

# 7

## Training Methods for the “Serious” Athlete

In Chapter 5 you saw examples of several types of weight training programs and many techniques for adding variety to them. Among the programs I showed you was a typical strength training cycle, whose phases progressed from higher to lower repetitions per set. You’ll remember that the high-rep phase of the cycle had certain purposes and goals, such as reducing body fat and building muscle tissue, whose attainment was important for success in the subsequent phases where one purpose was building strength. This concept of one phase of a training cycle “potentiating” the body for increased adaptation in the next phase is at the heart of a training technique called *periodization*, which is used in one form or another by most world-class athletes.

So far in this book we’ve studied strength training as a form of exercise in and of itself, although the basic concepts and training principles presented can, and should, be applied to all exercise programs. However, when you employ a training program not only for strength and general fitness but also for improved performance in a particular sport or physical activity, you need to consider some additional factors.

**First, you should realize that the emphasis of**

your overall training program, not just the strength component, should change during different times of the year. No one can effectively train for strength, power, endurance, and sport techniques at the same time. Thus, during different periods you should emphasize developing different physical (and psychological) requirements for effective participation in your sport, while trying to maintain or minimize the loss of other requirements. Many athletes, for example, find it works best for them to concentrate mainly on strength development during the off-season and pre-season months, and then to try to maintain their strength level while concentrating on applying it effectively to their particular sport. This is easier to do if the chosen strength training exercises work the various muscle groups of the body in movement patterns that are similar to those occurring in the actual sport (that is, the specificity of training principle).

Second, the most productive way to develop the various components of fitness, and the motor skills (sport technique) needed for specific sports or types of physical activity, is to train in cycles. Each cycle, or period of weeks or months, has a major goal and one or more minor goals. Planning such training programs, with the end goal being the best possible overall condition for a given activity during a given period of time, is called *periodization of training*.

For some athletes, cyclic training makes obvious good sense. Track-and-field athletes, gymnasts, boxers, and weightlifters, for example, have only a few really important contests per year. For these types of athletes, training cycles can easily be designed to lead up to a "big event" and put the competitor in top shape for his or her sport.

The following is an example of this type of situation. It's a program designed for a female gymnast who competes in the "all-around," which consists of four events. Later, we'll look at some useful ways to train in cycles for seasonal sports, such as skiing and football, and year-round sports such as racquetball and squash.

## BASICS OF A TRAINING CYCLE FOR GYMNASTICS

The multi-event nature of the all-around in women's gymnastics requires considerable stamina to maintain performance at the highest level throughout prolonged competitions. The individual events themselves require great strength, power, flexibility, and movement skills. For this example, let's consider an athlete who has just finished several weeks of rest, relaxation, and low-level recreational activities following her competitive year. She now has three months available to prepare for the first meet of the new competitive year. What should she do?

Rather than trying to develop and improve all of the above-mentioned components of competitive readiness simultaneously, her coach designs a training plan in cyclic form. The first cycle of her "new year" plan will last three months, the time available until the first meet of the year.

Three phases are generally contained in a training cycle, due to properties of Selye's General Adaptation Syndrome, which we discussed in Chapter 5. The first training phase takes into account the *alarm reaction* of GAS and gets the body accustomed, or reaccustomed, to strenuous physical activity. The remainder of the first phase and the second phase of the training cycle take into account the *resistance phase* of GAS, which is a time when the body adapts to the program and increases its potential for a quality performance in the sport it's being conditioned for. This middle phase of a training cycle is called the *preparatory phase*. The third phase may be called a *pre-competition* or *competition phase* of the cycle, when total workload (volume of training) is cut back to permit the body to recover completely from the first two phases, and to allow extra attention for fine points of technique. For simplicity in this example, let's assume each phase of the cycle lasts four weeks.

### Phase One

Given the nature of gymnastics and the demands of competing in the all-around, the major emphasis of phase one would probably be to develop stamina, cardiovascular fitness, and good overall physical condition. Of lesser importance for this first phase is the development of strength, flexibility, and technique for the competitive events. Thus, the initial training phase would emphasize running (both longer distances and shorter repetitive intervals) or cycling, basketball, circuit weight workouts (using higher reps per set and short rest intervals), or other more or less continuous low intensity activities. Actual gymnastics practice would likely occupy less than one-third of the athlete's weekly training time.

### Phase Two

Phase two of this cycle should probably emphasize strength and power development, although flexibility and gymnastics technique take on increased importance, too. The gymnast should maintain her basic fitness and stamina level (improved in Phase One) by following a well-planned, strenuous program involving and stressing the components just mentioned. Three weight workouts each week, with a good choice of primary and assistance exercises, should provide her with the needed strength and power improvement. Her flexibility

can be developed during warm-up and on in-between days when she practices gymnastics technique. Light technique work can also be done on weight training days.

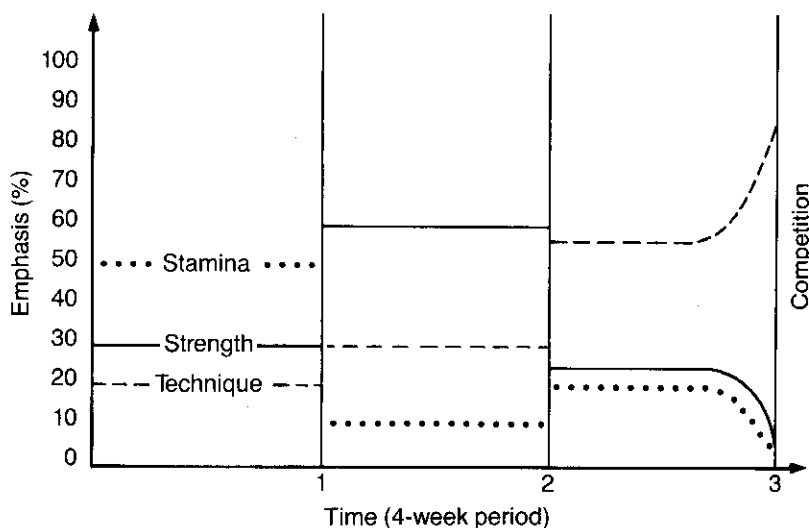
### Phase Three

Now that the gymnast is stronger and has good stamina and flexibility, she can concentrate on perfecting her technique in the competitive events during phase three of the training cycle. She can maintain strength and power with just two weight workouts each week. Stamina and general fitness are maintained simply by her participation in the long daily workouts during which she repeatedly practices parts of her competitive routines.

The illustration graphically depicts the emphasis of major training goal components during the total three-month cycle. Note the special alterations that occur the week before the meet; namely, she works almost exclusively on her gymnastic techniques, while other components are essentially eliminated from the program.

Each week during this three-month cycle is planned ahead by her coach and should include a lot of variation. The days of each week are also planned ahead, using some of the ideas we discussed in Chapter 5. Stamina and technique work are varied day to day and week to week in a manner similar to the strength training variations. If the details of the program are properly planned and followed, the athlete will be "peaked" for a quality performance.

### Emphasis During a Gymnastics Training Cycle



The above example was presented in very general form to illustrate the typical considerations used to construct a training cycle. Depending on the needs and experience of a given athlete, the amount of time available for training, and so on, different priorities could receive emphasis at different times, or for different durations during a given cycle.

## **TRAINING FOR TEAM AND SEASONAL SPORTS**

If your interest is in team sports such as baseball, basketball, and football, or seasonal sports such as skiing, you can also benefit from a planned training cycle. With any of these sports or similar seasonal activities, an intelligent approach is to use pre-season, in-season, and post-season cycles. In this kind of a program you condition yourself not for a few major competitions each year, as in the previous example, but for a period of weeks or months when games or participation is frequent.

Most pre-season cycles initially emphasize the development of stamina, muscular endurance, and cardiovascular fitness. A later phase of this cycle could be designed to improve strength and motor skills (technique) involved in the sport or activity itself.

The in-season cycle generally involves a cutback in most components of training due to the time and energy you spend participating in the actual sport or activity. Regular and frequent competition or participation should, by itself, minimize loss of stamina and endurance and enhance motor skills. Strength maintenance, or minimizing strength loss, can be accomplished with one or two weight workouts each week.

The post-season cycle is a good time for you to emphasize strength development, with relatively little of your total training time devoted to other goals.

A weight training cycle similar to the one I presented at the end of Chapter 5 would fit well into this cycle of training.

## TRAINING FOR YEAR-ROUND ACTIVITIES

You may wonder how to plan cyclic training for an activity like tennis or racquetball, which you can play all year long. The answer is simply to plan training cycles as you would for a seasonal sport. Emphasize certain components of fitness in different cycles, and accept the fact that during some cycles you will not be playing at your best. In the long run, however, your physical abilities will increase more than with a non-varying, non-cyclic program, and you will eventually play closer to your genetic potential.

One of the greatest mistakes some competitive weightlifters make in their year-long training programs is to always train with low reps and heavy weights. They seem to have a psychological need to handle "big" weights and feel very strong all the time. Their eagerness for ever-increasing personal lifting records prevents them from devoting the emphasis of a single phase in a training cycle to basic conditioning, flexibility, or technique work. Such athletes may never reach their true physical potential.

## GUIDELINES FOR PLANNING A TRAINING CYCLE

When you begin a period of training, your performance capabilities usually decrease in the first week or two. This is because your body is experiencing the *alarm stage* of the General Adaptation Syndrome; it needs to get used to or readapt to the demands of exercise. You can minimize this decline in performance, and accompanying muscle soreness, by gradually working into the new training program.

This stage is followed by a period during which your body is adapting to the exercise stressors and your performance capabilities increase. This is called the *preparatory phase* of training, since your body is being "prepared" for higher performance.

If the exercise stressors are too great or last too long, your body may go into an *exhaustion stage* where performance capability decreases and you are said to be *overtrained*. With proper planning, you can avoid overtraining and maintain an elevated performance level for a relatively long period, preferably when competitions are occurring or when you are participating frequently in your activity.

After this so-called *competition phase*, you should cut back your training so your body can make a smooth transition into another "prep" phase without getting overtrained. This transition phase permits your body to recuperate fully from the stress of training and competition so that it can successfully adapt to new exercise stressors.

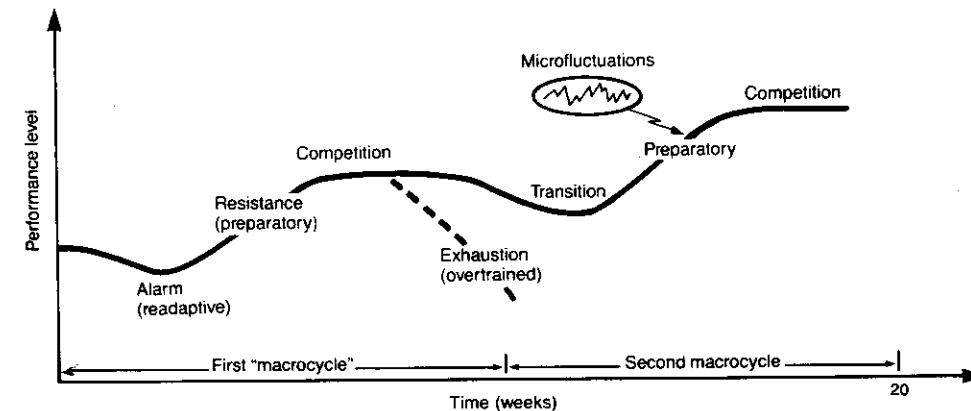
A complete training cycle consisting of a readaptation (or transition) phase, a prep phase, and a contest phase is often called a *macrocycle*.

## How Long Should Each Phase Last?

Typical time periods for the different phases of a training cycle look like this:

1. Readaptation or transition phase: one to two weeks.
2. Preparatory phase: four to eight weeks
3. Contest phase: three to six weeks

These are certainly flexible within reasonable limits and depend on the sport you are training for. As you become more "experienced," the phases may tend to last longer, but you must discover for yourself what works best for you and adjust the phase durations accordingly.



Training-cycle analogy to GAS

## How Do Load, Volume, and Intensity Change for Each Phase?

For the *strength training component* of a program, each phase of a cycle can be characterized by relative values for load, intensity, and volume.

1. Readaptation or transition phase: low load, intensity, and volume
2. Preparatory phase: moderate to high load, intensity, and volume
3. Contest phase: low to moderate load, high intensity, low volume

Earlier, I mentioned that other sports, like running, also have *objective measures* for the *volume* and *intensity* of training. This is also important for you to consider—in addition to load, volume, and intensity values for the strength training component of your program—when planning the weeks that make up your training cycle. In a prep phase, for example, there should be “microfluctuations” day to day in the volume and intensity of *total* training. If you use a light strength training day to go heavy in some other component of your program (for example, practicing technique in the high jump), then that day is a heavy training day *overall*. This cannot occur continuously or over-training will result; your body must have light *overall* training days to help it recuperate totally from heavy ones. Your performance capabilities gradually increase during most of a training cycle, but they are lowered immediately after heavy training sessions. The fact that a prep phase is characterized by moderate to high load and intensity does not mean that periodic daily reductions cannot occur. These reductions result in overall light training days, which generally have a large volume reduction but smaller intensity decrease relative to the heavy days.

The idea of repeated “macrocycles” is to raise performance capabilities “step by step.” One complete cycle may emphasize developing a particular component that is important to your sport—say, strength or technique—or it may be more general in nature. As your most important competitions or activities approach, you should be as ready as possible for a maximum performance. To show how volume measures (total reps for weight lifting, total distance for running, and so on) can help you plan phases of a training cycle, consider the situation of a competitive weightlifter.

## ADVANCED TRAINING CYCLE PLANNING FOR WEIGHTLIFTING

From past experience, an Olympic-style weightlifting coach determines that the coming training year for his lifter should contain a total lifting volume of 10,000 reps. The first six months of the year contain about 55 percent of the volume, since, on average, training during the first half of the year is done with slightly lower weights and slightly higher reps. This leaves 4,500 reps (45 percent) for the second six months of the athlete’s training year, which concludes with the competition of greatest importance, the National Championship.

The training year is divided into 12 four-week periods, with four weeks of the year set aside for vacation and active rest. Thus, six training periods are contained in the second half of the year. The volume for this half of the year, 4,500 reps, is divided *unequally* among the six periods so as to vary the exercise stressors imposed on the athlete. There are many ways to proportion the 4,500 reps, and one reasonable scheme is to have a 700, 1,100, 600, 900, 700, and 500 rep period. Obviously, the training volume should decrease before the major competition, and the sample scheme above has only 1,200 of the 4,500 reps in the last two of six four-week periods. Also, right after the heaviest period (1,100 reps), volume is decreased by almost 50 percent, to 600 reps. Such a decrease is often planned so that the athlete can successfully participate in a competition of lesser importance at the end of this low volume period.

Once the coach decides on the division of lifting volume among the available training periods, he must divide each period’s volume *unequally* among its four weeks, to have variation in the program. If he considers the 900 rep period of this example, a reasonable division would be 200, 250, 150, 300 reps per week. This provides for one light, one heavy, and two medium volume weeks. The first week in the following period would be light to moderate in volume since the last week of this period is heavy (300 reps). The coach uses common sense, experience, and training literature to help determine this weekly division of volume.

The coach must also subdivide each week’s volume among the planned training days. A division of 55, 40, 75, 30 reps per day would be reasonable for the first week (200 total reps). Four training days in this week were chosen because 200 reps fit well into this number of days. If an advanced lifter were to have 400 reps scheduled for a heavy week, five days would probably be used. If a very large volume were assigned to a single day (125 reps), two training sessions rather than one might be used on that day.

Finally, the exercises, sets, and reps for each day must be chosen. Methods for doing this were discussed in Chapter 5. Light days would have two or three core exercises, while heavy days might have four to six. The sets per exercise usually range from three to six (plus warm-up sets). Assistance exercises follow core exercises and may involve only one or two sets.

The coach makes these types of subdivisions for each four-week period of the year, resulting in a day-by-day training plan for the entire year. He may have to make modifications during the year, due to unexpected progress or lack of it by the athlete, but these should be minor if the coach is experienced and has really thought out the program relative to the athlete’s needs and abilities. If injury or illness occurs, it must be overcome and training must be adapted with as little change as possible. The coach must also fit “active rest” (such as

running, cycling, or basketball) into the program on non-training days, to build or maintain stamina and cardiovascular fitness without interfering with the primary training goals.

This example of how to use training volume division in the planning of a long-term training cycle can be applied to many situations. If running or swimming, for example, is included in your total training program, then the distance covered is the volume measure, as stated in Chapter 5. You can divide this training volume unequally day to day, week to week, and month to month, just as you would the number of reps in your strength training exercises. Likewise, you can consider the time spent in the actual practice of your sport as a volume measure, and can divide it in a reasonable way, day by day and week by week, within the phases of your training cycles. Periodization is an extremely valuable tool that is universally used in high-level training. Its success depends on how well you apply the basic training principles we've discussed to your program, how well you learn about your body's responses to different training programs, and, to some extent, how you use your imagination.

## CONCLUSION

There are many ways to develop the various components of total body fitness. In this book I've shown you how all components can be developed using a properly designed strength training program with or without additional modes of exercise. The key step in designing a successful exercise program is to decide which components of fitness you need to emphasize, without neglecting the others, and then to plan how to develop these components with appropriate techniques—not necessarily the most advanced.

I have emphasized strength fitness in this book and have explained very basic to advanced training methods. For most of you, if you start using the simpler techniques you'll make good progress initially and be able to continue making progress for a long time by gradually adding advanced training methods to your program.

Remember: It's not where you start in terms of fitness that's important. Rather, it's that you make progress toward better fitness. Don't spend a lot of time comparing yourself with others; compare yourself with where you were a few weeks or months earlier—it's *your* progress that's important. Train hard and on a regular schedule, but don't overtrain—remember the value of light training days. And finally, watch what you eat; nutrition is an important contributing factor to the success of any exercise program. Good luck!