

New Trends in the Strength Training for Runners

**University of Minnesota Head
Strength and Conditioning Coach**

Cal Dietz, M.Ed. dietz011@umn.edu

21 Big Ten/WHCA Titles

10 National Championships

Over 300 All-Americans

XL ATHLETE

www.xlathlete.com

**Down load interactive
PowerPoint With video's and
hyperlinks on “Download” page
at www.xlathlete.com**

XLATHLETE

These Methods Can Be Used In Many Different Ways

- The only “bad” program is one that does not **change**
- The success of the program depends on constant change
 - **Daily, Weekly, Monthly, and Yearly**
- New stimuli must be given to the athlete at various times during the season
 - This is not to be mistaken for simply returning to previous stimuli
 - You must come up with novel ways of stimulating and stressing your athletes in order to spur change for the better

Key Factors For Successful Programming

- High Volume
- High Intensity
- High Frequency
- High Expectations
- Some Overtraining

Daily Organizing Training

- **Training session and days**
 - **What are optimal methods? – RFD**
 - **A single workout or practice session**
 - **For most, this is the same as the training day**
 - **Separate workouts – morning versus post-practice**
 - **Olympics in morning – Squatting after high quality practice is an option, but morning is usually optimal**
 - **For advanced athletes, several sessions may comprise a day**

Daily Organizing Training

- Total lifting in the morning separated by a few hours
- 2 to 6 hours- not optimal for everyone
- Warm up sets for power – [View Article](#)
- Training week
 - A series of several training days together – train 5 to 6 days

WENDESDAY

10-Dec-07

	REPS	LOAD	SETS	NOTES
Piston Squat Band	6		2	
Pair w/				
BND Pull Throughs Toes In	6		2	
Pair w/				
Glute Band Cycle Kicks	6		2	Bands

POWER CLEAN	REPS	LOAD	SETS	NOTES
	3	125 - 135		
	2	145 - 160		
	2	180 - 185		Coach See
	2	185 - 190		
	2	185 - 190		
	2	190 - 195		
	2	190 - 195		Coach See
	2	205 - 210		
	2	205 - 210		

FRONT SQUAT		180 - 185	4	
Pair w/				
5HHxBurst20	5		4	
Nordic Band HAM Curls	6		3	
BENCH PRESS	5	160 - 165	3	
Pair w/				
Chin up	x	85 - 95	3	
Pair w/				Jump w Band
DB Walking Lunge	5	80 - 85	3	Squeeze
DB Side Lat Raise	6	20 - 20	3	
Pair w/				
Dips	x	110 - 130	3	
Pair w/				
DB SL Calf Raise	15	35 - 35	3	Knee Bend

LAYING RELAXATION		s	1	
Pair w/				
GH HANG	120S		1	
Pair w/				
Rollers Glutes & Hams	120S		1	8

Prehab Exercise

- 2 sets of 2 to 3 Exercises paired together

- Examples

- Balance Single Leg Squat (knees, quads, ACL)

- Piston Squat – With Band (knees, quads, ACL)

- TKE (quads, prevention of tendonitis)

- 4 Way Ankle Kicks (hips, glutes, groin)

- 3 Way Ham Press (hamstrings)

- Cuban Press Figure 8 (rotator cuff)

Types of Daily Lifting Methods

- **Four primary types**
 - **Clustering, Contrast, Complex, French Contrast**
- **These are most effective daily methods**
 - Why are these methods are effective?
 - “Rate of Force Development”
- **We must seek out stressful methods that increase force during running**

Clustering

- 3 sets of 3 reps or 3 sets of 1+1+1+1
- Using cluster sets in training is an excellent way to stress an athlete, especially during phases of considerably intense loading. A cluster set allows for **more repetitions** to be made at a weight that an athlete would not normally be able to lift two or more times in succession.

[View Full Cluster Article](#)

Complex Training

- **The use of plyometrics in between sets of strength training**
- **3 sets of 3 reps paired with 3 sets of 3 plyometrics**
- **Speed load should be under 80 percent**

Complex Training

- **Set 1** - 2 Reps Back Squat p/w 3 Box Jumps
- **Set 2** - 2 Reps Back Squat p/w 3 Box Jumps
- **Set 3** - 3 Reps Back Squat p/w 3 Box Jumps

Contrast Training

- **Used during heavy loading phases – Drop off around 15 to 20 percent**
- **Set 1 – 2 reps @ 90%**
- **Set 2 - 2 reps @ 70%**
- **Set 3 – 2 reps @ 90%**
- **Set 4 - 2 reps @ 70%**
- **Set 5 – 2 reps @ 90%**
- **Set 6 - 2 reps @ 70%**

Contrast Training

- **Your drop set should be below 80%**
- **95 drop to 75**
- **90 drop to 70**
- **85 drop to 65**
- **80 drop to 60**

French Contrast Training

- E1 Back Squat -B1 Ecc, B2 Iso, B3 Dyn
- E2 Hurdle Hop – 3 to 5 Reps
- E3 Squat Jump With Weight 3 to 5 Reps
- E4 Power Step up – 3 to 5 reps
- Example: Back Squat
 - 2 weeks **eccentric tempo** in first block
 - 2 weeks **iso-hold** in second block
 - 2 weeks **dynamic action** in third block
- 800m versus 100m

Guidelines with Percentages and Reps

- **55% - 74% - reps of 5 to 3 – with variables**
- **75 % - 4 to 2 – out-of-season – in-season**
- **80 % - 4 to 1 – out-of-season – in-season**
- **85 % - 3 to 1 – out-of-season – in-season**
- **92 % - 2 to 1 – out-of-season – in-season**
- **Rule # 1 (Speed/Quality)**
- **Cluster Training-**
 - **Set of 3 Reps (1+1+1) 10 to 30 Sec**

Exercise Selection

Power Snatch

Back Squat

Glute Ham Hyper

Squat Jump

Back Step Up

Clean and Jerk

Walking Lunge With
Band

Clean

Power Clean

RDL Shrug

Back Step Up

Organizing Weekly Training

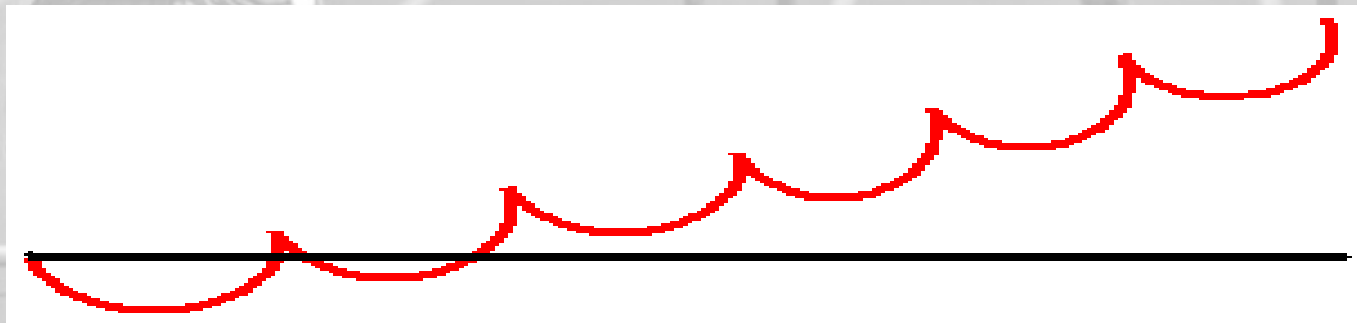
- **Working Various Motor Task**



Figure 20: Increase in power in the vertical jump in place after 6 weeks of training with various weights: 1) 50% of maximum. 2) 90% of maximum and 3) combination of 90% and 50% of maximum.

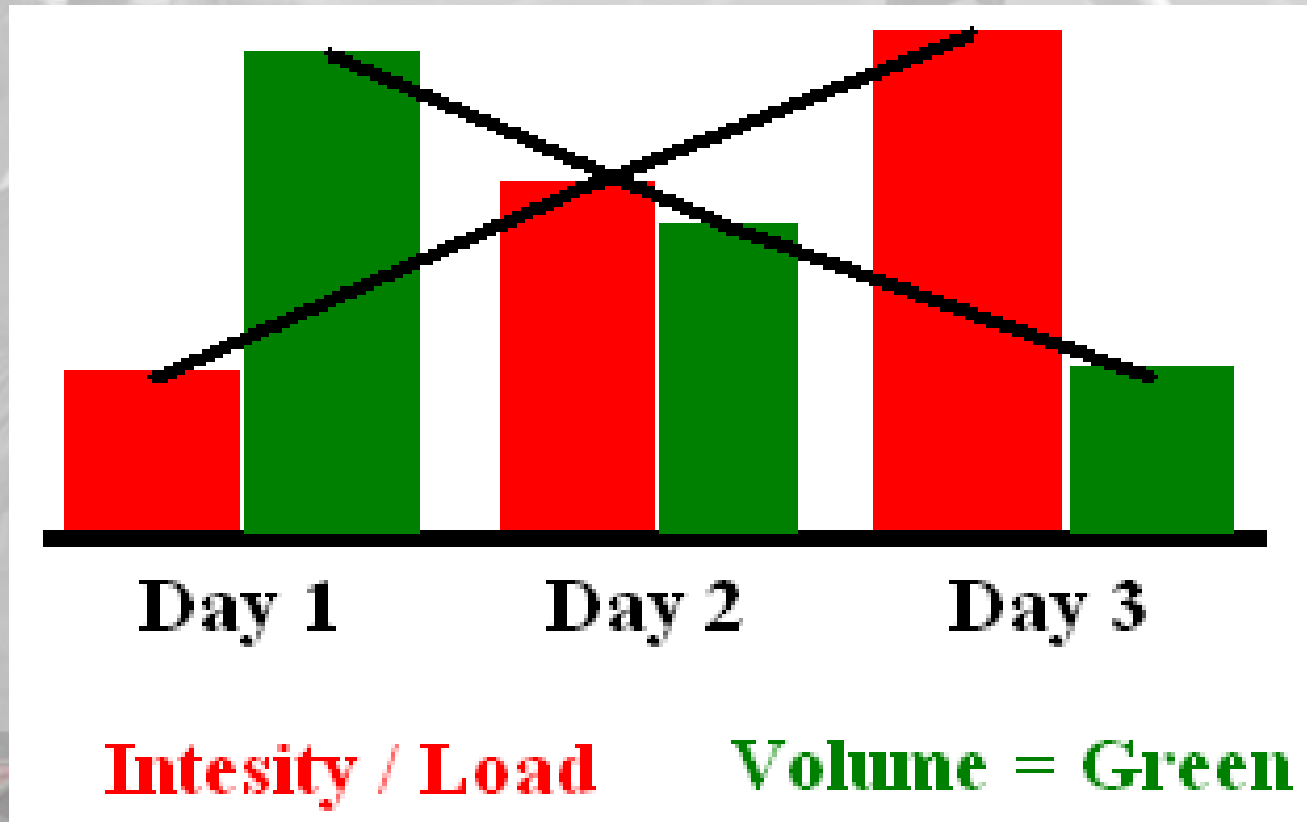
Organizing Monthly Training

Periodization vs. Undulating Model



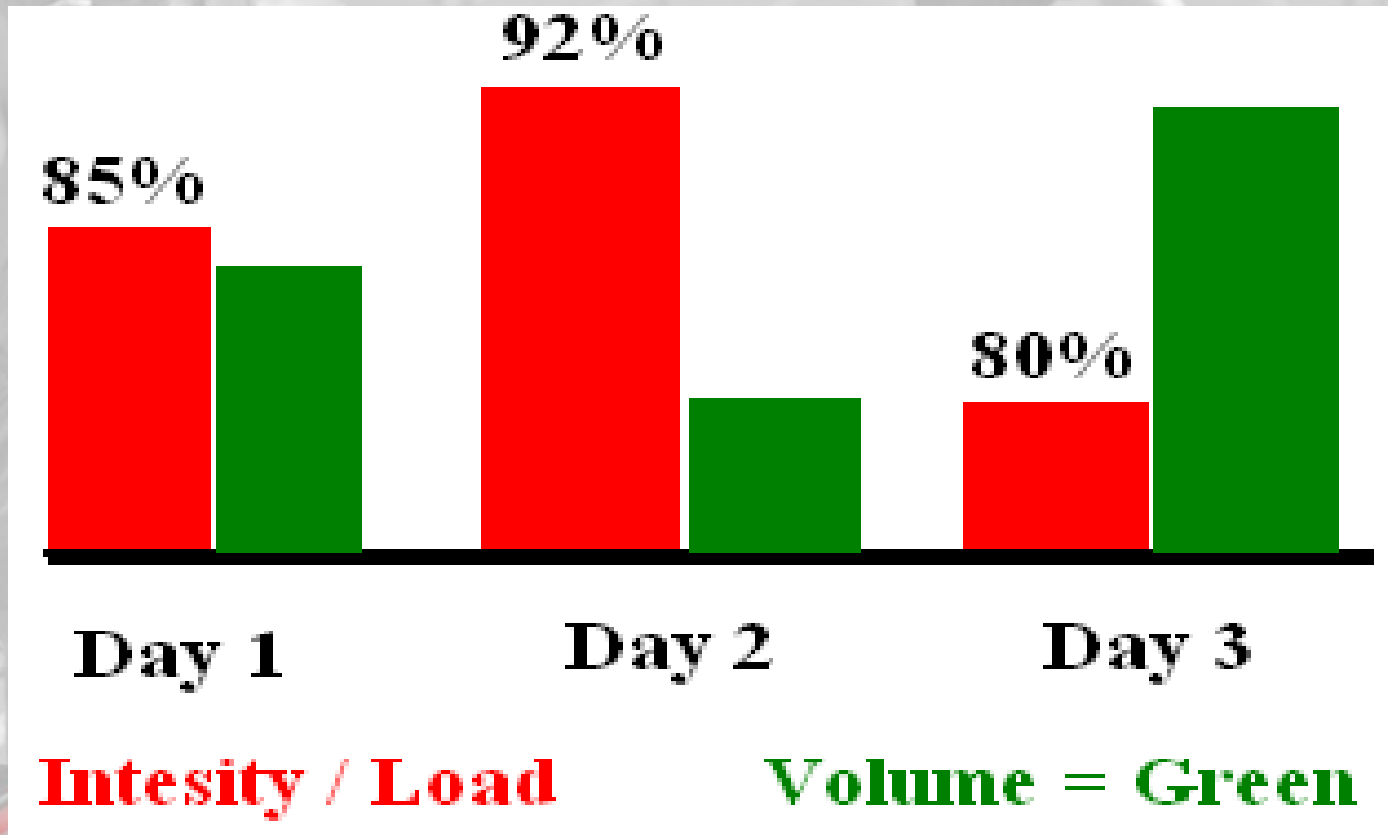
Organizing Weekly Training

Classic Undulating Model



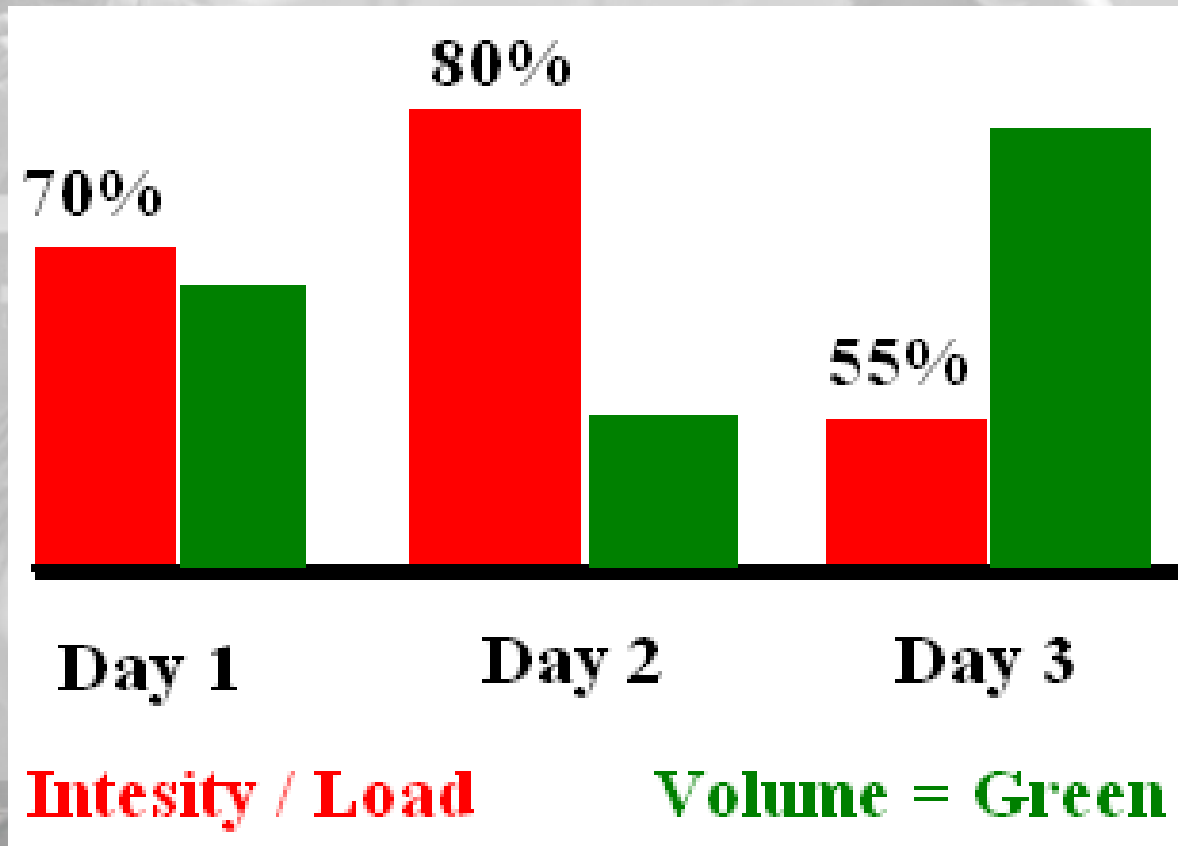
Organizing Weekly Training

Heavy Undulating Loading Week



Organizing Weekly Training

Lighter Undulating Loading Weeks



Weekly Lifting Sessions

- **It is helpful to vary training loads from day to day and week to week**
- **Rule of 60% for in-season**
 - **The number of reps used during the in-season should be about 60% of the number of reps used on the out-of-season workout**

Acceleration Strength Exercises

Key Factors in Specificity – Same Joint Angle



[Back Squat](#)

[Back Step Up - Band](#)

[Walking Lunge](#)

[Walking Lunge W/ Band](#)

[Piston Squats](#)

[Balance Single Leg Squat](#)

Acceleration Strength Exercises

Power Step Up

Relaxed Box Jump

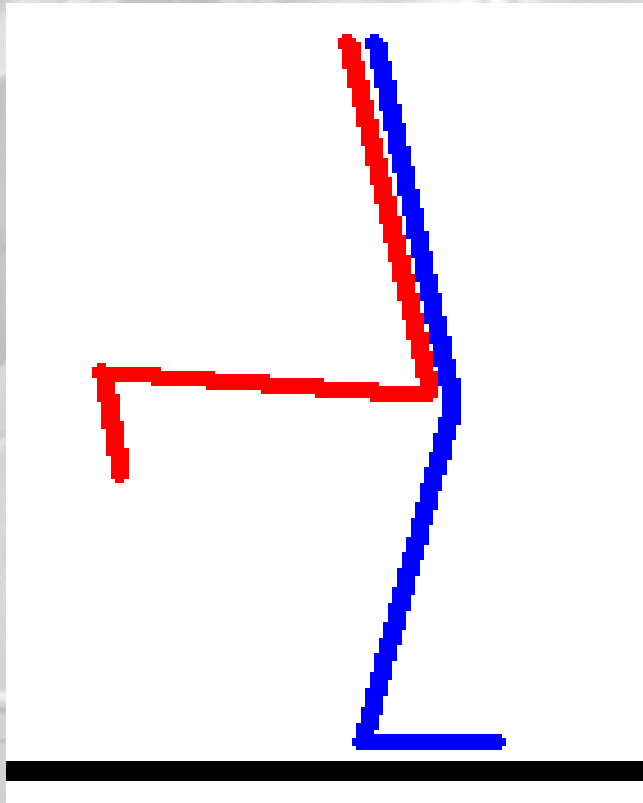
Squat Jump Pause

Half Squat Jump

Double Knee Jump

Alternating Split Lunge
Jump

Top End Speed Strength Training



[Straight Leg Deadlift](#)

[Straight Leg Walking](#)

[Good Morning](#)

[In Line RDL](#)

[Glute Ham Hyper](#)

[Incline](#)

[Glute Lift](#)

Top End Speed Strength Jump Training

Single Dumbbell Leg
Bench Hop

Good Morning Jump

Low Hurdle Hop For
Distance

Depth Drop – Jump

Pike Jump – Distance

Half Squat Jump -
Distance

Organizing Monthly Training

- **Training Cycles Possibilities**
- **3 Day Per Week Body Part Training**
 1. **Day 1 – Medium Loading**
 2. **Day 2 – Heavy Loading**
 3. **Day 3 – Light Loading – High Reps Endurance**
- **2 Day Per Week Body Part Training**
 1. **Day 1 – Medium or Light Loading/Endurance**
 2. **Day 2 – Heavy Loading**

Organizing Monthly Training

- **Training Cycles Possibilities**
 1. **3-6 weeks hard training**
 2. **1 week lighter training (download week if needed)**
 3. **If 9 weeks of training is available- then break into 4 weeks cycles with a lift week in middle**
 4. **Female vs Male**
 1. **Females need more assisted exercises**
 2. **1 to 2 days a month extra rest**
 3. **Females need work capacity**
 4. **Much easier to coach**

Organizing Yearly Training

- **Several months of training towards a specific goal makes training more effective**
- **Goal would be to apply more stress over a long period of time**
- **The type of stress that you want to apply in the beginning is volume based**

Organizing Yearly Training

- **Off-Season Training Plan-with Academic Plans**

Off Season -August	In-Season January
Month 1 – GPP	Month 7 – Strength
Month 2 – Speed	Month 8 – Speed
Month 3 – Strength	Month 9 – Strength
Month 4 – Speed	Month 10 – Speed
Month 5 – Strength	Month 11 – Speed?
Break 6 - GPP	Month 12 – GPP

Dynamic Action Concept

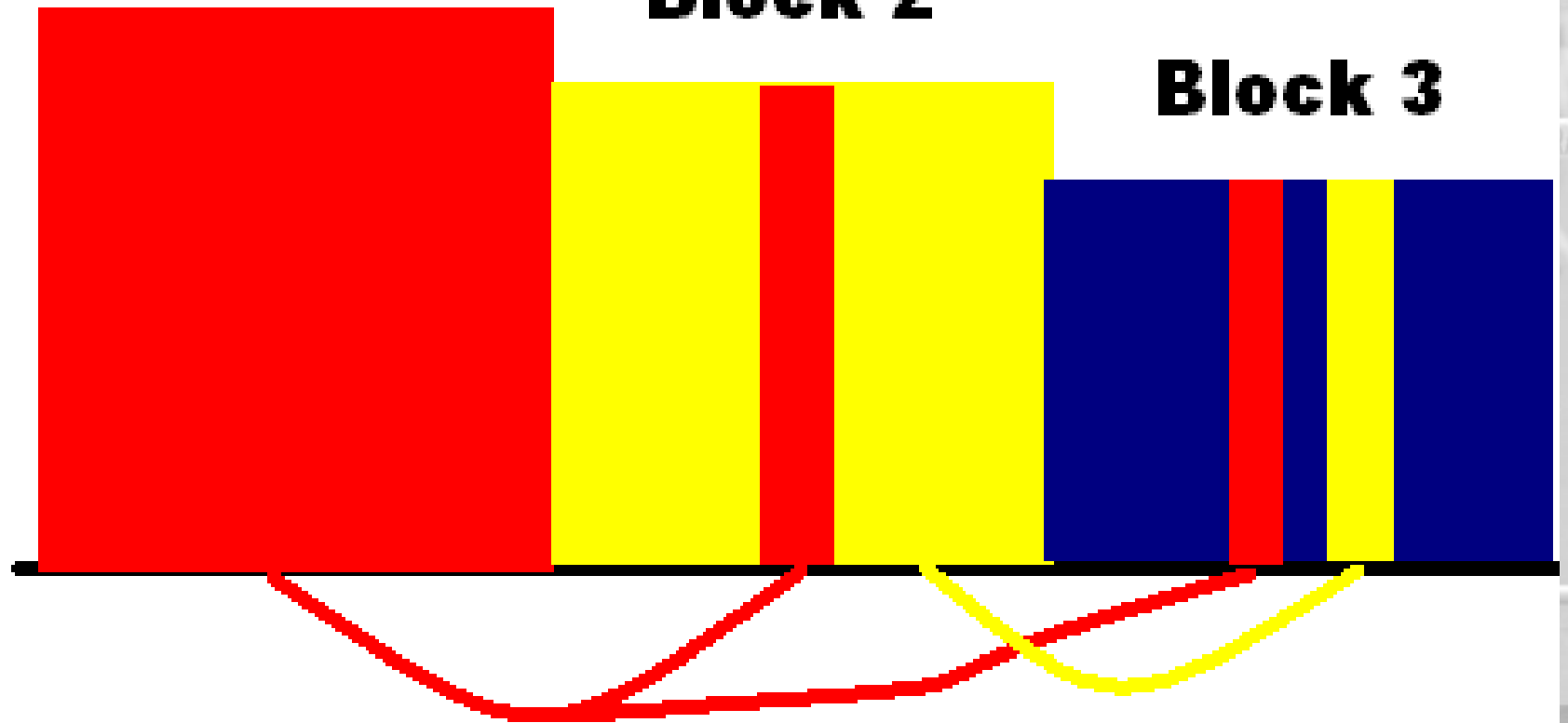
- 3 Phase of Movements
- Block 1 - Focus on Eccentric Movement
- Block 2 - Focus on Stretched Isometric Phase
- Block 3 – Explosively
- Key Movements – Back Squat – Glute ham
Hyper- Bench Press
- Block with **DAC** should only be 2 to 3 Weeks
- General Blocks can be 2 to 6 weeks

Block Training Sequencing

Block 1

Block 2

Block 3



Various methods

[Treadmill Conditioning Workouts For Track](#)

[Training For Injured Track Athletes](#)

[Top End Speed Development For Track](#)

[Flexibility and Stretching For Track](#)

[Core Workouts For Track](#)

[Specific Prehab For Track](#)

[Plate Workouts For Track](#)

[Dynamic Warm Up For Track](#)

[Bike Conditioning Workouts For Track](#)

[Conditioning Plans For Track](#)

[Non-Spinal Loading Circuits For Track](#)

[Medicine Ball Circuits For Track](#)

[Stadium Step Workouts For Track](#)

[Post Workout Recovery For Track](#)

[Adaptability Training For Track](#)

[Plyometric Programs For Track](#)

[Super Endurance Workouts For Track](#)

[Increased Muscle Mass Workouts For Track](#)

[Tabata Intervals For Track](#)

Strength Recovery

- **You now place more stress on athletes and the key to this stress management is Recovery. Review the distance training talk for various Recovery methods.**

Chocolate Milk For Recovery?

- 1. The key is to drink within a 30 minute window post strenuous activity.**
- 2. Improves body composition and recovery research has shown.**
- 3. Chocolate Milk is 90% Water.**

Chocolate Milk For Recovery?

- 1. Has key nutrients and electrolytes such as Calcium, Vitamin D. Phosphorus and Magnesium.**
- 2. Potassium to help muscle contract and regulate body fluids.**
- 3. B-Vitamins to help convert food energy to exercising Muscles.**

Chocolate Milk For Recovery?

- 1. Recovery is most important factor in training.**
- 2. Get boosters involved in buying process.**
- 3. Administration feels very comfortable about milk.**
- 4. The cost is as effective as the product.**

Mechanical Recovery Methods

- Sauna Recovery Workout
- Restorative Shower
- Post Workout Track Recovery
- Various Exercise Methods
- Band Stretching
- Soft Tissue
- Partner Stretching
- Flush Bike Workout

Questions?

- Thank you for your interest!
- Please feel free to visit:

www.xlathlete.com

700 Videos - Free

200 Drill Sheets - Free

Coaching Tools - Free

Articles - Free

XLATHLETE