

PERIODI



**Don't get stuck in conformity—
take your performance to the n**

MAX PERFORMANCE

In essence, this form of periodization takes your training from high-volume and low-intensity work through stages of increasingly lower volume and higher intensity. This approach, which is divided into phases with scientific terms and sport-specific goals, has enjoyed much support from coaches, athletes, and even scientists. But there are various other forms of periodization that can be equally effective, yet receive little press. Let's change that right now!

CLASSICAL PERIODIZATION

Before we look at an alternative form of planning, let's set the stage for recognizing the differences and how that can impact your progress. In the West, many athletes' ideas on periodization derive from abridged and watered-down versions of Russia's strength training guru L. Matveyev's model, characterized by low-intensity, high-volume periods of general preparatory programming (GPP) that gradually shift toward high-intensity, low-volume work of a more sport-specific nature. Here's an example from a high school football team's strength program:



A WEIGHTLIFTER'S TRAINING NEED NOT FOLLOW ONE CONVENTION.

Stage	Week	Volume per Rx	Total Volume (all Rx)	Intensity per Rx
Testing	1	Testing	Testing	
Exercise Menu: vertical jump, 5-10-5, 40-yard sprint, long jump, 60-yard shuttle, bench press, squat				
GROUND WORK Preparatory	2-3	CL: 4x10-12 AUX: 3x15 SP: 4x400 MB: 100 throws	CL: 640-768 reps AUX: 540 reps SP: 4800 yards MB: 400 throws	CL: 60-65% AUX: 50-60% SP: 60-75% MB: medium %
Exercise Menu				
Core lifts (CL): squat, front squat, lunge, step-up, Romanian deadlift, military press, bench press, bent row, high pull, dips				
Auxiliary lifts (AUX): shoulder complex, shrugs, dumbbell incline press, multi-hip, leg curl, hyper				
Sprints (SP): 400-yard sprints				
Med ball (MB): multi-plane partner throws, solo work, distance throws, wall throws				
GROWTH Preparatory	3-4	CL: 4x8-10 AUX: 3x12 SP: 4x200 3x100, 4x50 MB: 100 throws	CL: 512-640 reps AUX: 432 reps SP: 3900 yards MB: 400 throws	CL: 65-75% AUX: 60-70% SP: 70-85% MB: medium/high %

Exercise Menu

Core lifts: squat, front squat, lunge w/ twist, step-up, Romanian deadlift, jammer, military press, bent row, DB bench press, high pull, dips

Auxiliary lifts: shoulder complex, trap bar shrugs, dumbbell incline press, multi-hip, leg curl

Sprints: 200-, 100-, 50-yard distances

Med ball: distance throws, partner throws, solo work

Stage	Week	Volume per Rx	Total Volume (all Rx)	Intensity per Rx
STRENGTH	5-8	CL: 4x5-8	CL: 320-512 reps	CL: 75-85%
Preparatory	AUX: 3x8-12	AUX: 288-432 reps	AUX: 65-75%	
	SP: 6x60, 6x40	SP: 2400 yards	SP: 75-90%	
	MB: 80 throws	MB: 320 throws	MB: high %	
	Plyos: 60 contacts	Plyos: 120 contacts	Plyos: high %	

Exercise Menu

Core lifts: squat, front squat, power clean, push press, deadlift, jammer, row, bench press

Auxiliary lifts: dumbbell curl-press combo, shoulder complex, multi-hip, reverse hyper, leg curl

Sprints: 40- and 60-yard distances

Med ball: wall throws, partner throws

Plyos: hops, bounds, jumps

POWER	9-12	CL: 6x2-4	CL: 192-384 reps	CL: 85-100%
Precompetition	AUX: 2x8-10		AUX: 192-240 reps	AUX: 75-85%
	SP: 4x40, 2x20, 4x10		SP: 960 yards	SP: 80-100%
	MB: 40 throws	MB: 160 throws	MB: high %	
	Plyos: 50 contacts		Plyos: 100 contacts	Plyos: high %

Exercise Menu

Core lifts: power clean, power snatch, squat, snatch high pull, push jerk

Auxiliary lifts: incline bench press, lunge, row

Med ball: wall throws

Sprints: short distance only: 10, 20, 40 yards

Plyos: jumps, bounds, lateral bounds

With the above plan, intensity (the loading of the barbell) increases while volume (total reps and sets) decreases. The athlete is expected to handle ever increasing loads as the season progresses, resulting in improved performances in the core lifts during week 13. This periodization version calls for distinct phases or stages of training. While this basic approach is sound and will likely result in training gains, you need to realize that the degree of gain won't be the same for every athlete. Also,

this model is limited when it comes to meeting the demands of an athlete with many years' experience.

A critical consideration is that you must spend a significant amount of time perfecting the specific motor skills necessary to achieve and to maintain technical mastery in your sport. In the previous program, however, an extended period of time is devoted to general (not sport-specific) training. This can take away from the available time and physical resources necessary to maintain your sport-specific skills.

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OLYMPIC CHAMP RULON GARDNER DIDN'T EVEN MAKE IT TO THE FINALS AT THIS YEAR'S WRESTLING NATIONALS. WAS HIS PERIODIZATION OFF?

For example, suppose a shot putter stayed off the field and in the weight room for the first seven weeks of a 12-week training cycle, performing large numbers of GPP exercises. He might spend the first three weeks of the cycle doing nothing but high-rep dumbbell presses, step-ups, lunges, squats, lat pull-downs, upright rows, etc., and the next four weeks performing pure strength exercises like squats, deadlifts, military presses, and bent rows. Granted, this approach will undoubtedly improve his muscle mass and strength, but when he steps out into the throwing circle these increases in physical capacity may not immediately transfer into longer throws. Because he spent the last seven weeks in the gym and not in the ring, it'll take some time to gain back his technical

mastery of the throwing movement and the associated motor learning patterns.

For a similar example, suppose that a weightlifter suffered a disappointing finish in her last meet due to an inability to recover from the bottom position of her cleans. Identifying a need for greater leg strength, she spends the next three months focused on front squats, back squats, lunges, split squats, overhead squats, step-ups, deadlifts, and calf raises. She achieves significant improvements: her front squat goes up by 15 kg while her back squat improves by 20 kg, not to mention the muscle she's added.

And now a meet is coming and she begins practicing the snatch and the clean and jerk movements once again. However, these are two motor-skill-dominant exercises that depend on timing, skill, and intermuscular and intramuscular coordination, as well as on speed, flexibility, and balance. But not working with these activities for such a long time has left her not nearly as proficient in their performance as she used to be, and it takes





Jane Jamieson of the NSWIS in action in the women's shot put during the 2003 Telstra A series held at the Sydney Athletic Centre in Sydney, Australia, on March 22, 2003.

her three to four weeks to reacquire these skills.

These examples reveal some of the major concerns in the application of classical cycling methods that are characterized by high-volume, low-intensity, GPP-dominated training at the start of a cycle and low-volume, high-intensity, sport-specific skill-dominated training at the end of it. But there are alternatives.

ALTERNATIVE PERIODIZATION

Large amounts of GPP work aren't always necessary for every athlete. Athletes who compete year-round in events, such as weightlifters and powerlifters, should devote proportional time and resources to strength and conditioning activities as well as technical skills. Devoting too much time to GPP activities can often result in a loss of sporting form for the higher-level athlete.

Peter Tschienne, an expert on training theory from Germany, and Anatolie Bondarchouk, a former world-class hammer thrower and coach of the Soviet national team during the 1980s, have both

been proponents of a strength-skills approach to high performance training. Both recognize that the main objective of the coach, with respect to planning, is to get the athlete into top form at the right moment. Once the coach and athlete have achieved top sporting form, they must then develop a way to maintain this high level. As a consequence, Tschienne and Bondarchouk's work focuses on the planning and organizing of training according to an undulating interplay between intensity and volume. Higher intensities of training are stressed, along with an inverse amount of total training volume. In addition, training modalities are more equally split between actual, high-level sport skill drilling and specific strength and power work.

Once at top form, you must maintain this state of readiness by performing quality work of relatively high intensity while allowing adequate time for proper recovery. If you were to return to large volumes of GPP, or nonspecific activities, you would have to drop the intensities involved. Tschienne states, "No type of nerve-muscle work can substitute the specificity of a concrete movement in sport (technique). The importance of the general conditioning preparation is limited very much at the highest level of performance; great and voluminous loads with a necessary lower intensity have a disturbing influence upon the movement structure (technique); a complete recovery of the organism cannot be reached (nerve system) when the volume increase will be continued for many years." Put simply, once you have built a solid foundation early in your training, your training focus should shift from GPP work to more specialized training. Such specialized training and conditioning should involve high intensity work at lower volumes, balanced with the actual technical and tactical sport skill work. To achieve optimal stimulation of the nervous system, structure your training with the following ideas in mind:

- Highly specific and highly intensive work should dominate your training
- The preparatory and competitive periods of the plan should have relatively equal amounts of volume



SPENDING TOO MUCH TIME ON GPP MIGHT TAKE AWAY FROM PERFORMANCE."

- Shorter training cycles should dominate the plan (i.e., three-week microcycles)
- Frequently change your training loads and recovery times
- Use significant training variations along with significant load leaps

THE STRENGTH-SKILLS

APPROACH

Let's look at the alternative form of planning with the example of a wrestler competing at the Division I collegiate level. Throughout junior high, high school, and the first two years of his collegiate career, he spent a great deal of time on GPP and learning and practicing wrestling skills.

His performance is dominated by a central theme, to be in top physical condition so he can apply his sport skills on the mat. Equal amounts of training time should be devoted to practicing and perfecting his mat skills while priming his body to perform those skills at optimum efficiency.

High-performance wrestling involves a blend of explosive concentric contractions, yielding eccentric contractions, to include periods of

PERIODIZATION LINGO

Just to keep us all on the same page, let's review some basic terminology describing the structural units of training:

Training session: a single training session.

Training day: a series of training sessions during a 24-hour period.

Microcycle: a group of several training days. Often takes place during a one-week period, although this isn't a requirement.

Mesocycle: a group of several microcycles. May span a time frame of 2 to 6 weeks, though this isn't a requirement.

Macrocycle: a group of several mesocycles. Typical duration is 6 to 12 months. Traditional macrocycles include a preparation, competition, and transition phase, each of which consists of several mesocycles.

Annual plan: a year's training schedule, usually consisting of one to three macrocycles.

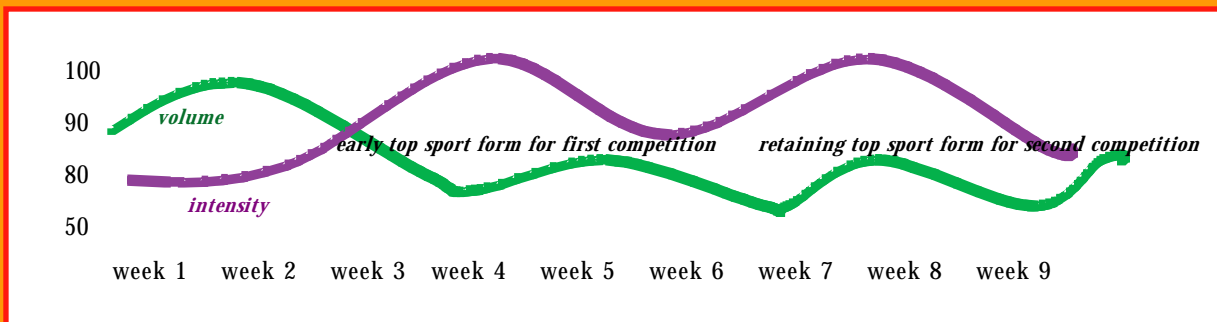
Quadrennial plan: coinciding with the Olympic or Pan American Games, this multi-year plan aims to culminate with peak performances at those competitions.

isometric muscle actions. Event-specific power endurance, the ability to perform explosive high-force and high-speed sport actions on a repeated basis for a specific period of time, is key to

success. Keeping these needs in mind, let's look at a series of microcycles and their relative load volumes (intensities) over a two-month period of training.

Week 1: 100% of load volume
 Week 2: 80% of load volume
 Week 3: 15-20% of load volume
 Week 4: 80% of load volume
 Week 5: 100% of load volume

Week 6: 15-20% of load volume
 Week 7: 100% of load volume
 Week 8: 80% of load volume
 Week 9: 15-20% of load volume



The above mesocycle is characterized by a dominating amount of specific and highly intensive work as well as equal amounts of total work volume throughout. This is opposed to the traditional pattern of high volume early, low volume later. The above series of short, three-week microcycles share a common theme of higher intensity, sport skill-dominated work that also makes frequent use of

sudden and drastic changes in loading (intensity) and a powerful variation with load leaps from one week to the next. This theme is necessary because many athletes base their training on preparation for frequent competitions.

For the wrestler, a three-day microcycle might look like this:

Day 1	Day 2	Day 3
Skills practice	Skills practice	Skills practice
Weighted dummy throws	Cable resisted attacks	Whirlpool/sauna/massage
Partner throws	Cable resisted escapes	Film study
Power cleans 85%x3x3	Squats 90%x1x6	
Front squat + Neider press 80%5x3+1	Snatch high pulls 95%x3x3	
Bench throws 80%x5x5	Explosive step-ups 90%x4x4	
Cable rows 85%x3x6	Dumbbell push press 90%x3x3	
Plyometric lateral hops x3x5	Sled drives/pushes 20 seconds x 5	
Med ball throws 20 #ball x 6 sets x 3	Weighted pull-ups 90% x max reps x 3 sets	

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To help you apply the above information to your situation, let's speak in terms of modalities

and exercise/skill categories:

Example: Weightlifter

Preparatory Period	Average Number of Reps	80-85%	86-90%	91-95%	96-100%
Day 1					
Snatch	Work up to 90% of previous competitive max for 5 singles	3		5	
Clean and jerk	Work up to 90% of previous competitive max for 4 sets of 1+1			8	
Front squat	Work up to 120% of today's best clean and jerk for 5 sets of doubles	4	4	10	
Clean pull shrugs from block	Work up to 110% of today's best clean and jerk for 3x3	3	3	3	3
Core work	50 reps of resisted ab and low back work				
Day 2					
Power snatch	Work up to 80% of yesterday's best snatch for 5 sets of doubles	10			
Power clean + power jerk	Work up to 85% of yesterday's best clean and jerk for 4 sets of 2+1	12			
Back squat	Work up to 90% of today's best power clean and jerk for 2x5, drop to 80% for a set of 3, jump to 110% for 3 singles	3	10		3
Push press	Work up to 80% of yesterday's clean and jerk for 5 sets of triples	15			
Core work	Perform 40 reps of stabilization work				
Day 3					
Snatch	Up to 80% of Monday's best for 3 singles	3			
Clean and jerk	Up to 80% of Monday's best for 2 singles	2			
Core work	50 reps of bodyweight ab and low back remedial work				

As you can see, day three has the lowest load volumes at higher intensities, as compared to the previous two days in the microcycle. Also note the load jumps from set to set, exercise to

exercise, and day to day.

Let's compare this preparatory microcycle with a competitive microcycle.

Competitive Period	Average Number of Reps			
	80-85%	86-90%	91-95%	96-100%
Day 1				
Snatch	Work up to 92.5% of previous competitive max for 3 singles	2	1	3
Clean and jerk	Work up to 90% of previous competitive max for 3 sets of 1+1		6	
Front squat	Work up to 110% of today's best clean and jerk for 6 sets of doubles	4	4	12
Snatch pull shrugs from block	Work up to 110% of today's best snatch for 3x3	3	3	3
Core work	50 reps of resisted ab and low back work			
Day 2				
Snatch	Work up to daily max, drop 5% and do 5 singles	1	1	5
Power clean + split jerk	Work up to 85% of yesterday's best clean and jerk for 3 sets of 2+1		9	
Front squat	Work up to 100% of today's best for 2 x2, drop to 90% for a set of 3, jump to 110% for 3 singles		3	4
Power clean + split jerk	Work up to 85% of yesterday's clean and jerk for 5 sets of doubles		10	
Push press	Work up to 85% of yesterday's clean and jerk for 5 sets of doubles		10	
Core work	Perform 40 reps of stabilization work			
Day 3				
Snatch	Up to 80% of Monday's best for 3 singles	3		
Clean and jerk	Up to 80% of Monday's best for 2 singles	2		
Core work	50 reps of bodyweight ab and low back remedial work			

As you can see, there's little change in the levels of intensity/load volume between the three-day preparatory and competitive microcycles. In addition, the exercise menu is highly specific to the sport of weightlifting, with a noticeable lack of GPP. Frequent changes in loading and jumps between loads are used for purposes of variation.


In contrast, a less experienced athlete might have an exercise menu consisting of 25 to 30 different exercises. In addition, the levels of intensity would be considerably lower and the volume greater, since high numbers of repeated attempts will be necessary to facilitate correct nervous system recruitment patterns in beginners.

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WRAPPED UP

Periodization is a great way to approach training. However, the status quo, even when it comes to effective ways of training, may not be sufficient. Once you have achieved a well-trained state and a solid foundation, it may well be time to go beyond traditional periodization by adding sport skill specifics to your routine.

Coordinate an equal distribution of strength

and power work, along with skill and technique training, into your next yearly plan. Let the major competitions of the year dictate the high-level interaction between intensity and volume. Maintain an elevated degree of tactical and skill work along with high-intensity strength and power training and you'll always be ready to perform at a superb level of play or competition. 

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