

AMERICA'S FITNESS MAGAZINE



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10 Best STRENGTH STRATEGIES

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To maximize your results from strength training, you must have a carefully designed plan. A safe, efficient, productive, and comprehensive program can be designed using the following ten guidelines.

1. Train with a high enough level of intensity to produce muscular fatigue.

Research suggests that results from strength training are directly related to level of intensity (or effort). The *harder* that you train, the *better* your response. Your intensity of effort must be great enough to produce a sufficient level of muscular fatigue. Your muscles will adapt to these demands by increasing in size and strength. The extent to which this occurs then becomes a function of your inherited characteristics (i.e., muscle length, predominant muscle fiber type, etc.). Failure to reach a desirable level of intensity will result in little or no strength gains.

In the weight room, a high level of intensity is characterized by performing each exercise to the point of *concentric* muscular failure: when you've exhausted your muscles to the extent that you literally cannot raise the weight one more time. You

likely that you've gotten any stronger. However, what if you were able to do 11 reps with 120 pounds a month later? In this case, you did 10 percent more reps with 20 percent more weight.

The fact of the matter is that for a muscle to increase in size and strength, it must be progressively overloaded with a workload that is increased steadily and systematically throughout the course of your program. Whenever you work out, you should attempt to increase either the weight you use or the repetitions you perform in relation to your previous workout. This is known as the Double Progressive Technique (resistance and repetitions).

Each time you attain the maximum number of repetitions, you should increase the resistance for your next workout. Your muscles will respond better if the progressions in resistance are 5 percent or less. (This may necessitate using "saddle plates" of 2.5 to 7.5 pounds.) However, the resistance must *always* be challenging.

3. Perform one set of each exercise for maximum results.

For a muscle to increase in size and strength it must be fatigued. Nu-

Blueprint for

BY MATT BRZYCKI

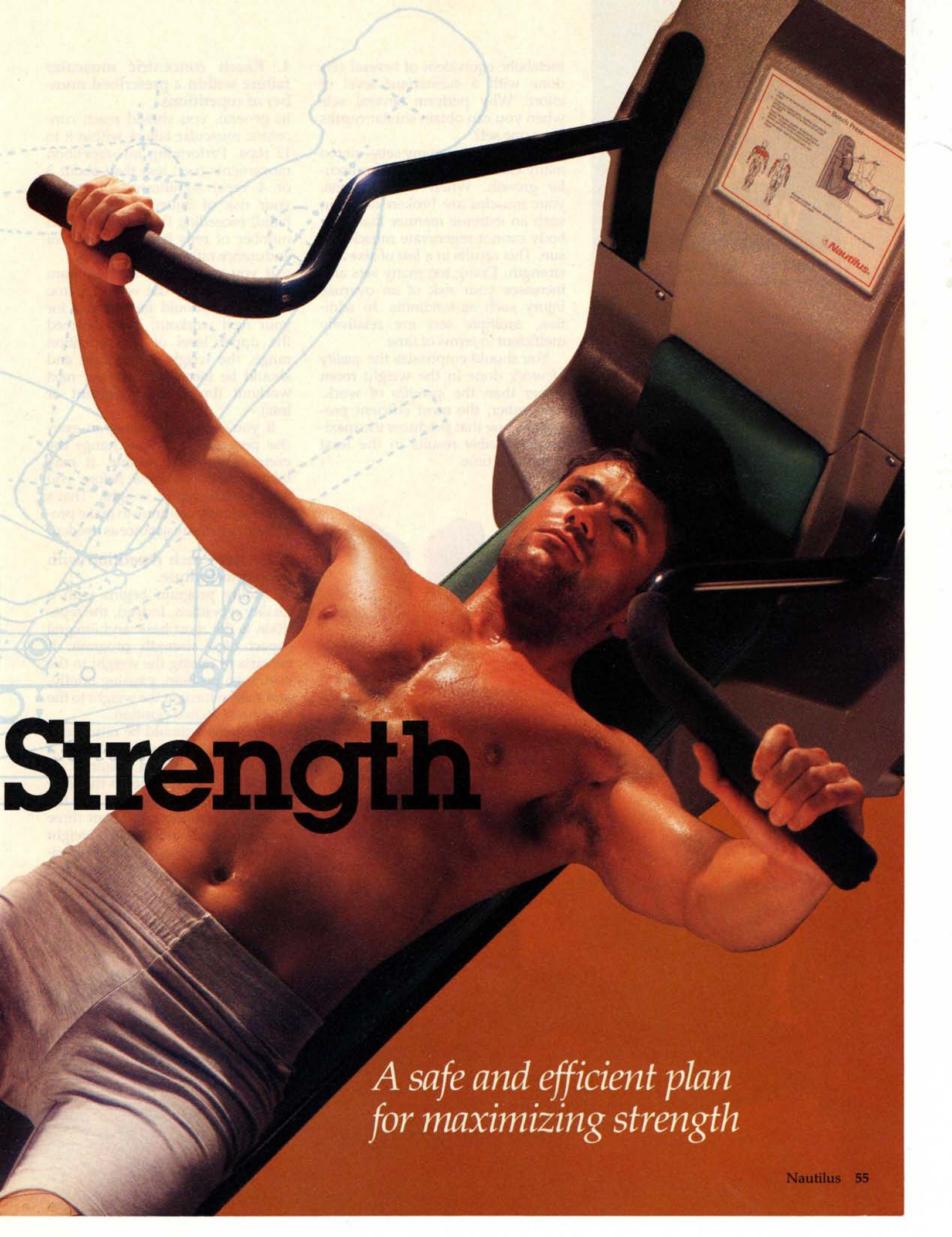
should be thoroughly exhausted at the end of each exercise.

2. Attempt to increase the resistance used or the repetitions performed every workout.

Suppose that today you did a set of leg curls for 10 reps with 100 pounds and a month later you're still doing 10 reps with 100 pounds. It's not

merous research studies have shown that there are no significant differences when performing one, two, or three sets of an exercise—provided that one of those sets is done with an appropriate level of intensity (i.e., to the point of concentric muscular failure). When performing multiple sets, the cumulative effect of *each successive set* creates the necessary muscular fatigue; when performing a single-set-to-failure, the cumulative effect of *each successive repetition* creates the necessary muscular fatigue. Truly, one set done with a *maximal* level of effort is the

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A full-page photograph of a muscular man lying on a Nautilus lat pulldown machine. He is shirtless, wearing grey athletic shorts, and is pulling the bar down towards his chest. The machine is dark grey with a black handle. In the background, there is a faint blue line drawing of a human torso and a technical diagram of the machine's pulley system. The word "Strength" is printed in large, bold, black letters across the middle of the image.

Strength

*A safe and efficient plan
for maximizing strength*

Total Body Workout

Body Part	Exercises	Reps
Hips	1	15-20
Hamstrings	1	10-15
Quadriceps	1	10-15
Calves	1	10-15
Chest	2	8-12
Back ("lats")	2	8-12
Shoulders	2	8-12
Biceps	1	8-12
Triceps	1	8-12
Forearms	1	8-12
Abdominals	1	8-12
Lower Back	1	10-15
Neck	2-4	8-12

metabolic equivalent of several sets done with a *submaximal* level of effort. Why perform several sets when you can obtain similar results from one set?

Performing too many sets—or too many exercises—can retard muscular growth. When this happens, your muscles are broken down in such an extreme manner that your body cannot regenerate muscle tissue. This results in a *loss* of size and strength. Doing too many sets also increases your risk of an overuse injury such as tendinitis. In addition, multiple sets are relatively inefficient in terms of time.

You should emphasize the *quality* of work done in the weight room rather than the *quantity* of work. Remember, the most efficient program is one that produces the maximum possible results in the least amount of time.

4. Reach concentric muscular failure within a prescribed number of repetitions.

In general, you should reach concentric muscular failure within 8 to 12 reps. Performing low-repetition movements (i.e., less than about 3 or 4 reps) significantly increases your risk of injury; on the other hand, exceeding the recommended number of reps becomes a test of endurance rather than strength.

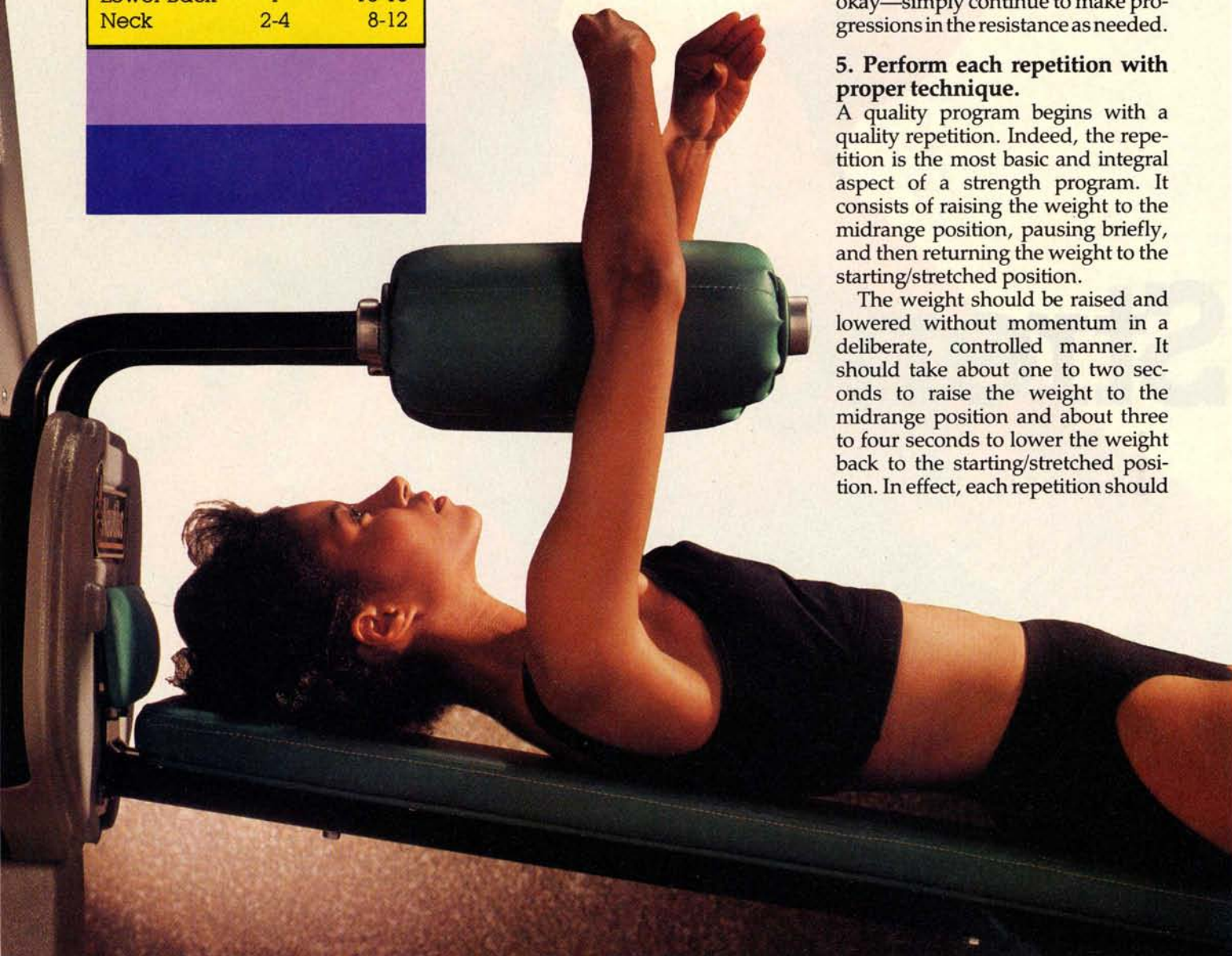
If you cannot do the minimum number of reps, the weight is too heavy and should be reduced for your next workout; if you exceed the upper level of the repetition range, the weight is too light and should be increased for your next workout (by about 5 percent or less).

If you're just beginning an exercise program or if you change the exercises in your routine, it may take several workouts before you find a challenging weight. That's okay—simply continue to make progressions in the resistance as needed.

5. Perform each repetition with proper technique.

A quality program begins with a quality repetition. Indeed, the repetition is the most basic and integral aspect of a strength program. It consists of raising the weight to the midrange position, pausing briefly, and then returning the weight to the starting/stretched position.

The weight should be raised and lowered without momentum in a deliberate, controlled manner. It should take about one to two seconds to raise the weight to the midrange position and about three to four seconds to lower the weight back to the starting/stretched position. In effect, each repetition should



be roughly four to six seconds in length.

Lifting a weight in a rapid, explosive fashion is ill-advised for two reasons: (1) it exposes your muscles, joint structures, and connective tissue to potentially dangerous forces which magnify the likelihood of an injury and (2) it introduces momentum into the movement which makes the exercise less productive and less efficient.

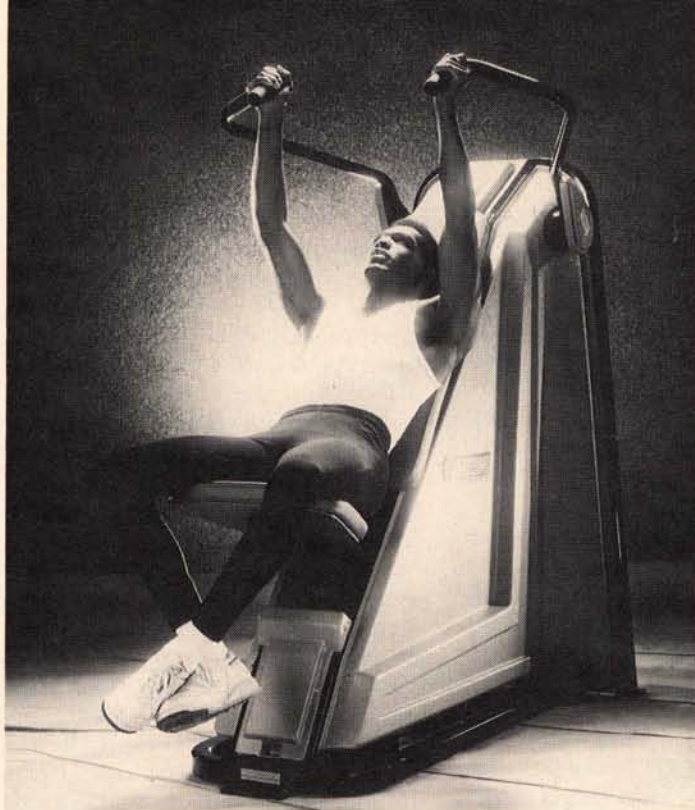
The lowering portion of the movement should be emphasized for a longer time because you can lower more weight than you can raise. The lowering of the weight should also be emphasized because it makes the exercise more efficient: the same muscles that are used to raise the weight concentrically are also used to lower it eccentrically. By accentuating the lowering of a weight, each repetition becomes more efficient and each set becomes more productive. Lowering the weight in a controlled manner also ensures that the exercised muscle is being stretched properly and safely.

Finally, a quality rep is done throughout the greatest possible range of motion that safety allows—from a position of full stretch to a position of full muscular contraction and back to a position of full stretch. Exercising throughout a full range of motion will allow you to maintain (or perhaps increase) your flexibility. Furthermore, it ensures that you are exercising your entire muscle—not just a portion of it—thereby making the movement more efficient. However, during rehabilitation you should exercise throughout a restricted, pain-free range (using the Nautilus range limiter). Nevertheless, full-range movements are more productive and should be performed whenever possible.

Remember, how you lift a weight is more important than how much weight you lift. Your strength training will be safer and more efficient by performing each rep with proper technique.

6. Strength train for no more than one hour per workout.

An inverse relationship exists between time and intensity. As the time (or length) of an activity increases, your intensity of effort decreases. So, in order to train with a



The Incline Press, a companion to the Decline Press, works the chest muscles.

reasonably high level of intensity, you must train for a relatively short period of time.

The duration of your workout depends on several factors, such as the size of the facility and the amount of equipment. However, you should be able to complete a productive workout in less than one hour. Under normal circumstances, if you are working out much more than an hour then you are probably not training with a desirable level of intensity.

The transition time between each exercise will vary with your level of conditioning. Proceed from one exercise to the next as soon as you "catch your breath" or feel that you can produce a maximal effort. After an initial period of adjustment, you should be able to recover adequately within one to three minutes. Training with a minimal amount of recovery time between exercises will allow you to obtain a tremendous metabolic conditioning effect.

7. Perform no more than 19 exercises each workout.

A comprehensive strength-training program consists of about 19 exercises during each workout. The focal point for most of these exercises should be your major muscle groups (i.e., hips, legs, and upper torso). Include one exercise for hips, hamstrings, quadriceps, calves, biceps, triceps, forearms, abdominals,

and lower back. Because your shoulder joint allows movement at many different angles, two exercises should be selected for your chest, upper back ("lats"), and shoulders. You may also include two to four neck movements in your program.

Occasionally, you may wish to perform an additional exercise to emphasize a particular body part. However, if your strength begins to plateau in an exercise, you're probably doing too many extra movements.

8. Whenever possible, work muscles from largest to smallest.

Avoid exercising your arms before your upper torso. Multiple joint (or compound) movements for your upper body require your arms to assist the movement. Your arms are the "weak link" in the exercise because they are smaller. If you fatigue your arms first, you'll weaken an already weak link, thereby limiting the workload placed on the muscles of your upper torso. Likewise, your legs are the weak link in exercises for your hips.

Therefore, exercise your hips first, then your legs (hamstrings, quadriceps, and calves), upper torso (chest, upper back, and shoulders), arms (biceps, triceps, and forearms), abdominals, and finally your lower back. You can exercise your neck at the beginning, middle, or at the end of your workout.

9. Strength train two to three times per week on nonconsecutive days.

Intense strength training places great demands on your muscles. In order to adapt to that stress, the muscles must adequately recover between workouts. Time off from training allows your muscles time to rebuild and repair the damage caused by the workout. Think of this as allowing a wound to heal. If you reopened it every day, you would delay the healing process.

A period of about 48 to 72 hours is necessary for muscle tissue to recover sufficiently from a strength workout. Therefore, you should lift two to three times per week on nonconsecutive days (e.g., Monday, Wednesday, and Friday). Performing any more than three sessions a week can gradually produce a catabolic effect. This occurs when the demands you have placed on your muscles have exceeded your recovery ability.

How do you know if you've had enough recovery time? You should see a gradual improvement in the amount of weight and/or the number of repetitions that you're able to do over the course of several weeks. If not, then you probably need more recovery time between workouts.

10. Keep accurate records of each strength-training performance.

The importance of accurate record keeping cannot be overemphasized. Records are historical references of what you've accomplished with your strength-training activities.

By monitoring your progress, you'll make your workouts more meaningful. Additionally, you'll be able to identify exercises in which you've reached a plateau. In the unfortunate event of an injury, you can also gauge the effectiveness of the rehabilitative process if you have a record of your preinjury strength levels.

You should record your body weight, the date of each workout, the weight used for each exercise, the number of reps performed for each exercise, the order in which the exercises were completed, your overall training time, and any necessary seat adjustments.

COLD, DARK, AND HUNGRY

(Continued from page 44)

in the cooler climate, dry air and increased urine production raise the risk of dehydration. This includes indoor workouts, due to the drying effect of most heating systems. Precautions include wearing some sort of facial covering, such as a balaclava, over the mouth and nose to warm and moisten the air before it reaches the lungs—humidifiers can help inside. All athletes should drink fluids before they feel thirsty.

As in the summer, cold fluids are more readily absorbed than warm drinks and thus hydrate the body faster. Hot drinks might feel good, but they do little to raise body temperature. In fact, drinking hot fluids dilates blood vessels in the skin and increases heat loss. Drinks should also be caffeine-free to avoid the heightened urine production that caffeine causes.

Nor should these fluids contain alcohol. While the drink might burn a path down your throat and warm your stomach, alcoholic beverages can be deadly when it comes to exercising in cold temperatures. In the body, alcohol:

- ☐ Reduces sensitivity to pain, increasing risk of frostbite and injury
- ☐ Dilates blood vessels, increasing heat loss and reducing blood return to the heart
- ☐ Dehydrates the body, making thermoregulation more difficult
- ☐ Impairs motor skills, increasing risk of injury
- ☐ Produces cardiac dysrhythmias (with sufficient intake)
- ☐ Requires more oxygen to metabolize
- ☐ Reduces glucose production and output by the liver, especially during long workouts.

Instead, stick with plain cold water or fruit juices diluted as needed.

Staying Below Average

For most Americans, the average amount of weight gained between November and January will be about ten pounds. This holiday season, be an underachiever by planning a few simple strategies before you're faced with party buffets and huge family meals. Set realistic and enjoyable goals, such as eating three or

four cookies at this get-together or one slice of pie at that dinner, rather than abstain from every fattening item. Try a hot drink or soup to start off and eat slowly, selecting foods that you normally don't get to eat, to control your intake. Most important of all, don't starve yourself all day before a social event—you'll probably eat too much and feel worse afterward.

If you're doing the entertaining, offer low-fat dishes and your guests will be grateful. This could mean dips made with strained nonfat yogurt or nonfat sour cream substitutes, gravy made in advance with defatted stock, or pie crusts made with graham crackers moistened with fruit juice (whip together in the blender). Little substitutions go a long way toward getting the fat out of rich holiday fare. Mingle with friends rather than worry about food—walk around with a festive punch (cranberry juice, flavored seltzer water, and your favorite fruit) in your hand to keep from grabbing nuts, candy, and other high-fat finger foods without even noticing. Better yet, plan events that involve activity (games, walking, singing) rather than eating. And during off-season months, fruit baskets made with high-quality fresh fruit will be as welcome as boxed chocolates.

Resolutions to Live By

In past cultures, New Year's Eve noisemakers might have been used to scare off evil spirits, but they won't scare off winter weight gain. Before you "resolve" to lose every extra pound you've put on since Thanksgiving (Halloween?), sit down to "re-solve" the problems that put on the weight. Usually it boils down to a busy schedule with not enough time to exercise or to eat right—and plenty of social time to pop party treats into your mouth. So, renew your commitment to eating a generally low-fat diet and to getting regular exercise, both aerobic and strength workouts.

Next set a realistic goal, such as to lose no more than 10 percent of your current body weight. You didn't gain *all* that weight in just a couple weeks—much of it probably crept on throughout the late fall and into winter. And it won't come off as quickly as weight-loss ads say it will.