5 RULES OF EFFECTIVE STRENGTH TRAINING

THE "TRUE NORTH" GUIDELINES YOU NEED TO UNDERSTAND TO GAIN MORE MUSCLE SIZE AND STRENGTH

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1 THE PRINCIPLE OF PROGRESSIVE OVERLOAD

How scientists explain it: To provoke an adaptational response, the organism must be subjected to stressors of ever-increasing magnitude.

In the gym speak: "No pain, no gain."

Explanation: Golfing phenom Tiger Woods, like all beginning golfers, started with the simplest of skills. He learned how to hold the club, how to address the ball and so on. But if Woods had not continued to challenge himself with increasingly more difficult skills, he would never have attained even a small percentage of his ultimate potential.

The same applies to exercise training. To the body, physical training (which can also be called "motor learning") is a form of stress. In fact, Soviet sports scientists refer to training as an "irritant," since it disrupts the body's preference to stay the same. This is called "homeostasis."

How to incorporate this into your workout:

In a nutshell, you *must* ensure that each workout is slightly more challenging than the one that preceded it. There are at least three ways to accomplish this:

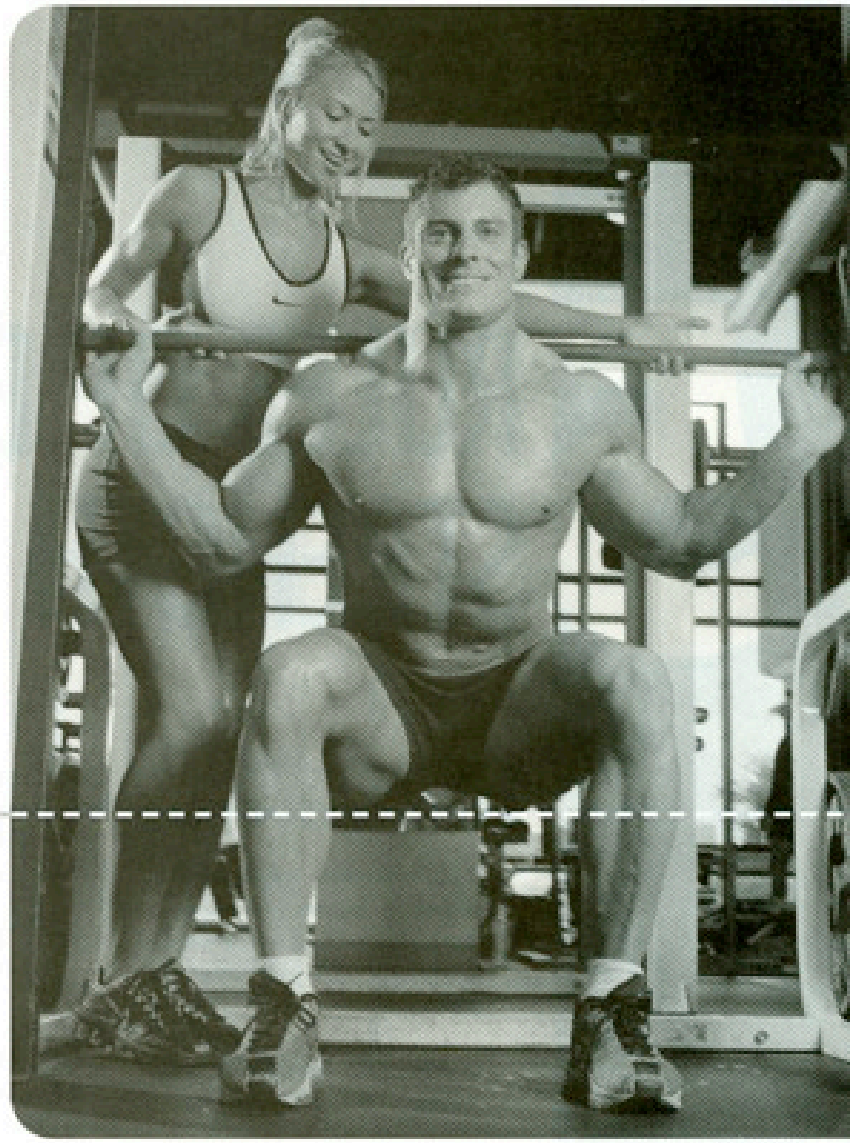
- Increase intensity: Intensity is defined as the absolute difficulty, or the *quality* of your training.
- Increase volume. This refers to the total amount, or the *quantity* of your training.
- Increase density

There is one catch to this principle: If the stress applied is too sudden or severe, the body will be unable to successfully adapt, and injury, illness and overtraining will result. Think of it this way: If you take on a new job as an auto mechanic and on the first day you handle a wrench for eight hours, your hands will become severely blistered. The stress was too sudden and severe. But, if instead you worked with the wrench for an hour the first day, two hours the second day and so on, your hands would

successfully adapt by developing calluses. Training works exactly the same way.

Perhaps the best way to ensure that your exercise program abides by the principle of progressive overload is to keep a detailed training log. In this way, you can determine last week's training load, and then plan this week's training such that it exceeds what you accomplished last week. There are a few simple yet powerful ways you can do this: Do more work (e.g., more total sets and/or reps) in the same period of time or do the same amount of work in less time.

Either way, when you progressively challenge yourself you'll grow—it's that simple.



2 THE PRINCIPLE OF REVERSIBILITY

How scientists explain it: When the environmental challenge is discontinued, the organism responds by discontinuing its adaptation response.

In the gym speak: "Use it or lose it."

Explanation: After a lengthy period of inactivity, your body will return to its previously untrained state. Although unsubstantiated by research, athletes over the years have recognized a certain "muscle memory" that makes it possible to make a "comeback" after a long period of inactivity, in a shorter period of time than it took to get to that level initially. However, conscientious trainees are better served by ongoing training than by gambling on "muscle memory."

The principle of reversibility suggests that you should stay in training year round, although the intensity and character of training will vary throughout the year. The sudden discontinuance of training (for example, after a professional athlete retires) is in itself stressful physically, as well as emotionally and psychologically. For this reason, many former Eastern-bloc sports programs utilize a planned and gradual reduction of training over several years upon an athlete's retirement from elite-level competition.

"CONSISTENCY IS THE HALLMARK OF ALL SUCCESSFUL TRAINING PROGRAMS."

How to incorporate this into your workout:

Consistency is the hallmark of all successful training programs. Perhaps the best way to ensure it is to create a lifestyle that supports your training efforts. This includes scheduling your workouts as if they were meetings or appointments. When something is important, you must put it on your schedule first, and then work other tasks in afterward, rather than vice versa. So, instead of planning to do a workout "tomorrow," actually set up an appointment with yourself tomorrow from 1:00 p.m. to 2:00 p.m. Even better, find a motivated training partner who will keep you accountable to that appointment! By employing these two simple strategies, you'll find your level of consistency dramatically improved.

3 THE PRINCIPLE OF VARIABILITY

How scientists explain it: Over time, monotonous stimuli tends to result in ever-smaller disruptions to homeostasis as the organism learns to cope with already-familiar stressors.

In the gym speak: "Dude, you've hit a plateau—change up your routine to shock your body into new growth."

Explanation: One of the more paradoxical facts about training is that specificity must be balanced against variability within the context of a sound training program. In other words, specificity is necessary, but too much of it is just as much of a problem as not having enough! Here's why:

- The effectiveness of any program is a function of the degree to which it challenges your body. The problem is that familiar programs are less challenging because the body habituates (habituation is the gradual reduction of a response when an initially new stimulus is repeated over and over). Every time an athlete repeats a training program, it becomes less effective.
- All programs have both negative and positive features no matter how well designed or specific. Too much time on one program, and athletes demonstrate a tendency to habituate to the positive aspects and accumulate the negative ones. For example, the athlete who performs barbell bench presses every week may develop an imbalance between the front and rear deltoid muscles, despite the fact that he or she is not getting stronger on the exercise.
- Unchanging training routines lead to overuse injuries. According to Dr. Sal Arria, sports medicine director for the International Sports Sciences Association, "Adopting long-term training habits of any kind is very often a precursor to degenerative changes in the joints. Advanced athletes are particularly vulnerable, since their training tends to become more and more specific over time."

How to incorporate this into your workout:

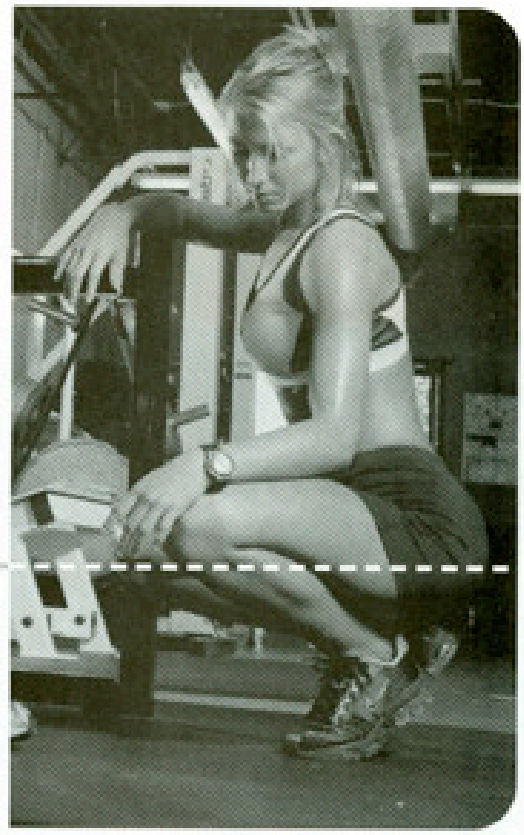
For the reasons just stated, it's crucial to constantly change all aspects of training—everything from the frequency of sessions to their content. Here's a simple and fun tip to get your workouts in line with the principle of variation: For the next month, use only exercises that you've never done before (yes—I'm serious!). You'll find ideas by scanning through previous issues of *Muscle Media*, as well as the exercise index on my website (www.integratedsportsolutions.com). You'll be shocked at how much fun you'll have, and also how sore you'll be from all the unfamiliar exercise choices.

4 THE PRINCIPLE OF SPECIFICITY

How scientists explain it: The body's adaptation to training is very specific to the type of training stimulus. Thus, the athlete must first decide which type of adaptation is desired (strength, speed, power, agility, etc.) and then select the appropriate type of training that is known to produce the desired response, or training effect. This is sometimes referred to as the "S.A.I.D. principle," or Specific Adaptation to Imposed Demand.

In the gym speak: "If you want a bigger bench press, do more bench presses!"

Explanation: All of the principles I'm discussing here are universal and apply to all facets of life. In the case of specificity, let's use the analogy of going to school: Studying geography tends to improve your skills in geography, but not your skills in other subjects such as math or English literature. If you go to the gym three times a week and do nothing but barbell curls, you'll tend to develop bigger biceps, but not bigger calves (this example excludes certain individuals who experience hypertrophy of the low back musculature as a result of doing barbell curls, but that's a subject for another article).



How to incorporate this into your workout:

Whenever you talk about specificity, you have to ask "Specific to *what*?"

In the gym, *your exercise selection must be specific to the muscles you want to develop, and the loading parameters you choose must be specific to the motor qualities you wish to develop.*

The first part of this explanation should be intuitively obvious.

However, if you're not sure which exercises target a particular muscle, here are a few easy ways to find out:

- During the exercise which muscles are experiencing fatigue?
- The next day, which muscles are sore?
- On many exercises, including leg extensions, leg curls, back extensions, triceps kickbacks, lateral raises, flyes, etc., you can determine which muscles are targeted by observing which muscles or muscle fibers are facing the ceiling. For example, if you perform a front dumbbell raise, the deltoid fibers that face upward are the ones which will receive the brunt of the training load.

Incidentally, if you're using an exercise that supposedly targets a specific muscle (say, the quadriceps) and you feel the most fatigue/soreness in other muscle groups (such as your low back), or if you tend to feel pain in your joints rather than fatigue in your muscles, it'd be wise to have an experienced exercise professional evaluate your technique for you.

Now let's look at the second part of the explanation: "*The loading parameters you choose must be specific to the motor qualities you wish to develop.*" Here is a short list of a few of the most relevant motor qualities you should be familiar with:

Absolute strength: This is the amount of musculoskeletal force that can be generated for one all-out effort, regardless of time or body weight. While only powerlifters need to maximize and demonstrate this type of strength, anyone interested in a leaner, stronger body should work on developing absolute strength, as it forms to create a foundation for hypertrophy.

Speed strength: This term means strength divided by time, or put another way, strength per unit of time. Speed strenght is defined as work divided by time, where work is defined as force x distance. Therefore, speed strength is defined as force x distance, divided by time. Many fitness enthusiasts ignore this motor quality, assuming it only applies to elite athletes. But it's important should not be underestimated, for at least two reasons:

Speed strength training targets the so-called fast-twitch muscle fibers—the ones that have the most capacity to enlarge and raise the metabolic rate.

Of all the motor qualities, speed strength is one of the fastest to deteriorate as we age. So if you want to maintain your ability to train hard and enjoy an active lifestyle as you approach your later years, you need to work on your ability to move weights fast.

Hypertrophy: This refers to muscle enlargement. Remember how I said earlier that absolute strength forms the foundation for hypertrophy? Here's why: You have to stimulate fast-twitch fibers before they can grow.

5 THE PRINCIPLE OF INDIVIDUAL RESPONSE

How scientists explain it: Each biologic organism is unique with respect to genetic potentiality, morphology, environmental stressors, fiber-type ratios, endocrinology, and a host of other factors which precludes the possibility of an across-the-board, homogenous response to a particular stimuli.

In the gym speak: "Everyone's different—you have to find what works for you."