CHAPTER 4

Advanced Training Principles

INTENSITY IS THE key to making progressive-resistance training work for you. What is intensity? One kind involves how hard you feel yourself trying. That is intensity of effort. Another is the amount of stimulation you are able to deliver to the muscles, causing them to respond and develop. This is intensity of effect. It is important to realize the difference between these two types of intensity, otherwise you are likely to just keep trying harder (often to the point of injury) rather than mastering the type of intensity techniques described in this chapter that produce maximum training progress.

INCREASING TRAINING INTENSITY

Increasing intensity in the beginning is not that difficult. You learn to do more exercises and how to do them correctly; you get stronger and in better condition so you can work harder and longer and put more stress on your muscles. Once your body gets used to this effort, however, it becomes more difficult to continue to escalate intensity at the same rate.

Obviously, if you take long rest periods and train very slowly, so it takes you half the day to get through your workout, the actual intensity of your efforts will be minimal. Time, therefore, is an important factor in increasing training intensity. By manipulating time, you can increase intensity in two basic ways: (1) by doing the same amount of work in less time; and (2) by doing an increased amount of work in the same time.

But the most obvious way to increase workload is simply to train with more weight. Another valuable method is to cut down on rest periods between sets and try doing two or three exercises in a row without stopping.

This puts greater demand on your powers of endurance. Endurance, like strength, is something that can be developed in a progressive manner, a little at a time. You should also work at the fastest pace you are capable of without getting sloppy in your technique. This will help you to do the maximum amount of work in the minimum amount of time.

Beyond increasing intensity by manipulating time or adding weight, there are a number of special training techniques that can help ensure your progress in the Advanced Training and Competition Training Programs. These all involve methods of putting extra, unusual, or unexpected stress on the muscles, thereby forcing them to adapt to the increased demand.

Intensity Techniques

The Shocking Principle

The Shocking Principle involves literally shocking the body, catching it by surprise by changing various aspects of your workout. The body is amazingly adaptable and can accustom itself to workloads that would fell a horse. However, if you always put the same kind of stress on the body, in the same way, it gets used to this, and even very intense training will yield less response than you expected. You can shock it by training with more weight than usual; doing more reps and/or sets; speeding up your training; cutting down your rest time between sets; doing unfamiliar exercises; doing your exercises in an unfamiliar order; or using any or all of the Intensity Techniques listed here.

Change by itself tends to shock the body, even if the unfamiliar workout is no more demanding than the one you are used to. But you'll get to a point where you'll find it difficult to make additional progress without shocking your muscles into getting bigger and stronger, fuller, harder, and more defined. One way I introduced radical change into my workout was by training superheavy one day each week, typically on Friday. We'd overload the weights on a couple of sets of each exercise to really train for power, then take Saturday off to recover from the soreness. Check out the power training photos of Behind-the-Neck Presses (page 273), Dumbbell Presses (page 274), and Incline Dumbbell Presses (page 329) for some good examples.

Forced Reps

One method of forcing out extra reps is to have your workout partner supply a little extra lift to help you keep going. However, I have never liked this method because your partner has no real way of knowing how much

lift to supply, what you are really capable of doing on your own, and how much help you actually need. I prefer a kind of forced reps which is sometimes called Rest/Pause Training. You use a fairly heavy weight and go to failure in the set. Then you stop, let the weight hang for just a few seconds, and then force out an extra rep. Again, rest only a few seconds before forcing out another. This method depends on the fast initial recovery that muscles make from exercise, and you can use this recovery to force out several extra reps. If you rest too long, however, too many of the tired fibers recover and you end up using them again instead of stimulating new fiber. For ultimate rest/pause forced reps, you can put the weight down for a moment, pick it up again, and force out additional reps. For exercises like Chin-Ups, you can do your reps, let go of the bar, rest momentarily, and then attempt to force out some more.

Partial Reps

Continuing to do partial reps when you are too tired to complete full-range-of-motion repetitions is a shock method I have always used for almost any muscle in the body, and it is a particular favorite of Dorian Yates. Dorian has done a lot of training where he forced his muscles past the point of momentary failure to almost total exhaustion, using techniques like forced reps and partial reps. Partial reps are most effective at the end of a set, when you are almost exhausted. For example, if you were doing Preacher Curls, you would have your workout partner help you lift the weight and then you would lower it a few degrees and then lift it as much as possible, even if only a few inches; then lower it some more and do some partial reps from that position, repeating this on the way down until your muscles are burning and exhausted.

Isolation Training

Isolation training involves focusing your efforts on a specific muscle or muscle group or even part of a muscle in isolation from other muscles. Here is an example of how specific isolation training can get: When you do compound exercises like a Bench Press, the muscles involved are the pectorals, the triceps, and the front delts. An exercise like Dumbbell Flys, on the other hand, works the pecs in isolation and lets you hit them with maximum intensity. As a further step, you can do Incline Dumbbell Flys as a way of isolating just the upper pecs. Carrying this to an even further extreme, you can perform Incline Cable Crossovers, making a special effort to cross your hands and get the maximum Peak Contraction of the test. This would isolate and develop the inner area of the upper pecs.

Isolation training can allow you to develop every part of your physique completely, bringing up any weak areas and helping to achieve

the degree of muscle separation and definition necessary for that sculpted, champion look.

Negative Repetitions

Whenever you lift a weight using the contractile force of your muscles you perform what is defined as a positive movement; when you lower the weight, extending the working muscle, you perform negative movement. Negative repetitions actually put more stress on the tendons and supportive structures than on the muscles themselves. This is beneficial because you want tendon strength to increase along with muscular strength. To get the full benefit of negatives in your normal workouts, always lower the weights slowly and under control, rather than letting them drop. To work harder at negatives, first try cheating a weight up that would otherwise be too heavy to lift strictly and then lower it slowly and deliberately (see The Cheating Method, below). Your muscles can lower a weight under control that they could not actually lift in the first place. At the end of a set, when your muscles are very tired, you can have your workout partner give you a little assistance in lifting the weight, and then do strict negatives on your own.

Forced Negatives

To develop even more intensity in negative repetitions, have your workout partner press down on the weight as you lower it, forcing you to cope with greater resistance. This should always be done carefully and smoothly so that the muscles and tendons are not subjected to any sudden jerks. Forced negatives are more easily done with machines or cables than with free weights.

The Cheating Method

The Cheating Method is an exception to the general rule that strict technique is necessary in bodybuilding. This kind of cheating doesn't involve using sloppy training technique. It is a method in which you deliberately use other muscles or muscle groups to work in cooperation with the target muscles. This is not something you should do all the time, but it is very useful for achieving certain specific goals.

Say you are doing a heavy Barbell Curl. You curl the weight up five or six times, and then find you are too tired to continue to do strict reps. At this point you begin to use your shoulders and back to help in the lift slightly so that you can do another 4 or 5 reps. But you cheat *just enough* so that you can continue the set, and your biceps continue to work as hard as they can. By cheating, you have forced the biceps to do more reps than

they could have done without the help from the other muscles, so you have put more stress on them, not less.

Cheating is used to make the exercise harder, not easier. It is also a way of doing forced reps without the help of a training partner. But to make cheat reps work, you have to concentrate on making sure that the extra effort being applied by the other muscles *is just enough* and not too much, so that the target muscles are still being forced to contract to the max.

Heavy-Duty Method

Heavy-Duty Training is a name applied to different approaches to working out. For some, it involves a lot of extended sets—that is, following your regular repetitions with forced reps, negatives, forced negatives, and partial reps to exhaustion. I always used the term to mean going right to the heaviest weight you can handle (after warming up) rather than pyramiding up—that is, gradually increasing weight and decreasing reps. So if I could do strict Dumbbell Curls with, say, 65 pounds, rather than slowly working up to that weight I would do two light warm-up sets and then *immediately* pick up the 65-pound dumbbells and do my normal amount of reps and sets with that heavy poundage, forcing my biceps to work to their maximum from beginning to end. The key to this kind of training is not to use a weight too heavy for you to do your normal amount of sets and reps—say 5 sets of 8 to 12 reps. If you can do only 6 or 7 reps, the weight is *too* heavy.

POWER-TRAINING PRINCIPLE

Power sets are the kind a competitive weightlifter would do, training for maximum strength and power. You do a couple of warm-up sets and then choose a heavy weight that lets you do only about 8 reps. Keep adding weight so that your sets become 6, 4, and 3 reps, and do a couple of sets of only one rep. This kind of training teaches your muscles to deal with maximum poundages, in comparison to lighter weights for more reps. Power Training works best for exercises that use a lot of muscles at the same time, such as Bench Presses, Squats, and Deadlifts (see page 142 for more on Power Training).

Staggered Sets

Staggered Sets involve doing a number of sets of a body part you want to train with increased intensity in between other exercises throughout your workout. For example, when I decided I need extra effort on my calf training, I would come into the gym, do a few sets of calves, then go do Bench

Presses, then a few more sets of calves, then Incline Dumbbell Presses, back to calves for a few sets, and by the end of the workout I had done 25 sets or more for calves—really giving them a workout. The next few days I would do my normal calf workout and then train with Staggered Sets again to really bomb and blast them.

The Priority Principle

The Priority Principle involves giving any area of your physique that is weak or lagging behind the others special priority in your workout schedule. This is necessary because every bodybuilder has weak points. No champion, no matter how many titles he has won, has a perfect physique. Some body parts always develop better and faster than others no matter who you are or how good your genetics may be. There are a number of ways of doing this:

- You can schedule a specific body part so that you train it immediately after a rest day, when you are fresh, recuperated, and strong.
- You can schedule a body part workout at the beginning of your training session rather than later, when you are more fatigued.
- You can choose exercise specifically designed to achieve the kind of development you are looking for (size, shape, definition, separation, etc.).
- You can work on improving your basic training technique to increase the efficiency and effectiveness of your workouts.
- You can change your training program so that you include extra intensity training for any lagging body part, such as making use of a variety of Intensity Techniques.

You can use Priority Training to enhance the size and the sweep of your quadriceps, to make your arms bigger, biceps peak higher, deltoids more pronounced and separated, or to improve any weak area of your physique. When I was a young bodybuilder, I knew I would need better calves to become the kind of champion I wanted to be, so I would always train my calves first, before any other body part, would subject them to any number of intensity techniques to force them to grow—often doing Staggered Sets throughout my entire workout. Since my triceps were never as overwhelming as my biceps, and I was going up against the likes of Sergio Oliva, who had absolutely phenomenal arms, I would give my triceps priority treatment in precontest workouts to give me the arms I needed to defeat Sergio "The Myth." In more recent times, when I was getting ready to film the second *Conan* movie, although I was in good shape, I wasn't happy with how tight my waistline looked. So I began giving abdominal training priority in

my daily workouts, piling set upon set and eventually brought my waist measurement down two inches before filming started.

Shawn Ray is another example of what Priority Training can do for you. He was able to stay competitive against the big guys by working his back on a priority basis over a period of years, coming into the Mr. Olympia each time with his back a little wider and a little thicker. Nasser El Sonbaty also improved his back muscularity in an effort to defeat Dorian Yates, but in addition he reduced his waistline, which gave him a much better V taper. I could go on with examples forever, but the point to remember is that nobody has a perfect physique and if a body part is not responding, don't just accept that as a fact, but do something about it—and one primary remedy for such a problem is the employment of the Priority Principle.

Supersets

Supersets are two exercises performed in a row without stopping. For extra intensity, you can even do three sets in a row without stopping (trisets). It takes a while to build up the endurance necessary to do a lot of supersets, but this kind of conditioning develops in time if you keep working on it.

Actually, there are two ways you can use supersets: (1) You can do two exercises in a row for the same body part (such as Cable Rowing and Cable Pulldowns); or (2) you can train two different body parts (Bench Presses followed by Chins, for example). Supersetting within the same muscle group allows you to hammer away at that area and give it an ultimate pounding. You will be surprised how a muscle that seems to be totally fatigued will still have a lot of strength remaining if you demand that it perform a slightly different movement. To do this, however, you need to start with the most difficult movement and then go to one that is less demanding—Bent-Over Rows followed by Seated Cable Rows, for example.

Supersetting two different body parts, such as chest and back (one of my favorites) or biceps and triceps, allows one muscle group to rest while you are working the other, allowing you to exercise on a continuous basis, which is great for cardiovascular conditioning. Personally, I have always liked to use supersets to train opposing muscle groups because of the tremendous pump you get, which can make you feel you have the body of King Kong.

The Stripping Method

The Stripping Method means you reduce the weight you are using as you begin to fail at the end of a set so that you can continue on and do more repetitions. When I was first learning about bodybuilding training it was

obvious to me that when you come to the end of a set and seemingly cannot do another repetition, that doesn't mean all the muscles are totally fatigued. It only means that they are too tired to lift that amount of weight. If a plate or two is removed, you can do more repetitions. Take another plate off, and you can keep going even longer. Each time you do this, you are forcing the muscles to recruit more muscle fiber. (Actually, unknown to me, this same discovery was made in 1947 by Henry Atkins, editor of *Vigor* and *Body Culture* magazines. He called it the multi-poundage system.) You should never use the Stripping Method at the beginning of an exercise when you are fresh and strong, but only for your last set.

Since the changes in weight must be made quickly so that the muscles don't have time to recuperate, it helps to have a workout partner ready to slip plates off the bar or move the pin in a machine weight stack. For example, you might do Bench Presses with the heaviest weight on the bar you can handle for 6 reps. Say that weight is 300 pounds. After you have failed, your partner would quickly strip off weight so that you could do more reps with 250 pounds. I don't recommend going too low, however, unless you are training for maximum definition, because you won't grow by handling weights that are too light. Many bodybuilders use this principle in a different way by working their way down a dumbbell rack as they do more sets of an exercise and get more and more tired.

A variation of this method is called Running the Rack, in which you do your set with one weight, go to failure, put the weight down and go to the next lightest in line, go to failure, and continue this process to exhaustion.

The Isotension Principle

During your one-minute rest period between sets, don't just sit around watching your training partner do his set. Continue to flex and contract the muscles you are training. This not only keeps them pumped and ready for more action, but is in itself a very beneficial kind of exercise as well. Flexing is a form of isometric exercise, and isometrics (although they do not usually apply to bodybuilding because they do not work your muscles through their entire range of motion) involve very intense muscle contractions. A bodybuilder who poses and flexes in the gym, watching himself in the mirror, is engaged in a very important part of his workout.

In fact, I don't think you can win a major championship without practicing Isotension between your sets. It isn't enough to have big muscles; you have to be able to control them as well, and that's something you have to learn. You get the same kind of benefits from really hard sessions of posing practice, too, as we will discuss later (see Posing, page 565).

The Instinctive Principle

When you begin bodybuilding training and are attempting to master the fundamental exercises and create a basically sound muscle structure, it pays to follow a set program. But after you have been training for a longer period, you will find that your progress will increase if you learn to perceive and understand your body's individual responses to training and vary your workouts accordingly. In my early years I tended to go through my workouts in a rigid, set pattern, the same way every time. Then I started training with Dave Draper and he taught me another approach. Dave would come into the gym knowing which body parts he was going to train and which exercises he was going to do, but he would change the order of those exercises depending on how he felt on that particular day. If he usually began a back workout with Wide-Grip Chins, he might decide instead to begin with Bent-Over Rows and finish off with Chins. He had learned to trust his instincts to help guide him through his workouts. Occasionally, he would abandon his normal workout and do something entirely different: 15 sets of Bench Presses, for example; fewer, very heavy sets or a lot of sets done rapidly. I learned from Dave that the body has its own rhythms, that it is different from day to day and that the more advanced you become, the more you need to be aware of these variations and cycles. Let me caution you, however, that this awareness does not come overnight; a year or more of training is usually needed before you can begin to profit from making these occasional instinctive adjustments in your program.

Pre-exhaust Principle

The total bodybuilding effect comes about when you fully stimulate and innervate as many fibers in the muscle as possible. But some muscles are bigger than others and, when used in combination with smaller ones, will still have unused fiber available when the smaller muscles are totally exhausted. But you can plan your training so that you isolate and fatigue the big muscle first, before you train it in combination with smaller ones. When you do a Bench Press, for example, you are using your pectorals, front delts, and triceps in combination. The pectorals are by far the strongest of these muscles, and normally, when you press the weight up, the smaller delts and triceps fail long before the pectorals. To compensate for this, you can do Dumbbell Flys first, which isolate and pre-exhaust the pectorals. Then if you go on to do Bench Presses, the pectorals, which are already tired, will go to total fatigue at about the same time as the other muscles. Other pre-fatigue routines could involve doing Leg Extensions before Squats (pre-fatiguing the quadriceps), Dumbbell Laterals before Shoulder Presses (pre-fatiguing the deltoids), or fatiguing the lats in isola-

tion on a Nautilus Pullback machine before doing Seated Rows, T-Bar Rows, or another rowing exercise involving the biceps.

I Go/You Go

In this method for increasing your training intensity and shocking your muscles, you and your training partner finish a set and immediately hand over the weight to the other, never putting the weight down, each one going in turn. I can remember doing Barbell Curls, handing the bar off to Franco and going back and forth, not really counting reps, just going to failure. After a while I was screaming and hoping Franco would take his time because my biceps were burning so bad. You stay in pain, your partner hands you back the weight again, and the number of reps you can do gets shorter and shorter. But the point of this technique is that you go when it's your turn, ready or not, no matter how tired you are getting. The degree of intensity you can develop using this method is fantastic. Talk about shocking the body! The only problem is the soreness you feel the next day.

The I Go/You Go Method is more useful for training smaller muscles like the biceps or calves than it is for the big thigh and back muscles. Exercises like Squats and Bent-Over Rows demand so much energy that you run out of steam in a hurry even without this intensive kind of training.

The Flushing Method

The Flushing Method involves holding a (relatively light) weight steady at various points along the path of the exercise, forcing the muscle to maintain a constant contraction for extended periods. For example, after I have done as many Dumbbell Laterals as possible I hold my arms locked out by my sides and then lift them about 5 inches away from my thighs, feeling the deltoids tense and flex. I hold this position for about 10 seconds as the burn accompanying the buildup of lactic acid gets stronger and stronger. This tension applied at the end of an exercise causes an enormous increase in muscle separation, and can be done for many muscles in the body: for lats, hanging from the chinning bar and lifting the body only a few inches; doing Cable Crossovers, holding your hands crossed with chest fully contracted, flushing blood into the pectorals; holding a Curl steady, at various angles of the total arc; or locking your legs out in a Leg Extension and holding as long as you can.

Multi-exercise Sets

To shock the body, instead of doing 5 or 6 sets of a specific exercise for a body part, you do your sets using a different exercise for that body part

each time. Multi-exercise sets are not done as supersets; you do them one at a time and rest in between, but you do only one set of each exercise and then go on to another. For example, you might do one set of Barbell Curls, rest for a minute, then do a set of Dumbbell Curls, Cable Curls, Incline Curls, and so on down the line until you have fully exhausted the biceps. The idea here is to make the stress of each set slightly different, attacking the body part from every possible angle to ensure that the entire muscle is trained and providing a shock that will force the maximum amount of response from the body.

The "One-and-a-Half" Method

Another way to vary the stress you put on your muscles in any set is to do a complete rep of a movement, followed by a half rep and then alternating full and half reps until the set is finished. When you do this, make sure that the half rep is very slow and very strict. Hold the weight momentarily at the extreme point of the movement, then lower it slowly, totally under control.

The Platoon System (21s)

This system is more elaborate than one-and-a-halves because you do a series of half reps in the lower range of motion, a series of half reps in the upper range of motion, and then a series of full reps. You can use any number of reps—I always did 10-10-10—as long as you do the same number for each of your half reps and full reps. Traditionally, many bodybuilders have used 7 reps—hence the name 21s: 3×7. The extra stress generated by this kind of training comes about because you have to stop the movement right in the middle, and this forces the muscles to exert themselves in ways they are not used to.

Progressive Workload

Nobody can go all out every workout. Using this training system, you plan your three-times-a-week body part sessions so that the first is intense, with relatively high reps and sets, but you don't use the heaviest weights possible. You increase the weight for the second session, but still stay short of going all out. For your third workout, however, you go very heavy, keeping your reps down to 4 to 6 maximum per set. By gradually building up each workout during the week, you prepare your body to handle the shock of very heavy weight.

Ballistic Training

Ballistic Training refers to a technique in which you drive a weight up, or explode it (but in a smooth and controlled manner), rather than lifting it at a constant speed. This is done with relatively heavy poundages, so the weight doesn't really move all that fast. But the attempt to force the weight to go faster accomplishes a number of things:

1. It creates variable resistance. Why? Because you are stronger in one part of a lift than in another, due to the difference in mechanical leverage advantage. When you are stronger, the weight accelerates a little more. And an accelerated weight is heavier than one that is not accelerated or not accelerated as much. Therefore, the weight is heavier when you are stronger and not as heavy when you are weaker—which is variable resistance.

2. It recruits a maximum amount of white, fast-twitch power fibers, which are bigger (by about 22 percent) and stronger than red, slow-twitch endurance fibers.

3. It creates constant failure. The muscles grow when they are given a task that is just beyond their capabilities. When you are trying to accelerate a weight, there is always a limit to the amount of acceleration you can achieve. Your muscles are failing to move it any faster. Therefore, rather than failing only at the end of your set, you are actually experiencing a degree of failure during each rep of the set.

Ballistic Training should be done primarily with exercises that use a lot of big muscles—for example, Bench Presses, Shoulder Presses, and Squats. You should use a weight you can normally do about 10 reps with. Since an accelerated weight is heavier, you'll find you can do only about 7 reps with the same weight when using the ballistic method. Also, ballistic reps require a slightly different type of technique than do normal, constant-speed repetitions:

1. Lower the weight normally, using constant speed. Pause at the bottom, then drive the weight up, accelerating it smoothly throughout the range of motion.

2. Continue the set not to the point of absolute failure, but to failure of power. That is, when you can't accelerate the weight anymore, and can only lift it slowly, you have finished the set. When doing ballistic reps, there is no point in going past this point.

3. Get plenty of rest between sets, from one to 2 minutes. White, fast-twitch fiber takes longer to recuperate than does red fiber and this is the type of muscle you are focusing on with ballistic sets.

LEARNING TO USE ADVANCED TRAINING PRINCIPLES

Rome wasn't built in a day and neither is a first-class bodybuilding physique. Creating a highly developed muscular body means starting out using the basics, learning the necessary skills, developing strength and conditioning over time, and then gradually raising the level of training intensity, in part by learning to use Advanced Training Principles.

To be effective, your training should be goal oriented, and your goals may change over the course of time. In the beginning, your goal is to just get started, learn basic techniques, and condition your body to the point where you have the strength and conditioning you need to make the most of your workouts. For some people, who are interested mostly in training for overall health and fitness and who aren't able or willing to devote more than a couple of hours a week to working out, this is the most they will ever want to achieve.

But for those who look to a higher goal, the development of a superior, muscular body or who are training for the purpose of entering a competition, the next step is to increase intensity, both by lifting heavier weights and by using the appropriate intensity techniques.

My best recommendation is to master the intensity techniques listed above one at a time. Try a particular technique, get familiar with it, and observe how it feels and how it affects your body. When you feel totally comfortable using that intensity technique, go on and do the same thing with another. Not every bodybuilder uses or wants to use every intensity technique. But getting familiar with them, learning how they work and what they feel like, will enable you to incorporate the ones that best suit you into your future workout programs.