | 1.3 mg per day | Equivalent to 1/2 cup pistachios |
| Vitamin B9 (Folate) | -Essential for DNA synthesis<br>-Participates in normal cell division, red blood cells, and cardiovascular health | 600 ug per day | Equivalent to 10 cups spinach or 2 cups sunflower seeds |
| Choline | -Builds hormones and steroids<br>-Improves cholesterol and cell membranes | 425 mg per day | Equivalent to 4 egg yolks or 3 cups flaxseed or 4 ounces 85% dark chocolate |
| Vitamin C | -Biosynthesis of collagen, carnitine, and neurotransmitters<br>-Provides antioxidant protection<br>-Improves cholesterol production | 90 mg per day | Equivalent to 1/2 sweet pepper or 1 cup parsley |
| Vitamin E | -Fatty acid anti-oxidant support | 15 mg per day | Equivalent to 1/2 cup sunflower seeds or 1 tbsp. wheat germ oil |
| Selenium | -Supports anti-oxidant production<br>-Produces thyroid hormone | 55 ug per day | Equivalent to 1/2 brazil nut or 5 eggs or 2/3 cup flour |
| Carotenoids (Vitamin A & Beta Carotene) | -Cell integrity in the eye and other surface areas of the body<br>-Aids in gene expression<br>-Improves growth and immune function | 900 ug per day | Equivalent to 1/3 cup sweet potato or 1/4 cup kale |

| | | | |
|---|---|---|---|
| Vitamin K | -Motivates blood coagulation<br>-Improves bone metabolism<br>-Supports Vitamin D function | 120 ug per day | Equivalent to 1/8 cup parsley or ¼ cup kale |
| Chromium | -Improves glucose tolerance and insulin action | 35 ug per day | Equivalent to 1 1/2 cups broccoli or 1/2 tbsp. brewer's yeast |
| Copper | -Promotes antioxidant function<br>-Promotes production of neurotransmitters and amino acids | 900 ug per day | Equivalent to 1 1/2 cup mushrooms or 1 cup buckwheat |
| Iodine | -Necessary for thyroid hormone production | 150 ug per day | Equivalent to 1 tsp. kelp or 2 cups organic yogurt or 2 cups of navy beans |
| Iron | -Builds red blood cells, proteins, and enzymes | 18 mg per day | Equivalent to 2/3 cups rice bran or 5 tbsp. tahini or 3 cups lentils |
| Manganese | -Creates enzymes for bone formation<br>---Improves protein, fat, and carbohydrate metabolism | 2.3 mg per day | Equivalent to 1 1/2 tbsp. ground ginger or 1/2-ounce hazelnuts |

**EAT 3 FUNCTIONAL FOODS PER DAY!**

The term "functional foods" refers to foods that improve the body's ability to function. Functional foods contain medicinal properties that have profound effects on the digestive, hepatic, renal, lymphatic, and endocrine systems. The following list highlights different types of functional foods that should be regularly included in the human diet.

**DIGESTIVE FUNCTIONAL FOODS**

- **PROBIOTICS**
  - Probiotics are an ingestible form of live bacteria. Probiotics balance the flora by increasing the number of helpful bacteria in the small and large intestine. Probiotics also help reduce the growth of harmful bacteria and can decrease the severity of diarrhea and constipation. In addition, probiotics boost overall immunity. They can be found in yogurts, sauerkraut, and other fermented food items.

- **MINT**
    - Peppermint calms the muscles of the stomach and improves the flow of bile, which the body uses to digest fats. As a result, food passes through the intestines more smoothly.

**LIVER FUNCTIONAL FOODS**

- **QUERCETIN**
    - Quercetin is a plant antioxidant that gives many fruits, flowers, and vegetables their distinct coloring. Once consumed it seeks out free radicals and prevents cellular damage. Quercetin has been found to be a powerful tool in preventing and treating Fatty Liver Disease, Hepatitis B, Hepatitis C, and Alcoholic Liver Disease. Citrus fruits such as oranges, lemons and limes, dark berries, apples, broccoli, apricots, ancho peppers, and buckwheat contain high amounts of quercetin.
- **TURMERIC**
    - The Indian spice turmeric has several benefits, including acting as an antioxidant, anti---inflammatory, anticarcinogenic, hypocholesterolemic, antibacterial, antispasmodic, anticoagulant, and hepatoprotective actions. Turmeric has been found to be a powerful tool in preventing and treating Fatty Liver Disease, Hepatitis B, Hepatitis C, and Alcoholic Liver Disease.

**KIDNEY FUNCTIONAL FOODS**

**WATERMELON + WATERMELON RIND**

Watermelon (particularly the rind) is a rich source of citrulline. Citrulline is a compound that promotes nitric oxide production, which increases blood flow and reduces blood pressure. A deficiency of nitric oxide is associated with an increased risk of kidney disease. Watermelon can improve and also protect the kidneys.

**CRANBERRIES**

Cranberry juice reduces the amount of calcium in the urine. Calcium buildup causes urinary tract infections and kidney stones. Cranberries can improve and also protect the kidneys.

**LYMPH FUNCTIONAL FOODS**

**FENUGREEK**

Fenugreek has the unique ability to help the body eliminate toxins and improve overall immunity. Fenugreek helps the lymphatic system eliminate toxins and waste materials through the pores of the skin.

**GARLIC**

Garlic is a potent assistant to the lymphatic system because of its high sulfur content that helps eliminate toxic material, bacteria, fungus, and viruses. Studies have found the antimicrobial effects of garlic are similar to some prescription medications such as penicillin and tetracycline.

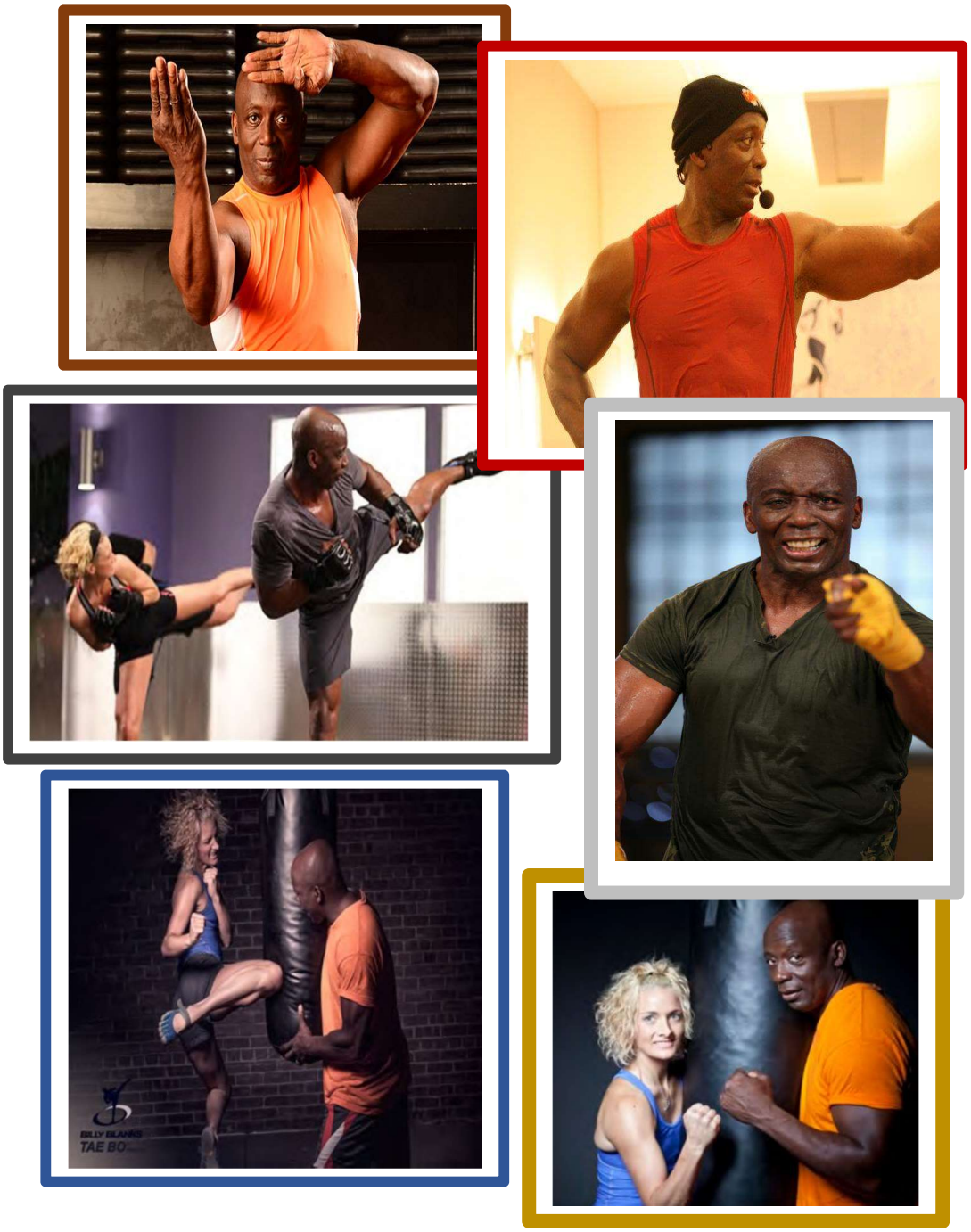
**IN SUMMARY**

1. Macronutrients are large energy producing nutrients. There are three types of macronutrients: Proteins, Fats, and Carbohydrates.
2. An individual's diet should consist of:
    - 60---80% Carbohydrates
    - 10---20% Protein
    - 10---20% Fat
3. Fiber is an important part of human health.
    - There are two forms of fiber:
        - Insoluble Fiber
        - Soluble Fiber
4. Drinking a sufficient amount of water is important. However, it is also important to eat fruits and vegetables, which are rich sources of naturally, filtered water.
5. A healthy diet incorporates adequate amounts of micronutrients. Micronutrients are the necessary vitamins and minerals for survival.
6. Functional foods are foods that improve the body's ability to function. Overall health can be improved simply by eating functional foods on a regular basis.

Implementing healthy dietary habits can be difficult for many people. Encourage your students to lead healthier lives by focusing on their nutrition.

**THE TAE BO® FITNESS WAY**

Chapters 8 through 11 provide information and resources for you to become an expert Tae Bo® Fitness Basic Instructor and change your life for the better, plus the ability to share it with the world!



## CHAPTER 8: MENTAL MOTIVATION/ WHOLE BODY FOCUS

Do you believe that you have to sacrifice in order to be fit? The creator of Tae Bo® Fitness, Grand Master Billy Blanks says, "You should never sacrifice to be fit"! People often think that if you don't punish yourself and spend more time in the gym versus eating desserts, you won't get into shape; or that if you enjoy a workout then it can't be doing any good. However, people are actually more likely to become committed to something they enjoy and look forward to. To be a successful instructor you must be able to spark a student's interests to keep returning to your class sub---consciously. After all, there are not many people who look forward to pushing their body physically, to the point of sweating for an hour, which makes commitment questionable from the start.

***"The body only profits a little from exercise, but the mind profits a lot". - Billy Blanks***

The success of Tae Bo® Fitness is not only because it is a proven total---body workout, but also because it requires whole---body focus. It works you from the inside out through mental motivation, ultimately becoming a positive force in your life both; physically and mentally. Tae Bo® Fitness will give you the power to unleash the strength and energy that you have within yourself, beginning with the way you think. Making it important that your students understand that how they think about exercise will affect their mood, effort, and also their results.

Remember, whenever you're facing a challenge, including a new workout, always ask yourself, "How much better will I be after I succeed at this?" and then give it your all.

In order to do any Tae Bo® Fitness Workout correctly and get the most out of it, you will need to exercise a part of your body not commonly used on the gym floor, your MIND! It doesn't matter how strong or fit you are, the only thing that matters is your ability to concentrate on your technique.

Beginning Tae Bo® Fitness students find that the 'whole---body focus' is the biggest challenge of the workout. Even dedicated fitness enthusiasts, who regularly work out, find this to be a challenging and different approach to exercise. After all, typical fitness programs tend to focus on one area of the body at a time, encouraging you to mentally zone out the other areas.

***"You can't exercise by sight because you'll quit. You need to exercise by will." -Billy Blanks***

Whether you're a star athlete, a beginning fitness student, struggling to lose weight, fighting constant fatigue, or just tend to procrastinate gym time; motivation is a requirement for success. Not just the innate desire that pushes you to be better than someone else or that burning need to prove something in a challenge; but a driving force that personally moves you. What kind of motivation would you need in order to do something consecutively for 21 days, so it could become a habit?

What would motivate you to commit to a 6:00 a.m. Tae Bo® Fitness Workout? Would it be the instructor, a friend, be required for work, needed for college credits; or is it a combination of things? Think back to when you first began, what motivated you to commit to Tae Bo® Fitness? Because that is exactly what your students need in order to reinforce their way of thinking, so they can try a Tae Bo® Fitness Course with an open mind.

***"Motivation is what gets you started. Habit is what keeps you going." -Author: Unknown***

Motivation can be found everywhere; the trick is to make it positive and believable. For example: music, loved ones, friends, fitness instructors, poems, quotes, pictures, or just a smile and a friendly attitude can all act as motivators. Words have power and energy. Repeating words that portray strength naturally channel positive thoughts. Words are a simple, quick, easy, and effective way to, motivate your students to become committed to a challenging, yet rewarding workout. Inspirational quotes empty our minds of negative, irrational and illogical thinking, re---connect us to purity and remind us who we are.

***"Everything you face; hangs on your thoughts." - Author: Unknown***

A good workout is hard and challenging but also impossible to fail. After all, exercising is meant to make you feel good, powerful, inspired, and beautiful; which all begins on the inside. It will awaken the unknown warrior you hold inside, giving you new found strength to conquer everyday challenges. A good workout will work you from within by giving you more energy, strength, power, focus, and more reason to feel good about yourself. Plus, you will get the added bonus of a healthy, great looking outside as well! Tae Bo® Fitness will help you become a person who makes things happen, not a person things happen to. Remember, it all begins with attitude, the difference between success and failure is a positive one

***"Success comes from knowing you did your best and gave your all." - Author: Unknown***

Another way to turn up the volume on workout motivation is to rock the house! Music and exercise go hand in hand. In addition to providing motivation, music can also distract you from discomfort, elevate your mood, increase your endurance, and reduce your perceived exercise effort. It's natural to automatically get with the beat of a catchy tune, without even thinking about it and regardless of where your thoughts and attitude were before it started. The beat of music has the power to immediately take away anger, frustration, sadness, and even pain.

Music can be almost like a drug to athletes who have become addicted to specific pre---game rituals that allow them to mentally zone out and completely focus on what they are about to do.

The more upbeat the tempo of the music, the better the results will be. Even if you think you can't dance, bodies naturally internalize musical beats and atomically try to sync with them. Music tempo can also help your body coordinate the movements more efficiently while distracting your mind from the work, providing a powerful combination that is guaranteed to give you a more productive and enjoyable fitness experience.

***"Clear your mind of 'can't'!" -Author, Unknown***

To be successful in Tae Bo® Fitness, as well as in day-to-day life, concentrate on your thoughts. Think about how happy you are to be where you are today. Before you begin anything that could be challenging, remember to take a moment to push back any distracting thoughts and recommit your energy to what lies ahead of you. Remind yourself of everything you have achieved so far that has allowed you to get to this point in your life and use that to inspire you through whatever trials and tribulations may lie ahead. Think about what you want to achieve, and then take a good, full deep breath, smile, and face it with the power you hold inside yourself.

## CHAPTER 9: TAE BO® BASIC WARM UP

The objective of this chapter is to introduce the warm---up that precedes every Tae Bo® Fitness Class. In many ways, the warm---up is more important than the workout itself because the success of your workout and your ability to avoid injury depends on it.

A warm up does exactly as the name implies, it warms up the muscles in the body. Warm muscles are more flexible, more agile, more responsive and stronger. It is necessary for everyone taking the class to participate in the warm up.

A Tae Bo® Basic Workout should **NEVER** begin without a proper 5 to 7-minute warm up. Each class should be individualized and determined by the age of your students, health conditions, and the skill level of your students. For example, a warm up for a class with individuals all over the age of 50 may be slower, last longer, and include more stretching.

Ask your students how they feel. Are they tight? What muscles need to be loosened up? Encourage student feedback and adjust the warm up accordingly.

### THE TAE BO® BASIC WARM UP ROUTINE:

**Tae Bo® Butterfly Toe Tap:** Start with feet shoulder-width apart, knees slightly bent, arms out from your sides with your hands in fists facing inward. Step to the left bringing your left foot to the center next to the right and tap your toes when it gets there, at the same time rotate your arms to the center of your body, the sides of your hands should touch (with palms facing you) just as your right foot taps down next to your left foot. Return to the start position. Repeat the other direction.



**Tae Bo® Arm Circles:** Stand with feet shoulder-width apart, arms straight out to the sides with your palms pointing down. Rotate your arms in a large circular motion for a brief period. Remember to keep your knees slightly bent and your back straight throughout the movement. Repeat in the other direction.

**Tae Bo® Shoulder Shrugs:**

Start with feet shoulder-width apart, knees slightly bent, back straight and hands on hips. Bring your shoulders up to your ears as if you were shrugging, return to normal placement. Repeat, first with both shoulders and then alternate shoulders, shrugging only one at a time, starting with the left shoulder

T**ae Bo® Drop Stretch:**

Start with feet a little more than shoulder-width apart, arms by your sides. Keeping your weight on your right foot rock back onto the heel of your left foot while you drop down as low as you can to the floor. Keep your right arm inside the right thigh, bending your arm at the elbow, with fist at chin. Left hand is on the floor for support. Be sure to stay in control of the move and keep your back straight. Hold it where you feel it, but are not out of control of the stretch. Return to the start position and repeat the other direction.

**Tae Bo® Side Shoulder Stretch:**

Start in a wide stance, knees bent and back straight, place your hands on your quads. Dip the left shoulder left shoulder toward your right knee, return to the center and then dip your right shoulder toward your left knee.

**Tae Bo® Overhead Reach:**

Start with feet shoulder-width apart, knees slightly bent, back straight and arms by your sides. Reach your left hand over your head as you straighten your left leg so just your left toes are on the floor. Return to the start position. Repeat, first to the left and then the right.

**IN SUMMARY**

1. The Tae Bo® Basic Warm Up should be at least 5---7 minutes long.
2. All students must participate in the Warm---Up.
3. The Warm---Up consists of:
    a. Tae Bo® Center Toe Tap
    b. Tae Bo® Arm Circles
    c. Tae Bo® Shoulder Shrugs
    d. Tae Bo® Drop Stretch
    e. Tae Bo® Side Shoulder Stretch
    f. Tae Bo® Overhead Reach Stretch

LIFE AND DEATH ARE IN THE POWER OF THE TONGUE

## CHAPTER 10: TAE BO® BASIC MOVEMENTS

The objective of this chapter is to introduce, break down, and explain the fundamentals of each Tae Bo® Basic move. Remember to begin each move balanced in order to execute correct positions and increase your accuracy, confidence, power, and flow of motion.

### TAE BO® BASIC FOOT WORK

### TAE BO® BUTTERFLY:

Start with feet together, knees slightly bent and hands on your hips. Take a large step to the left with the left foot. At the same time swing your arms out to your sides; bent elbows should be parallel with shoulders and fists at ear level. Be sure to keep your knees bent and your glutes back throughout the move. Squeeze your chest and twist your wrists as you bring your hands toward the center. Return to the start position. Repeat, first to the left and then the right.

### TAE BO® FORWARD TOE TAP:

(Side view shown) Start with feet together, knees slightly bent, back straight, arms in guard position with chin in the cage. Step forward with the right foot and then the left but instead of placing your left foot, tap your toes. Return to the start position. Repeat, first to the left and then the right.

**TAE BO® LATERAL SHUFFLE STEP:**

Start with feet shoulder-width apart and arms in guard position. Take a small, quickstep with your left foot, quickly bringing your right foot next to it, make sure you tap your right toe once it gets there. Repeat the other direction. Be sure to keep your knees slightly bent and your back straight. Remember, this is a quick, fluid motion like a shuffle.



**TAE BO® "V" STEP:**

Starting with feet shoulder-width apart and arms in guard position, step diagonally back with your left foot, then step forward with your right foot so you're your feet are together, then step diagonally back with your left foot, and then step forward bringing your feet together, making a "V" pattern.




**TAE BO® JUMPING JACKS:**

Start with feet together, knees slightly bent, and hands in a triangle in front of you. Perform a jumping jack, keeping knees slightly bent and reach both hands over your head, bringing them back to a triangle above your head. Return to the start position. Repeat.



**TAE BO® LEG CHECK:**

Start with feet together, arms bent at sides, hands in loose fists. Execute this move in a smooth rhythmic motion, keeping back straight and knees bent. Move your left leg in front of the right, and touch the heel to the floor. Repeat on the opposite leg, be sure to keep your weight on the supporting leg. Think of sitting in a chair.

**TAE BO® BASIC STANCES**

**TAE BO® HORSE STANCE:**

Start with feet a little more than shoulder-width apart, knees bent (without them going over the toes) back straight, arms in guard position and chin in the cage.

**TAE BO® FORWARD FIGHTING GUARD**:

Feet shoulder-width apart, left foot forward, arms in guard position, and chin in the cage. Do not let the heel of your back foot touch the ground. Keep your back straight and knees slightly bent and your hands under the chin.

**TAE BO® HORSE STANCE FIGHTING GUARD:**

Stand with feet in a wide stance, arms bent at your sides with hands in loose fists. First to the left bring your left fist up in a single fluid movement, turning your head the same direction and watching your fist go up. Return to the start position and repeat in the opposite direction.

**TAE BO® HOUR GLASS STANCE:**

Stand with feet shoulder-width apart, right foot behind the left leg so your knees are directly behind one another, knees slightly bent, back straight, arms in guard position and chin in the cage.

## TAE BO® BASIC UPPER BODY

### TAE BO® SINGLE ARM SPEED BAG:

Stand with feet shoulder-width apart, knees slightly bent, back straight and arms in guard position with chin in the cage. Raise the left arm so elbow is parallel with shoulder, turning your head to look at your fist, right arm remains in guard position. Move the left arm in a continuous forward circular motion from the elbow. Be sure to keep your shoulders down, your back straight and your knees slightly bent. Repeat, first on the left and then the right. Then repeat the circles in the opposite direction.

### TAE BO® DOUBLE ARM SPEED BAG:

Start with feet shoulder-width apart, knees slightly bent, back straight, arms in guard position and chin in the cage. Pivot your upper body to the left and raise both arms, looking at your raised fists. Be sure to keep your shoulders down, back straight and your knees slightly bent. Use both hands at the same time and roll your arms in a tight circle. Keep your back heel off the floor. Repeat to the right.

### TAE BO® OVERHEAD PRESS:

Start with feet shoulder-width apart, knees bent, arms bent with elbows parallel to shoulders, palms held above shoulders. Extend both arms over your head, making sure to face your palms up. Push your hand straight up over your head without overextending your elbows, return to the start position. Repeat.

**TAE BO® TOE TAP LATERAL RAISE:**

Start with feet together, knees slightly bent, upper arms close to your body, forearms and hands straight out from stomach, touching in upside down fists. Lift both arms to the sides, rotating wrists as you lift extending arms out parallel with shoulders. As you lift your arms, shift weight to right leg, extending the left leg until only the toe is touching. Return to the start position with the same steps. Repeat, first on the left and then the right.

**TAE BO® JAB:**

(Side view shown) Stand with feet shoulder with apart, knees bent, arms in guard position and chin in the cage. Step forward with left foot as you execute a left jab, extending your left arm straight out from your shoulder. Return to the start position. Repeat, first to the left and then the right.

**TAE BO® CROSS:**

Stand with feet shoulder-width apart, back straight, arms in guard position and chin in the cage. In one swift motion, step with your left foot as you execute a right cross punch; do not drop your shoulder. Be sure to pivot your hips, cross the centerline and to twist your wrist at the end of the punch. Return to the start position. Repeat, first with the right and then the left.

**TAE BO® HOOK:**

Stand with feet shoulder-width apart; back straight, arms in guard position and chin in the cage. In one swift motion, life your left heel off the floor as you execute a left hook; do not drop your shoulder. Be sure to turn your hips and not to swing the punch. Do not go to full extension or cross your centerline. Return to the start position. Repeat, firs on the left and then the right.

**TAE BO® UPPERCUT:**

Stand with feet shoulder-width apart; back straight, arms in guard position and chin in the cage. In one swift motion, drop your left knee as you throw a left uppercut. Be sure to pivot your hips toward your focal point or target. Don't swing the punch or fully extend the arm. Return to the start position. Repeat, first to the left and then the right

**TAE BO® BASIC LOWER BODY**

**TAE BO® FRONT KNEE:**

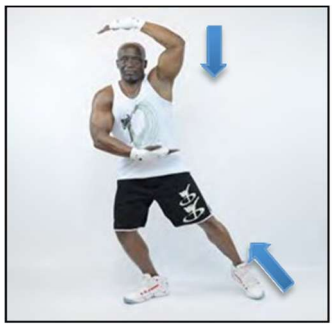
(Side view shown) Stand with feet shoulder-width apart, knees slightly bent and back straight. Shift weight onto right leg as you lift your left knee up so your knee is parallel to the hip. At the same time, your left-hand touch extends to touch the ankle of the left leg. Return to the start position. Repeat, first with the left and then the right.

**TAE BO® SIDE KNEE RAISE:**

Stand with feet shoulder-width apart, knees slightly bent and back straight. Shift weight to the right leg, bending the knee; extending left leg out to the side with only toes touching the floor. Bring the left knee up at the same time the arms come down crunching the abdominals. Be sure to bring the left knee up above the belly button. Point the toes of the leg being raised and be sure to have that same hand touch the ankle of the raising leg. Return to the start position. Repeat, first to the left and then the right.

**TAE BO® HALF MOON KNEE RAISE:**

Stand with feet shoulder-width apart, knees slightly bent and back straight. Shift weight to the right leg, bending the knee; extending left leg out to the side with only toes touching the floor. Right arm is across the stomach and left arm is above your head. Lift the left knee up at the same time you bring your left elbow down, crunching the obliques. Return to the start position. Repeat, fist on the left and then the right.



**TAE BO® FRONT KICK:**

(Side view shown) Stand with feet shoulder-width apart, knees slightly bent, back straight, arms in guard position and chin in the cage. In a slow and controlled movement shift weight onto the right leg as you lift the left leg, so the knee is parallel to the hip, kicking straight out with the foot once the knee is up. Return it to the start position in the same motion. Repeat, first to the left and then the right.

**TAE BO® BACK KICK:**

(Side view shown) Stand with feet shoulder-width apart, knees slightly bent, back straight, arms in guard position and chin in the cage. Lean forward, sticking out your butt so your shoulders are above the knees and kick straight back with your left foot flexed. Return to the star position. Make sure you bring the heel up as high as the glutes. Hands should be in a solid guard position. Repeat, first with the left and then the right.

**TAE BO® ROUND HOUSE KICK:**

Stand in a large stance, arms in guard position and chin in the cage. Slightly pivot your torso so your hands are over your left leg, facing the left. Shift weight onto the right leg as you lift the left foot so only toes touch. Leaning forward so your left shoulder is above your right knee, lift your left knee straight up, parallel with the hip, and execute a left roundhouse kick. Return to the start position in the same way. Do not drop the kicking leg. Supporting knee stays bent and back straight. Toes of the kicking foot are pointed. This kick should be a "slapping" kick and should make a half circle motion. Repeat first with the left and then the right.

**TAE BO® SIDE KICK:**

Stand in a large stance, arms in guard position and chin in the cage. Slightly pivot your torso so your hands are over your left leg, facing the left. Shift weight onto the right leg as you lift the left heel off the floor. Leaning forward so your left shoulder is above your right knee, kick your left leg foot out executing a left sidekick. Return to the start position with the same moves. This kick is a straight---line kick, done with the heel of the foot. It makes a "poking" move.  Repeat, first with the left and then the right.

## TAE BO® BASIC COMBINATIONS

**TAE BO® SPEED BAG SIDE TOE TAP:**

This combination puts the Tae Bo® Double Speed Bag (instructed above) with a simple toe tap. As you execut a double speed bag, tap your feet in place. Repeat, first on the left and then the right.


**TAE BO® BUTTERFLY PUNCH 1, 2, 1**:

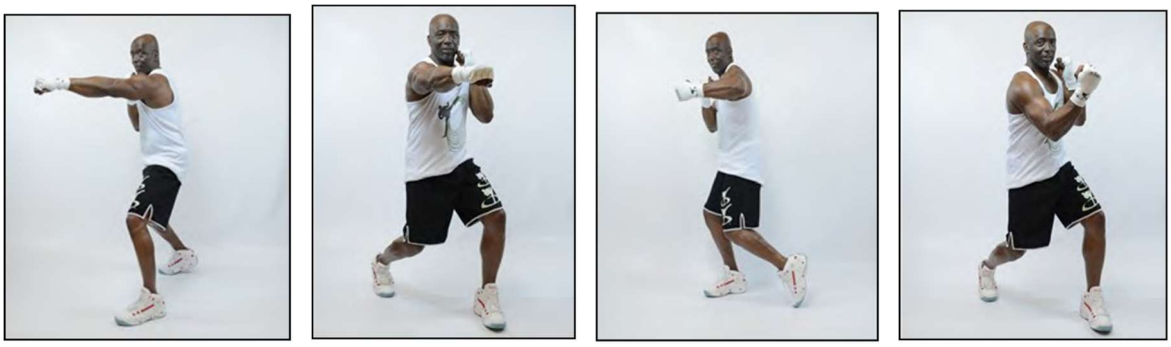
This combination puts the Tae Bo® Butterfly (instructed above) with the Tae Bo® Jab and Tae Bo® Cross (also both instructed above). Begin facing the left side, execute a Tae Bo® Butterfly, opening the stance and turning at the same time so you end up facing forward. Execute a left jab, right cross, followed by a left jab. Return to the stat position. Be sure to keep it a continuous movement and to look forward while executing the punches. Repeat, first to the left and then the right.





**TAE BO® 4 STEP PUNCHING COMBO:**

This combination puts all four of the Tae Bo® Punches together in one move: Tae Bo® Jab, Tae Bo® Cross, Tae Bo® Hook, and Tae Bo® Upper Cut (all instructed above). Execute a left jab and a right cross punch while traveling forward and a left hook and right uppercut while traveling backwards. You should end up in the same spot that you started. Repeat.



**TAE BO® SHUFFLE STEP PUNCHES:**

This move combines the Tae Bo® Jab and Tae Bo® Cross (both instructed above) together with a shuffle step. Travel first to the left and then to the right in a continuous motion, executing three left jabs followed by a right cross. Return to the start position. Repeat, first to the left and then the right.

**Shuffle Jab 3 times**

**TAE BO® "V" STEP CROSS**:

This move combines a Tae Bo® Cross (instructed above) with a 'V' stepping pattern, stepping to the left, back to the center and then to the right in a continuous motion, making the letter "V", finish the move by executing a Tae Bo® Left Cross. Repeat in the other direction.

**TAE BO® JUMPING JACK :**

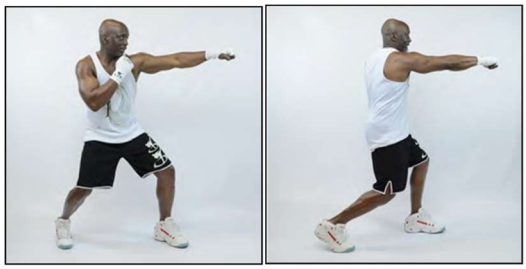
Start with feet together and hands in a triangle at your waist. Jump straight up, landing feet in a wide stance. At the same time bring your hands up, ending in a triangle above your head. Return to the start position and repeat.

**TAE BO® CROSS CORNER CROSS:**

This move executes two Tae Bo® Crosses (instructed above) in rapid fire. Start with left cross and then a right cross. Be sure to not shift your weight back and forth. Sit back and isolate the legs. Punch across your centerline. Return to the start position and repeat

**TAE BO® LEG CHECK SPEED BAG:**

This move combines the Tae Bo® Double Speed Bag (instructed above) with a leg check movement. While executing a Tae Bo® Speed Bag, step forward with your left leg, resting only your heel on the floor, tightening the abdominals. Return to the start position and repeat to the right.



**TAE BO® JAB CROSS:**

(Side view shown) This moves combines a Tae Bo® Jab and a Tae Bo® Cross (both instructed above). Execute a left jab immediately followed by a right cross. Return to the start position. Repeat, first to the left and then the right. Do not drop your punches.

**TAE BO® PUNCH 1, 2, 1 KNEE RAISE:**

(Side view shown) This move combines a Tae Bo® Jab, Tae Bo® Cross, and a Tae Bo® Knee Raise (all instructed above). Make sure each move is its own and fully executed before advancing in a continuous motion. Execute a left jab, a right cross, a left jab, followed with a left side knee raise. Repeat on the right side.

**TAE BO® LOW/HIGH JAB:**

(Side view shown) This move combines a Tae Bo® Jab (instructed above) with a low/ high motion. Bending your knees and leaning forward execute a left jab, stand back up and execute a left jab. Do not let your knees go over your toes and focus your punches first to the stomach and then to the head. Return to the start position. Repeat, first to the left and then the right.

**TAE BO® STEP FORWARD KNEE RAISE**:

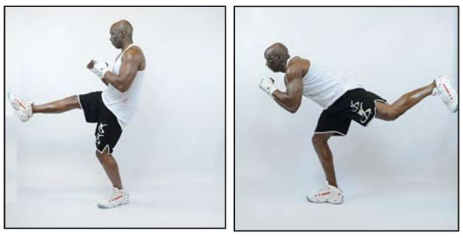
This move combines the Tae Bo® Knee Raise (instructed above) with a forward step. Step forward with the right foot, begin to step forward with the left but instead execute a left knee raise. Repeat in the opposite direction. Be sure to keep the supporting knee slightly bent and bring the knee to the chest.

**TAE BO® SIDE KNEE RAISE CROSS PUNCH**:

This move combines a Tae Bo® Knee Raise and a Tae Bo® Cross (both instructed above) Execute a left knee raise immediately followed by a right cross. Return to the start position. Repeat on the opposite side. Be sure to pivot your body while punching and to make a full range of motion

**TAE BO® FRONT KICK BACK KICK:**

(Side view shown) This move combines a Tae Bo® Front Kick and a Tae Bo® Back Kick (both instructed above). Start with a right front kick followed by a left back kick. Repeat on the opposite side. Be sure the supporting leg is slightly bent and do not let the kicks drop.



**TAE BO® FRONT KICK TOE TAP:**

This move combines a Tae Bo® Front Kick with a Tae Bo® Toe Tap. Execute a left leg front kick, tapping your toe when returning it to the floor. Repeat, first to the left and then the right.

**TAE BO® SQUAT FRONT KICK:**

This move combines a Tae Bo® Squat with a Tae Bo® Front Kick (both instructed above). Start with a squat followed by a left front kick. Return to the starting position. Repeat, first with the left and then the right. Make sure your knees do not go over the toes and to keep your back straight.



**TAE BO® SIDE KNEE SIDE KICK:**

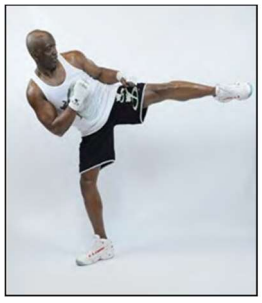
This move combines a Tae Bo® Knee Raise with a Tae Bo® Side Kick (both instructed above) Execute a left side knee raise immediately followed by a left knee sidekick. Return to the start position. Repeat to the right. Be sure to not drop the kick and to have good balance.



**TAE BO® BACK ROUND HOUSE KICK:**

Start with your feet slightly more than shoulder-width apart, knees slightly bent, back straight, and chin in the cage. Slightly pivot your right foot, shifting your weight onto your right side, raise your left knee until its parallel with your hip, and then kick your foot out with a pointed toe. Be sure that the right leg “kicks out” the left leg in a hop. Do not let the kicking leg drop. Then repeat on the opposite side.



**TAE BO® SIDE KNEE ROUND HOUSE KICK:**

This move combines a Tae Bo® Side Knee raise with a Tae Bo® Round House Kick (both instructed above). Execute a side left knee raise immediately followed by a left roundhouse kick. Repeat each move on the opposite side to return to the start position. Repeat in the opposite direction. Do not drop the kick and be sure to maintain good balance and posture.



**TAE BO® "V" STEP SIDE KNEE RAISE:**

This move combines the Tae Bo® 'V' Step with a Tae Bo® Knee Raise (both instructed above). Execute a Tae Bo® "V" step followed by a Tae Bo® Left Knee Raise. Repeat to the right.




**STEADFAST DRILLING**

Steadfast drilling utilizes steps in sequence at a high speed. It improves:

- Memory of steps
- Technique
- Rhythm

It is important to make sure that students still workout within their training heart rate range even during steadfast drilling. Students should be reminded to constantly breathe during these fast-paced drills. Drill exercises typically cause students to hold their breath, which will push them into an anaerobic state.

In addition, it is important to maintain good transitions and a continuous flow of movement during steadfast drilling.

Steadfast drilling is completed when the instructor calls out the punch or kick in a number sequence. For example, you may call out 1, 1, 2, 2, 6 and students follow the sequence by executing a left jab, left jab, right cross, right cross, followed by a left roundhouse kick.

**TAE BO® FITNESS BASIC SYSTEM**

#1 Jab

#2 Cross

#3 Hook

#4 Upper Cut

#5 Front Kick

#6 Round House Kick

#7 Side Kick

#8 Back Kick

**IN SUMMARY**

The Tae Bo® Basic workout consists of a variety of different stances, punches, kicks, and combinations. It is your responsibility as an instructor to incorporate these moves into a cohesive exercise routine within the guidelines of this instructor manual.

## CHAPTER 11: TAE BO® BASIC COOL DOWN

The objective of this chapter is to review the cool down moves and the proper technique needed to correctly perform the Tae Bo® Basic Cool Down.

It is important that enough time is dedicated to the cool down or students run the risk of passing out. Blood pressure is elevated throughout the entire Tae Bo® Basic class and students can become lightheaded and faint if the body does not sufficiently cool down. To help your body cool---down properly, the five minutes before it actually begins should be spent marching in place or walking around the room to assist the heart in slowing down.

**RECOVERY HEART RATE**

Recovery heart rate is the heart rate taken at the end of a cool down. Students should monitor their recovering heart rate 10 minutes after intense activity to ensure it is back to a normal resting level.

**TAE BO® BASIC COOL DOWN**

**TAE BO® SIDE TOE TAP ARM CIRCLE:**

Start to the left side and then repeat to the right. Execute a Tae Bo® Toe Tap moving to the side while performing arm circles with your arms out to your sides and your fingertips pointing up. Repeat on the opposite side. Be sure to use smooth, slow movements and to breathe.

**TAE BO® SIDE HAMSTRING STRETCH:**

Start with your hands on your hips and your knees slightly bent. Shift all of your weight to one leg and put the opposite leg out in front of you with only your heel touching the ground. Reach down to your toes and gently pull back on your toes until you feel the stretch in your hamstring. Make sure to keep your back straight and do not over extend.

**TAE BO®LUNGE STRETCH AND REACH:**

Start with a deep left lunge, place your left hand flat on the ground directly under your shoulder and raise the right palm to the ceiling, your eyes and head should follow your right hand to toward the ceiling. Shift to the right and repeat with the opposite leg and arm.

**TAE BO® HORSE STANCE HOLD**:

Hold a horse stance facing forward, with your arms in guard position for a period of time to be determined by the instructor.

**TAE BO® OVER HEAD SIDE STRETCH:**

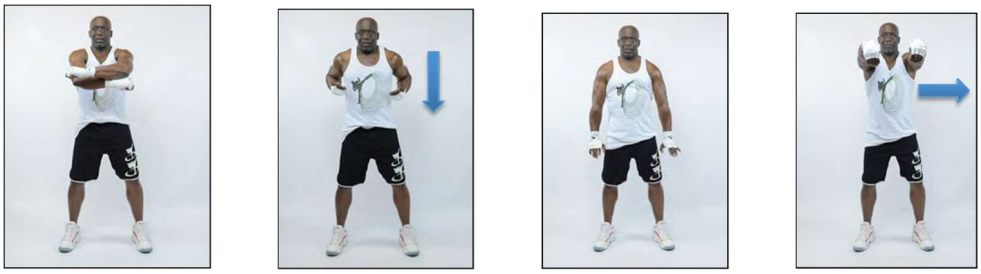
Standing with your feet together and your knees slightly bent, stretch your right arm over your head to the left and then repeat to the right, using your right arm

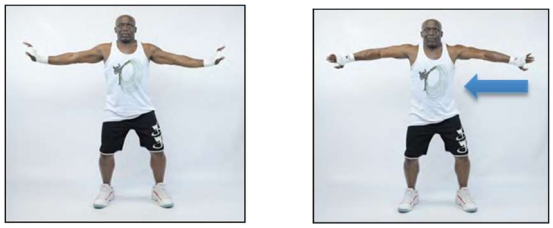
**TAE BO® NECK STRETCH:**

Start with feet together and arms straight at your sides. Gently grab the top of your head with your right hand and drop your head to the right, repeat on the left with the left hand.

**TAE BO® BREATHING:**

In a smooth continuous move, use long sweeping motions and be sure to breath throughout the entire move. Start with feet shoulder-width apart, knees slightly bent, your arms are crossed in front of you and on top of one another with your hands in loose fists. As you breathe in pull your arms to your waist, push them down to your sides as you open your fists. Continue to bring your arms up in front of you keeping your fingertips pointing down, bring your arms straight out from each side. Leading with your fingertips bring your arms back out in front of you so that your fingertips meet at your center, turn your palms up, make loose fists and pull your fists to your sides as your take a bow!





As a Certified Basic Instructor, you have the opportunity to end your class with a message of your own. For example, you could wish your students a wonderful day, recite a famous quote, offer a few words of wisdom, or even tell a joke. Billy likes to end his classes by reminding his students they should think about what they've learned about themselves and their body during the class and reflect on that before they rush back to their busy lives.

**INSTRUCTOR SAFETY INFORMATION**

Chapters 12, 13 and 14 provide information for instructors to ensure a safe workout environment, proper technique and appropriately correcting students.

## CHAPTER 12: PROPER TECHINIQUE

As an instructor, it is your responsibility to ensure your students know the proper form and technique used in a Tae Bo Basic Workout. This chapter will explain the proper technique needed to avoid injury. It is recommended that you periodically review this list of proper techniques and helpful tips to keep them fresh in your mind.

Each and every move that is part of any Tae Bo® Fitness Workout relies on the ability to execute proper technique and the knowledge of the basic fundamentals involved. Understanding the importance behind each type of move will help you instruct your students to properly perform each move.

**Tae Bo® Footwork:** There isn't a lot of fancy footwork in any Tae Bo® Workout, but what is used is very important because it is a 'whole---body' workout done from the ground up.

- Encourage students to be aware of their weight distribution and always keep the supporting leg slightly bent. Encourage them to tap their toes.
- Encourage students to bring their tapping foot to the center of their bodies. They should always make a full range of motion when stepping to ensure proper balance and effective fat burning.
- When moving in a forward motion, encourage students to lean slightly forward to help maintain good balance.
- Direct students to think of the floor as to "hot" to walk on so they do not set their foot completely down but remain on their toes.

***Common Footwork Mistakes to watch for:***

- Students becoming flatfooted.
- Students straightening the supporting leg.
- Students leaning too far back when performing forward motions.
- Students not making a full range of motion.
- Students dragging their feet.

**Tae Bo® Stances:** Every punch, every kick, and every combination in any Tae Bo® Fitness Workout begins from a stance.

- Encourage students to evenly distribute their body weight down the center of their bodies.
- Encourage students to keep their knees slightly bent.
- Encourage students to have their guard up and in the ready position, with triceps resting on the rib cage and their "chin in the cage".
- In a forward fighting guard, the rear heel should be up, and the rear leg should be right outside of the rear shoulder.
- Encourage students not to hunch their backs or tilt their pelvis.

***Common Mistakes with Stances to Watch For:***

- Students straightening their legs.
- Back is hunched over and pelvis is tilted causing pressure on their lower back.
- Guard is lower than their chin causing their shoulders to hunch up by the ears.
- In a forward fighting guard, the legs become crossed.
- In a horse stance, the knees go over the toes or the toes.

**Tae Bo® Knee Raises:** They are an exercise, but they are also the key to completing every kick included in any Tae Bo® Fitness Workout properly.

- Encourage students to keep the supporting leg bent.
- Students should bring the knee at least to their "belly button" height.
- The toe on the knee that is being lifted should be pointed.
- Students should isolate the supporting leg and should not bounce on it.
- Students should keep their back flat.
- Touch only the toe to the floor of the leg that is being lifted.
- Arms should pull in a controlled movement.
- Touch the ankle of the leg that is being lifted with the same hand while the opposite hand touches the top of the knee.
- Students should contract on the pull up of the knee, the separation of the hand, and knee on the release of the knee.
- Students should contract abs on knee raises.

***Common Mistakes with Knee Raises to Watch For:***

- Students bouncing or straightening the supporting leg.
- Students' back is round.
- Students are touching the ball of their foot or their whole foot to the floor.
- Flying arms that do not touch the ankle or the top of the knee.
- Students' do not contract their abdominal muscles on the knee raise.

**Tae Bo® Punches:** They are fun to do, feel great, tone just about the entire body, and the upper body moves in every Tae Bo® Fitness Workout revolves around them.

- Encourage students not to reach full extension on any punch.
- Students should twist the wrist at the end of the punch.
- Students should make a full range of motion, both in and out when punching.
- Students should punch in a "pushing" motion and not a "slapping" or "swinging" motion.
- Students should punch at chin or eye level.
- Arms should come back to the resting position on the rib cage.

***Common Mistakes with Punching to Watch For:***

- Full extension on punches.
- Hunched shoulders when punching.
- Low punches.
- Students not making full range of motion.
- Swinging punches.

**Tae Bo® Kicks:** The most dramatic move in any Tae Bo® Fitness Workout; also, the hardest and the most tiring.

- Be sure students are in proper kicking position, with toes on the supporting leg facing the opposite direction of kicks that are executed to the side. Their hips should turn in the direction of the kick.
- When kicking, students should always bend the supporting leg and crunch their abs in a holding position.
- Encourage students to make a full range of motion and not to drop the kicking leg upon return.
- Encourage the correct foot position; either a pointed foot or flexed foot, according to what kick is being done.
- Be sure students do not hunch their backs.
- Remind students to keep their hands in a guard position.

***Common Mistakes with Kicks to Watch For:***

- Incorrect kicking positions.
- Flying hands in the guard position.
- Student's back is hunched.
- Supporting leg is straight.
- Kicking leg drops at the end of the kick.
- Kick is done from the floor, without lifting the knee and foot into a parallel position.

**GENERAL TIPS FOR PROPER TECHNIQUE**

- Encourage students to use the mirror to watch and correct their technique. Explain it is their 'eraser' and will help them get stronger and more proficient in their movements.
- Encourage students to count out loud. Counting not only helps students stay to an "8 count" as well as the beat of the music but their voice gives them power! Encourage them to talk themselves through the workout and to push themselves to the next level.
- Encourage students to pace themselves and to remember that they are in control of the workout. They can go as hard as they want but also have the ability to back off if and when necessary. Remind students that you are just a guide for their workout, but they have control of the driver's seat.
- Remind students to hydrate and to be aware of their body's needs. If something feels uncomfortable they should walk it out or stop. Encourage modification if necessary (i.e.--- instead of kicking, knee raise or if winded slow and march it out for a brief period). Use your knowledge and judgment and be encouraging.
- Remember that students come to you for help and encouragement. It is important for you to remind them of proper technique and to encourage them to have fun while "going through the fire"!
- It is important to remind your students to remain focused in the workout. If they "space out" or lose focus they may miss what is coming next and increase their risk of injury. Have them look forward and watch you from the mirror.
- As you walk around, uplift your students by letting them know they are doing a good job.
- Students may ask you what shoes to wear or to avoid during a workout. This should be determined by the strength of their feet and the type floor that they are working out on. Everyone's tolerance is different.
- When addressing injuries, it is important to know what the student's doctor says. NEVER encourage students to go against instructions from a physician and DO NOT EVER offer a diagnosis or treatment regimen. If your students are cleared for the workout, help them to modify it if necessary.
- One of the most important things to remind students is to HAVE FUN! The workout is going to be challenging and demanding. Smile at them, encourage them, and help them to find the power within themselves to make it through. The tiniest gestures often empower Think about what makes YOU feel empowered and then share it!

**IN SUMMARY**

1. It is your responsibility as the instructor to correct your students' form and technique.
2. Students must always focus on executing proper technique in order to avoid injury.
3. can maintain proper form and avoid injury by making sure:
    a. That each movement is executed with control.
    b. Their knees, arms, and legs are not overextended.
    c. Their joints are not locked.
    d. They are utilizing the appropriate muscle groups.

## CHAPTER 13: INSTRUCTING A TAE BO® BASIC CLASS

A Tae Bo® Fitness Basic Instructor is an extension of the Tae Bo® Fitness Brand and must take great pride in their role. Tae Bo® Fitness Basic Instructors are organized, engaged, aware, knowledgeable, and effective. The following chapter highlights some of the most important characteristics Certified Tae Bo® Fitness Basic Instructors must have.

### ORGANIZATION

A certified instructor must be organized in their personal life and while teaching. Students are perceptive and will notice mental or physical disorganization. Make it a habit to de---clutter your personal life. Some ways to help accomplish this are:

- Write out a daily schedule.
- Keep your surroundings clean and organized.
- Make time each day for personal relaxation.

Organizing your personal life will give your life structure and mental clarity. It will also increase your work capacity, which will make teaching your classes easier, more fun, and more effective.

### PLANNING A CLASS

Instructors must PLAN each Tae Bo® Basic Class at least 2 days in advance. Start by allowing yourself an hour planning time for every hour of class you teach. As you become more efficient, you may find that 20 minutes is all that is needed. To be properly prepared it is important to remember the following things:

- Outline the steps of your routine for each class at least two days in advance.
- Choose your music, remember that it cannot be offensive or contain profanity.
- Write out motivational quotes, sayings, or fitness facts that you can share.
- Review student profile sheets of expected students for any needed modifications.

### BE ENGAGED

It is important to be engaged while teaching your class. Being engaged means to positively motivate students, address students by their first name, smile, encourage students, make quirky jokes, or provide your students with educational fitness facts.

### AWARENESS

It is important for instructors to be aware of everyone and everything occurring in the class. You must be able to spot incorrect movements, potential injuries, distressed students, and potential environmental hazards. Make sure to look at a different part of the classroom every three seconds. Making eye contact with students will help you gauge where they are physically and mentally. If you notice that a student is mentally struggling, encourage them accordingly. If you find that a student is physically struggling, offer modifications that will help relieve the current challenge.

**BE EFFECTIVE**

Being an effective instructor relates to your ability to teach a class that students can easily follow along to and enjoy. This includes your ability to clearly communicate with all of your students. To be effective you must use accurate instructor cues, provide counting beats, appropriately correct students, clearly teach positions, and provide a comfortable exercise environment for everyone in attendance. To help you be the best instructor, the 'appropriate instructor cues' previously mentioned, are explained below:

**INSTRUCTOR CUES**

Instructor cues are words or phrases used to inform students of an upcoming move. Tae Bo® Basic has adapted a numbering system for the punches and kicks to help beginning students. Make sure to call out the name of the exercise and the appropriate number to ensure that students also know the name of the move.

**COUNTING**

Counting is used to help your students follow along with the rhythm, timing, beat, reaction, and to ensure proper breathing during the workout. Although each exercise routine is set to an 8 count, instructors are permitted to teach to the beat of the music if they want.

**CORRECTING STUDENTS**

Your students will only improve if you politely point out their mistakes. Walk around the room and gently correct students that are performing bad technique. Students may be sensitive to your critique so try to point out a positive before correcting their negative.

It is always important to conduct yourself professionally, especially if you have to correct a student. There are 2 ways to appropriately correct students. Correcting students with touch is the preferred method, but it also must be acceptable for each individual student. For example, if you need to encourage students to stay in proper form, put your hand on their upper back to correct their posture. Or if you see that their knee is falling over their leg while they are lunging, touch their knee and gently show where to move it to be straight over their foot. The other appropriate method used to correct students is demonstration of the proper form while given them a detailed verbal explanation.

**TEACHING POSITIONS**

You must be able to clearly cue and execute each exercise so that every student can follow along. Make sure to break down each exercise so students know which muscle group to isolate. Make sure that you perform each exercise where all students can clearly see you. Also remember to provide mirror image instructions, especially when introducing a new move or technique. Mirror image instruction is when the instructor faces the students and provides a mirror image example of the move, using the opposite the arm or leg. You will probably need to breakdown each move several times for your students to comfortably learn it.

**PROPER CLASS ROOM ATMOSPHERE**

Students should feel safe and comfortable in their exercising environment. They should have at least 3 feet of space, so they have enough room to kick and punch and not worry about being kicked or punched themselves. It is also important to make sure that the exercise environment is safe, clean, and free from potential hazards. For example: look for wet floors, power cords, ripped carpet edges, or uneven flooring before your first student arrives.

**KNOWLEDGABLE**

Students love instructors that know what they are talking about. Call out the muscle groups you are working to educate your students. Provide fun facts to motivate your students. Although being knowledgeable and providing informative information like this is not a requirement, it can enhance the classroom experience for everyone in attendance.

**HANDWRAPPING DIRECTIONS**

As a certified instructor, you are responsible to ensure your students know how to properly wrap their hands. Whether they choose to wrap their hands before a Tae Bo® Basic class or not, is completely up to them.

Proper hand wrapping steps are:

- Hook the loop over the thumb; begin with the seam down.
- Wrap around the wrist 2---3 times.
- Go from the back of the wrist to the back of the hand, and then between the thumb and pointer finger.
- Use a figure 8---motion between the wrist and the hand to create a barrier that protects the wrist and hand from a boxer fracture.
- Finish by wrapping around the wrist 1 - 2 more times and attach the Velcro at the farthest point from the hand.

**STUDENT LIABILITY**

Be prepared to have students of varying skill levels in each class. Including students that may be pregnant, have conditions that might not allow them to participate, be recovering from an injury, or under a physician's care. It is highly recommended that instructors require new students to submit a physician's medical release before attending a class. As a certified instructor, you are responsible to be aware of any potential student liabilities in your classes. In addition, you are required to adhere to any limitations set a physician and you are NEVER allowed to provide a diagnosis. You are there only to instruct and educate and you need to ensure that students who should not physically be in your class, do not participate.

**STUDENT PROFILE**

The student profile is a helpful tool that lets you get to know your students better. It also provides phone numbers in case you need to notify students of changes to the class time, location, or cancellation. This information is confidential and is for your eyes only. These forms should be organized and kept at home, so they do not get lost. This student profile will make you more aware of possible health risks. It will also help you identify which students require a medical clearance from their doctor before beginning your exercise class. Following is a sample of a student profile sheet; you can use a different form as long as it requires the same important information.

INSTRUCTOR TERMINOLOGY

- **Boxing gloves -** completely cover the hands, have either lace or Velcro closures, and are usually used during one on one boxing fights.
- **Mitts -** used to help students develop proper technique by punching and making contact with an instructor or fellow classmate.
- **Hand Wraps -** worn underneath boxing gloves to protect the knuckles, wrists, and thumbs while making contact with any type of mitt or punching bag
- **Punching Bag** - a freestanding bag used to improve technique by contact
- **Technique -** involves the body form used in the steps, moves, and stances in order to keep the body in perfect alignment, control, and harmony and obtain the maximum benefit from the workout.
- **Counting -** a verbal use of counting numbers out loud to lead a class through a numbered sequence of moves. Tae Bo® Basic recommends instructors count throughout the class to keep their students with the beat of the music and in tune of their movements.
- **Cueing -** lining up thoughts to have the correct reaction. The use of key words or phrases to prepare students for an approaching step or sequence.
- **Drilling -** a rapid set of punches or kicks called out in a numbered sequence.

**IN SUMMARY**

1. Maintain an organized life, in and out of the classes you teach.
2. Outline your exercise routine for each class at least two days in advance.
3. Encourage students to count their steps to stay on track and give them power.
4. Remain positive and professional when correcting a student.
5. Remember to occasionally act as a mirror when teaching any class, especially if you are introducing a new step or movement.
6. Use mirrors in class whenever possible.
7. Ensure that students have at least 3 feet of space to exercise in.
8. Make sure you understand your role as your students' Tae Bo® Fitness Basic Instructor and that you are not a doctor.
9. Have every student fill out a Student Profile Data Sheet before taking your class.

## CHAPTER 14: PREVENTNG INJURY / COMMON FITNESS AILMENTS

The objective of this chapter is to provide you with ways to prevent injury as well as providing insight to deal with typical group fitness injuries.

**Important Reminder: Any instances that involve blood or other bodily fluids must be considered as a contaminating substance and requires that proper procedures to reduce the risk of blood borne pathogens by followed.**

The last thing you want is for a student to become injured during a workout class. Remember, every student runs the risk of potential injury, regardless of age, skill level, or physical conditions. Instructors need to be watchful of all participating students, beginners and competent athletes.

### Preventing Injury

Even the most focused students are at risk of suffering fitness injuries, even with all the ways to avoid them. Following are some tips that can help reduce the risk of suffering injuries, especially for students that are new to fitness programs or have recently changed their workout regimen.

- Physical: It is highly encouraged that anyone starting, altering, or increasing their exercise program have a doctor complete a routine physical.
- Gradually Increase Time and Intensity: When starting a new program people often have a lot of enthusiasm and go hard, usually too hard. Their bodies are not as ready as their mind might be which can lead to injuries that ultimately will deflate their motivation altogether.
- Warm---Up Properly: A proper, gradual warm---up goes a long way to prevent injuries. Remember, the warm---up of any exercise routine is more important than the actual workout.
- Do NOT Work out on Empty: While you don't want to exercise immediately after eating a large meal, eating about 2 hours before exercise can help fuel your workout.
- Drink Before You Exercise: Dehydration can kill your performance!
- Listen to Your Body: If you feel any sort of discomfort, pay attention to it! Pushing through the 'fire' is great but forcing your body through acute pain is the fastest way to develop a severe or chronic injury. It is important to acknowledge what you're feeling and to learn what it means.
- Take Time to Rest and Recover: In addition to getting enough sleep, it is important to have rest days between working out the same muscle group.

### Common Fitness Ailments

In addition to preventing injury, instructors need to be prepared to properly handle emergencies that could occur. Following are guidelines for some of the common injuries suffered during group fitness exercises. It is important to understand that this chapter does not alter the Tae Bo Fitness Corporate policy; requiring certified instructors have a current CPR card.

**Sprain**

A sprain is a damaged ligament. Ligaments attach bones to adjacent bones. Damage to ligaments can occur through an accident, falling, or overuse. Sprains can range from over---stretching and micro---tears in the ligament to complete tears in the ligament.

***Common treatment options for sprains are:***

1. Minor sprains are often treated with ice.
2. Severe sprains require immediate medical attention.
3. All sprains require extended periods of rest.
4. Severe sprains could also require surgical repair procedures.

**Sore Muscles**

A stiffness or soreness in muscles that were worked out 1---2 days prior is typically due to exercising unconditioned muscles or beginning the workout without a proper warm---up. To cure sore muscles, you cannot beat the simple act of prevention! Stretching your muscles before exercising can greatly reduce the soreness of muscles after exercise as well as reduce the possibility of stress related injury.

***Treatment for Sore Muscles***

1. Apply ice for immediate relief.
2. A hot bath is an ancient practice to relieve sore muscles and works great!
3. Stretching the muscle slowly, allowing it to re---align properly will assist with discomfort.
4. Gently massaging the sore muscle and the surrounding area to work out the pain.
5. Drinking water will reduce the pain by re---hydrating the muscle.
6. Eating foods high in potassium can help alleviate muscle pain. Lima Beans and bananas are quick and easy sources of potassium.
7. Rest and relaxation is often the best cure for sore muscles.

**Tendonitis**

Tendons attach muscles to the bones. Tendonitis is an injury to the tendon or the muscle, and one of the most common fitness injuries suffered. It is also more serious than sore muscles and usually requires treatment from a medical professional. Tendonitis occurs when the tendons receive constant stress or overuse from your muscles. The best cure for tendonitis is simple prevention, such as stretching before exercise.

***Common treatment options for tendonitis are:***

1. Apply ice or heat packs to the painful area.
2. Exercise or simple stretching exercises.
3. Prescription medications are available for the pain and inflammation.
4. Treatment from a medical professional is usually required.

**Contusions**

A contusion is usually caused by a blow or strike to a muscle. This collision may cause swelling and bleeding and forma contusion. Normal muscle function and range of motion will be impacted as the blood coagulates and scar tissue forms, in the impacted area.

***Common treatment options for contusions are:***

1. Rest the injured muscle.
2. Apply ice to the contusion.
3. Lightly message the muscle.
4. Bad contusions will require the consultation of a medical professional.

**Black Eye**

Black eyes are common but can also be dangerous if not treated properly. It is often necessary to treat an accident, commonly resulting in a black eye, during group exercise programs. A black eye can result in needing medical attention if the flesh surrounding the eye swells up.

***The Treatment***

1. Place a cold compress or ice bag over the area immediately.
2. After using a cold compress, place a warm damp towel over the area.

**Bloody Nose**

It is typical to occasionally have a student in a group fitness class suffer a bloody nose. A bloody nose occurs when the blood capillaries in the nose are broken. Bloody noses can occur from accidentally falls, accidental contact between two people or excessive physical exertion. They are a common occurrence in the sports world, and typically do require further medical attention.

***Treatment for A Bleeding Nose***

1. **Bloody noses need to be addressed immediately to reduce the risk of bloodborne pathogens.**
2. Pinch the sides of your nose closest to the face.
3. Place an icepack over the nose to slow bleeding.
4. Instruct the student to lean forward to avoid choking.
5. Sit down, relax, and allow the body to recuperate.

**Heatstroke**

Heatstroke occurs when you over exert your body without replenishing fluids then you can become overheated. Heatstroke can happen to people inside or outside and also comes on very quickly.

***Treatment of Heatstroke***

1. Seek medical attention immediately!
2. Cool the victim down (remove shoes and/or hat to expel body heat quicker).
3. Place the victim on their side to expose as much skin to the atmosphere as possible.
4. Wipe the victim with a wet towel.
5. If the victim is conscious and can drink, give them water to drink.

**IN SUMMARY**

- Minor sprains can be treated with ice and rest but severe sprains require immediate medical attention.
- Applying ice to sore muscles can instantly relieve the pain.
- Tendonitis is more severe then sore muscles.
- Classroom accidents resulting in black eyes are common.
- Nosebleeds are a common occurrence during group physical activities.
- It is important to monitor for signs of heatstroke.

**Instructor Tip:**

**When in doubt, REFER OUT!**

**Move Index**

**Tae Bo® Butterfly Toe Tap:** Start with feet shoulder-width apart, knees slightly bent, arms out from your sides with your hands in fists facing inward. Step to the left bringing your left foot to the center next to the right and tap your toes when it gets there, at the same time rotate your arms to the center of your body, the sides of your hands should touch (with palms facing you) just as your right foot taps down next to your left foot. Return to the start position. Repeat the other direction.

**Tae Bo® Arm Circles:** Stand with feet shoulder-width apart, arms straight out to the sides with your palms pointing down. Rotate your arms in a large circular motion for a brief period. Remember to keep your knees slightly bent and your back straight throughout the movement. Repeat in the other direction.

**Tae Bo® Shoulder Shrugs:** Start with feet shoulder-width apart, knees slightly bent, back straight and hands on hips. Bring your shoulders up to your ears as if you were shrugging, return to normal placement. Repeat, first with both shoulders and then alternate shoulders, shrugging only one at a time, starting with the left shoulder.

**Tae Bo® Drop Stretch:** Start with feet a little more than shoulder - width apart, arms by your sides. Keeping your weight on your right foot rock back onto the heel of your left foot while you drop down as low as you can to the floor. Keep your right arm inside the right thigh, bending your arm at the elbow, with fist at chin. Left hand is on the floor for support. Be sure to stay in control of the move and keep your back straight. Hold it where you feel it but are not out of control of the stretch. Return to the start position and repeat the other direction.

**Tae Bo® Side Shoulder Stretch:** Start in a wide stance, knees bent and back straight, place your hands on your quads. Dip the left shoulder left shoulder toward your right knee, return to the center and then dip your right shoulder toward your left knee.

**Tae Bo® Overhead Reach:** Start with feet shoulder-width apart, knees slightly bent, back straight and arms by your sides. Reach your left hand over your head as you straighten your left leg so just your left toes are on the floor. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Basic Foot Work:**

**Tae Bo® Butterfly:** Start with feet together, knees slightly bent and hands on your hips. Take a large step to the left with the left foot. At the same time swing your arms out to your sides; bent elbows should be parallel with shoulders and fists at ear level. Be sure to keep your knees bent and your glutes back throughout the move. Squeeze your chest and twist your wrists as you bring your hands toward the center. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Forward Toe Tap:** Start with feet together, knees slightly bent, back straight, arms in guard position with chin in the cage. Step forward with the right foot and then the left but instead of placing your left foot, tap your toes. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Lateral Shuffle Step:** Start with feet shoulder - width apart and arms in guard position. Take a small, quickstep with your left foot, quickly bringing your right foot next to it, make sure you tap your right toe once it gets there. Repeat the other direction. Be sure to keep your knees slightly bent and your back straight. Remember, this is a quick, fluid motion like a shuffle.

**Tae Bo® "V" Step:** Starting with feet shoulder - width apart and arms in guard position, step diagonally back with your left foot, then step forward with your right foot so you're your feet are together, then step diagonally back with your left foot, and then step forward bringing your feet together, making a "V" pattern.

**Tae Bo® Jumping Jack:** Start with feet together, knees slightly bent, and hands in a triangle in front of you. Perform a jumping jack, keeping knees slightly bent and reach both hands over your head, bringing them back to a triangle above your head. Return to the start position. Repeat.

**Tae Bo® Leg Check:** Start with feet together, arms bent at sides, hands in loose fists. Execute this move in a smooth rhythmic motion, keeping back straight and knees bent. Move your left leg in front of the right and touch the heel to the floor. Repeat on the opposite leg, be sure to keep your weight on the supporting leg. Think of sitting in a chair.

**Tae Bo® Basic Stances:**

**Tae Bo® Horse Stance:** Start with feet a little more than shoulder-width apart, knees bent (without them going over the toes) back straight, arms in guard position and chin in the cage.

**Tae Bo® Forward Fighting Guard**: Feet shoulder - width apart, left foot forward, arms in guard position, and chin in the cage. Do not let the heel of your back foot touch the ground. Keep your back straight and knees slightly bent and your hands under the chin.

**Tae Bo® Horse Stance Fighting Guard:** Stand with feet in a wide stance, arms bent at your sides with hands in loose fists. First to the left bring your left fist up in a single fluid movement, turning your head the same direction and watching your fist go up. Return to the start position and repeat in the opposite direction.

**Tae Bo® Hour Glass Stance:** Stand with feet shoulder-width apart, right foot behind the left leg so your knees are directly behind one another, knees slightly bent, back straight, arms in guard position and chin in the cage.

**Tae Bo® Basic Upper Body:**

**Tae Bo® Single Arm Speed Bag:** Stand with feet shoulder-width apart, knees slightly bent, back straight and arms in guard position with chin in the cage. Raise the left arm so elbow is parallel with shoulder, turning your head to look at your fist, right arm remains in guard position. Move the left arm in a continuous forward circular motion from the elbow. Be sure to keep your shoulders down, your back straight and your knees slightly bent. Repeat, first on the left and then the right. Then repeat the circles in the opposite direction.

**Tae Bo® Double Arm Speed Bag:** Start with feet shoulder-width apart, knees slightly bent, back straight, arms in guard position and chin in the cage. Pivot your upper body to the left and raise both arms, looking at your raised fists. Be sure to keep your shoulders down, back straight and your knees slightly bent. Use both hands at the same time and roll your arms in a tight circle. Keep your back heel off the floor. Repeat to the right.

**Tae Bo® Overhead Press:** Start with feet shoulder-width apart, knees bent, arms bent with elbows parallel to shoulders, palms held above shoulders. Extend both arms over your head, making sure to face your palms up. Push your hand straight up over your head without overextending your elbows, return to the start position. Repeat.

**Tae Bo® Toe Tap Lateral Raise:** Start with feet together, knees slightly bent, upper arms close to your body, forearms and hands straight out from stomach, touching in upside down fists. Lift both arms to the sides, rotating wrists as you lift extending arms out parallel with shoulders. As you lift your arms, shift weight to right leg, extending the left leg until only the toe is touching. Return to the start position with the same steps. Repeat, first on the left and then the right.

**Tae Bo® Jab:** Stand with feet shoulder with apart, knees bent, arms in guard position and chin in the cage. Step forward with left foot as you execute a left jab, extending your left arm straight out from your shoulder. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Cross:** Stand with feet shoulder-width apart, back straight, arms in guard position and chin in the cage. In one swift motion, step with your left foot as you execute a right a cross punch; do not drop your shoulder. Be sure to pivot your hips, cross the centerline and to twist your wrist at the end of the punch. Return to the start position. Repeat, first with the right and then the left.

**Tae Bo® Hook:** Stand with feet shoulder-width apart; back straight, arms in guard position and chin in the cage. In one swift motion, life your left heel off the floor as you execute a left hook; do not drop your shoulder. Be sure to turn your hips and not to swing the punch. Do not go to full extension or cross your centerline. Return to the start position. Repeat, firs on the left and then the right.

**Tae Bo® Uppercut:** Stand with feet shoulder-width apart; back straight, arms in guard position and chin in the cage. In one swift motion, drop your left knee as you throw a left uppercut. Be sure to pivot your hips toward your focal point or target. Don't swing the punch or fully extend the arm. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Basic Lower Body:**

**Tae Bo® Front Knee:** Stand with feet shoulder-width apart, knees slightly bent and back straight. Shift weight onto right leg as you lift your left knee up so your knee is parallel to the hip. At the same time, your left-hand touch extends to touch the ankle of the left leg. Return to the start position. Repeat, first with the left and then the right.

**Tae Bo® Side Knee Raise:** Stand with feet shoulder-width apart, knees slightly bent and back straight. Shift weight to the right leg, bending the knee; extending left leg out to the side with only toes touching the floor. Bring the left knee up at the same time the arms come down crunching the abdominals. Be sure

to bring the left knee up above the belly button. Point the toes of the knee being raised and be sure to have that same hand touch the ankle of that leg. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Half Moon Knee Raise:** Stand with feet shoulder-width apart, knees slightly bent and back straight. Shift weight to the right leg, bending the knee; extending left leg out to the side with only toes touching the floor. Right arm is across the stomach and left arm is above your head. Lift the left knee up at the same time you bring your left elbow down, crunching the obliques. Return to the start position. Repeat, fist on the left and then the right.

**Tae Bo® Front Kick:** Stand with feet shoulder-width apart, knees slightly bent, back straight, arms in guard position and chin in the cage. In a slow and controlled movement shift weight onto the right leg as you lift the left leg, so the knee is parallel to the hip, kicking straight out with the foot once the knee is up. Return it to the start position in the same motion. Repeat, first to the left and then the right.

**Tae Bo® Back Kick:** Stand with feet shoulder-width apart, knees slightly bent, back straight, arms in guard position and chin in the cage. Lean forward, sticking out your butt so your shoulders are above the knees and kick straight back with your left foot flexed. Return to the star position. Make sure you bring the heel up as high as the glutes. Hands should be in a solid guard position. Repeat, first with the left and then the right.

**Tae Bo® Round House Kick:** Stand in a large stance, arms in guard position and chin in the cage. Slightly pivot your torso so your hands are over your left leg, facing the left. Shift weight onto the right leg as you lift the left foot so only toes touch. Leaning forward so your left shoulder is above your right knee, lift your left knee straight up, parallel with the hip, and execute a left roundhouse kick. Return to the start position in the same way. Do not drop the kicking leg. Supporting knee stays bent and back straight. Toes of the kicking foot are pointed. This kick should be a “slapping” kick and should make a half circle motion. Repeat first with the left and then the right.

**Tae Bo® Side Kick**: Stand in a large stance, arms in guard position and chin in the cage. Slightly pivot your torso so your hands are over your left leg, facing the left. Shift weight onto the right leg as you lift the left heel off the floor. Leaning forward so your left shoulder is above your right knee, kick your left leg foot out executing a left sidekick. Return to the start position with the same moves. This kick is a straight---line kick, done with the heel of the foot. It makes a “poking” move. Repeat, first with the left and then the right.

**Tae Bo® Basic Combinations:**

**Tae Bo® Butterfly Punch 1,2,1:** This combination puts the Tae Bo® Butterfly (instructed above) with the Tae Bo® Jab and Tae Bo® Cross (also both instructed above). Begin facing the left side, execute a Tae Bo® Butterfly, opening the stance and turning at the same time so you end up facing forward. Execute a left jab, right cross, followed by a left jab. Return to the stat position. Be sure to keep it a continuous movement and to look forward while executing the punches. Repeat, first to the left and then the right.

**Tae Bo® Speed Bag Side Toe Tap:** This combination puts the Tae Bo® Double Speed Bag (instructed above) with a simple toe tap. As you execute a double speed bag, tap your feet in place. Repeat, first on the left and then the right.

**Tae Bo® 4 Step Punching Combo:** This combination puts all four of the Tae Bo® Punches together in one move: Tae Bo® Jab, Tae Bo® Cross, Tae Bo® Hook, and Tae Bo® Upper Cut (all instructed above). Execute a let jab and a right cross punch while traveling forward and a left hook and right uppercut while traveling backwards. You should end up in the same spot that you started. Repeat.

**Tae Bo® Shuffle Step Punches:** This move combines the Tae Bo® Jab and Tae Bo® Cross (both instructed above) together with a shuffle step. Travel first to the left and then to the right in a continuous motion, executing three left jabs followed by a right cross. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® "V" Step Cross:** This move combines a Tae Bo® Cross (instructed above) with a 'V' stepping pattern, stepping to the left, back to the center and then to the right in a continuous motion, making the letter "V", finish the move by executing a Tae Bo® Left Cross. Repeat in the other direction.

**Tae Bo® Jumping Jack:** Start with feet together and hands in a triangle at your waist. Jump straight up, landing feet in a wide stance. At the same time bring your hands up, ending in a triangle above your head. Return to the start position and repeat.

**Tae Bo® Leg Check Double Punch:** Start to the left and repeat to the right. Be sure to not shift your weight back and forth. Sit back and isolate the stationary leg. Punch across your centerline.

**Tae Bo® Leg Check Speed Bag:** This move combines the Tae Bo® Double Speed Bag (instructed above) with a leg check movement. While executing a Tae Bo® Speed Bag, step forward with your left leg, resting only your heel on the floor, tightening the abdominals. Return to the start position and repeat to the right.

**Tae Bo® Jab Cross:** This move combines a Tae Bo® Jab and a Tae Bo® Cross (both instructed above). Execute a left jab immediately followed by a right cross. Return to the start position. Repeat, first to the left and then the right. Do not drop your punches.

**Tae Bo® Punch 1,2,1 Knee Raise:** This move combines a Tae Bo® Jab, Tae Bo® Cross, and a Tae Bo® Knee Raise (all instructed above). Make sure each move is its own and fully executed before advancing in a continuous motion. Execute a left jab, a right cross, a left jab, followed with a left side knee raise. Repeat on the right side.

**Tae Bo® Cross Corner Jab:** Start on the left side and repeat to the right side. Be sure to keep knees bent and work the legs.

**Tae Bo® Low/High Jab:** This move combines a Tae Bo® Jab (instructed above) with a low/ high motion. Bending your knees and leaning forward execute a left jab, stand back up and execute a left jab. Do not let your knees go over your toes and focus your punches first to the stomach and then to the head. Return to the start position. Repeat, first to the left and then the right.

**Tae Bo® Side Knee Raise Cross Punch**: This move combines a Tae Bo® Knee Raise and a Tae Bo® Cross (both instructed above) Execute a left knee raise immediately followed by a right cross. Return to the start position. Repeat on the opposite side. Be sure to pivot your body while punching and to make a full range of motion.

**Tae Bo® Front Kick Back Kick:** Start with the left leg doing the front kick and the right leg doing the back kick. Repeat on the opposite side. Be sure the stationary leg is slightly bent and do not let the kicks drop.

**Tae Bo® Front Kick Toe Tap:** This move combines a Tae Bo® Front Kick with a Tae Bo® Toe Tap. Execute a left leg front kick, tapping your toe when returning it to the floor. Repeat, first to the left and then the right.

**Tae Bo® Squat Front Kick:** This move combines a Tae Bo® Squat with a Tae Bo® Front Kick (both instructed above). Start with a squat followed by a left front kick. Return to the starting position. Repeat, first with the left and then the right. Make sure your knees do not go over the toes and to keep your back straight.

T**ae Bo® Side Knee Side Kick**: This move combines a Tae Bo® Knee Raise with a Tae Bo® Side Kick (both instructed above) Execute a left side knee raise immediately followed by a left knee sidekick. Return to the start position. Repeat to the right. Be sure to not drop the kick and to have good balance.

**Tae Bo® Back Round House Kick:** Start with your feet slightly more than shoulder--- width apart, knees slightly bent, back straight, and chin in the cage. Slightly pivot your right foot, shifting your weight onto your right side, raise your left knee until its parallel with your hip, and then kick your foot out with a pointed toe. Be sure that the right leg "kicks out" the left leg in a hop. Do not let the kicking leg drop. Then repeat on the opposite side.

**Tae Bo® Side Knee Round House Kick:** This move combines a Tae Bo® Side Knee raise with a Tae Bo® Round House Kick (both instructed above). Execute a side left knee raise immediately followed by a left roundhouse kick. Repeat each move on the opposite side to return to the start position. Repeat in the opposite direction. Do not drop the kick and be sure to maintain good balance and posture.

**Tae Bo® "V" Step Side Knee Raise:** This move combines the Tae Bo® 'V' Step with a Tae Bo® Knee Raise (both instructed above). Execute a Tae Bo® "V" step followed by a Tae Bo® Left Knee Raise. Repeat to the right.

**Tae Bo® Basic Cool-Down:**

**TAE BO® BREATHING:** In a smooth continuous move, use long sweeping motions and be sure to breath throughout the entire move. Start with feet shoulder-width apart, knees slightly bent, your arms are crossed in front of you and on top of one another with your hands in loose fists. As you breathe in pull your arms to your waist, push them down to your sides as you open your fists. Continue to bring your arms up in front of you keeping your fingertips pointing down, bring your arms straight out from each side. Leading with your fingertips bring your arms back out in front of you so that your fingertips meet at your center, turn your palms up, make loose fists and pull your fists to your sides as your take a bow!

**TAE BO® NECK STRETCH:** Start with feet together and arms straight at your sides. Gently grab the top of your head with your right hand and drop your head to the right, repeat on the left with the left hand.

**TAE BO® OVER HEAD SIDE STRETCH:** Standing with your feet together and your knees slightly bent, stretch your right arm over your head to the left and then repeat to the right, using your right arm.

**TAE BO® HORSE STANCE HOLD:** Hold a horse stance facing forward, with your arms in guard position for a period of time to be determined by the instructor.

**TAE BO®LUNGE STRETCH AND REACH:** Start with a deep left lunge, place your left hand flat on the ground directly under your shoulder and raise the right palm to the ceiling, your eyes and head should follow your right hand to toward the ceiling. Shift to the right and repeat with the opposite leg and arm.

**TAE BO® SIDE HAMSTRING STRETCH:** Start with your hands on your hips and your knees slightly bent. Shift all your weight to one leg and put the opposite leg out in front of you with only your heel touching the ground. Reach down to your toes and gently pull back on your toes until you feel the stretch in your hamstring. Make sure to keep your back straight and do not over extend.

**TAE BO® SIDE TOE TAP ARM CIRCLE:** Start to the left side and then repeat to the right. Execute a Tae Bo® Toe Tap moving to the side while performing arm circles with your arms out to your sides and your fingertips pointing up. Repeat on the opposite side. Be sure to use smooth, slow movements and to breathe.

In closing the Tae Bo® Fitness Basic Manual, the important thing to remember is that you are now a Certified Tae Bo® Fitness Basic Instructor and have been educated in one of the best workout programs available! You should be proud of yourself as well as excited about the potential this manual has instantly put within your reach.

Remember, every person that gives Tae Bo® Basic a chance will discover the same exciting, energizing power that you did. In turn, each one of your students will bring something new to Tae Bo® Fitness through their dedication and passion. Tae Bo® Fitness has been known to touch people's lives in ways that have nothing to do with exercising.

As a Certified Tae Bo® Basic Instructor you are responsible to assist your students with their work out progression, for example increasing to Tae Bo® Advanced. There is no magical answer to the question of when a student is ready to progress to Advanced; it is ultimately a personal decision. However, your job is to properly educate your students, so their enthusiasm doesn't get the best of them. The purpose of Tae Bo® Basic is to build a strong fitness foundation. Taking the time to learn everything you can about Tae Bo® Basic will allow you to get the most out of any other version of Tae Bo® Fitness you pursue in the future.

It is our hope that through this Tae Bo® Fitness Basic Instructor Manual you will gain the knowledge, the insight, and the inspiration to help you and your students maintain a healthy Tae Bo® Fitness Lifestyle. Don't think of this as reaching the end of the Tae Bo® Fitness Basic Instructor Manual, think of it as information to provide you with the knowledge to increase your internal fuel and keep the 'BURN' alive!

**YOU'VE GOT TO GIVE SOME TO GET SOME!**

**– BILLY BLANKS**