



Brian W. Findley, MEd, CSCS, \*D  
Column Editor  
E-mail: findleyb@pbcc.edu

## summary

Periodization has been a universally accepted training strategy in athletes regardless of skill level. While some view this as a blueprint for manipulating strength training variables, others question the appropriateness of using this strategy in novices.

**PRO** First of all, linear and nonlinear terminology is misleading. Periodization implies nonlinear variation in training parameters, so it would be more appropriate to refer to various models as traditional or nontraditional.

To state that periodization is unnecessary or counterproductive for athletes at certain developmental levels is like stating that curriculum design is unnecessary or counterproductive for certain students. Periodization is a pivotal concept in strength and conditioning because it refers to the long-term strategy, or syllabus, used to progressively challenge athletes on 2

# Is Periodization Applicable to Novice Athletes?

Brian W. Findley, MEd, CSCS, \*D  
Palm Beach Community College, Boca Raton, Florida

fronts: content (means) and workload (methods). In this sense, periodization compensates for diminishing returns over time, but it is inaccurate to imply that variation on either front is inappropriate early in an athlete's development.

In terms of workload, the central issue is to prescribe volume loads in appropriate bandwidths. After completing a needs analysis, the relative emphasis placed on different means and methods should be influenced by the athlete's developmental status, especially regarding critical or sensitive periods. This should be approached in the context of productive workload ranges. At the lower end is the stimulus threshold required to trigger desired effects; at the upper end is a point of diminishing returns, beyond which further application yields no beneficial—or perhaps even detrimental—effects. These tend to be moving targets as an athlete's fitness and adaptivity improve with long-term development. A growing body of evidence supports variable rather than linear workload progression as a superior strategy, at least for strength and power acquisition (2). This can be accomplished through different tactics.

In terms of content, the “contextual interference” effect is a well-established

motor behavior and learning phenomenon, where random and variable practice methods improve long-term retention. The evidence clearly supports variable progression as a superior strategy for skill instruction and acquisition (1, 3–6).

It is incorrect to state that novice athletes are unable to excessively tax their recovery capacity. Inappropriate intensity or volume prescriptions can result in acute or chronic problems at any level of preparation. Moreover, even if such athletes can tolerate a linear increase in workload for weeks or months, this does not mean that it is an optimal strategy. For the reasons described above, content or workload variations can be beneficial if applied prudently. Although the need to periodically unload or prescribe active recovery for novices may be reduced compared with intermediate or advanced athletes, this does not render it inappropriate.

Finally, repetition maximum testing is not the only way to determine an athlete's preparation level. Assessment of movement competencies is another method, which again brings us to the issue of workload versus content. It is true that strength and power testing presents a practical challenge when working with novices and that percentage-based workloads are not

appropriate in these situations. However, this does not support the idea that periodized training is counterproductive or unnecessary for beginners; it simply means that the primary focus should be centered on movement mechanics and techniques. This is the value of considering periodization in terms of both teaching and training. In the process of varying tasks, there are nonquantitative ways to adjust workload. ♦

## References

1. Magill, R. *Motor Learning* (6th ed.). New York, NY: McGraw-Hill Higher Education, 2001.
2. Plisk, S.S. and M. H. Stone. Periodization strategies. *Strength & Conditioning Journal* 25(6):19–37, 2003.
3. Schmidt, R.A. and T.D. Lee. *Motor Control & Learning* (3rd ed.). Champaign, IL: Human Kinetics, 1999.
4. Schmidt, R.A. and C.A. Wrisberg. *Motor Learning & Performance* (2nd ed.). Champaign, IL: Human Kinetics, 1999.
5. Singer, R.N., H.A. Hausenblas, and C.M. Janelle, eds. *Handbook of Sport Psychology* (2nd ed.). New York, NY: John Wiley & Sons, 2001.
6. Williams, J.M., ed. *Applied Sport Psychology* (4th ed.). Mountain View, CA: Mayfield Publishing, 2001.

**Steven Plisk, MS, CSCS, \*D**, is the Sports Performance Director for Velocity Sports Performance in Fairfield County, CT.

**CON** Periodization is a pivotal concept in modern strength and conditioning. It may be defined as “a logical, phasic method of manipulating training variables in order to increase the potential for achieving specific performance goals,” (2) with undulating nonlinearity of training its core principle, an increase in performance scheduled into the program at prescribed intervals, and significant periods of unloading to allow for recovery. It is regarded as a necessary component in achievement of maximum performance.

However, in athletes at certain levels of experience and development, nonlinear periodization not only is unnecessary but also may be counterproductive. Novice athletes derive little benefit from periodized resistance training programs. The necessity of periodization increases relative to trainee experience until, at the advanced level, it becomes crucial for continued improvement. Periodization's value lies in its ability to compensate for the diminishing returns inherent in the progression from novice to advanced training.

A common observation among strength coaches working with young novice athletes, and even with older novices, is that improvement happens rather quickly. Because of their inability to tax recovery capacities excessively, the vast majority of novices are able to add weight to the work sets of most core strength exercises every training session for many weeks or months, and their training should be designed accordingly (1).

During this early phase of an athletes' career, any program that fails to take advantage of this capacity for rapid improvement misuses training time, misses opportunities to motivate through perceived success, and possibly costs the athlete a percentage of his or her potential development. Nonlinear periodization schemes requiring significant off-loading during their constituent microcycles may therefore be inappropriate for novices.

Periodization involves repetition maximum (RM) testing as a prerequisite to the calculation of percentages used in the program, assuming the test is predictive of current ability. This assumption ignores that (a) accurate assessment of RM depends on the execution skill of the athlete, which no novice, by definition, possesses; and (b) a novice's strength increases as fast as load is added, further devaluing RM testing.

As athletes advance through their training careers, progress becomes slower

and more difficult. It is here that nonlinear periodization becomes appropriate. Intermediate trainees are capable of exceeding recovery capacity, necessitating incorporation of active recovery into the training program. The challenge for the strength coach is determining when to begin more involved approaches to systematic loading and offloading.

Advanced athletes require extensive manipulation of all training parameters to continue progress to elite levels. An athlete's potential is generally limited by his or her genetic capacity, but attaining the highest percentage of genetic capacity is a function of the training program's effectiveness. Athletes operating near their genetic potential walk a thin line between injury or overtraining and improved performance because of their ability to produce training volumes and intensities that maximally tax their ability to recover. Just as novices' recovery capacities must be reflected in their training program, the advanced athletes' completely different training and recovery abilities, a function of an asymptotic approach to the limits of their genetic capacity, determine their training requirements.

The dogmatic application of nonlinear periodization principles to novices is equally detrimental to optimal performance gains as is the failure to apply them aggressively to an advanced athlete. ♦

## References

1. Hoffman, J.R., M. Wendell, J. Cooper, and J. Kang. Comparison between linear and nonlinear in-season training programs in freshman football players. *J. Strength Cond. Res.* 17(3):561–565. 2003.
2. Stone, M.H. Periodization. NSCA National Conference. Atlanta, June 1996.

**Mark Rippetoe** is the owner of Wichita Falls Athletic Club, Wichita Falls, Texas.