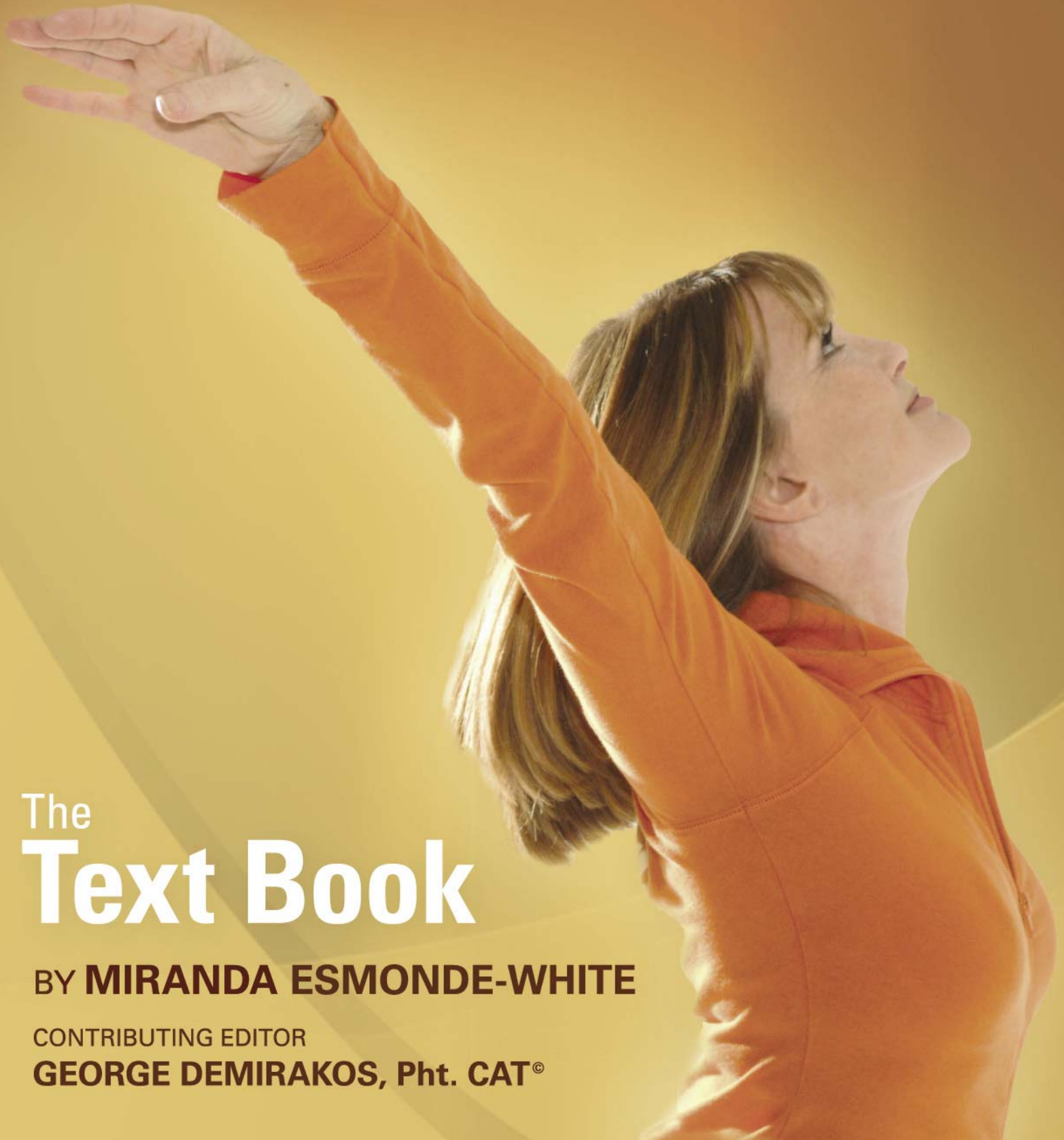


CLASSICAL STRETCH™

THE ESMONDE TECHNIQUE



The
Text Book

BY **MIRANDA ESMONDE-WHITE**

CONTRIBUTING EDITOR

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This document offers excerpts taken from:

Classical Stretch- The Esmonde Technique™ the text Book

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Classical Stretch-The Esmonde Technique™ Text book

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Introduction

A sense of well-being is when our bodies do not interfere with our lives. In other words a state of well-being is the absence of illness, injury, pain, chronic exhaustion, and mental depression. Good health or well-being would also include plenty of energy to carry us throughout our busy days with a positive outlook. In order to 'feel good' the systems of our body have to be functioning efficiently.

The systems are:

1. The Cardiovascular System
2. The Nervous System
3. The Skeletal System
4. The Locomotive system
5. The Muscular System
6. The Digestive System
7. The Respiratory system
8. The Endocrine system
9. The Immunological system
10. The Reproductive system

Although our mental health is not a physical system it is recognized medically as essential in maintaining good physical health. In addition to the physical systems functioning effectively, we must also try to find balance in our mental health. It is well documented that stress, depression, and anxiety are factors in causing many serious medical illnesses from heart disease to cancer. Trying to fill the complexity of demands required to maintain a healthy body seems like a daunting task, and in a way it is; however, that is the challenge of life. Classical Stretch can help in the achievement of good health and sense of well being by stimulating and challenging our body. When one of the systems goes off balance the body as a whole suffers.

This program is designed to balance the muscular skeletal system while directly stimulating the neurological system. In doing so, the program indirectly stimulates the circulatory, respiratory and gastrointestinal systems. Unfortunately, this program cannot solve any emotional, mental or psychological problems, but it can do a great deal to solve the physical ones.

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1. One of the principal philosophies behind Classical Stretch is based on the concept of circles or wheels. The body is not flat but three dimensional, capable of moving in circular type directions thanks to our many varying joints; arms rotate within the sockets, the body rotates around the circular spine, and the legs rotate in the hips. Classical Stretch uses the concept of continuous rotations within rotations, not just of the joints of the body, but the rotating or alternating of the uses of techniques, objectives and exercises.

In addition to the principal theory of Wheels within Wheels, Classical Stretch also is based on the concept of a Full Body Workout, and not just isolation stretching. This principal concept behind Classical Stretch theorizes that in order to achieve maximum flexibility, the entire body must be engaged during the same workout session. Classical Stretch is opposed to stretching a few primary muscle groups, which obviously need stretching. In many ways, the word stretching is misleading for people who are looking for a flexibility program. Instead of calling it stretching we should rename stretching “re-balancing” the body.

In order for a mechanic to balance the wheels of a car to insure that they are equally balanced in relationship to each other, they must carefully adjust all four wheels. No car owner would dare drive with poorly balanced wheels. The car would dangerously wobble on the road and be accident-prone. The human body needs the same careful balancing to keep it injury free and comfortable. A joint is in reality a type of wheel with varying rotational abilities, which we call range of motion. To balance the joint, the full circle or wheel of the joint needs both stretching and strengthening. The body is much more complex than a car with 4 wheels. We have many joints, which have a sophisticated intertwining relationship with each other. It is not sufficient in stretching to just focus on the major muscle groups while eliminating of the rest of the body. It is often the case that smaller ligaments or muscles are the cause of an imbalance that ultimately leads to pain or injury.

An easy way to understand how to regulate the problem of muscle imbalance and correct stretching is to adopt a program using the same principal components, which a mechanic uses to rebalance the wheels of a car.

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Stretching by definition, involves increasing the distance between two joints by pulling the joints apart with their adjoining muscles. The actual pulling apart of the joint involves exerting an eccentric force on all the muscles surrounding any particular joint. The direction or directions in which the eccentric force is exerted depends on the way in which the muscles are arranged around the joint. That is dependant on the action required of each particular joint. A hinge joint, (for example-the knee is a hinge joint), needs to swing back and forth, therefore the insertion point is on one side of the knee-hinge permitting the muscles on the hamstrings (posterior of the knee) and the quadriceps (the anterior of the knee) to run smoothly across the joint. In order for the knee to remain balanced the muscles that make the swinging back and forth action need to be equally strong and flexible.

Muscles or muscle bundles, come in various shapes and sizes; long, short, flat, wide, irregular, and triangular. In order to effectively stretch the joint, any joint, all the surrounding muscles irrespective of size, length, point of origin and insertion need to be included. When a muscle is isolated and stretched the peripheral muscles do not necessarily get included. In focusing only on the muscle path that runs directly between the origin and insertion points, the peripheral muscles are not stretched. For instance when

isolating and stretching the hamstring, the tensor fascia latae is not affected. However, in real life, lower limb movement requires the use of the tensor fascia latae. If any part of a joint is not equally stretched in relationship to the other parts, an imbalance will be created. The result is that the shorter muscle will prevent the longer newly stretched muscle from going to its new length. If parts of the muscle or joint are less flexible than other parts, the short muscles will govern the actual application of the joint. In other words, you are only as loose as your tightest muscle. The imbalance will inhibit all the muscles.

In order to prevent this from happening, Classical Stretch: The Esmonde Technique has developed a system where movement is used extensively throughout the program.

During a Classical Stretch: The Esmonde Technique workout, the whole body should be in a constant state of motion, following the principals of the wheels within wheels. The human body is intended for motion, and should be exercised following the natural flow of body mechanics. We reach, we twist, we turn, we bend forward, we bend back, we lift, we push, we pull, and we carry. We are in constant motion. The Classical Stretch: Eccentric exercises mimic movements that the body uses in daily life.

Movement is used within the joint, by rotating the related joint during a stretch. This movement within the joint tends to pick up any peripheral parts of the muscle or stray muscle groups which get ignored in a static stretching program. This technique follows the same principles as a fisherman's net: when the net is thrown into the sea, it catches everything in its path.

The constant movement in Classical Stretch is also one of the reasons it is so effective in slenderizing the muscles. The various stretching and strengthening techniques used leave the muscles long and lean. The principal of a full body workout, using movement within the stretches and the slenderizing techniques combine to change the total shape of someone's body. In addition, this method also helps to improve posture, reduce back pain and strengthen the abdominals.

The thoroughness from the total balancing of any joint by 'movement within the stretch' prevents the muscles from shrinking back to their original best resting, as happens so frequently after most traditional stretch programs. Muscles shrink back to best resting when they re-align themselves to the tightest muscles of any specific joint (best resting will be discussed in detail in chapter 2). This is the most

common type of stretching, leaving minimal results and little incentive to stretch in the future, which is one of the major reasons why so few people take stretching seriously. The biggest problem with many flexibility programs is that the flexibility does not remain for long enough to be noticeable. In Classical Stretch, the flexibility remains for several days between stretch workouts. Even high performance athletes whose careers demand hours of daily training, notice that their muscles maintain their flexibility for many days after a one hour Classical Stretch workout.

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Proprioceptive Neuromuscular Facilitation (P.N.F.)

Proprioceptive Neuromuscular Facilitation or PNF was a technique originally developed after World War I by physiotherapists, in the treatment of amputee victims to stimulate nerve endings, and gain greater sensitivity of the muscles of the remaining limbs. It has since become an invaluable technique used by physiotherapists and personal trainers, to achieve greater and safer flexibility in their clients.

This sophisticated technique can be broken down into a very simple explanation of contract-release-relax-stretch. The two principals of contract and stretch should immediately bring to mind the functions of myotatic and Golgi tendon reflexes. PNF uses the myotatic and Golgi tendon reflexes in a systematic fashion, tricking the reflexes into letting muscles release into a safer and deeper stretch than they could

without using PNF. Repeated applications of PNF on the same muscle within the same workout will release the muscles into a deep and pain free degree of flexibility. Reflexes are neuro-muscular reactions that are not under the conscious mind's control. The Golgi tendon reflex relaxes the muscles and the myotatic reflex contracts the muscles. The Golgi tendon reflex protects the tendon from injury and the myotatic reflex protects the muscle from injury. The role they play in protecting the muscles and tendons interferes with a person's ability to fully stretch and strengthen the muscles. In order to achieve maximum flexibility, it is necessary to bypass these reflexes. PNF does just that. It scientifically uses the reflexes against themselves by exaggerating each reflex reaction (extreme contraction into an extreme relaxation) thus setting in motion the opposite reaction.

The proprioceptors are joining points between nerves and muscles, where the signal from the brain triggers reactions in the muscles. They are like a switching station receiving and sending messages. Their function is to trigger the message to the reflex, forcing it to protect the muscles or tendons against injury. PNF interferes with the signals. It reverses the signals confusing the reflexes.

The tension that is applied to the muscle at the beginning phase of PNF causes the muscle to contract and therefore tug on the tendon. The Golgi tendon reflex, in response to the tug on the tendon, sends a message to relax the muscle. The continued release/relaxation seems to lull the myotatic reflex into complacency. In the final stretch phase, the myotatic reflex does not immediately react, permitting the muscle to stretch freely (bypassing the myotatic reflex). This reverse message (to relax instead of contract) only lasts a few seconds before the myotatic reflex wakes up and contracts, but not until the muscle has slipped past its normal stiffness into a deeper degree of flexibility. Repeated two or three times in training should change the entire muscles flexibility.

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Fasciae Readjustment “Ironing out the wrinkles”

Fascia is an enveloping tissue of varying thickness and size, divided into two types: superficial and deep. Fascia is often described as a cellophane type sleeve, composed of a relatively flexible caliginous subcutaneous tissue (a mixture of loose areolar and adipose tissue). It envelops both individual microscopic muscles filaments, as well as whole muscle groups, such as the back of the neck into the shoulders, and the quadriceps into the lower back. One of the largest fascia in the body is described as a “pant” that crosses over the knee and finishes above the hips; it is thicker around the knee, thinning out as it continues up the leg and hips and thickening again at the iliac crest. It is one of the soft tissues that hold everything in its place.

When fascia gets twisted, it pinches the muscles causing inflammation and pain. Fascia pain is often confused with muscle injury. This is a normal confusion, for fasciae envelopes the muscles, hence confusing the fascia pain with muscular injury. There have been many instances where twisted fascia is

confused with chronic back or knee pain. No amount of painkillers, heat or cold can relieve that pain. Not until the fascia is straightened out, will the pinching and thus the pain disappear.

Every time we get dressed, we automatically straighten out a twisted sleeve or pant leg. It would be uncomfortable to spend a day with a sweater sleeve awkwardly twisted around our arm, so we unconsciously adjust our clothes, making them hang in a comfortable natural flow. Fascia has often been described as the natural sleeves of the muscles. As with any sleeve, it can shift, pulling and pinching in a similar way that the twisted sweater would. As with a twisted sleeve, it needs to be straightened out to be comfortable.

Classical Stretch can be applied as a technique to adjust twisted fasciae by using the rotational movements to straighten it out. When putting on a tight sweater, we wiggle and shift around until we straighten out the sleeves. The Classical Stretch techniques of movement within a stretch and rotation of a joint, act in a similar fashion in straightening out the twisted fasciae. Fasciae can be straightened out sometimes as easily as a few simple rotations of the offending joint. The moment the fascia is straightened out, the pinching stops and the pain disappears. Sometimes as little as gently wiggling the painful area is enough to adjust the fascia. Often combinations of gentle movements within a stretch using different angles on the joint are what are needed to straighten out the fascia.

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The joints of the spine are called a plane joint (*Articulatio plana*). The many vertebrae of the spine give the spinal column the greatest range of motion of any part of the body. Each vertebra on its own is limited in its full range of motion; however strung together as they are in a column offers an amazing ability of range of motion for the total unit of 33 vertebrae. This range of motion gives the spine the appearance of elasticity making the spine look as if it is very pliable. It is actually an illusion. Each vertebrae taken separately is limited, but grouped together the spine can bend forward, backwards sideways and do full rotations around the waist, hips and thoracic cage.

The back musculature

The back or dorsal musculature is classified in two groups: surface and deep dorsal musculature which is sometimes three layers deep. They include the:

- Latissimus dorsi muscle (*m. latissimus dorsi*) in the first layer,
- The levator scapulae muscle (*m. levator scapulae*) in the second layer
- The serratus posterior superior muscle (*m. serratus posterior superior*) in the third layer

The longissimus muscles are an example of deep dorsal muscles. Deeper thoracic muscles include the levatores costarum muscles as well as the internal and external intercostal muscles. The diaphragm is also part of the thoracic musculature.

The thoracic musculature includes the pectoralis major muscle, which moves the arm toward the body. Other surface thoracic muscles include the pectoralis minor muscle and the serratus anterior muscle

The abdominal musculature falls into anterior, lateral and posterior groups. The anterior group includes the pyramidalis muscle and the rectus abdominis muscle. The lateral group includes the transverse abdominis muscle. The posterior group includes the quadratus lumborum muscle, which closes the gap between the ribs and the pelvic ridge next to the spinal column.

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Muscle Memory/Reflex Intelligence

Memory is about remembering and recall; intelligence is about brainpower, wisdom and decision-making. In dancing, skiing, golfing or any physical activity, we learn how to do the activity and get better at doing it through repetition. For instance, in golf, the muscles remember how the torso and hips feel as the golfer swings to hit the ball. The muscles develop a memory of how much or how little force is required to achieve the desired results. We use our intelligence to perfect the movements and then repeat the same movement, until it becomes part of our muscle memory. Learning begins with the conscious mind that controls the muscular skeleton. After the body has learned the desired movements, then the subconscious mind takes over remembering automatically how best to perform those movements.

Through the brain, humans have several computer type programs that control our bodies. First, there is the conscious and subconscious mind, then, there is the regulatory computer program, which controls body temperature, heart rate, distribution of nutrients, and any additional necessary functions. The conscious & subconscious mind and the regulatory & nervous systems act independently, each for the common good of the whole body. Even though they are independent, what happens with one obviously has an impact on the other.

The muscular-skeletal is affected as profoundly by the conscious mind as the nerves system. There is more to movement than just the memorized mechanical action. Programmed into the muscles are reflex reactions controlling and protecting the actual muscle during all movement. These reflexes inhibit and interfere with any potentially dangerous movement that the person attempts. We generally think of the conscious or subconscious mind as the unique controlling force of the muscles, we are only partly correct in that assumption. In addition to the conscious mind, a system of various reflexes directly influences how the muscles react, and those influences are independent of the conscious mind. In conclusion, regarding the domain of muscle movement, the conscious mind is actually sharing the control with the reflex systems.

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Best Resting

Best-resting is a guide to judge a persons potential flexibility. Best-resting is the point of reference that indicates the actual length of the myofilament of the individual person. It also shows their level of flexibility prior to doing any significant exercise. It is a neutral point from which we have the ability to contract the muscles (roughly 25%) or extend them (roughly 60% to 75%). It is the neutral point before the myosin and actin proteins (building blocks of the muscles) slide to contract or elongate. The point of

best resting changes from person to person. Best resting is dependant on several factors; genetic disposition, age, level of fitness and type of training.

The objective in a flexibility workout is to become more flexible, which in reality means changing the daily starting point or best-resting point. This can only be achieved with repeated regular workouts. For strength training, the starting or best resting point can become shorter, while for flexibility training the starting point is longer. Theoretically, the day after any workout the muscles should be slightly shorter or slightly longer, slightly stronger or slightly more flexible, than the previous day. The change is dependant on the type of training.

The point of best resting is dependant on the fitness level of each individual, and can change from day to day. A twenty-year-old marathon runner has a certain level of best resting that will change within months, if they stop exercising. A fifty-year-old couch potato will have a certain best resting completely different from the marathon runner. The couch potato might take twenty times longer to achieve an acceptable level of best resting than the twenty year old. The point is, that best resting needs to be analyzed on a person-by-person basis.

When starting Classical Stretch, most people want to know how much flexibility they can realistically expect to achieve. Most people can gain some degree of flexibility, but no two people are alike. It is widely accepted in kinesiology that the average person can gain between 60% to 75% additional flexibility from their point of best resting, and contract their muscles 25%. The percentages are interesting, as they give the muscle a range of 100% from its best resting position. This is referring to range of motion of a joint. Best resting is a valuable tool to judge where a person potential will be. If the best resting is very limited then the likelihood of gaining extreme flexibility is slim. However a person with a reasonable degree of flexibility in their best resting prior to beginning Classical Stretch is likely to gain a considerable degree of flexibility over several months.

Bulky muscles should not be confused with strength. Bulky is the way in which the strength-training section of a person's fitness program has built the muscles. The 25% contraction is related to the degree of active strength and the 75% flexibility is the active flexibility. A professional football player or ballet dancer can use the full range of their strength and flexibility in the course of their activity. Best resting is

not about the look of the muscle, but about the muscles ability to use the full range of strength and flexibility. Best resting is about being able to use the full 75% flexibility range and the full 25% strength.

Leanness or bulkiness is developed in the strength-training portion of the person's workout program. Best resting has nothing to do with the look of the muscles, but to do with their level of flexibility.

Exercising is like anything else, if you are going to do it, you have to be smart about it. Best resting is a wonderful point of reference. Every muscle group has a neutral best resting. The body functions best when every muscle group is balanced evenly with its adjoining group. This leaves the person with good range of motion, alignment and balance. When the best resting of any of these groups is over trained, the balance of the body is damaged. Many people are unaware of the concept of best resting, and unaware of the need to correctly train their best resting in both directions. The results are an imbalance of strength over flexibility.

Outside of kinesiology and the high performance sports world, the existence of best resting is all but unknown. Yet knowing how to use best resting helps a fitness enthusiast regulate how to safely train him and how to judge the potential limits. It guides in knowing how hard to push and why we sometimes feel blocked. Best resting should be used as a yardstick to monitor maximum potential. Best resting is a guide in potential flexibility, and what people could realistically strive towards.

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Scar Tissue

It is important to understand what scar tissue in order to understand how we can reduce it. Scar tissue should neither be ignored nor feared but worked at to reduce its size and immobility. Scar tissue is much tighter than the healthy tissue surrounding it; however, a great deal can be done to loosen it up and reducing its size by activating the rigid scar area. One of the objectives in Classical Stretch is to help reduce scar tissue and liberate the affected region.

What Causes Scar Tissue?

When an injury occurs in the body, it stimulates the bodies inflammatory and immune responses to help eliminate the harmful agent, prevent further injury, and restore the injured site. There are two ways that tissue repair can happen; regeneration and fibrosis. Regeneration replaces the injured tissue with the same kind of tissue, and fibrosis creates scar tissue. In most tissues, repair involves both activities. Scar tissue is

formed in all directions on the injured site, essentially forming a “blob” of tissue, which is not aligned with the rest of the healthy tissue fibers. The scared area is firm to the touch, and has a feeling that the area is stuck or glued in place.

External and internal forces such as tension of a muscle, movement of a joint, soft tissue loading and unloading, etc. can provide stress and strain that can help loosen up the scar tissue. This can facilitate the alignment of the collagen fibers or the scar. The scar would begin to realign itself parallel to the lines of tension, eventually moving in the same direction as the structure, whether it is a muscle, ligament, etc.....

Stretching to Reduce Scar Tissue

In understanding the cause of scar tissue build up and behavior, we can understand how to encourage the scared area to repair itself and rebuild in the direction in which the injured tissue flows. We don't like scar tissue when it becomes a thick blob, gluing all the damaged soft tissues together. However, many people resign themselves to an uncomfortable scar as they are unaware that they can do something to get rid of it. Reducing scar tissue will naturally increase the rate of recovery, as well as make the recovery more complete. Most people are unaware of two things; what creates a scar, and the need to stretch and deeply massage the scar to diminish scarring. After the bleeding has stopped, but while the healing process is still occurring is the time to gently massage and stretch the injury. However, breaking up scar tissue can be done years later and still be effective. (Scar tissue has the look and feel of something permanent but like the plaque build up in the teeth it can be dislodged with the correct techniques)

Internal scar tissue build up is similar to external scar tissue. It leaves the injured area feeling stiffer and less mobile than prior to the injury. In a recurring injury, a build up of thick scar tissue can affect elastic movement, making the joints feel blocked and stiff. The process of stretching and massaging the injury during the healing process will prevent the thickening around the joint. The cells will be encouraged to align themselves in the direction of the muscle or cell fibers, and a build-up of waste cells will not occur. Movement of damaged tissue during the healing process encourages each individual layer of damaged tissue to heal separately and prevent the clumping effect from occurring.

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Turn Out & Pulling-Up

The techniques of pulling-up and turning-out are directly derived from ballet. These are two of the most effective techniques for pain relief, and performance enhancement. They are extremely simple to teach and easily adapted to average people and athletes. Ballet dancers are trained to do the extreme version of turnout and pulling-up; however, a toned down version is taught and used with great success for the general public and athletes. These techniques help: improve posture; protect the hips; relieve back and knee pain; strengthen muscles; improve circulation; improve eliminations and alignment; strengthen the abdominals; and increase energy. For athletes, they add a new element of power, control and injury prevention which many professionals never dreamed possible, until they used these techniques.

Pulling-up

To understand the technique of pulling-up, imagine that a string is attached to the back of the head feeding through the spine and down into the feet. Imagine that the string is pulled towards the ceiling. Try to feel as though every joint in the body is being pulled in two directions: up ward and apart. The arms should feel as though they are pulling out of their sockets, the legs pulling from the hip joints, the head pulling out of the shoulders, the chest being pulled open, the spine being pulled apart sideways and lengthwise. The feeling of pulling-up is a bit like the feeling of being stretched on a medieval torture

wheel where the person was being pulled in opposite direction; the only difference is that this should feel really good.

Turning-Out

Turning-out is a technique that some students describe to me as cleaning the scar tissue out of their hip joints. It frees legs in the hip joint by breaking up the tension in the muscles. It acts as an injury prevention technique protecting the hips, knees, ankles and spine from sprains caused by torsion in poor alignment. It stabilizes balance, helping to give speed and power to athletes. It protects the athlete from injury, while adding greatly to the ability to make quick changes of direction.

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Body Awareness + Flexibility + Strength = Classical Stretch

It is very common for a new student to be unaware that they are moving incorrectly, and can't tell the difference between what feels right and wrong. Looking at themselves in a mirror will show them that they are not doing the exercises correctly; however, it takes time to reprogram the body and mind into exercising correctly. The problem with doing the movements incorrectly is that the benefits won't be achieved and the person will become discouraged. They could also injure themselves if they are doing the exercises dangerously wrong. Therefore, body awareness is very important.

The word awareness immediately involves the mind and insinuates that a level of intelligence must be present. Body awareness is movement with thought behind it. Awareness is the conscious and deliberate placement of clean alignment of all joints: knees, hips and spine. It is being sensitive of when a movement feels wrong, awkward, or putting an unhealthy strain on muscles. Body awareness is the link between the mind and the body. The more the awareness, the better any movement is performed, and the greater the results.

Generally speaking, most people are unaware of how they move in every day activities, such as: sitting, standing or walking. Yet, with every movement we do we are correctly or incorrectly training our body. Repeating poor posture such as slouching develops the muscles accordingly; the pectorals begin to shrink, the back muscles weaken, the shoulders round, and the neck becomes overstretched. Many peoples body awareness is so poor that someone can stand with visibly poor posture yet feel as though they are standing correctly. It is when they look at themselves in a mirror that they see how poor their posture actually is. This is because their muscles are accustomed to supporting the torso incorrectly. When someone becomes accustomed to poor posture, the correct position actually feels uncomfortable and wrong. It takes time to both reprogram the mind and strengthen the muscles sufficiently to achieve correct posture. During the transition period from bad to good posture, the student has to be motivated and committed to making the change or they will quickly revert to bad posture.

Body awareness is the integration of several objectives into one. First, there has to be a change from incorrect to correct positioning, followed the strengthening of muscles to support the correct position. Then, the student must develop an awareness of their body and its movements. Many people have trouble isolating specific muscles, which is a necessary ability to both safely exercise and get the maximum benefits of any fitness program. In ballet and modern dance, the students are trained to know exactly which muscles to use in order execute the movements. It is not something that comes naturally to most people; most often it has to be learned. Like anything that has to be learned, first the person has to be convinced that there is a reason why they should put the effort into learning body-awareness, and then they have to make the effort to learn it. Inspiration to gain body awareness comes when the person discovers the benefits of body awareness. Benefits can include developing a more attractive body, or

achieving greater success as an athlete. Surprisingly, once the desire is there to become body-aware, learning how to do it is quite simple.

The focus in Classical Stretch is primarily on increasing flexibility and strength. However, when flexibility and strength are added to a poorly aligned body, the potential for injury is enormous. The real benefits of flexibility and strength kick in only with the addition of body awareness. With body awareness, movement takes on a whole new meaning. Many of life's activities involve quick movements with sudden shifts in direction: running up the stairs, catching a bus, jogging, and tennis, skiing, chasing a dog or carrying groceries. With increased body awareness, quick changes of directions no longer have the potential of straining or injuring the knee, as life's activities become an integrated part of the person's fitness program.

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Objectives

A Balanced Body

Objectives

A Balanced Body

When a door is loose on its hinge it hangs off centre, swinging awkwardly and closing imperfectly. The loose hinge makes the door off balance. It is important to note that a relatively small problem such as a tiny loose screw can create a major problem with the functioning of a door. It not only prevents the door from closing properly, it makes the door awkward to open or close and it will eventually damage to the entire frame. The seemingly major imbalance can be simply corrected by tightening the loose screw.

If the wheels of a car were off balance, the car would pull dangerously to one side, causing unnecessary wear and tear and more seriously making the car accident-prone. Driving an unbalanced car is dangerous, awkward and an unpleasant experience. Due to the discomfort of driving a poorly aligned car, wheel alignment is the one thing that gets quick attention from the car owner. Unfortunately, we do not treat

our bodies with the same respect that we treat our cars. When we have minor injuries or aches and pains most people just ignore the discomfort. We learn to tolerate and accept a great deal of pain, until the minor injury becomes a major injury. Very often an untreated minor injury will be the cause of a future major injury. Too often we wait until we are at our wits end with a chronic injury or chronic pain before dealing with the problem.

Rebalancing the body is exactly like rebalancing the wheels of a car. Once the job is done, the body is usually pain free and movements flow easily. Stretching, strengthening and aligning the muscles simultaneously are necessary to rebalance the body. Like a car, it takes slow thorough work to complete the rebalancing job. In a car all the wheels need to be balanced in relation to each other. You can't just adjust one wheel and hope the other wheels will fall naturally into place. The human body works on that same principal; it is a mistake to pin point one muscle group while ignoring all others. All muscles must be re-balanced together.

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Nervous system, Application and Alignment

Muscle function in relationship to the neurological system

Muscles shorten, elongate or contract changing length to produce movement or hold the body in place. (Concentric, eccentric, isometric) It is important to understand the pathways that nerves use in order to understand the basis of all movement and the basis of stretching, in particular. The myotatic and Golgi tendon reflexes are the two most important reflexes in the understanding of movement, both talked about in chapter 3, The Dating Game. These reflexes act on the muscles affecting the varying degrees of flexibility and strength.

In order to create muscle action or movement, messages must be sent from the brain to the muscle. These messages follow their own pathways through the nervous system; start in the brain, through the spine and into the muscles. There are sending and receiving stations along the pathways, as in any electrical system. The effectiveness of the nervous system is dependant on the neurological pathways being clear and healthy. In addition to nerve fibers, chemicals are also used to transmit messages. The chemical balance of the body is vital for healthy movement to occur.

For instance: in order for the sliding filament theory to take place, a calcium Cristal must be triggered by an impulse from the nervous system. Without calcium, the sarcomere cannot slide and the muscles remain rigid. Endocrinology is the study of the chemistry of the body. Although endocrinology is essential in fully understanding the action of a muscle, the study of endocrinology is not necessary for this particular academic course. However, the study of endocrinology is essential in understanding movement.

Muscular-skeletal contractions are either voluntary or involuntary. Muscles respond to a loading force or resistance with (somatic) and without (somatic) conscious thought. Muscular skeletal contractions use varying versions of muscle intelligence (somatic) and muscle memory (somatic). The nervous system is responsible for all the many different reactions.

In order to fully understand how to achieve the maximum benefits of any exercise program, it is necessary to have a basic knowledge of the central nervous system. The nervous system controls the reflexes and as the reflexes can block, inhibit or enhance movement it is vital to understand how they function. Intelligently working with the nervous system it is completely possible to preventing injuries while training. In addition, the length of time needed to see quick results can be shortened by working in harmony the nervous system.

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Relief from Muscle Soreness

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Agonist-Antagonist

In the structure of the muscle, specific groups of muscles are arranged in opposing pairs. When one muscle contracts, the opposing muscle has the opposite reaction by lengthening, thus working harmoniously as a pair. This relationship is known as agonist/antagonist. Theoretically, the degree of

contractile tension in the working muscle (agonist) is matched equally to the degree of elongation, through relaxation or eccentric tension in the opposing muscle (antagonist).

To learn more about the working principles of agonist-antagonist, there is a large body of knowledge available in the scientific community. The field of kinesiology studies how the agonist and antagonist relate and function. As kinesiology is still a relatively new science, there is still much debate about exactly how these two muscles relate to each other. In this discussion I will limit myself on how the working pairs (agonist-antagonists) can be used to increase flexibility, relieve pain, prevent injuries and increase motor reaction (speed).

Three of most recognized agonist-antagonist pairs are the:

1. Biceps-triceps
2. Quadriceps-hamstrings
3. Peroneus- gastronomicus

These are muscles which share opposite sides of the same joints. When the biceps contracts the triceps lengthens and vice-versa. When the quadriceps contracts concentrically the hamstrings either contracts or relaxes eccentrically.

The antagonist muscle opposes the agonist during an exercise. For example, during the lifting phase of a biceps curl, the triceps muscles lengthen as the biceps contract. During the lowering phase, the opposite occurs and the biceps lengthen becoming the antagonist.

However the popular wisdom of today, (which is still controversial in the scientific community,) is considering referring to non-pair muscle groups, which have an agonist-antagonist relationship to be also agonist-antagonists. For example, the abdominals could have an agonist-antagonist relationship with the back muscles. The side extensor muscles could have an agonist-antagonist relationship with their opposites.

“We shouldn't think of muscles as being organized in agonist-antagonist pairs. We won't find it useful, for instance, to try to name an antagonist for every single muscle. Instead, given a functional movement, we should think of muscles in terms of functional groups which have opposite actions.” (Smith, Weiss, Lehmkuhl, 1996)

In Classical Stretch, I am using the broader interpretation of agonist-antagonists. It might not be one hundred percent scientifically accurate however common sense and thousand of students later, should offer a level of credibility to using the interpretation of the agonist-antagonist relationship as stated by ‘Smith, Weiss and Lehmkuhl’.

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Types of strengthening

Concentric, Eccentric, Isometric & Isotonic

All activity in a muscle takes place on the cellular level. The building blocks of the muscles are two contractile proteins called myosin and actin. According to the sliding filament theory, muscle contraction

occurs every time a muscle is stimulated. All movement causes the muscles to contract. There are different ways in which the muscles can contract: isotonic, isometric, isokinetic, concentric and eccentric.

The thick myosin protein is connected to the thin actin protein by a calcium crystal hinge. When the myosin is stimulated the calcium crystal hinge moves in one of two directions. Either it drops forward towards the center Z-line, thus shortening or tightening the myofilament, or it drops away from the center Z-line, lengthening the myofilament. The shortening is referred to as concentric; lengthening is referred to as eccentric. Both directions require the muscle to contract; the difference is in the length of the contraction. One is short while the other is long.

The word contraction refers to shortening of something, which is what happens to muscles every time they move (they contract). How they contract is what is confusing: concentric is contracting shorter and eccentric is contracting longer.

When a muscle moves eccentrically it is lengthening and simultaneously contracting. For example, when putting heavy groceries on to a table, the biceps, which are in a concentric contraction as they are embracing the grocery bags, change into eccentric contractions as the elbows straighten to put the groceries on the table. The straightening of the elbows is the action of elongating the biceps, but the contractile tension remains constant until the groceries are safely on the table. The muscle is stretched and contracted simultaneously: eccentric.

In Classical Stretch, even though isometric, concentric and eccentric movements are used, eccentric movement is the basic strength technique. The purpose of Classical Stretch is to increase flexibility, relieve joint pain, and slenderize the look of the body overall. Eccentric movements are the most effective in reaching that goal. However, as Classical Stretch is a full body workout, all the different strengthening techniques should be understood and are used throughout every program.

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Techniques

Overextension & Levers

In this chapter we will talk about the difference between over-extensions & hyper-extensions. We will talk about the purpose of over-extensions. We will also discuss which joints can safely use over-extensions and which can not.

Overextension & Lever stretches

Purpose

Over-extension and lever stretches are techniques specifically designed for Classical Stretch. Overextensions are to unblock tight joints. They are used primarily in the shoulders and thoracic spine, however, they can be used on any locked joint in the body. Levers are used to deepen the degree of any stretch on any joint. Levers and overextensions can be used simultaneously or separately. They are advanced techniques that should be used when the body is warm and the participant is in good muscular health.

Definition

Over-extensions

An over-extension is a movement where the participant tries to pull their joint further than feels comfortable. Over-extensions use a slight degree of force on the joint. Many peoples joints are so tight and restricted in ROM that the actual position is not in reality, over-extending the joint. The participant might feel as if they are, but rarely does anyone actually over-extend their joints. The pull is on the joint is to try to nudge it beyond its maximum comfortable stretching point.

Hyper-extensions

Hyper-extension is not a desirable goal for muscles and joints to reach. Hyperextension is dangerous for the joints, causing premature aging and difficulty in performing many movements. Where the joints are hyper extended, there is weakness in the muscles and joints.

Hyper-extended joints are generally genetic. When someone is referred to as having hyper-extension, it means that the bones go beyond a healthy alignment in their range of motion. Hyper-extension could be caused by; a poor shape of the joint, weak or injured muscles, torn ligaments or tendons or a muscular condition or illness. Hyper-extensions are not desirable and can create a chain reaction of problems. Over-extension should not be confused with hyper-extension, which is dangerous in terms of potentially causing joint damage. Hyperextensions are a genetic condition, where the joints dangerously go beyond their limitations. Over-extensions are a technique aimed at opening the joints into their maximum ROM.

Overextensions are not dangerous to the joint, but are actually good for stiff joints as they help return a tight joint back to its natural range of motion (e.g. Poor posture and a rounded back which is caused from tight deltoids, trapezius or pectorals quickly returns to normal when these muscles are gently forced into over-extension). Overextensions are a stretching-in-motion technique, as opposed to stop and hold. They should feel good like the first stretch in the morning. Using the rule of feels-good vs. feels-painful helps exercisers know exactly how far the overextension should be taken,

Over-extensions & posture

Overextensions of the shoulders and upper body are mainly used to improve posture and flexibility in the shoulders. Almost all the movements that we perform in daily life and sports are forward moving, resulting in rounded shoulders, poor posture as well as neck and shoulder pain. In addition many fitness enthusiasts find that after years of strength training, they develop an excessive build-up of bulk in their upper back muscles: deltoids, trapezius, lats and pectorals, which causes an uncomfortable restriction in their shoulder range of motion. Overextensions are aimed at reversing any rounding of the upper back, by placing extreme pressure on opening the muscular skeleton of the upper body.

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The Flow of Energy and Muscle Chains

The Unseen Magic of the Human Body

One of Leonardo Da Vinci's most famous masterpieces is the drawing of the universal man standing in the center of a circle with his arms and legs outstretched, touching the circumference. What was Leonardo trying to say with that drawing?

In naming the drawing 'The Universal Man', was Da Vinci relating the physical body of man to the basic universal laws of motion? Circular motion to be exact! The ancient Chinese wise men and women used similar laws in the development of yoga thousands of years ago. In yoga, the muscles are studied from the viewpoint of interlocking circular-type lines enveloping the body.

Technically speaking, each muscle is a separate entity in itself, each having its own unique points of origin, insertion and duty to perform. However, when we move, there is a natural flow between the muscles, which could be seen as a series of links in an invisible chain of muscles, as seen in yoga.

In Classical Stretch, we try to follow the natural chains of muscles while exercising. Not only does following the natural chains of the muscles feel very soothing, but it also very natural and easy to do. The reason it feels easier is because the body isn't fighting against itself but following an instinctive flow. The movements in Classical Stretch are designed to deliberately follow the natural chains of the muscles. This creates constant circular or rotational type movement, which are the trade-mark of Classical Stretch.

There are several benefits to deliberately following the muscle chains. One is psychological, leaving the participant with a sense of well-being. In other words, the movements are in harmony with what the body wants to do and where their body wants to go. At the end of a Classical Stretch workout, the person often walks away relaxed, a peace and contented.

The fitness value gained from following the muscle chains is as great a value as the emotional one. A chain implies a series of connecting links, or in this case connecting muscles. If one muscle along the chain

is weaker, tighter or off balance from the others, all of the muscles along the chain will be affected. That is why a foot injury can cause hip pain, or an arm injury can cause shoulder pain. The body is linked by a series on skeletal muscular chains. When the chains are respected in training, greater results can be achieved.

Following the principal of the wheels of the body as discussed in an earlier chapter, help guide the participant to follow the chains of muscles.

Nicolas O'Dwyer wrote the following, which explains the muscle chains in relationship to the central nervous system. In this he gives examples of how the central nervous system directs the muscles to work in chains to permit us to perform every day activities.

“A good example of the adaptability of reflexes is seen when the muscles of the wrist are stretched, while a subject is kneeling or standing. The muscles that are stretched contract, but muscles in other limbs also contract to prevent loss of balance. Interestingly, the reflex response of the elbow extensor muscles of the opposite arm depends on the task being performed by that arm. If the arm is used to stabilize the body (by holding the edge of a table), a large excitatory response is evoked in the elbow extensor muscles to resist the forward sway of the body. However, if the arm is holding an unsteady object, such as a cup of tea, a reflex inhibition of the elbow extensors prevents movement of the cup.

All movements activate receptors in the muscles, joints and skin. These sensory signals generated by the bodies own movement was introduced by Sherrington, who proposed that they control important aspects of movement, referred movements to as proprioceptive. The primary function of proprioceptive reflexes in regulating voluntary movements is to adjust the motor output according to the biomechanical state of the body and limbs. It is clear that without proprioceptive input, the adaptability and task dependent behavior of reflexes would be impossible. This ensures a coordinated pattern of motor activity during an evolving movement and it provides a mechanism for compensating for the intrinsic variability of motor output”.

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O'Dwyer, Nicholas; School of Exercise and Sport Science, The University of Sydney

Chapter 17 (*excerpts*)

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Concentric strength

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The artistic use of isometric force

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Force

Definition: Strength, energy, vigor, tension, stress, strain, pressure, and rigidity.

There are many different types of force or resistance training. The many types include: eccentric, concentric, overload, progression, specificity and finally, the artistic use of isometric force to encourage healing. We will discuss these different types focusing in particular on eccentric strengthening.

Eccentric Strength

Eccentric strength refers to the ability of a muscle to produce force while it is being elongated. During a running stride, every time an athlete's foot comes back to the ground, the muscles in the leg are contracting eccentrically. The stronger the eccentric contraction, the quicker and more powerful the propulsion forward will be. Speed requires eccentric strength.

Eccentric strength is displayed when a muscle lengthens as it yields to a resistance. When the muscles are moved eccentrically, 30% of the motor neurons turn off, leaving the remaining 70% of the muscle fibers to do the work concentrically done by 30% more fibers. As a result, those 70% of fibers left to do the work are challenged more, therefore become stronger than they would have, if all the neurons have been firing at the same time.

Concentric strength

Concentric strength refers to the ability of the muscles to produce force, while being shortened. The ability to overcome a resistance through muscular contraction, i.e., the muscle shortens as it develops tension.

Overload

To see gains in strength you must always stimulate the muscle more than it is accustomed to.

Progression

The active muscle must continue to work against a gradually increasing resistance in order to meet overload. This generally refers to weight training; however, lifting the body's weight in slow progressive movements can offer the muscle's progressive strength.

Specificity

Gains you receive are dependent on the muscle group used, and movement pattern performed. This generally refers to weight training. In Classical Stretch, specificity is rare.

The artistic use of isometric force

In traditional strength training when free-weights or machines are being used, it is easy to control how much resistance or force is being used. Simply add or subtract the repetitions and level of weights. In programs that do not use any outside resistance but the body's own weight, it is much harder to understand and teach how much or how little resistance any one person should use. This is the place where Classical Stretch, yoga, Pilates, tai chi and dance cross over to become art and not science.

To know how much resistance should be used for any given scenario requires sensitivity to the individuals' circumstance of each changing day. The degrees of resistance change from exercise to exercise depending on the objectives to be accomplished.

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Breathing to flatten the stomach

Correctly used, breathing can be a valuable technique in strengthening the stomach. Breathing techniques for abdominal strengthening often differ according to which fitness program you are following. Various programs tend to offer contradictory methods, which becomes confusing to a novice student. No one program should claim to have the correct technique as there is value in each different theory. I believe that mixing the techniques can add to the fun, value and variety of a workout.

One thing that is unanimous among fitness experts is that breathing techniques help to get the most out of abdominal work.

Here are some examples where two different breathing techniques are used for the same sit-up movements

Similar sit-up exercise's	Breathing technique #1	Breathing technique #2
Lift shoulders off floor	INHALE as you lift shoulders off the floor	EXHALE as you lift shoulders off the floor
Lower shoulders to the floor	EXHALE as you lower shoulders to the floor	INHALE as you lower shoulders to the floor
Holding the shoulders off the floor in a static position while	Holding the shoulders off the floor in a static position while slow breathing to the count of three	Holding the shoulders off the floor in a static position while doing three quick sharp exhales to the count of three
Lie on the back with one leg extended in front & other knee bent foot on floor	Slowly inhale three counts and exhale three counts before lowering leg	Six quick exhales, forcing the air out, before lowering leg

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Objectives

Improved Posture

Poor posture is one of the most common and most obvious physical flaws in our society. It is most often the result of repeated slouching. There are many reasons why people slouch, mainly from a bad habit of early childhood that was never corrected. If teachers and parents forced children to sit and stand erect, their muscles would develop accordingly. To be able to naturally hold good posture takes strength and repetition. But when children are permitted to slouch, the habit of slouching becomes burned into their muscle memory.

Poor posture as a health issue**Cause & effect**

Ninety percent of new cadets in the West Point Military Academy enter the Academy with poor posture (The West Point Fitness and Diet Book, page 212). Fortunately, they are all healthy young men and women, so it doesn't take long to whip them into becoming dignified, well-postured cadets. In this case, youth is on their side. It would be impossible to enter an old age home and achieve similar results.

Poor posture and its effects on the body

As the body slouches forward the spine compensates for the unbalance by curving the pelvis or tailbone under, rounding the lower back. This is the beginning of a whole new series of complex problems. In a slouched position, the stomach muscles instinctively relax. When an accordion squeezes, the space is reduced and when it pulls out the space is increased. What happens to the torso is similar to what happens to the accordion. When the space intended for the stomach, kidneys, liver, intestines etc. is reduced in size, they have to find an alternative space. The only direction to go is forward, forcing the stomach to protrude excessively. In addition the organs are squished awkwardly incapable of functioning efficiently.

The list of possible complications caused by this aspect of poor posture can be itemized ORGAN BY ORGAN

- The stomach: experiences digestive complications
- The intestines: constipation
- The kidneys & liver: limited circulation poor eliminations of toxins

Chapter 20&21 (*excerpts*)

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Note

Chapters 20 & 21 have been combined together for the convenience of the students taking the tele-course. Both TV episodes 20 & 21 deal with back pain and it seemed correct to keep the study material on the same subjects within the same chapter.

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Back Pain

Diagnosing Chronic Back Pain

Analysis of Back Pain

Preventing a Back Pain Attack

Exercise to prevent back pain

Weak abdominal muscles

Note: Chapters 20 & 21 have been combined together for the convenience of the students taking the tele-course. Both TV episodes 20 & 21 deal with back pain and it seemed correct to keep the study material on the same subjects within the same chapter.

Anatomy

Diagnosing Chronic Back Pain

When diagnosing back pain, many people behave as though they are specialists, including me. Back pain is so common that it is easy for chiropractors, physiotherapists, osteopaths, and fitness experts to have had years of life experience in dealing with and relieving people of their back pain. The first diagnosis should always come from a medical doctor. Unless the cause is glaringly obvious, like a car accident or falling off

a horse, it is important that infection, disease or tumors be eliminated before proceeding with treatment or an exercise program. Only a medical doctor is equipped to offer a medical diagnosis; therefore, the first specialist to be consulted should be a medical doctor.

Analysis of Back Pain

Back pain is one of the most painful non-life threatening chronic conditions a person can suffer from. Back pain can be caused from a multitude of problems; therefore, the first thing a back pain sufferer needs to do is get a medical diagnosis. I usually suggest the wait-two-week rule. If back pain does not begin to subside after two weeks, I always recommend that the person visit their doctor to rule out a medical condition. After two weeks of relentless pain, a correct medical diagnosis is necessary for the chronic back pain sufferer to rule out infection, disease, or the need for immediate surgery. Only about 20% of back pain sufferers need a doctor's help, as most back pain is caused from mechanical imbalance. All a doctor can do is offer pain relief medication; recommend a physiotherapist; chiropractor, ice, heat, exercise, acupuncture, or time off work. Unfortunately, the doctor can do very little to treat back pain if it is the standard mechanical imbalance type.

The solution to 80% of back pain is to rebalance the unbalanced "back muscles" irrespective of which ones are causing the problem. Following the 'law of the wheels of the body', all the related muscles need to be rebalanced at the same time. The solution of following a generic stretch and strengthening program can treat almost all-mechanical back pain.

Preventing a Back Pain Attack

People who have experienced the excruciating pain of a Charlie-Horse in the calf muscle know that immediate movement of any kind will help relieve the spasm; massage, jumping up and down or simply flexion of the ankle against the direction of the spasm. We know from experience that if the spasm isn't prevented at the onset, it will continue until the muscles are fixed in a rock hard immovable torturously painful bundle. The pain at that point becomes almost unbearable, sadly only time will relieve the spasm and let the muscles relax.

A Charlie-Horse or back pain spasm can last days before the muscles release the spasm. Even after a short-lived Charlie-Horse, of a few minutes, soreness remains in the muscles for days. A similar scenario happens to the back in a back pain attack. As with the Charlie-Horse, the most important thing to do is to immediately move to prevent the spasm.

In a spasm, the muscles are taking orders from the reflexes, which are ordering them to contract and stay contracted (they switch from voluntary to involuntary CNS control). The voluntary control is in the process of becoming involuntary. It is a battle, and the battleground is in the back-muscles. The person can only win the war if they take immediate action against the contraction.

The battle is to maintain control and not hand the control of the muscles over to the involuntary reflexes. Action against the contraction has to be taken the moment the first sign of contraction begins. As with a Charlie-Horse, the contraction or spasm can be fast and powerful, so there is no time to waste. Stretching exercises have to be done immediately to prevent a spasm (which often last ten to fourteen days).

There is no time to wait for a convenient moment to do the exercises, as with every passing second the spasm is getting closer. Understanding what is taking place on a muscular level gives the person who is experiencing a back pain attack the ammunition to fight and win. The urgent need to immediately stretch the contracting muscles cannot be overemphasized in the battle against the spasm. Even if the time or place might be awkward, it is imperative to immediately stretch. The urgency to immediately stretch, no matter what the situation, requires creative solutions.

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Anatomy

Structure of the cardio vascular system

The cardio vascular system consists of the heart and the blood vessels (arteries, capillaries and veins). The heart is an organ slightly larger than a fist, weighing on average less than a pound. It is a hollow organ with a tough muscular outer wall, an interior dividing wall (down the center of the heart cavity, right and left) and both sides of the heart are again divided into an upper chamber (atrium) and lower chamber (ventricle). The four quarters are called, right and left atrium and ventricles. The blood flows through all these chambers, in order to insure the one-way direction of blood flow. There are one-way valves making sure the blood cannot back-flow.

The blood flows, into the heart through veins and out of the heart through arteries. It circulates throughout the body retrieving carbon dioxide and waste products (from energy waste) returning to the heart to be cleansed and rejuvenated with oxygen. This is done in conjunction with the respiratory system as the blood leaves the right ventricle of the heart and is delivered to the lungs, (the pulmonary capillaries) where the carbon dioxide is released and oxygen is added.

The oxygenated blood then returns to the left atrium of the heart filled with nutrients and oxygen, then through the last chamber of the heart, the left ventricle, and is pumped out through the arteries to begin a new journey throughout the circulatory system, ready to nourish the brain, bones and muscles.

There is approximately 96,000 kilometers of vessels in the circulatory network through which the blood flows. The oxygenated blood flows through the arteries into the capillaries of muscles as it is delivering the oxygen-laden blood. The relationship of the capillaries and the cells of the muscles have been likened to a sponge, which when squeezed water rushes out of and is absorbed when released. The action of contracting the muscles can be looked upon like squeezing a sponge (nothing can enter as the fluid is being squeezed out), then the releasing of the muscles in a stretch is somewhat like releasing the squeeze on the sponge (where the water rushes back in). Stretching releases the tension out of muscles and in doing so opens the way for the blood to enter. In Classical Stretch, the constant stretching and strengthening (pumping) dynamics stimulates blood flow more efficiently than static stretching. The techniques behind a full body workout in any Classical Stretch program guarantees blood flow throughout the body.

The arteries carry the fresh oxygenated blood, which is pumped with great force out of the heart. Veins carry the old blood, full of carbon dioxide and waste products back to the heart. In Classical Stretch, the combination of stretching and strengthening also creates a pumping action as the blood is sucked in and pushed out. Classical Stretch through its deep pumping techniques helps to relieve the workload on the heart muscle, encouraging other muscles in the body to participate in the job of circulation.

In every aspect of Classical Stretch, the circulation of blood is being addressed from the wheels of techniques, exercises, objectives and the anatomy. This is why Classical Stretch is successful in speeding recovery from injury, surgery and illness. This is also why Classical Stretch is successful as an anti-aging program, in keeping the cells of the body healthy and full of oxygen giving energy.

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Diagram of the components of food

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Exercise for weight loss and weight maintenance

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Exercise for weight Loss and weight maintenance

Techniques

Pushing & Pulling

Techniques

Pushing & Pulling

The push and pull work is a combination of concentric and eccentric tension of agonist/antagonist muscles. A push is always away from the center and a pull is always towards the center. Pushes and pulls should be used in unison, one following the other. It involves contracting and releasing, which is an agonist/antagonist workout of the upper body. It is muscularly stimulating and feels good to do.

Pushes and pulls are effective in stimulating circulation through their gentle pumping action. They are a wonderful technique to use at the beginning of a workout to warm the muscles and initiate the first levels

of stretching. Pushes and pulls are preparatory stretches used to loosen up a particular muscle group. They should be used before a much deeper technique such as a lever, overextension or passive PNF to break up tension and insure sufficient blood flow. Pushes and pulls can also be used on injured muscles as they stimulate blood flow. The gentle pumping action created in pushes and pulls helps in the delivery of nourishment to the injured muscles. Pushes and pulls are also great techniques during competitions when athletes have a few moments break and need to take the tension out of a contracted muscle. The gentle pumping created by the pushing and pulling action shoots oxygen into exhausted muscles revitalizing them.

Purposes of

Pushes & Pulls:

- a. Warm-ups
- b. Preparation for deeper stretches
- c. Increased circulation
- d. Healing
- e. Oxygen delivery
- f. Relaxation

Chapter 24 (*excerpts*)

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Anti-aging

The Fountain of Youth - Blood Flow: Anti-Aging, Atrophy Reversal, Energy Ageing is inevitable. However premature ageing, in most cases, is not. When we think of ageing we think of wrinkles, weight gain, poor posture, loss of energy, osteoporosis, aches and pains in various joints and general over-all stiffness. All the ageing issues mentioned in this list can be addressed to some degree with correct exercise. Muscle mass, and therefore the power of the muscles, begins to dwindle from the age of around 35. The annual deterioration of muscles is around 0.5 percent until about the age of fifty, yet this deterioration is normally hardly noticed. Although this deterioration takes place more quickly from the age of fifty, the muscle mass of a seventy year old is still around 70 percent of that of a 30 year old. The shrinking muscle mass is replaced by fat. Apart from the pure loss in mass, the extensibility, tenacity and sliding ability of the muscles also reduces with age. Aging is slowly and silently creeping up on us. We look the same in clothes and our strength is slowly diminishing so as not to be obvious until our 50's.

In our 50's, we become aware that we can no longer do what we could in our 20's. The change is difficult to notice in our 30's and 40's as we can still sort-of do what we could in our 20's. It is only when we absolutely can not do the same exercises we could in our 20's that we know for sure we are aging. It is usually a big shock to realize that we have aged.

The time to counteract the effects of aging is not when we have aged but before. Exercise should be done in every person's life to keep the muscular-structure as strong and fit as possible. The deterioration process will not be as quick or as severe. The muscles will remain firm much longer and they will not be replaced by fat as quickly. Pre-mature ageing is all about whether we let our bodies fall apart faster than necessary. We need our bodies to be capable of staying fit and active our entire lifetime. How we treat them when we are young will significantly effect what we are left to work with when we get older. It is necessary to be able to exercise into our golden years. Exercises and fitness is no longer just for the young. It is now recognized that people of all ages can and should exercise. The changes in the muscles as we age have significant effects on our mobility and independence as an older person. However, the retro-development of our muscles does not start in old age, but immediately following the complete development of our body. The speed of the muscle atrophy can be significantly influenced by specific measures and primarily depends on the extent of their regular use. Old people tend to exercise less accelerating the natural deterioration of the muscles even more.

One of the main reasons stretching is so effective for anti-ageing is due to the stimulation of blood flow. Blood flow helps to moisturize dry muscles, relieve pain, and nourish skin. Stretching also works by removing toxins. These toxins are a combination of dead cells that, like anything dead, tend to rot and become poisonous. As with anything which is poisoning the body, they leave a person feeling tired and lethargic. The combination of both flushing out the toxins and delivering nutrients to the body leaves that person with an immediate increase in energy.....

Objectives

Range of Motion in relationship to ageing and easy movement

Range of motion is referring to the ability to move every joint to its intended maximum degree with complete ease. The use-it or lose-it concept unfortunately is true when it comes to range of motion. We lose our range of motion in a slow insidious way.

Most daily movements do not challenge the full range of motion of our joints. Most daily motion is limited to forward in-front of the body movements; lifting bags, walking forward, sitting and reaching in a cupboard. Very few backward movements are done on a daily basis such as washing our backs, or putting on a shirt sleeve. We subconsciously-adapt to motor problems and figure out how to get around difficulties like being unable to reach our full backs in the bathtub by using a wash cloth or a long scrub brush.

We rarely stop to think that we have lost the ability to move as freely as we once were accustomed to, until the lack of range of motion becomes interference in our life. Sadly that is often too late to be able to 100% reverse the loss of range of motion. By the time the problem is an obvious interference, most likely atrophy has set in and not much can be done to bring back muscles which have shriveled-up to the point where there is no longer any blood flow.....

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Constipation Relief

Definition of constipation

The clinical definition of constipation is any two of the following symptoms for at least 12 weeks (not necessarily consecutive) in the previous 12 months:

- Uncomfortable straining during bowel movements
- Lumpy or hard stools
- A sensation of not completely finishing evacuation
- A sensation of a blockage or obstruction
- Fewer than three bowel movements per week

Points of importance about constipation

- Constipation affects almost everyone at one time or another.
- Many people think they are constipated when, in fact, their bowel movements are regular.

- The most common causes of constipation are poor diet and lack of exercise.

Additional causes of constipation include medications, irritable bowel syndrome, abuse of laxatives, and specific diseases.

In diagnosing constipation often only a medical history and physical examination are needed before the doctor suggests treatment.

In most cases, following these simple tips will help relieve symptoms and prevent recurrence of constipation:

1. Eat a well-balanced, high-fiber diet that includes beans, bran, whole grains, fresh fruits, and vegetables.
2. Drink plenty of liquids.
3. Exercise regularly.
4. Set aside time after breakfast or dinner for undisturbed visits to the toilet.
5. Do not ignore the urge to have a bowel movement.
6. Understand that normal bowel habits vary.
7. Whenever a significant or prolonged change in bowel habits occurs, check with a doctor.

Most people with mild constipation do not need laxatives. However, doctors may recommend laxatives for a limited time for people with chronic constipation. Who gets constipated?

According to the 1996 National Health Interview Survey, about 3 million people in the United States have frequent constipation. Those reporting constipation most often are women and adults age 65 and over. Pregnant women may have constipation, and it is a common problem following childbirth or surgery. Constipation is one of the most common gastrointestinal complaints in the United States, resulting in about 2 million doctor visits annually. However, most people treat themselves without seeking medical help, as is evident from the millions of dollars Americans spend on laxatives each year.....

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Objectives

The purpose of transfers

1. To perform the exercise on the opposite side of the body
2. To give relief to the primary muscles being used
3. To develop body awareness
4. To develop safe execution of movements
5. To help injury prevention
6. To develop strength in the muscles
7. To tone the muscles
8. To double the effectiveness of the workout by making the program non-stop and seamless

Transfers of Movements

To live is to move. All movements involve a transferring of body weight in some way or other. Participants in a sport or fitness program move in and out of more awkward and varied positions than they ever would in their daily lives. Keeping in sufficient shape to be able to get in and out of those positions efficiently without injuring themselves requires a certain level of body awareness. Knowing how safely to get in and out of different positions and being able to do safely executed moves is what I am referring to as transfers.

Everyday life also requires a level of body awareness that we begin to develop as toddlers. As we mature body, movement becomes second nature to us. We do not think twice about how we go through the mechanics of reaching for a dish from a top shelf, washing our backs in the shower, running up and down stairs, or making a bed. We perform thousands of variations of these types of natural movements everyday, without stopping to figure out how to technically accomplish them. For everyday life application, transfers are what make getting in and out of a car less awkward, doing every day household chores easier or having more success in a favorite sport. Using transfers efficiently becomes an invaluable asset in daily life, making movement easier. This objective makes Classical Stretch unique from most fitness programs.

In sports, the body is constantly challenged to move quickly from one position to the next. In a sport, athletes often have move rapidly in and out of deep lunges or make abrupt changes of direction, safely and intelligently without injuring themselves. In Classical Stretch, we have taken the shifting of weight, the deep lunges or changing of directions and turned those moves into part of the workout, calling them transfers. The transfers are as vital as the actual training exercises.

The flow of most fitness programs is stop-and-start. In a traditional exercise class, an exercise is taught, everyone does the right side, stops, changes sides and does the left side, continuously stopping and starting. In Classical Stretch, the exercises are strung together by transfers, making the workout seamless, with almost no stopping and starting from the moment the class begins to when it ends. The transfers then become as vital as the actual exercises. The basic elements required to transfer the weight and change directions in movement are; flexibility, body awareness, alignment and strength, engaging the body totally.

In addition to protecting the body from injury and making life easier, transfers engage the body so completely that they double the value of a workout session. Transfers are an objective and not a technique. Every transfer has its own specific requirements or techniques, depending on the position in which the body starts and finishes. Analyzing how to safely, easily, comfortably and intelligently transfer is a challenge for both coach and student.....