Periodization

Chapter 22
What is periodization?

- Periodization is planned long-term variation of the volume and intensity of training to prevent overtraining and promote optimal performance at the desired time.
Defining Volume and Intensity

- **Volume** - amount of work performed per exercise, per day, per month (sets x reps)
- **Intensity** - the power output of the exercise (power = work/time)
Estimating Volume and Intensity

- **Training intensity**: Average mass lifted per exercise, per week, per month
- **Exercise intensity**: Monitored by calculating the relative intensity (% of 1rm)
- **Training volume**: estimated by volume load
- **Exercise volume**: estimated by average weight lifted
Selye's General Adaptation Syndrome

- Alarm phase
- Resistance phase (supercompensation)
- Exhaustion phase
The General Adaptation Syndrome (GAS)
Periodization Cycles

• Macrocycle-long period of time, one year
• Mesocycle-medium length of time, several weeks to several months
• Microcycle-short length of time, one or more weeks
Periodization involves shifting training priorities from non-sport-specific activities of high volume and low intensity to sport-specific activities of low volume and high intensity over a period of many weeks to prevent overtraining and optimize performance.
Matveyev’s Model of Periodization: Appropriate for Novice Athletes
Modifications of Matveyev’s Model of Periodization; for Advanced Athletes
Periodization Periods

- Preparatory-
- Transition-
- Competition-
  - Maintenance-
  - Peaking
- Active rest-
Preparatory Phase

• Hypertrophy/endurance phase- low to moderate intensity (50-75% 1rm) and high to moderate volume (3-6 sets, 10-20 reps)

• Basic strength phase- high intensity (80-90% 1rm) and moderate volume (3-5 sets, 4-8 reps)

• Power phase- high intensity (75-95% 1rm) and low volume (3-5 sets, 2-5 reps)
Hypertrophy Phase (1)

- Phase 1 = Hypertrophy/Endurance Phase
  - Highest volume (3-5 sets, 8-12 reps)
  - Lowest intensity (50% to 75% of 1RM)
  - Lasts up to 6 weeks (Based on program goals & level of athletes conditioning)
  - Establish neural & muscular base (adaptations)
  - Low intensity aerobic activity
  - Agility progression
  - Flexibility progression
Strength Phase (2)

- Phase 2 = Strength Phase
  - Moderate volume (3-5 sets, 5-8 reps)
  - Intensity (80% to 88% 1RM)
  - Moderate intensity aerobic activity
  - Moderate intensity plyometric training (Levels 1-5)
  - More complex lifts first
  - Multiple joint movements before single joint
  - Agility & flexibility progression
  - Towing/Downhill activities (Speed development)
  - Recovery times between sets based on energy systems ratios
Phase 3 = Power Phase

- Low volume (3-5 sets, 2-4 reps)
- High intensity (90% to 95% 1RM)
- Full recovery between sets (energy systems ratios)
- High intensity aerobic activities & plyometrics
- Power moves – multi-joint
- Plyometric drills separate from RT days
- Agility & flexibility progression

The goal is to PEAK right before competition begins
Transition Phase

• Modification to Matveyev’s original periodization model, break between high volume training and high intensity training
Competition Period

- Ideally 2-3 weeks max
- In sports with long season, may last months
- Peaking- very high intensity (>93% 1rm) and very low volume (1-3 sets, 1-3 reps)
- Maintenance- moderate intensity (80-85% 1rm) and moderate volume (2-3 sets, 6-8 reps)
Active Rest
(second transition)

- Restoration
- Remain physically active
- Lasts 1-4 weeks
- Mental and physical break from sport
Macrocycle for Team Sport

- Maintenance
- Active rest
- Spring training
- In-season

Graph showing the progression of a macrocycle, with phases labeled for maintenance, active rest, spring training, and in-season. The graph includes lines representing different indicators over time.

- Vertical axis: Arbitrary units
- Horizontal axis: Time (weeks)
- Key: 11 games
KEY POINT: Periodization Models

The traditional model is commonly referred to as \textit{linear} due to the gradually progressive microcycle increases in intensity over time.

The \textit{undulating} or \textit{nonlinear} model involves large daily (i.e., within the week or microcycle) fluctuations in the load and volume assignments for core exercises.
Tonight & Next Class

• Periodize a 12 week program
• Use perfect athlete
• PowerPoint presentations
• 10-15 minutes