

PRECISIONTM

THE KEY TO BEING YOUR PERSONAL BEST

AUTUMN 1997

RESISTANCE Training all the rage



Everyone is doing it... Resistance Training. To rehabilitate an injury, train for a specific sport or if you just want to alter body composition. Physicians and therapists have recently started promoting the benefits of resistance/strength training.

Benefits of Resistance/Strength Training:

Personal Appearance. Muscles are largely responsible for your overall personal appearance. Resistance training stimulates muscle fibers to increases in size and strength. This enhances muscle shape and function.

If you want to alter body composition, resistance training is only one part. Proper food intake and supplementation, aerobic exercise and systematic applications of these steps are all part of changing your appearance.

Injury-Prevention. A well-conditioned and well-balanced muscular system serves the body as a suspension system. It can prevent injuries from external and internal forces.

A strong muscular system offers protection against impact injuries often caused by running or jumping. It provides muscle buffering to prevent joint injury.

A balanced muscular system is equally important for avoiding injuries caused by performing a specific movement over long periods of time, like long distance running.

Resistance/Strength training leads to stronger muscles, bones and connective tissue. These work together to increase your functional capacity. It may not totally prevent

injury, but it will definitely postpone many degenerative problems associated with aging.

Increase Physical Capacity. Muscles are the body's engines. Every activity needs a certain percentage of the body's maximum physical capacity.

If your maximum bicep strength is 25 pounds, carrying a 25-pound bag is in all-out effort. Resistance training can increase bicep strength to 50 pounds. The same bag requires half your available muscle strength.

Improving physical capacity lets you perform previously difficult tasks with less effort. Research shows a 40% to 60% increase in muscle performance after only eight to ten weeks of fundamental resistance training.

Increase in Muscle Proteins. Progressive resistance training produces additional myoproteins (muscle proteins). They form larger muscle fibers with greater structural and contractile strength. During resistance training the load is transferred from the muscle to the tendons and ligaments. This produces more collagen proteins. The bones produce more osteo proteins. As a result you get a well-developed musculoskeletal system.

Before you begin any resistance training program enlist a certified personal trainer/fitness coach to teach proper technique and avoiding injury. Resistance training takes skill. Practice it with a light load until your muscles begin to adapt. ♦

— Angel L. Gonzalez

is certified in resistance training by
The National Academy of Sports Medicine

THIS ISSUE

Resistance Training
All The Rage

Sports Nutrition Can
Boost Athlete's Energy

Get To Know
Your Doctor

emPOWERing Talk

Dear Reader,

Autumn has arrived and as the colors of the leaves turn and we "fall" back in time, we find ourselves in a stage of change — new opportunities, new relationships, new insights. But, what causes change? What motivates us to create change in our lives?



I believe change comes from two sources. Often we are driven to change out of desperation. Our circumstances become so out-of-control, we abandon our search for answers to the problems in our lives. It is this overwhelming sense of desperation that finally drives us to look for solutions. Suddenly, we feel an urgency to find immediate answers to life's challenges.

The other source that drives us to make change in our lives is inspiration. I sincerely hope that is where you find yourself right now — inspired to make a major and dramatic change that will transform your life.

If there is anything we can be certain of in our lives it is change. When things will change is still uncertain. Although, we know what to do, we don't always do what we know. So, you ask, "When will my life change?" When you change!

Sincerely,

Angel L. Gonzalez
President, Personal Best Training Systems

SPORTS Nutrition

Can Boost Athlete's ENERGY

By Dolores C. Perri

Creatine!! What is it? What does it do and can it help in your workouts? Does creatine give you more bulk? More energy? Let's get answers. Creatine is believed to be an energy producing substance found primarily in animal tissue, particularly in red meat.

A very small part of lean body mass is made up of creatine with the major portion consisting of protein. Studies have shown that to achieve maximum strength, you should intake one gram of protein per pound of body weight. Although protein (specifically amino acids) provides a small but significant amount of energy for your hard workouts, most of it comes from carbohydrates along with the help from creatine. However, your body isn't building muscle from carbohydrates. Your body needs protein to grow and to keep insulin levels stable and body fat low.

The common belief that red meat is an important part of the diet for maximum muscle growth is probably linked to creatine. Although creatine is made in the body from amino acids arginine, methionine and glycine (found in plant and animal sources), vegetarians lack a presynthesized or concentrated source of creatine. A small quantity of creatine is stored in muscle cells.

Creatine phosphate is involved in an energy transfer resulting in ATP (Adenosine Triphosphate), which is the energy dynamo of the cells. Creatine itself does not provide energy. Creatine Phosphate (CP) is the substance primarily responsible for maintaining energy for the first 30 seconds of high intensity exercise.

Creatine is also used to facilitate the recovery process. Don't view it as another gimmick supplement. For athletes involved in explosive sports, it can be used for immediate, performance improvements. Creatine lets athletes train without excessive fatigue at an intensity higher than they were formerly accustomed to. For these reasons alone, creatine supplementation should be viewed as a significant development in sport nutrition.

General recommendations suggest that creatine be consumed before training. Some trainers recommend taking creatine both before and after the workout for optimal restoration of muscle energy stores.

Are you training hard and want to see great results? Try adding a high quality protein supplement to your diet. This facilitates faster recovery and better results. ♦

— Dolores C. Perri, M.S., R.D., C.N.S.,
Nutritionist Therapist



LEARNING THE LINGO

Ever feel like people in the gym are speaking another language? They are! They're describing the muscles being used, the type of movement they're going to perform and different training strategies. Understanding these terms will make you feel more confident in the gym and bring your communication with your personal trainer/fitness coach to a new level.

- ♦♦ **Abduction.** Movement away from the midline of the body.
- ♦♦ **Adduction.** Movement toward the midline of the body.
- ♦♦ **Biomechanics.** The study of motion and the effect of forces (load/weight) on biological systems (muscular, skeletal).
- ♦♦ **Contraction.** The state of a muscle when tension is generated — shortening of the muscle.
- ♦♦ **Circuit Training.** Selected movements performed in sequence, as rapidly as possible.
- ♦♦ **Concentric.** Shortening of the muscle — positive work.
- ♦♦ **Eccentric.** Lengthening of the muscle — negative work.
- ♦♦ **Extension.** Moving the two ends of a jointed body part away from each other (straightening the arm).
- ♦♦ **Flexion.** Moving the two ends of a jointed body part closer to each other (bending the arm).
- ♦♦ **Isometric** (Isometric Contraction). Muscle tension produced without movement. The muscle doesn't shorten.

Seasonal MYTH



Spot Reducing. It's not possible to spot reduce fat. Our bodies are genetically designed to carry a certain amount of fat in specific areas. In order to lose fat from any area an "energy deficit" must occur. This means the amount of calories you burn must exceed your caloric intake.

In addition to proper caloric intake you must have proper food supplementation, aerobic activity (walking, cycling) and anaerobic exercise (resistance training).

Once you have systematically applied these steps, be patient. There is no way to predict where the fat reduction will occur. But it will happen! ♦

Get to Know Your Doctor

By Dr. Scott G. Duke, D.C. DACBSP

Think medical schools train sports-medicine doctors to care for all your sports-related injuries? Think again! Sports medicine is barely acknowledged in most medical schools. One study found only four percent of medical schools require students to study exercise topics. Sports-medicine specialists are self-taught.

Who should treat your sports injuries? See someone who specializes in treating your type of injury. If it's a sports injury, the specialist should have added knowledge and experience in treating sports injuries. Qualified specialists belong to a professional sports-medicine society. Look for specialists who work to find the underlying cause of your injury, recommend conservative treatments before surgery and end your exercise program as a last resort. Here's a rundown of who to see for ailments:

Foot and Lower Leg. These injuries are treated by a variety of specialists, including orthopedists, osteopaths, physiatrists and chiropractors. Leading the pack is the Doctor of Podiatric Medicine (D.P.M.), or podiatrist. Podiatrists complete four years of training at a college of podiatric medicine, and a residency. Training focuses on the foot and foot-related problems. They can perform surgery and prescribe medication. Podiatrists find injury causes by examining your gait and the way your body moves biomechanically.

Knee. Knee injuries are most commonly treated by orthopedic surgeons. You can also see chiropractic sports physicians and osteopaths. Orthopedic surgeons are usually Medical Doctors (M.D.) who complete a four or five-year residency. They treat injuries to the musculoskeletal system, including bones, joints, muscles, ligaments and tendons. Knee injuries often stem from biomechanical problems, and is frequently corrected with orthotics or other treatments.

Thigh and Hip. These injuries are seen by osteopaths, chiropractors, physiatrist or orthopedists. There's little difference between

the training of a M.D. and a Doctor of Osteopathic Medicine (D.O.). Osteopaths train at a college of osteopathic medicine and are licensed to practice all branches of medicine and surgery. Their philosophy stresses a scientifically based, holistic approach to treatment instead of disease-oriented.

Doctors of Chiropractic medicine (D.C.) concentrate more on anatomy, physiology and biomechanics. They focus on manipulation and adjustments of the spinal column and joints (hip, knee, ankle, shoulder and wrists). They train for five academic years at a chiropractic college after they receive a bachelor of science degree. They don't perform surgery or prescribe medication. Chiropractors work to restore normal function and increase range of motion in a joint. For example, a runner can increase stride length for a faster and more efficient stride frequency without becoming injured.

Lower Back. Sometimes lower back injuries are treated by orthopedists first but, most often, chiropractors deliver relief using a physiotherapy approach to treating all types of athletic injuries. These D.C.s are often seen as the sports-medicine doctors of the future.

After diagnosis and treatment by a doctor, you may be referred to a physical therapist or athletic trainer. They work closely with doctors and know about rehabilitative techniques to help you return to normal activity. Physical therapists are licensed professionals with a bachelor's or master's degree.

To find a sports-medicine specialist, try a local runners club and coaches. In addition, the American Running and Fitness Association maintains a referral listing of specialists in your area. ♦

— Dr. Scott G. Duke has a Chiropractic Sports and Spinal Rehabilitation Practice where he uses Exercise and Physiotherapy proven to accelerate the healing process. Most recently, Dr. Duke worked on the Sports Medicine Team at the United States Olympic Training Center.

THE NETWORK

Each issue we'll bring you the professionals who can help you look and be your Personal Best.

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emPOWERing TALK



Words make us feel happy or sad, excited or fearful, alone or peaceful, deeply loved or massive pain. They are the seeds we plant in our minds. From them we grow our ideas, beliefs and philosophies.

REDUCE INTENSITY OF NEGATIVE FEELINGS

Depressed Feeling Down
Lonely Ready for Love
Frustrated Overwhelmed
I Hate I Prefer
Failure Learning
I Can't I Must
Problem Challenge

INTENSIFY POSITIVE FEELINGS

All Right Awesome
Happy Excited
Good Phenomenal
Smart Gifted
Interested Intrigued
Determined Unstoppable

Words not only produce how we feel about things, they shape our actions and ultimately

cause all we have, create and manifest in our lives. The words we choose everyday to communicate with others and ourselves absolutely shapes our destiny.

Most of us are well aware of the power of the words we use to describe our own experiences. Few of us are aware of our power to use these same words to challenge and strengthen our spirits and seek greatness from the gift of "life."

Unfortunately, we often fall prey to our negative thoughts and feelings. We begin to use words like frustrated, depressed, disappointed, angry or failure. Our mistake is not in using these words, it's in believing them.

emPOWERing talk (ET) is the conscious decision to use words that **emPOWER** us. ET provides the power to change life experiences. When we use strong, positive words we alter our perceptions.

Take control now. Notice the negative words and replace them with ones of **emPOWERment**. Take action. Make a commitment to make life an enchanting and passionate experience. ♦



Personal Best Training Systems is committed to passionately pursuing the answers to total health and fitness. Our mission is to identify and dispell the myths that permeate the fitness world, with real science. By researching and utilizing the technologies of top health and sports scientists, we will provide our clients with the skills, knowledge and power to be their Personal Best. They will learn the fundamental principles of nutrition, aerobic exercise, resistance training and the role of genetics in setting and reaching their fitness goals. Our clients will be educated and motivated to enrich the quality of their lives and empowered with the confidence and determination to be their **Personal Best**.