

BUILD FROM **TRADITION**

2015 NSCA COACHES CONFERENCE

JANUARY 7 - 10 / LOUISVILLE, KY / NSCA.COM/COACHES2015



- Special Training Considerations for Strength, Specificity, and Energy Systems for Year Long Planning
- Cal Dietz
- cal.dietz@gmail.com
- Thanks to many people.

Various Specificity of Athletes

- Olympian – 5-13
- VJ – 16.9 – 22.6
- Pro Agility – 5.35 – 4.49
- E-10 Yard – 1.97-1.84
- E-20 Yard – 3.29-3.04
- Squat 155-235
- Bench 120-155

Soon To Be Pro
-4 years in
program
-Hit Limit??
Work / Heart
rate
-Specific 100
-Fast Twitch

Building the Base

- Reasons for Training
 - What makes team Successful?
 - What are Key Qualities
 - Skill and Repeated Sprint Ability
 - RSA to me is Repeated Max Effort (RMEA)
 - How can I effect all Systems involved
 - Globally and Locally
 - Work on 3 Energy Systems involved in Future Training – Aerobic Most Important

Cooked!!!



- Schedule
- Sick?
- Lack of food
- Recovered?
- Aerobic – System??
- Daughter Performance

Building the Base

- History of what your about to see - Tendo
- The Bioenergetic Views- of Base Building
- Anaerobic/Creatine Phosphate - 0-10 Seconds
- Lactate/Glycolysis - +10 – 120 Seconds
- Aerobic – Heart Rate

Alactic Anaerobic / CP

High Quality Ratios

- 0-10 Seconds Work

- Rest
- 2:30 – 5:00 Minutes
- Reps 6 -8

Work Capacity Ratios

- 0-10 Seconds Work

Combining Qualities

- Rest
- :45 – 1:30 Minutes
- Reps 8 - 16

Maxim Sokolov Moscow 2003 - VN Seluyanov – 1996 - Vladimir Platonov – Issurin - Yessis in Conversation

Alactic Anaerobic / CP Workout

Ideal Workouts

- 0-10 Seconds Work

1) Quality/Speed

- 2:30 – 5:00 Minutes Rest
- Reps 6 - 8

2) Conditioning Focus

- :45 – 1:30 Minutes
- Reps 8 - 16

Combined Qualities Workout

- 0-10 Seconds Work
- First Reps 6 - 8
- 2:30 – 5:00 Minutes Rest
- Then Reduce Rest
- :45 – 1:30 Minutes
- Reps 8 - 16

Lactate/Glycolysis

High Quality Ratios

- +10 – 120 Seconds Work
- Rest
- 2:30 – 5:00 Minutes
- Rest up to 8 Minutes Elite Track
- Reps 6 -8

Work Capacity Ratios

- +10 – 120 Seconds Work
 - Rest
 - :45 – 1:30 Minutes
- Reps 6-10

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Aerobic / Oxidative

Guidelines

- Non Adaptive Stress Response – 110 – 150 Heart Rate
- Stay under Lactate Thresholds –
- Aerobic is the most important

Various Protocols

- Too many to list
- Key components for Aerobic possibilities
- Intervals for aerobic work – 4 minutes max for good Quality aerobic intervals
- Long Duration Protocols

Sequence of 3 Training Blocks – Main Theory

- Block 1) Aerobic 2 to 3 weeks – Local & Systemic

Block 2) Lactate/Glycolysis - 2 to 3 weeks - Local & Systemic

Block 3) Alactic anaerobic / CP - 2 to 3 weeks - Local & Systemic

Findings For Base Training

- All Systems are Aerobic/O₂ supported
- Conundrum – Elite Level Athlete
 - Shot Putter – Aerobic Capacity – How?

Contralateral– 65 Station

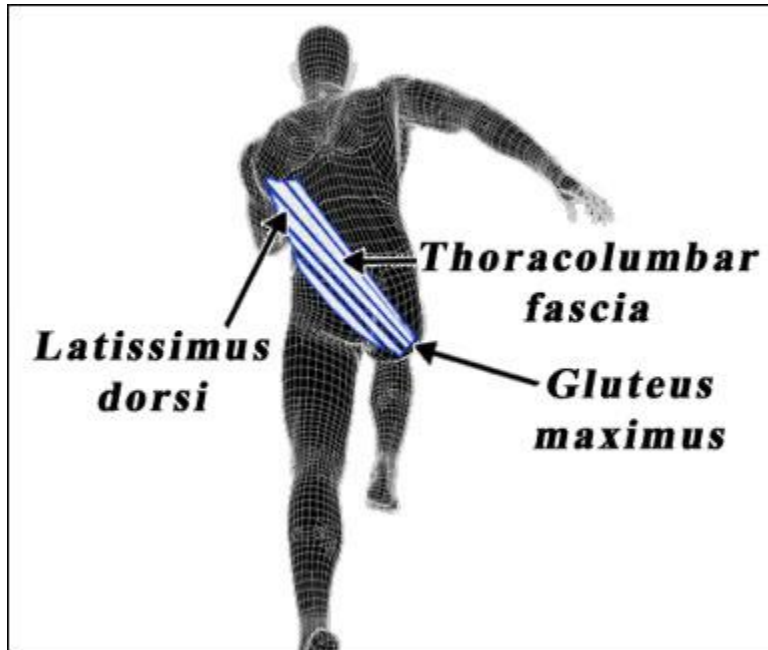
Modified EDT - 4 to 8 minutes

5 Minute Isometric Holds - Djatschkov

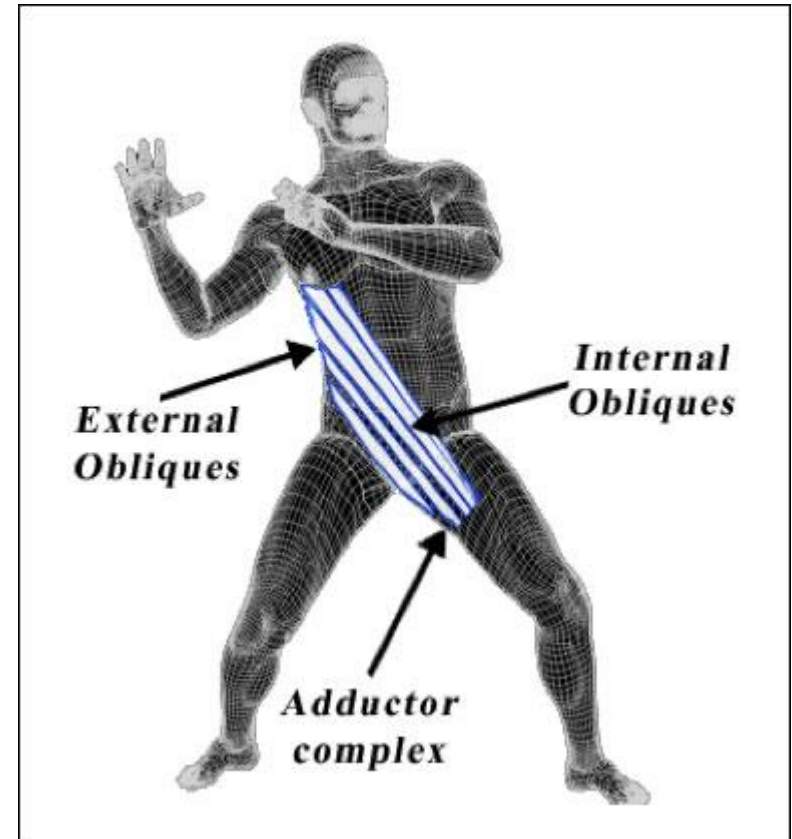
Benefits of Contralateral

- Lateral Sling
- Brain Considerations for Programing - Future

Lateral Sling



Running most effective - Forces
Strong man
[Isometric Flexion](#)



Pre Warm Up



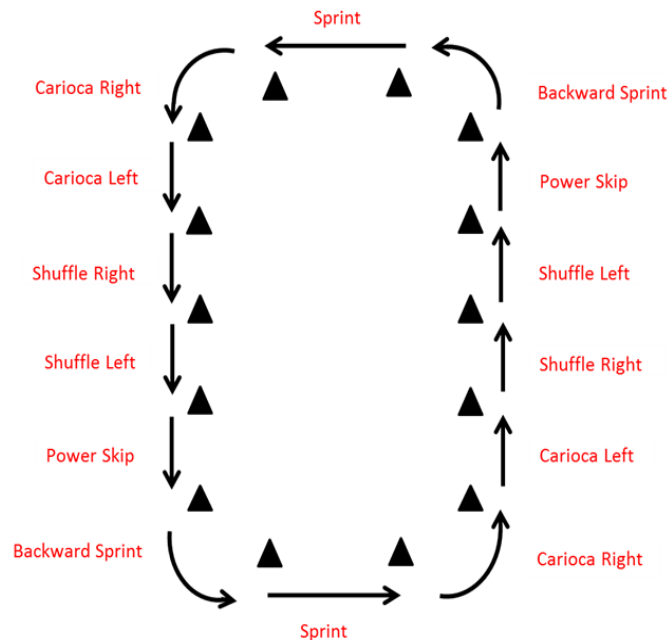
Post Warm Up



Compatible Aerobic work

- Metabolic Injury Prevention Running

Aerobic Base Injury Prevention Running



120 versus
170

Pre Season

Lactate/Glycolysis

- [30 Second Isometric](#)
- [EDT Methods – High Reps](#)

Alactic anaerobic / CP - Block

- [10 Second Isometric](#)
- [10 Second OC](#)
- [Extreme Myelination Circuit](#)

Sequence of 3 Training Blocks – Main Theory – 4 to 9 Weeks

- Block 1) Aerobic 2 to 3 weeks – Local & Systemic
- Block 2) Lactate/Glycolysis - 2 to 3 weeks - Local & Systemic
- Block 3) Alactic anaerobic / CP - 2 to 3 weeks - Local & Systemic

GPP Variables for Programming

- GPP – 9 Week Plan – All Blocks Used-Max
- 3 Aerobic – 3 Lactate – 3 CP/Alactic
- GPP – 6 Week Plan – All Blocks Used - Shortest
- 2 Aerobic – 2 Lactate – 2 CP/Alactic
- GPP – 6 Week Plan – All Blocks -
- 2 Aerobic – 2 Lactate – 2 CP/Alactic – Trade CP

GPP Variables for Programing

- GPP – 6 Week Plan – 2 Block Used
- 3 Aerobic – 3 Lactate
- GPP – 4 Week Plan – 2 Blocks Used - Shortest
- 2 Aerobic – 2 Lactate

Closing GPP

- Sports
- Results – Repeated Sprint Athletes that have 39 RHR
 - Strongest Wingate on Team
- This is not Sport Specific
- Base for Specificity – Raise the Ceiling
- Pain Cave Set 4 minute–
- 90% load failure isometric around 10 seconds
 - 50% load for failure 30 to 40 seconds
 - 30-20% load for a total of 4 minutes

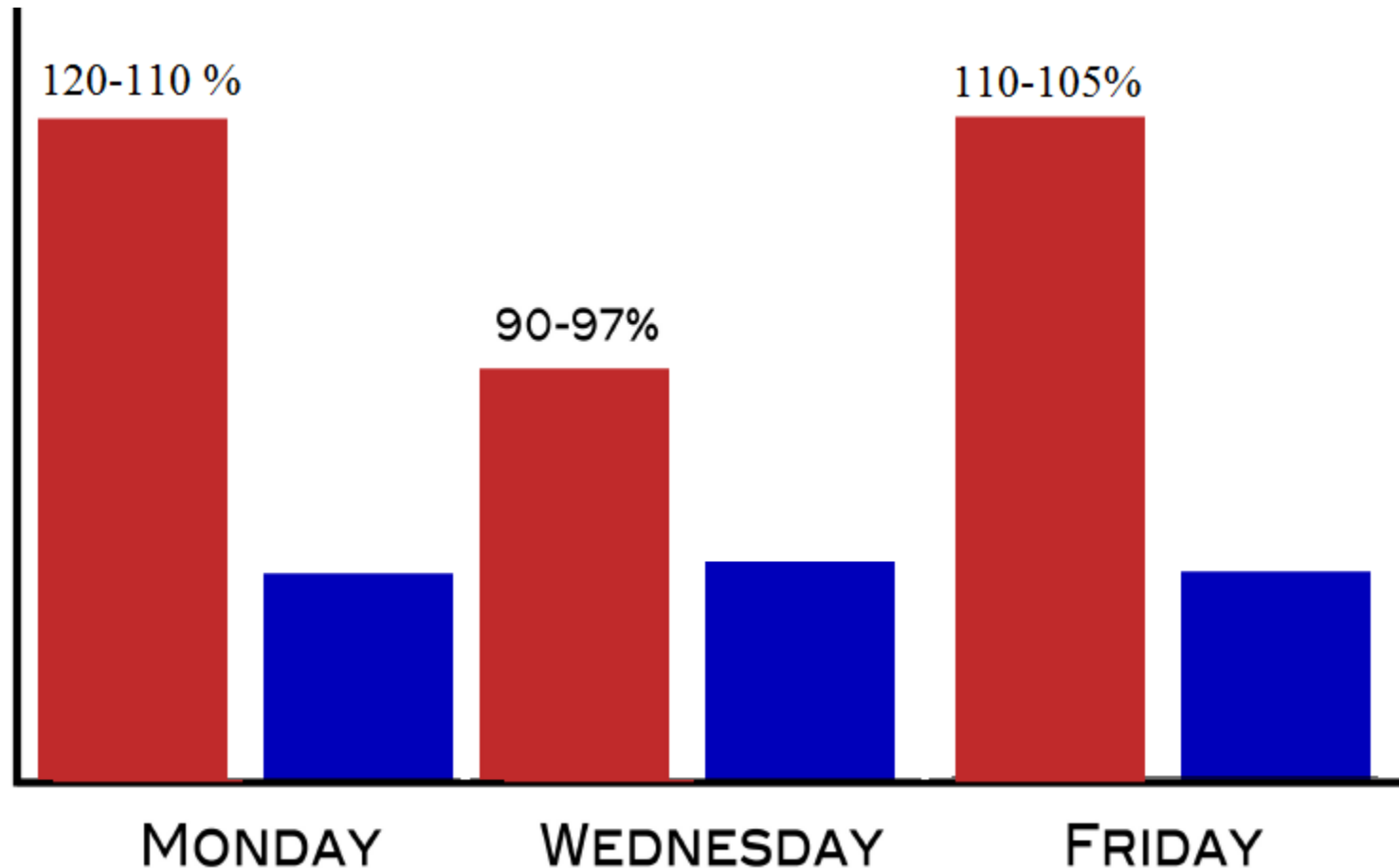
Most Advanced Method

- Supra-maximal Loading- Off Season
- 120 to 100 % + Loading During Eccentric/Isometric
- Most Effective Results in Speed and Reactiveness - Results 3 to 6 weeks – Post
- Compressed Training Effect
- Not Sport Specific
- Adaptation for Time Principle

Various Aspects of Supramaximal

- Strength for powerlifting movements
- Strength for sport—Enzyme
- Maximal Muscle Recruitment
- Maximal Fast Twitch
- Taxing on CNS
- Hyperplasia of myofibrils in muscle fibers
- Increase in free creatine in muscle fibers
- Increase concentration of hydrogen ions if duration enough and or rest reduced
- Hypertrophy of myofibrils in fast muscle fibers
- Negatives
Joints and safety , tissue damage

Supramaximal Weekly Loading



INTENSITY



VOLUME

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Example of the Methods

- Safety [Bar Single Leg Squat](#) – [Ecc](#) – [Iso](#)
 - Concentric Movement is 80 to 92% Load Blk3
 - Spotter Used on Both Sides and Back
 - Safety Pins are Positioned so only 5 or 6 inches Drop if lift is Missed.
 - Examples Females 136 pounds – Single leg 305
 - Examples Male 190 pounds – Single leg 585
500/10 sec
 - Duration is under 10 seconds - Why 10

New Tissue Consideration

- You should never lose sight of the ultimate goal, to add new tissue. This requires balancing the hyperplastic effect of the training against the strong tendency of the body toward catabolism. Cortisol is the body's biochemical agent for catabolism. Training, particularly heavy training, raises Cortisol levels. When Cortisol levels rise, new tissue is favored over old tissue. This raises the potential for a net loss of muscle tissue. This is clearly counterproductive. Wesley James

Tissue Remodeling Biochemical

- Triphasic tissue remodeling – the consideration to keep cortisol down should play a role in programming
- Triphasic first two blocks with Eccentric and isometric with maximal tissue adaption with 20 and 25 second sets.
- After those sets possible sets rest periods are extended and sets are reduced to under 10 seconds. Cluster Training concept.

Weekly Block Loading Model

Block Focus	Monday		Wednesday		Friday
Block 1-2 Weeks	Loading Day 1		Loading Day 2		Loading Day 3
Eccentric	120-110%		90-92%		110-105%
Block 2-2 Weeks	De-load week		De-load week		De-load week
Isometric	120-110%		90-92%		110-105%
Block 3-2 Weeks	De-load week		De-load week		De-load week
Con- Strength	85%		90-92%		85%
Con- Speed	65%		80%		55%

Off Season-Loading Parameters

Week	1	2	3	4	5	6	7	8	9	10
Load	20%-30%	20-30	70% Iso - 50% OC	70% Iso - 50% OC	90% Iso - 70%OC	90% Iso - 70%OC	20%-30%	120% , 110%, 92%	120% , 110%, 92%	20%-30%
Focus	Aerobic	Aerobic	Local Lactate	Local Lactate	Local - CP	Local - CP	Down-load	Eccentric	Eccentric	Down-load
			Global Aerobic	Global Aerobic	Global Aerobic	Global Aerobic				
Week	11	12	13	14	15	16	17	18	19	
Load	120% 92% 110%	120% 92% 110%	20%-30%	80% Plus	80% Plus	20%-30%	50%-25%	50%-25%	50%-25%	
				Strength	Strength		ASFM	ASFM	ASFM	
Focus	Isometric	Isometric	Download	Below 80%	Below 80%	Download				
				Strength	Strength					

Weekly State of Organism

Week 1

M T W T F



- Self Report Hormones 120
- Lack of Stress - Functional
- Not One Model Training

Week 2

M T W T F

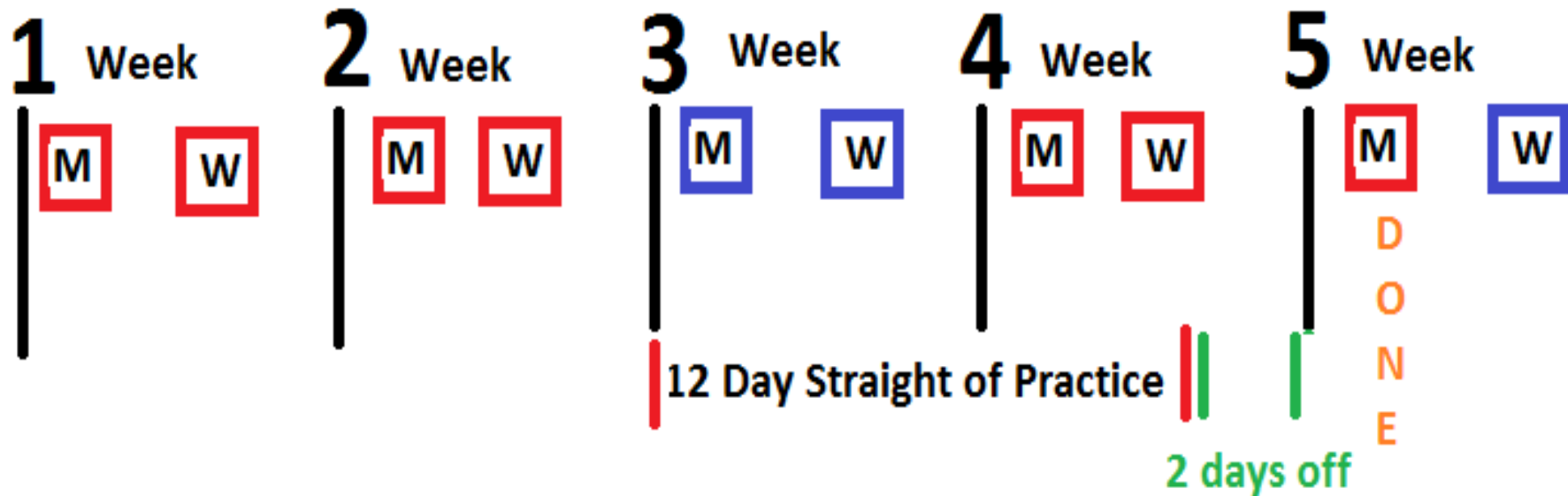


- Management of Stress
- Vegas Trip
- Triphasic – 6 Weeks?

The Stress of Life-Considerations

- Kids on Bus
- Wound Healing – Manage
- Pro Athlete – Emotion Ex wife
- Lack of Sleep – 1 Hour
- Exam week
- Most Advanced Training Method – Training
- In Season Example -

Real In-Season Maladaptation



Male 3 day Model – French Contrast

474	SL Safety Squat	5	215 - 260	1	
	Pair w/				
474	SL Safety Squat	3	280 - 310	1	
	Pair w/				
474	SL Safety Squat	1	370 - 380	1	
474	SL Safety Squat	1	425 - 450	1	
	Pair w/				Partners Help
474	SL Safety Squat	T	520 - 570	4	7:0:0:10:7:0
					2 Cluster Cycle
	Hurdle Hop	4	\$N/A .. \$N/A	4	Height
	Pair w/NO REST				
	SQ Jump Weighted	4	\$N/A .. \$N/A	4	0:1:0:0:0:0
	Pair w/NO REST				
	Acc Band Jump Pause	4		4	0:1:0:0:0:0

Safety Squat	340 - 415	1	
Pair w/			
Safety Squat	3	445 - 495	1
Pair w/			0:6:0:0:6:10
Safety Squat	1	590 - 605	1
Safety Squat	T	680 - 700	4
Pair w/	ED		0:0:0:0:5:10
Safety Squat	T	680 - 700	4
	EU		0:0:0:0:5:10

SL Safety Squat	215 - 260	1	
Pair w/			
SL Safety Squat	3	280 - 310	1
Pair w/			Fly 60
SL Safety Squat	1	370 - 380	1
SL Safety Squat	1	425 - 450	1
Pair w/	ED		Partners Help
SL Safety Squat	T	520 - 570	4
	EU		10:0:0:10:10:0
			1 Cluster Reps
Hurdle Hop	4	\$N/A .. \$N/A	4
			Height
PW / no Rest			Pause
USSR Plyo Box	4	\$N/A .. \$N/A	4
			Pause
PW / no Rest			Rest
Acc Band Jump Pause	4		4
			Rest HR 110

My Sample Program

Video Split Squat
Safety Bar

Accelerated Band
Jumps

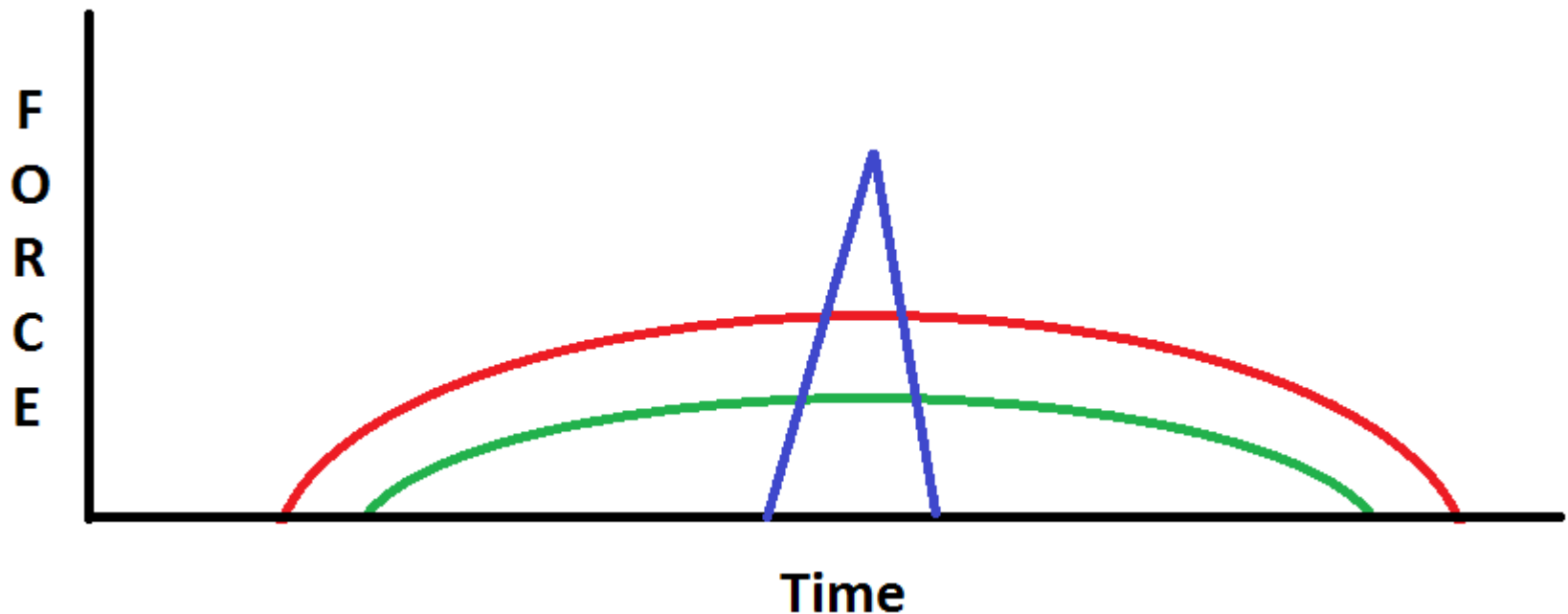
Reading My Sheets

	REPS	LOAD	SETS	NOTES
SL Safety Squat	5	160 - 195	1	
Pair w/				
SL Safety Squat	3	210 - 230	1	
Pair w/				
SL Safety Squat	1	275 - 285	1	
SL Safety Squat	1	320 - 340	1	
Pair w/				Partners Help
SL Safety Squat	T	390 - 425	4	7:0:0:10:7:0
				2 Cluster Cycle
Hurdle Hop	4	\$N/A .. \$N/A	4	Height
Pair w/NO REST				
SQ Jump Weighted	4	\$N/A .. \$N/A	4	0:1:0:0:0:0
Pair w/NO REST				
Acc Band Jump Pause	4		4	0:1:0:0:0:0
4 way neck	T	\$N/A .. \$N/A	3	0:7:0:0:7:20
PW / 45 rest/BB/RT	EU			7 sec 2-way
Bench Add Groin	T	\$N/A .. \$N/A	3	0:7:0:0:7:20
PW / 45 rest/BB/RT	EU			
ANT TIB BND	T		3	0:7:0:0:7:10

Exercise Selection

- The Training Process in becoming Specific.
- Magnitude of Load – Impulse
- Bondarchuck – Dynamic Correspondence

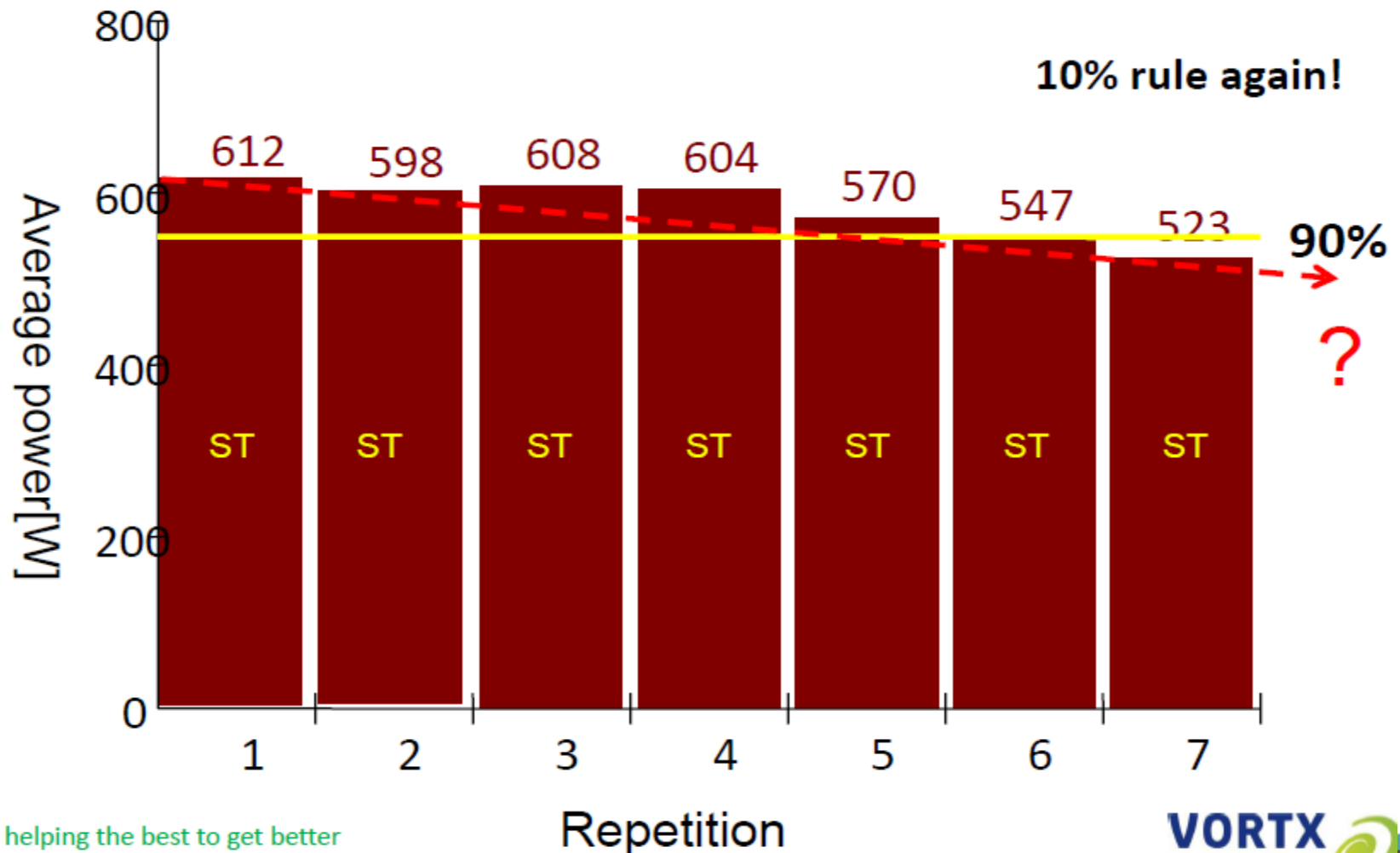
Exercise Selection



Secrets to Exercise Selection

- What am I trying to accomplish
- Does it do what I want? – Henk Specificity
- The method of Completing Exercise
 - Natural
 - Kinematic Sequencing
 - Bracing – Core Training – Running
 - Butt Training?
 - Is it Sports Specific?

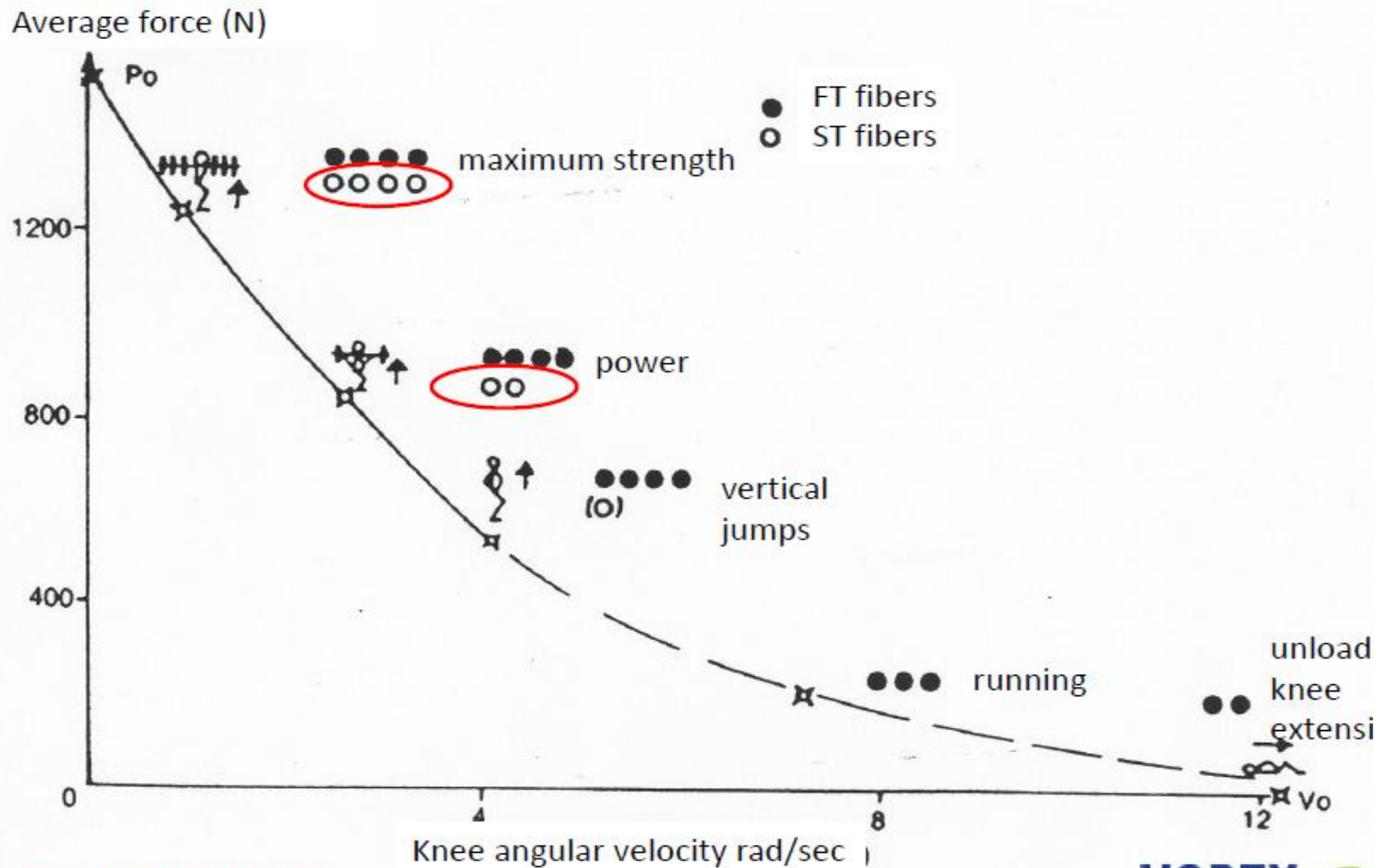
Henk Kraaijenhof



helping the best to get better



Henk Kraaijenhof



helping the best to get better

VORTX

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Secret to Performance

- Skill is Key – Everything is a Skill
- Quality Reps – 3 Reps
- Fatigued Prevents Skill Development
- Clusters Training 1+1+1+1+1+1
- **Potential Clusters**

Potential Clusters

- French Contrast Model
 - Exercise Selection
 - Acceleration/ Top End Speed
 - Bio Chemical Aspect of Method
 - Various Samples

SL Safety Squat	T	520 - 570	4	7:0:0:10:7:0
				2 Cluster Cycle
Hurdle Hop	4	\$N/A .. \$N/A	4	Height
Pair w/NO REST				
SQ Jump Weighted	4	\$N/A .. \$N/A	4	0:1:0:0:0:0
Pair w/NO REST				
Acc Band Jump Pause	4		4	0:1:0:0:0:0

Potential Clusters

- Simple Contrast Model for high school - Acceleration
- Sport Back Squat - 1 rep 65-80% + Box Jump / 1 rep...15-20 seconds Rest
- Sport Back Squat - 1 rep 65-80% + Box Jump / 1 rep...15-20 seconds Rest
- Sport Back Squat - 1 rep 65-80% + Box Jump / 1 rep...15-20 seconds Rest
- Sport Back Squat - 1 rep 65-80% + Box Jump / 1 rep
- Rest 2-3 minutes, then repeat for a total of 2 to 4 sets

Potential Clusters

- Top end Speed Running
- Hex Dead lift - 1 rep 65-80% + Hurdle Hop / 1 rep...15-20 seconds Rest
- Hex Dead lift - 1 rep 65-80% + Hurdle Hop / 1 rep...15-20 seconds Rest
- Hex Dead lift - 1 rep 65-80% + Hurdle Hop / 1 rep...15-20 seconds Rest
- Hex Dead lift - 1 rep 65-80% + Hurdle Hop / 1 rep
- Rest 2-3 minutes, then repeat for a total of 2 to 4 sets

Potential Clusters

- Peaking Focus for Team Sports, Basic Approach
- 25-30% Load Squat jump 1 rep + Drop box Jump / 1 rep...15-20 seconds Rest
- 25-30% Load Squat jump 1 rep + Drop box Jump /1 rep...15-20 seconds Rest
- 25-30% Load Squat jump 1 rep + Drop box Jump / 1 rep...15-20 seconds Rest
- 25-30% Load Squat jump 1 rep +Drop box Jump / 1 rep
- Rest 2-3 minutes, then repeat for a total of 1 to 3 sets

Potential Clusters

- Peaking Focus for Team Sports, Advanced Athletes
- 25-30% Load Squat jump/1 rep + Drop box Jump/1 rep + Acc. Band Jump/1 rep...15-20 seconds Rest
- 25-30% Load Squat jump/1 rep + Drop box Jump/1 rep + Acc. Band Jump/1 rep...15-20 seconds Rest
- 25-30% Load Squat jump/1 rep + Drop box Jump/1 rep + Accelerated Band Jump/1 rep
- Rest 2-3 minutes, then repeat for a total of 2 to 4 sets

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