

# NSCA COACHES CONFERENCE

JANUARY  
3 - 5, 2018

CHARLOTTE  
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 **NSCA**<sup>®</sup>  
NATIONAL STRENGTH AND  
CONDITIONING ASSOCIATION



# Conflict of Interest Statement

- **I have no actual or potential conflict of interest in relation to this presentation.**

“Some people feel the rain .. Others just get wet” – Bob Marley



# Our Model

Corrective Movement

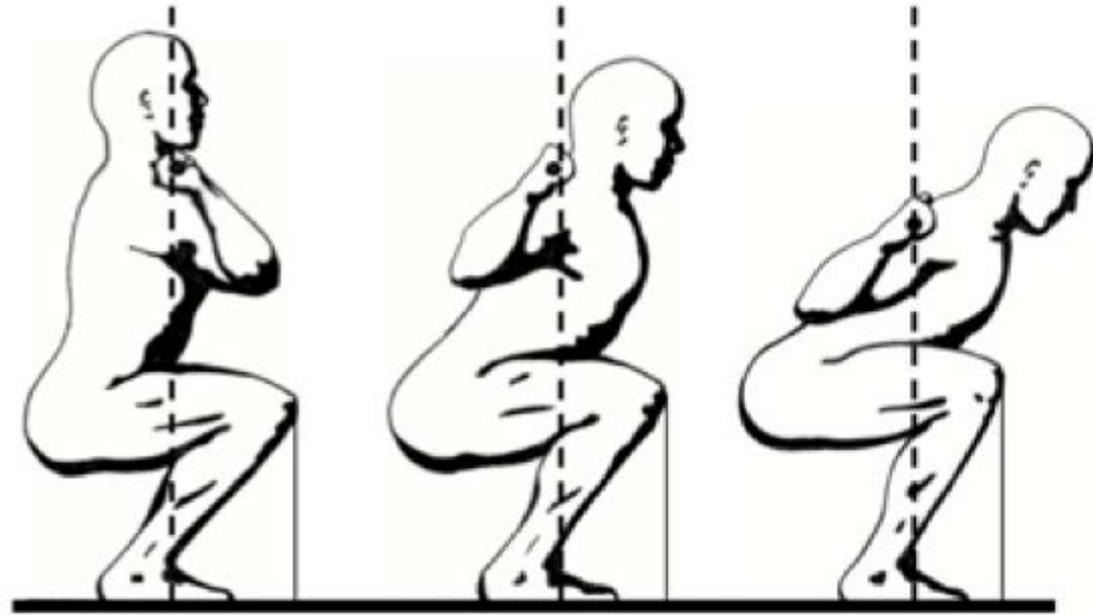
Tempo Training

Heart Rate Based Training

5/3/1  
Relative Intensity  
Variable Body Types

# Consider what is required to Squat

1. Ankle Mobility
2. Knee Stability
3. Hip Mobility
4. Lumbar Spine Stability
5. Thoracic Spine Mobility



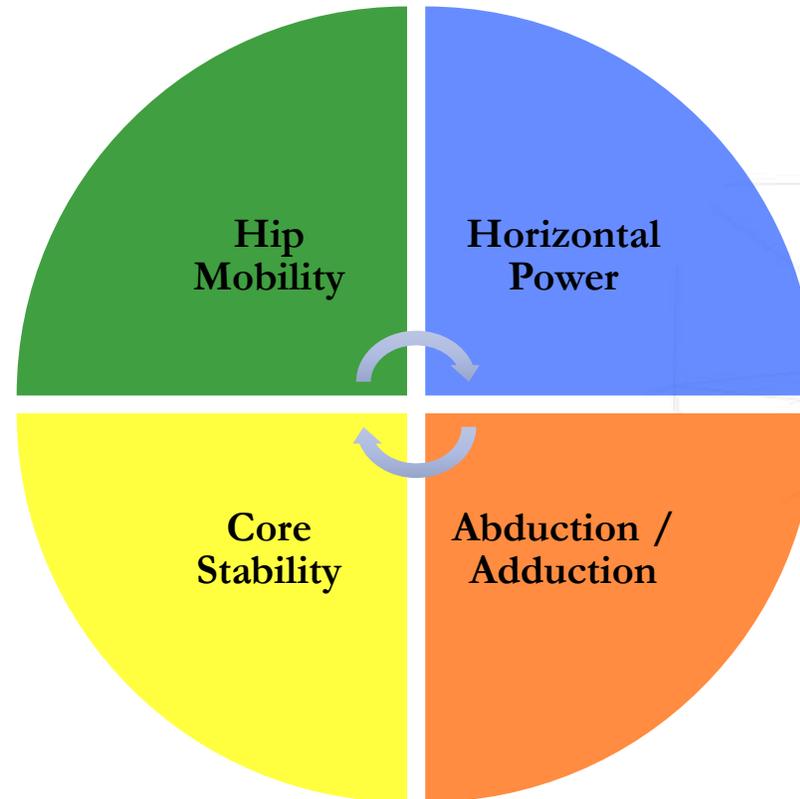
Think of it in terms of links in a chain that react simultaneously in order for a smooth movement pattern to occur.

# Implementing Corrective Movement

- Choose corrective movements based on common coaching points.
- Limit the number of working concepts.
- Implement during the early rounds as warm up to greater loads.

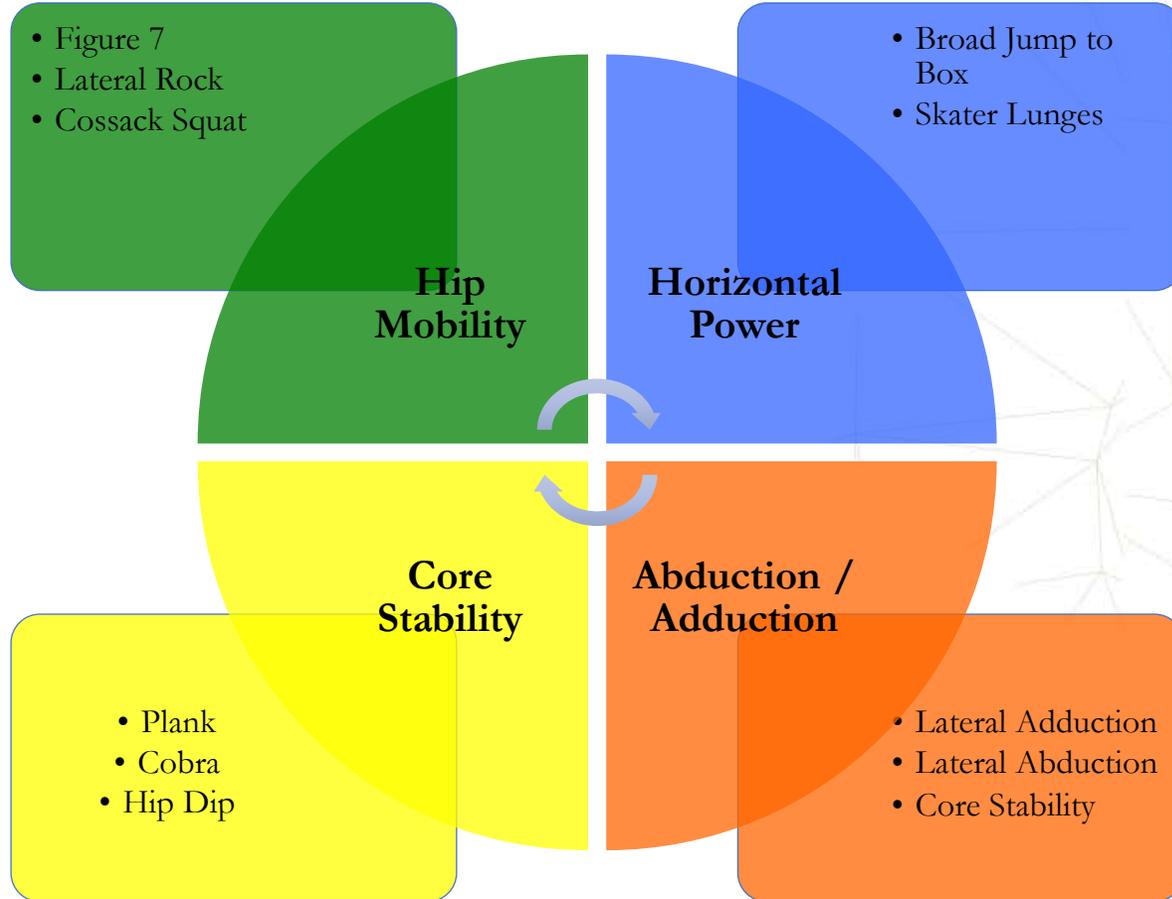
# Lower Complex

(Squat, Deadlift, Variations)



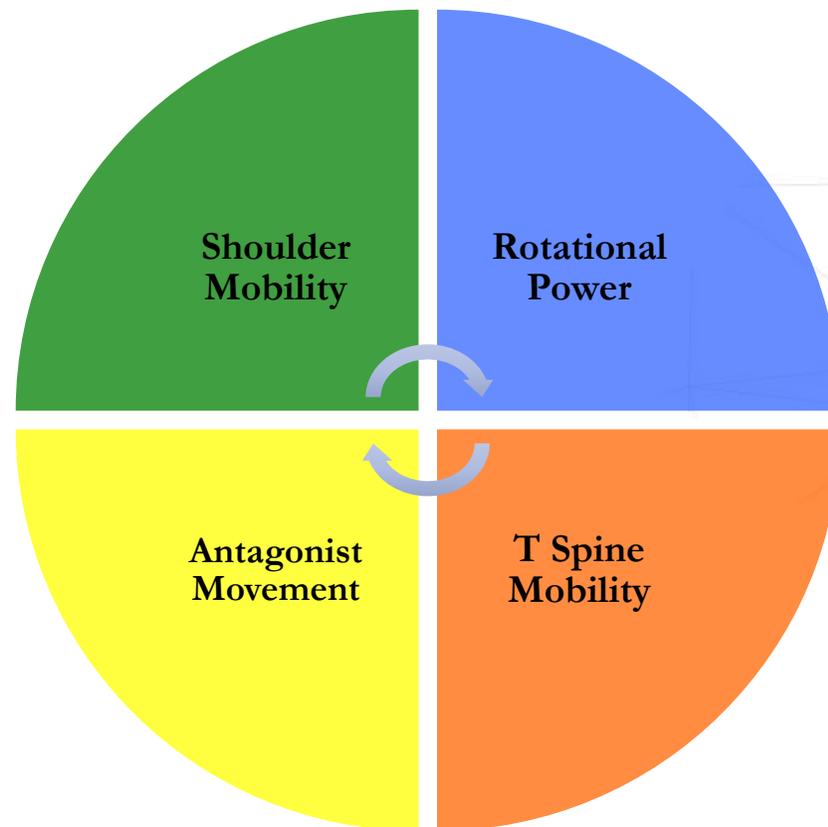
# Lower Complex

(Squat, Deadlift, Variations)



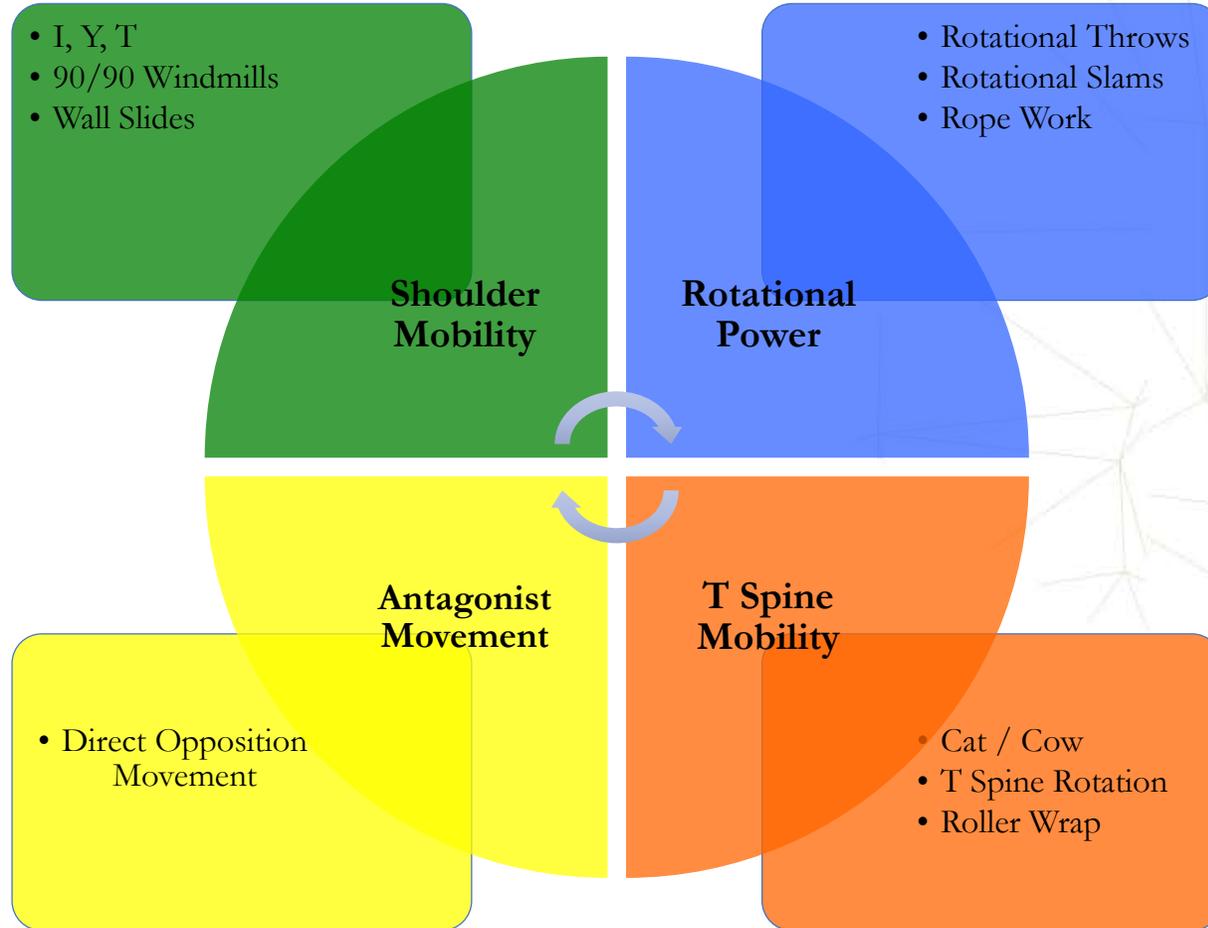
# Upper Complex

(Upper Pushes, Pulls, Variations)



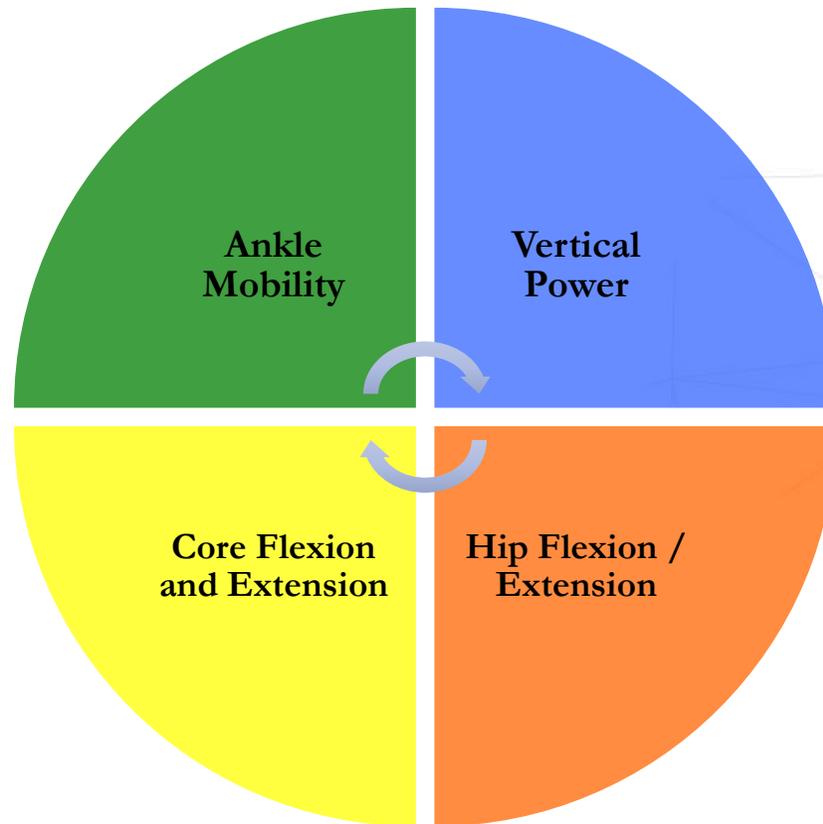
# Upper Complex

(Upper Pushes, Pulls, Variations)



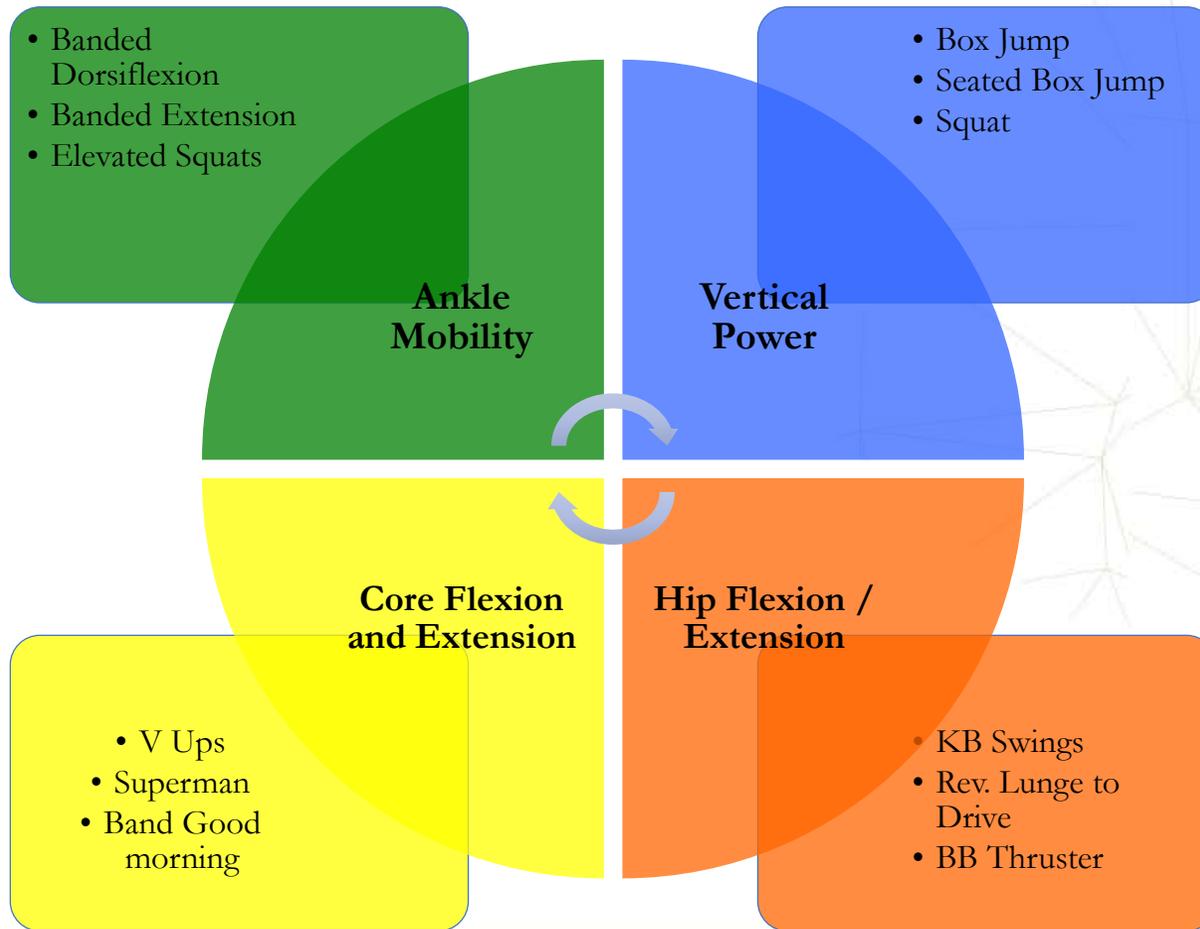
# Olympic Total

(Cleans, Snatches, Variations)



# Olympic Total

(Cleans, Snatches, Variations)



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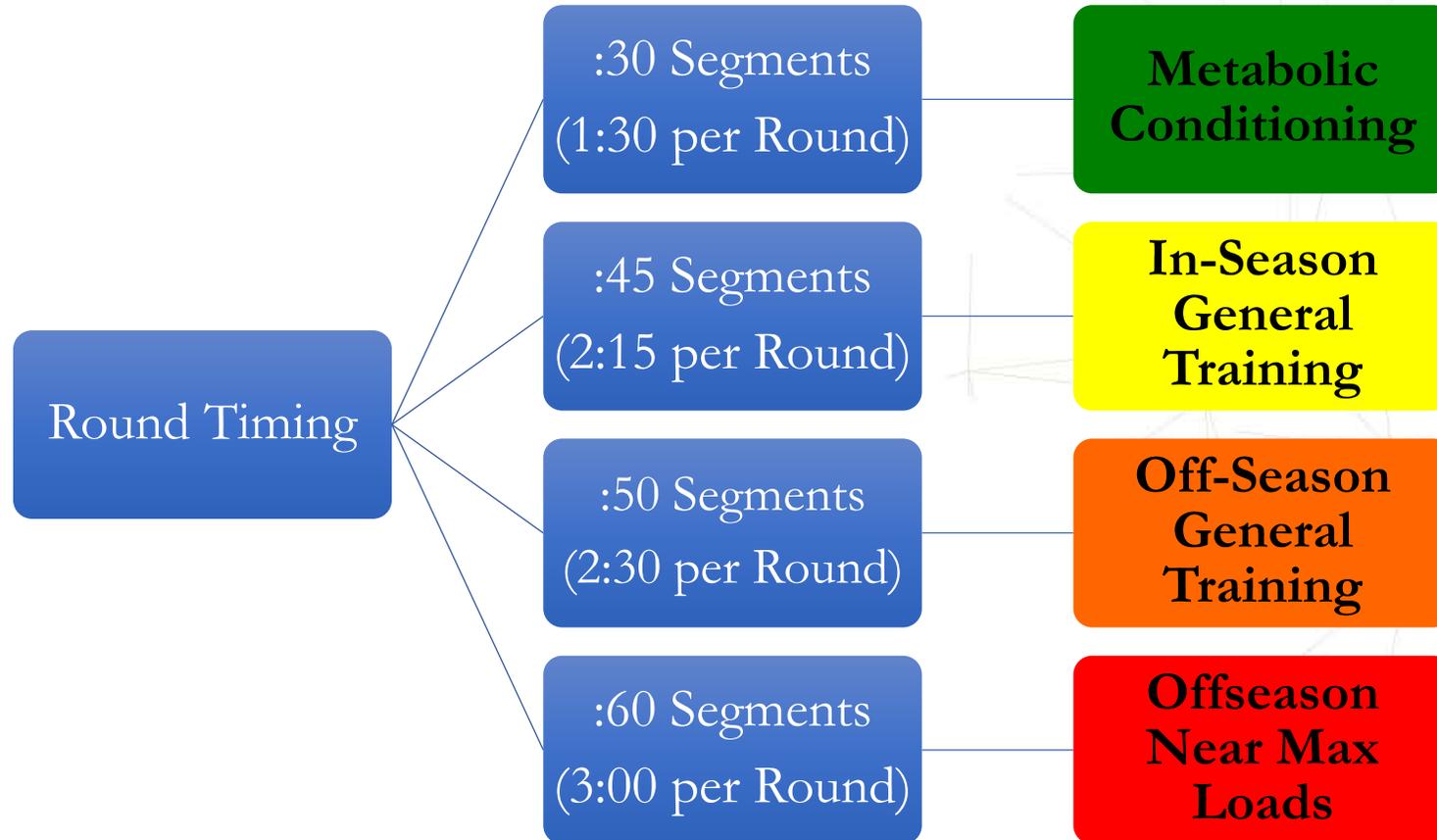
Relative Intensity

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# Tempo Training

- Timing broken down into individual segments.
- Segments last between :30 and :60 seconds.
- 3 Consecutive segments constitute a round.
- Utilize a timer to maintain pace
  - (Boxing Timer Pro app.)
- 2 - 3 Minute recovery between each complete circuit.

# Segment Timing



30 Sec. Intervals – 1:00 Min. Recovery

2 Rounds (Sets) – 3:00

3 Rounds – 4:30

4 Rounds – 6:00

5 Rounds – 7:30

45 Sec. Intervals – 1:30 Min. Recovery

2 Rounds (Sets) – 4:30

3 Rounds – 6:45

4 Rounds – 9:00

5 Rounds – 11:15

Segment Time Based on  
Recovery Expectation

50 Sec. Intervals – 1:40 Min. Recovery

2 Rounds (Sets) – 5:00

3 Rounds – 7:30

4 Rounds – 10:00

5 Rounds – 12:30

60 Sec. Intervals – 2:00 Min. Recovery

2 Rounds (Sets) – 6:00

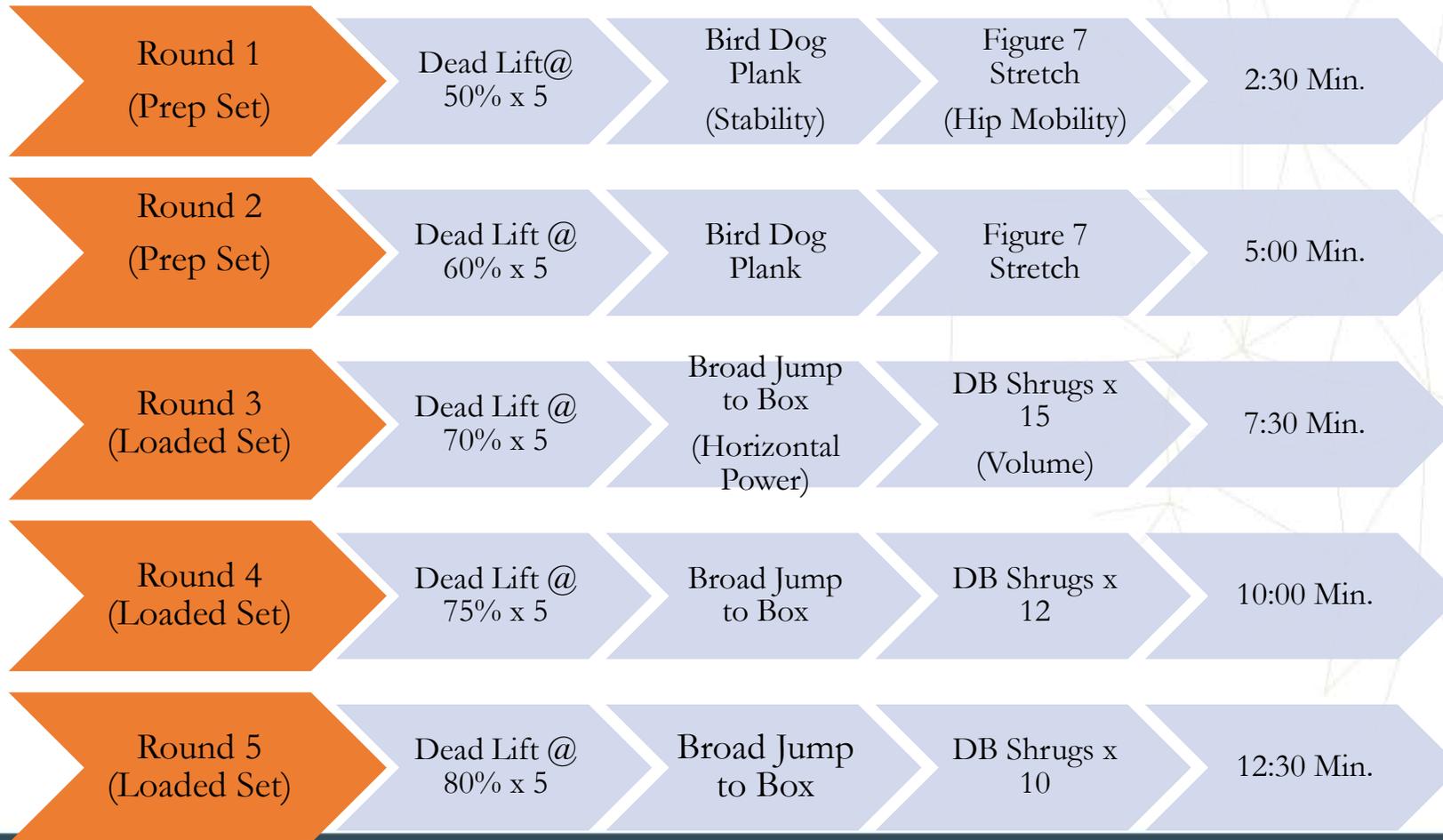
3 Rounds – 9:00

4 Rounds – 12:00

5 Rounds – 15:00

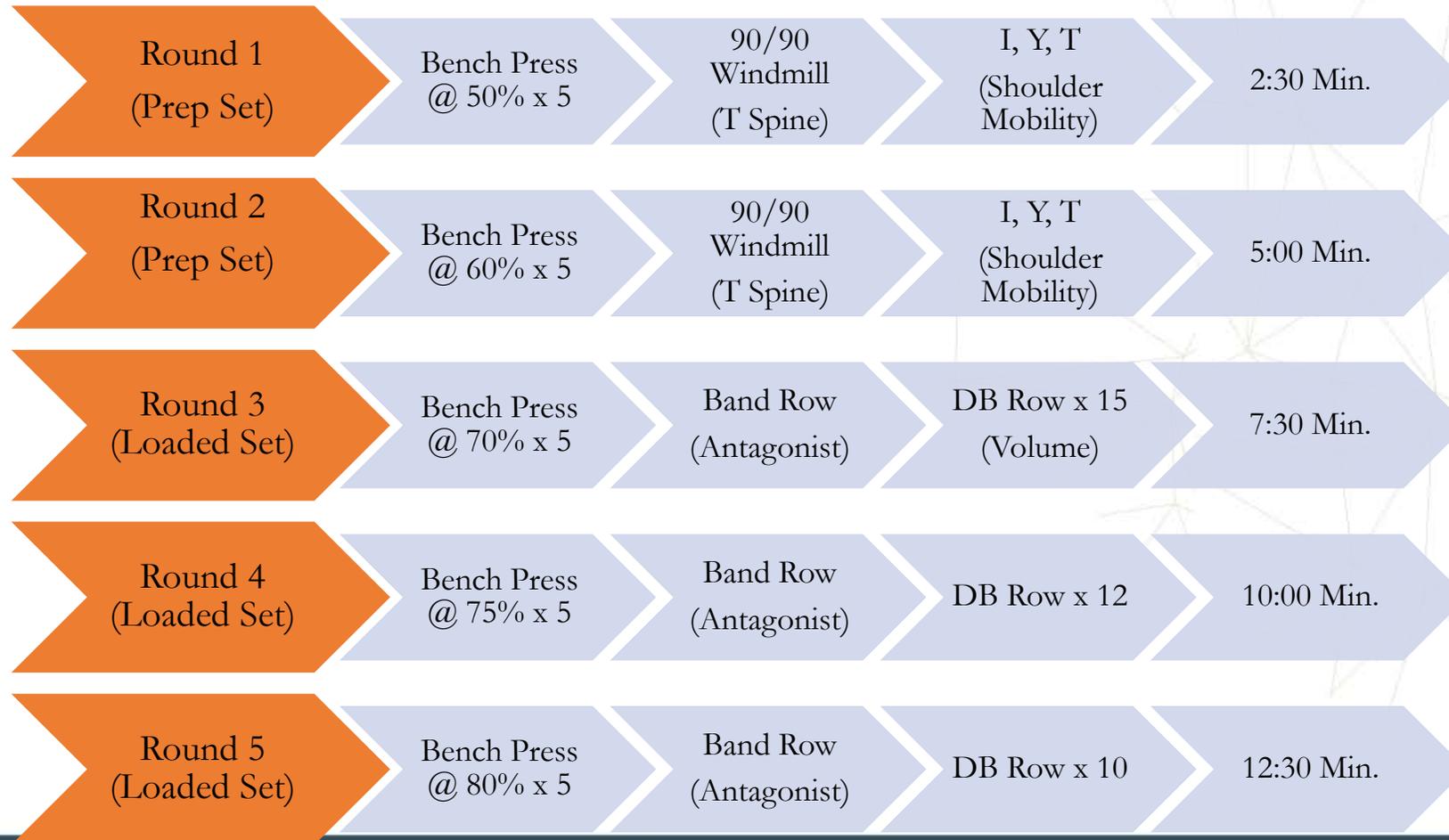
# Lower Complex Model

50 Sec. Intervals – 1:40 Min. Recovery



# Upper Push / Pull Model

50 Sec. Intervals – 1:40 Min. Recovery



Corrective Movement

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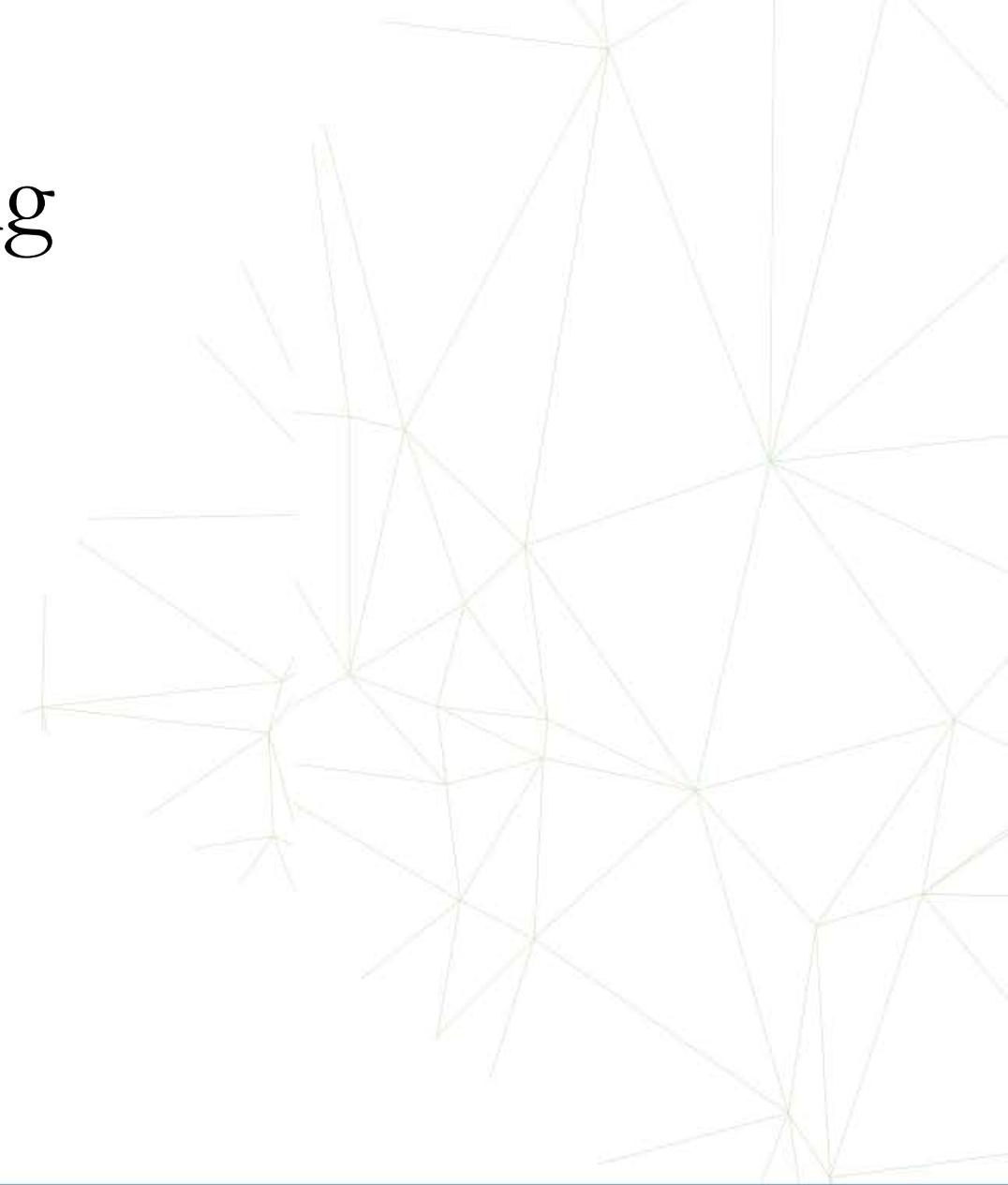
# Heart Rate Training

- Objective gauge of exertion during exercise.
- Allows correct intensity for desired results.
- Prevents overtraining / undertraining.
- Positive impact on body composition.
- Positive impact on health.



# Types of Heart Rate Training

- High intensity interval training.
- Steady state cardio training.
- Endurance athlete training.
- Cardiac rehabilitation.



# Calculating Max Heart Rate

- Age based formula:  $220 - \text{age}$ .
- Karvonen Formula:  $(\text{Max HR} - \text{RHR}) * \% \text{ Intensity} + \text{RHR}$
- VO2 Max
- Cardiac Stress Test
- Self administered protocols.

# Training Zones

## MAXIMUM

- 90 – 100% of max HR (0 – 2 Minutes in duration)
- 0 – 2 Minutes in duration

## HARD

- 80 – 89% of max HR (2 – 5 Minutes in duration)
- Increases anaerobic tolerance / Increases high speed endurance

## MODERATE

- 70 – 79% of max HR (5 – 40 Minutes in duration)
- Enhances aerobic power / Increase blood circulation

## LIGHT

- 60 – 69% of max HR (40 – 80 Minutes in duration)
- Increases aerobic endurance / Increases fat metabolism

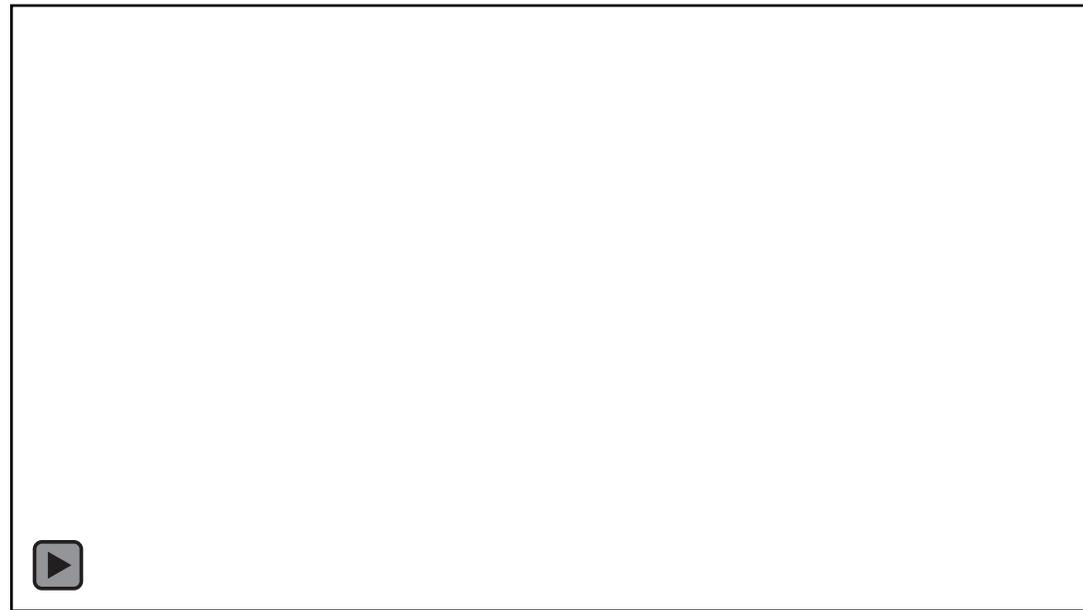
## VERY LIGHT

- 50 – 59% of max HR (20 – 40 Minutes in duration)
- Speeds recovery after heavier exercise

# Training Application



# Training Application



# Performance Application

<u>Heart Rate</u>	<u>% Max</u>	<u>Avg. Reaction Time</u>	<u>Contacts</u>	<u>Delay</u>	<u>Errors</u>
134	70	0.58	10	1.2	1
144	75	0.53	10	1.2	0
153	80	0.54	10	1.2	0
162	85	0.56	10	1.2	0
167	87	0.61	10	1.2	0
172	90	0.65	10	1.2	2
177	92	0.65	10	1.2	2

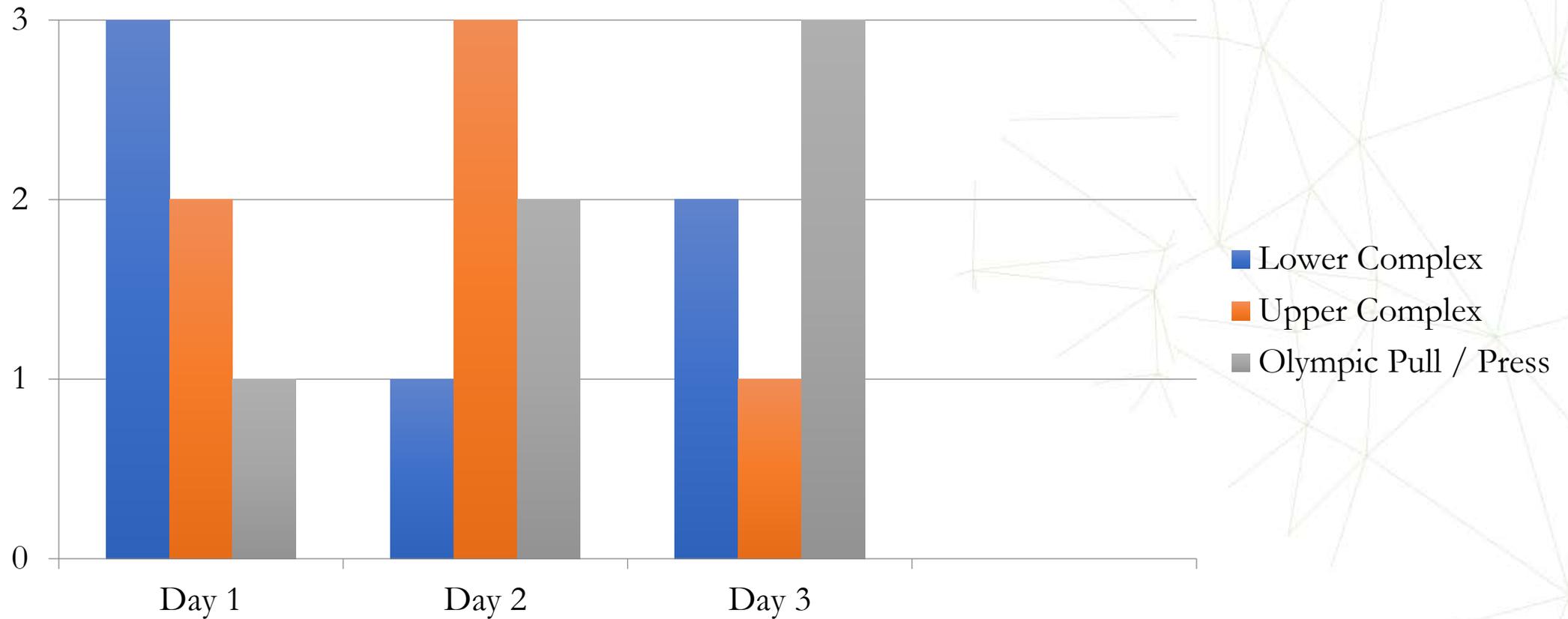
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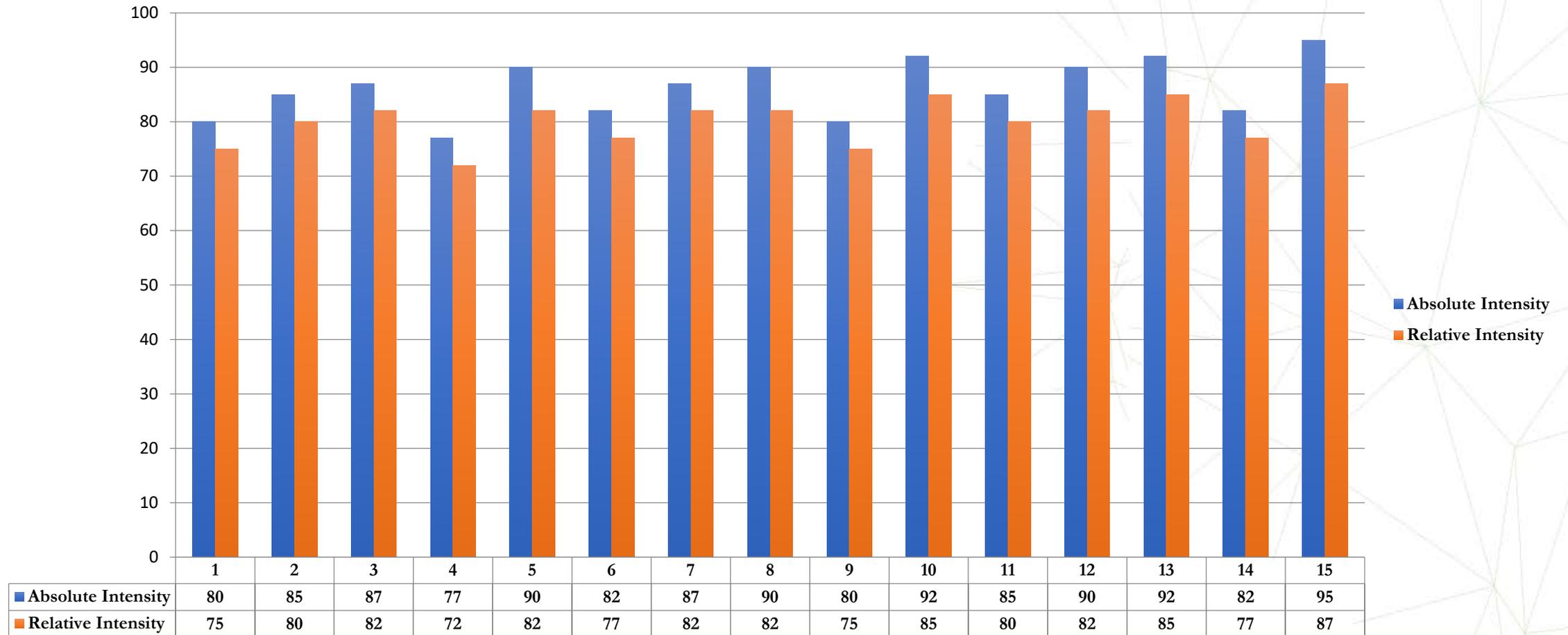
# Rotating Training Intensity



# Relative Intensity

	Max	x 2	x 3	x 4	x 5	x 6	x 8	x 10	
Max	100	95	92	90	87	85	80	75	True 1 Rep Test Sets
Heavy +	97	92	90	87	85	82	80	72	Test Sets
Heavy +	95	90	87	85	82	80	77	70	(1 - 3 Rep Max Sets)
Heavy	92	87	85	82	80	77	75	70	Test Sets (3+ Rep Max Sets)
Heavy	90	85	82	80	77	75	72	65	Occasional Loaded Work
Moderate +	87	85	82	80	77	75	70	65	Majority of Programmed Loaded Work
Moderate +	85	82	80	77	75	72	70	62	(Occasional Open Sets to Finish)
Moderate	82	80	77	75	72	70	65	60	Majority of Base Strength Work
Moderate	80	77	75	72	70	67	65	57	
Light +	77	75	72	70	67	65	62	55	Unloading Weeks
Light +	75	72	70	67	65	62	60	55	Beginner Base Work
Light	72	70	67	65	62	62	60	50	Super Unload and Recovery Work
Light	70	67	65	62	60	57	55	50	
Too light	67	65	62	60	57	57	55	50	Rarely Used In Cycles
Too light	65	62	60	57	57	55	52	45	

# Absolute vs. Relative Intensity



# Variable Body Types

# An often overlooked factor:

## Segmental Disproportion

1. The longer the femur, the more work required to squat an equal load.
2. Longer femurs tend to lead to an large forward lean as a counterbalance.
3. Most generally affects male athletes 6'4" and taller and female athletes 5"10 and taller.





	<u>BENCH PRESS</u>	<u>WEIGHT</u>	<u>REPS</u>	<u>MAX</u>	<u>G</u>	<u>J</u>	<u>REACH</u>	<u>W</u>	<u>BW</u>	<u>POWER</u>
1	CONKLIN	225	25	413	9.8	55125	26	1433250	245	5850
2	DOWELL	225	25	413	9.8	55125	22.5	1240312.5	217.3	5708
3	MYERS	185	26	345	9.8	47138	24	1131312	210.7	5369
4	MILLS, K.	185	27	352	9.8	48951	26	1272726	244.2	5212
5	MITCHELL	185	23	327	9.8	41699	26	1084174	215.8	5024
6	LACKEY	225	22	390	9.8	48510	25.5	1237005	248.6	4976
7	GALLAHAN	225	20	375	9.8	44100	27	1190700	250.7	4750
8	BRANNON	225	22	390	9.8	48510	24	1164240	251.8	4624
9	PRICE	185	19	302	9.8	34447	24	826728	181.7	4550
10	HATCHER	185	18	296	9.8	32634	23	750582	198	3791
11	MOORE	225	16	345	9.8	35280	23	811440	224.1	3621
12	OGLES, J.	185	17	290	9.8	30821	24	739704	206.8	3577
13	FLORES	185	12	259	9.8	21756	23.5	511266	177.9	2874
14	CHANEY	185	13	265	9.8	23569	23	542087	197.7	2742
15	MASLIN	185	12	259	9.8	21756	24	522144	191.5	2727
16	HENSLEY	225	12	315	9.8	26460	24	635040	236.8	2682
17	OGLES, D.	185	6	222	9.8	10878	23	250194	181.8	1376
18	MILLS, J.	225	3	248	9.8	6615	23.5	155452.5	181	859

# Thank You.

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