

ACHIEVING GREATNESS

# NSCA COACHES CONFERENCE

JANUARY  
3 - 5, 2018

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# 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



```
graph TD; A[Corrective Movement] --> B[Tempo Training]; B --> C[Heart Rate Based Training]; C --> D["5/3/1<br/>Relative Intensity<br/>Variable Body Types"]
```

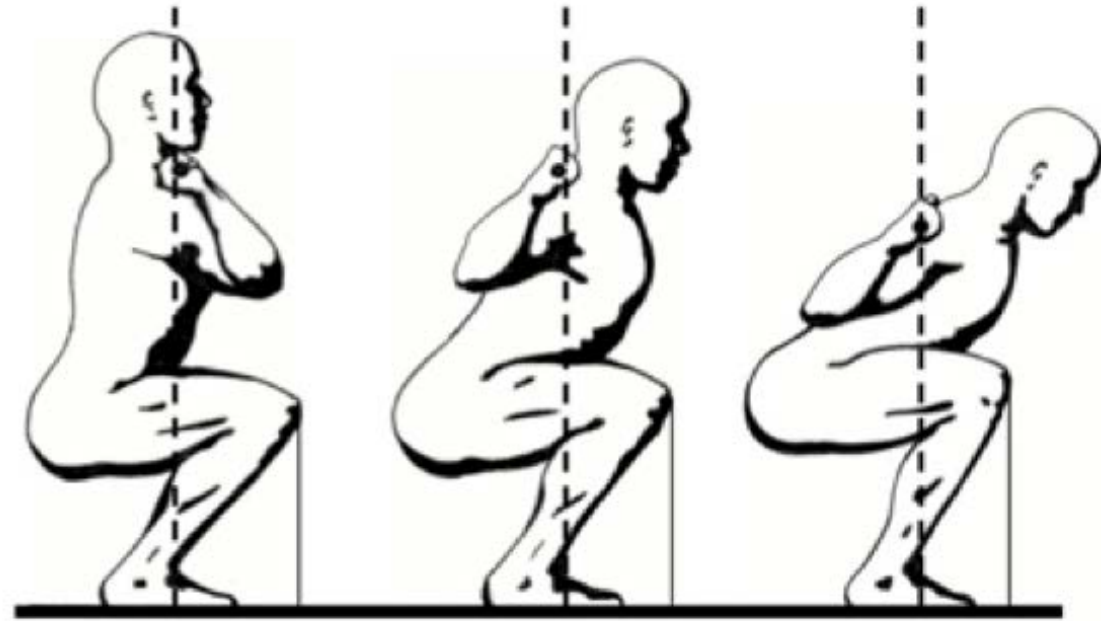
Tempo Training

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



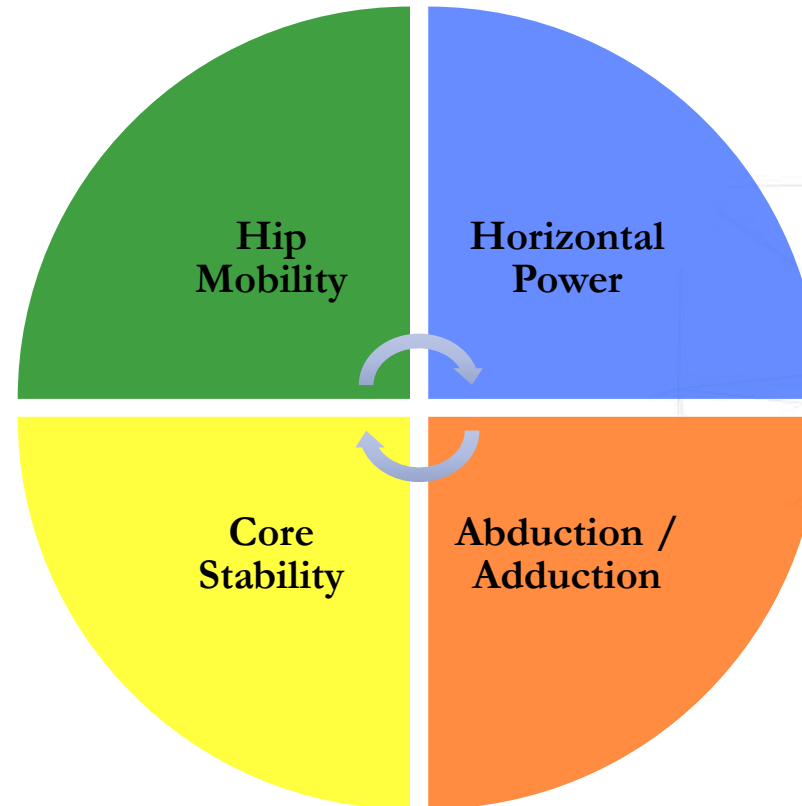
Think of it in terms of links in a chain that react simultaneously in order for a smooth movement pattern to occur.

# 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

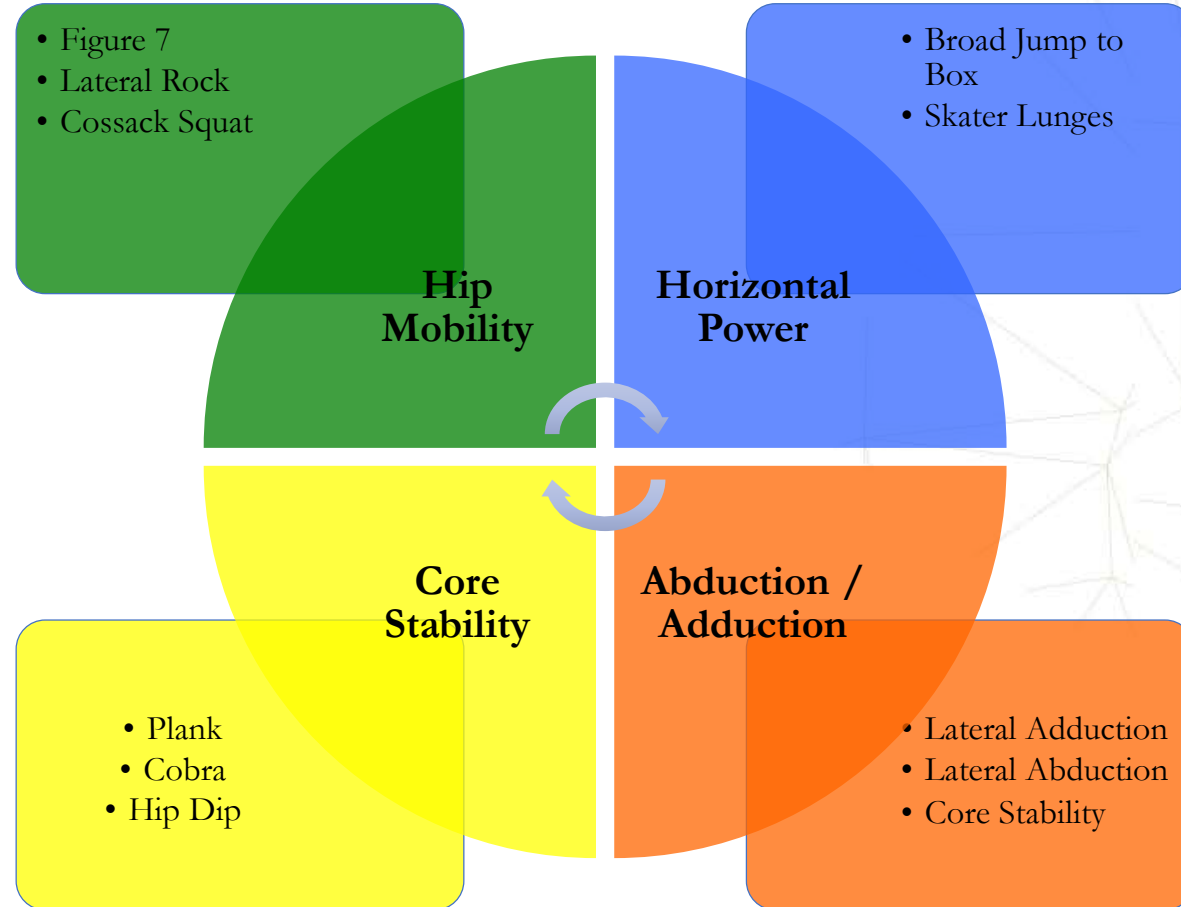
(Squat, Deadlift, Variations)





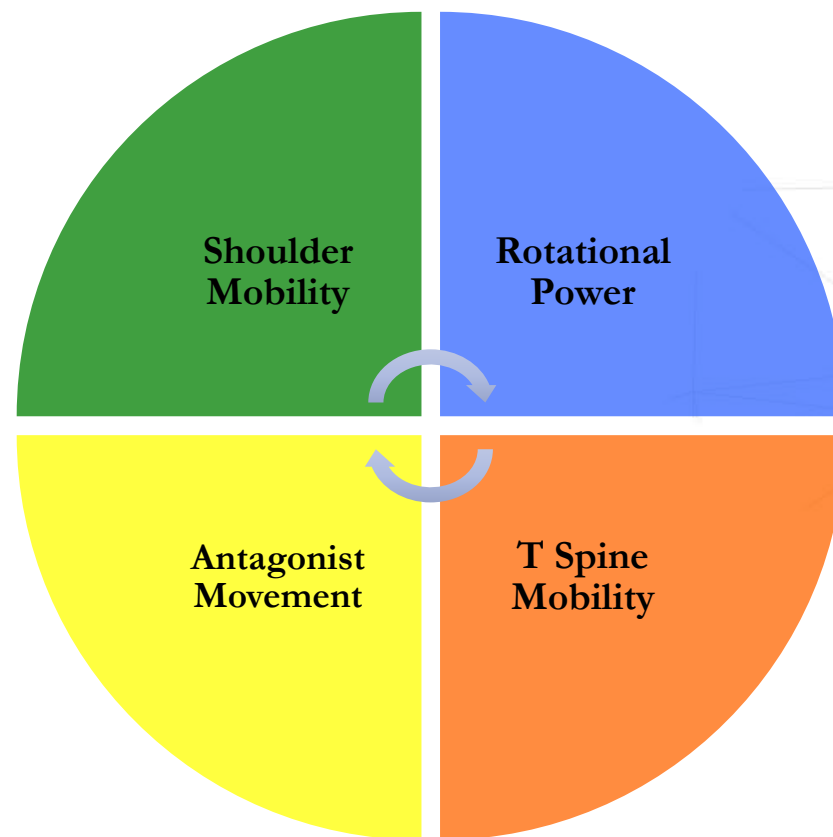
# Lower Complex

(Squat, Deadlift, Variations)



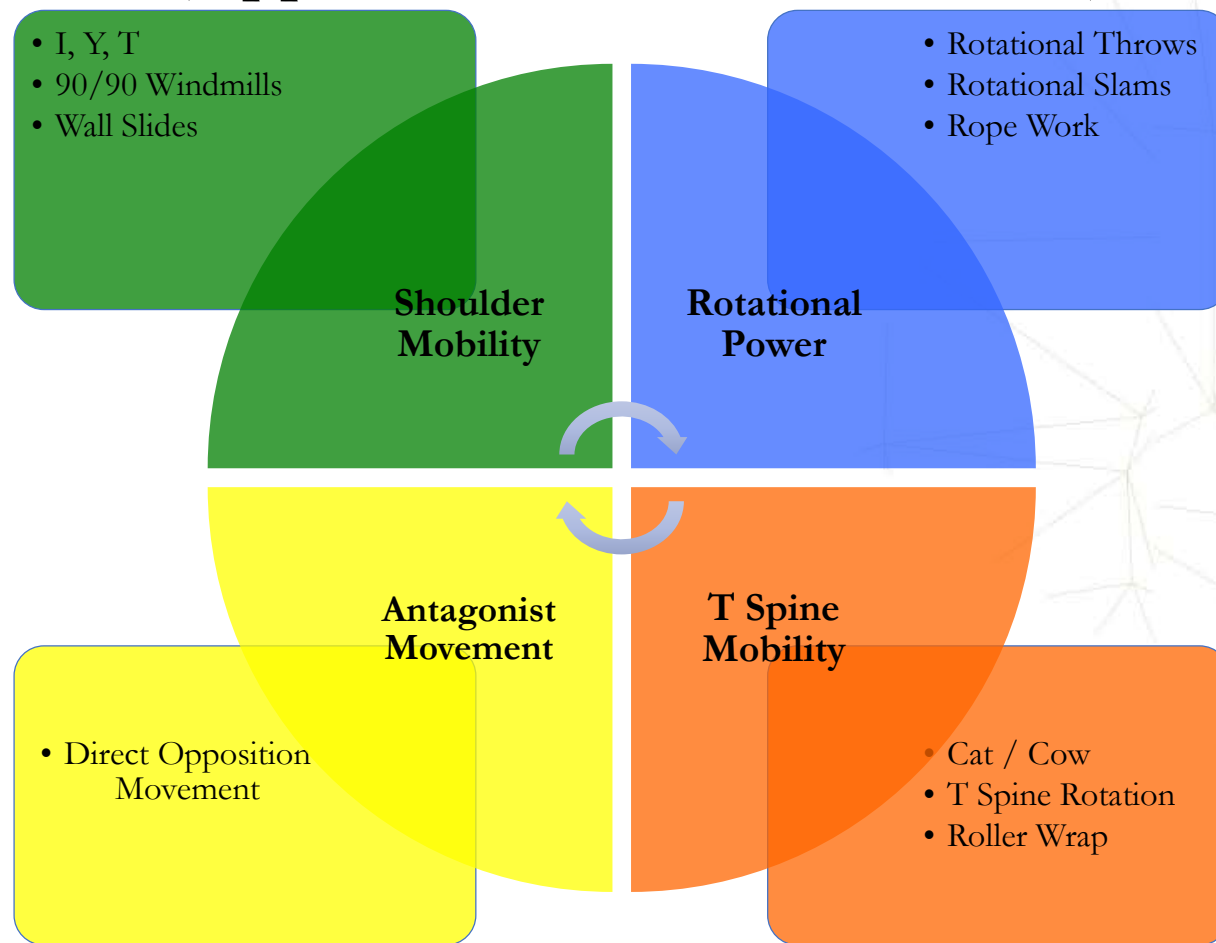
# Upper Complex

(Upper Pushes, Pulls, Variations)



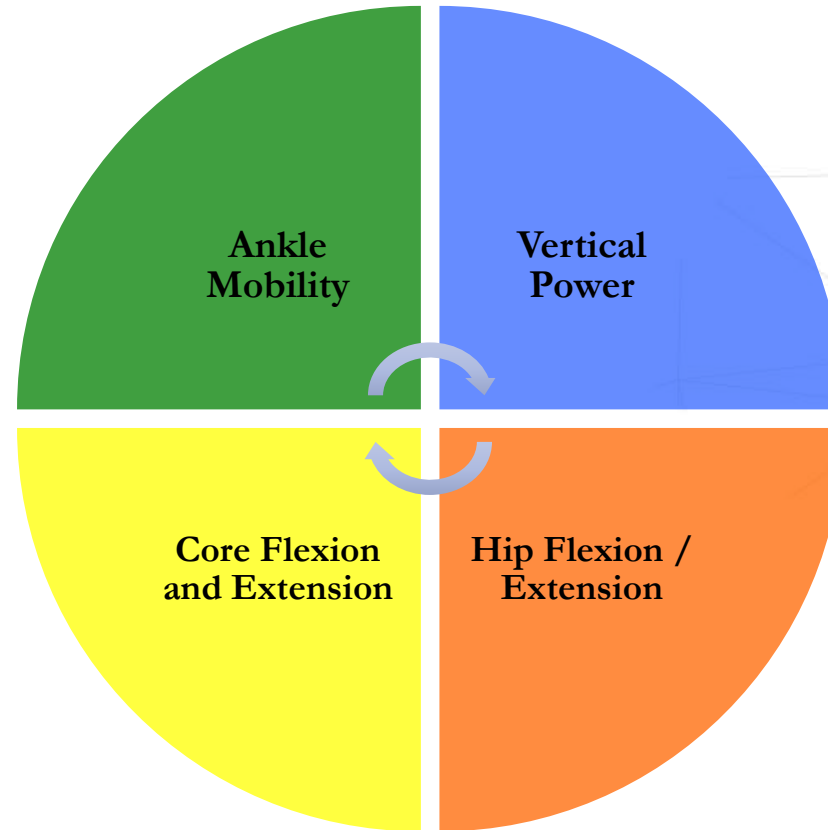
# Upper Complex

(Upper Pushes, Pulls, Variations)



# Olympic Total

(Cleans, Snatches, Variations)



# Olympic Total

(Cleans, Snatches, Variations)





Corrective Movement



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Tempo Training

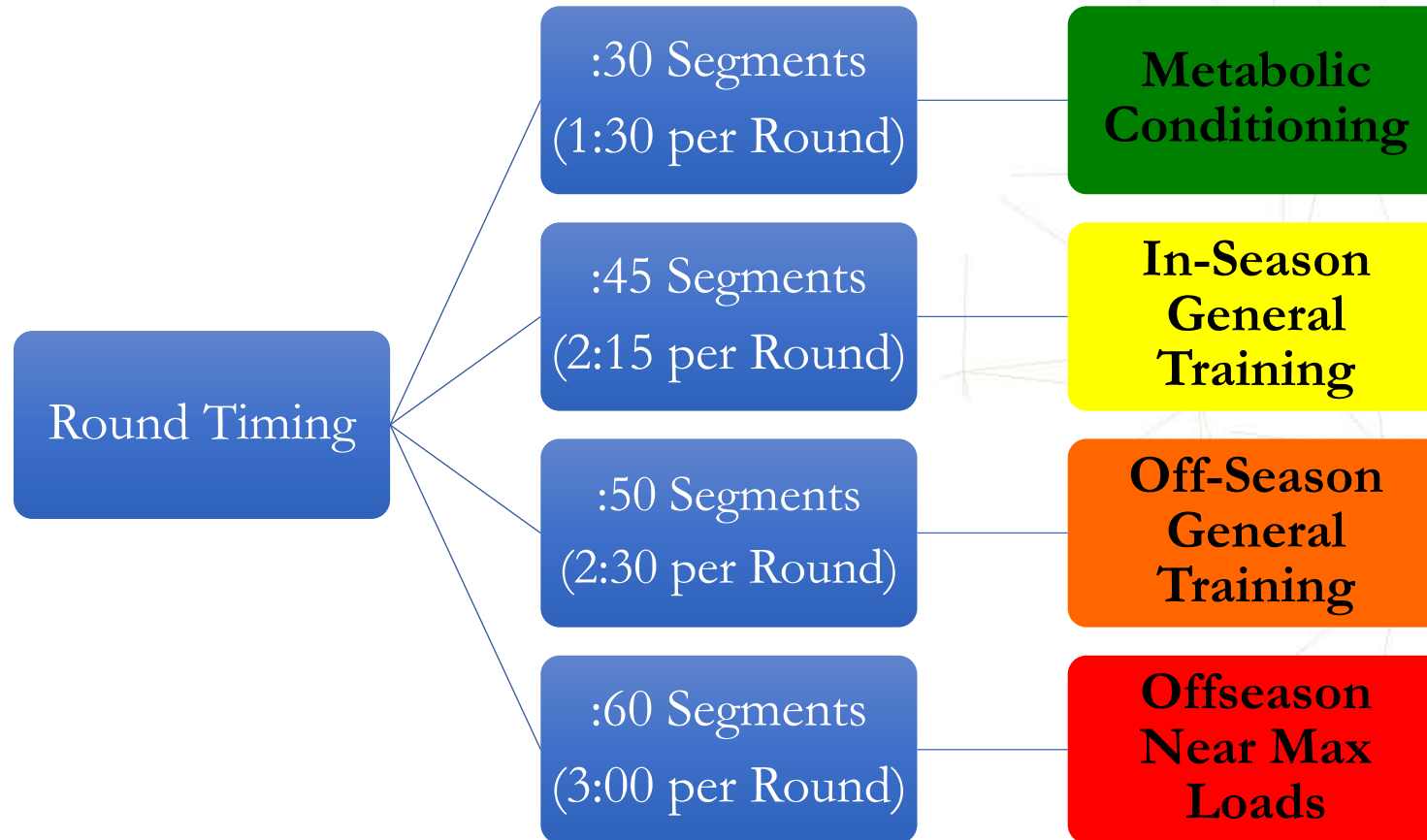
Heart Rate Based Training

5/3/1  
Relative Intensity  
Variable Body Types

# 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

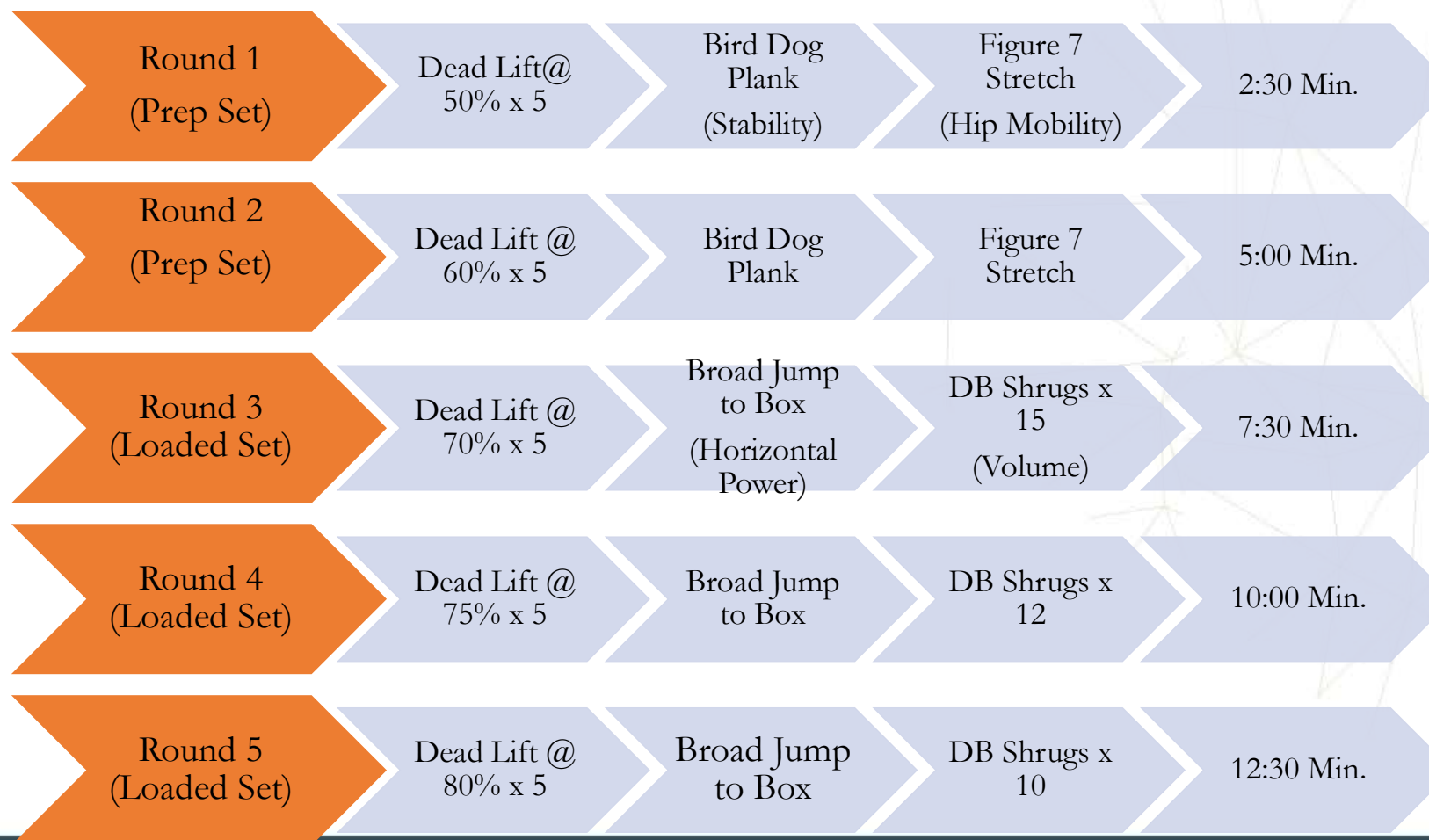
3 Rounds – 9:00

4 Rounds – 12:00

5 Rounds – 15:00

# Lower Complex Model

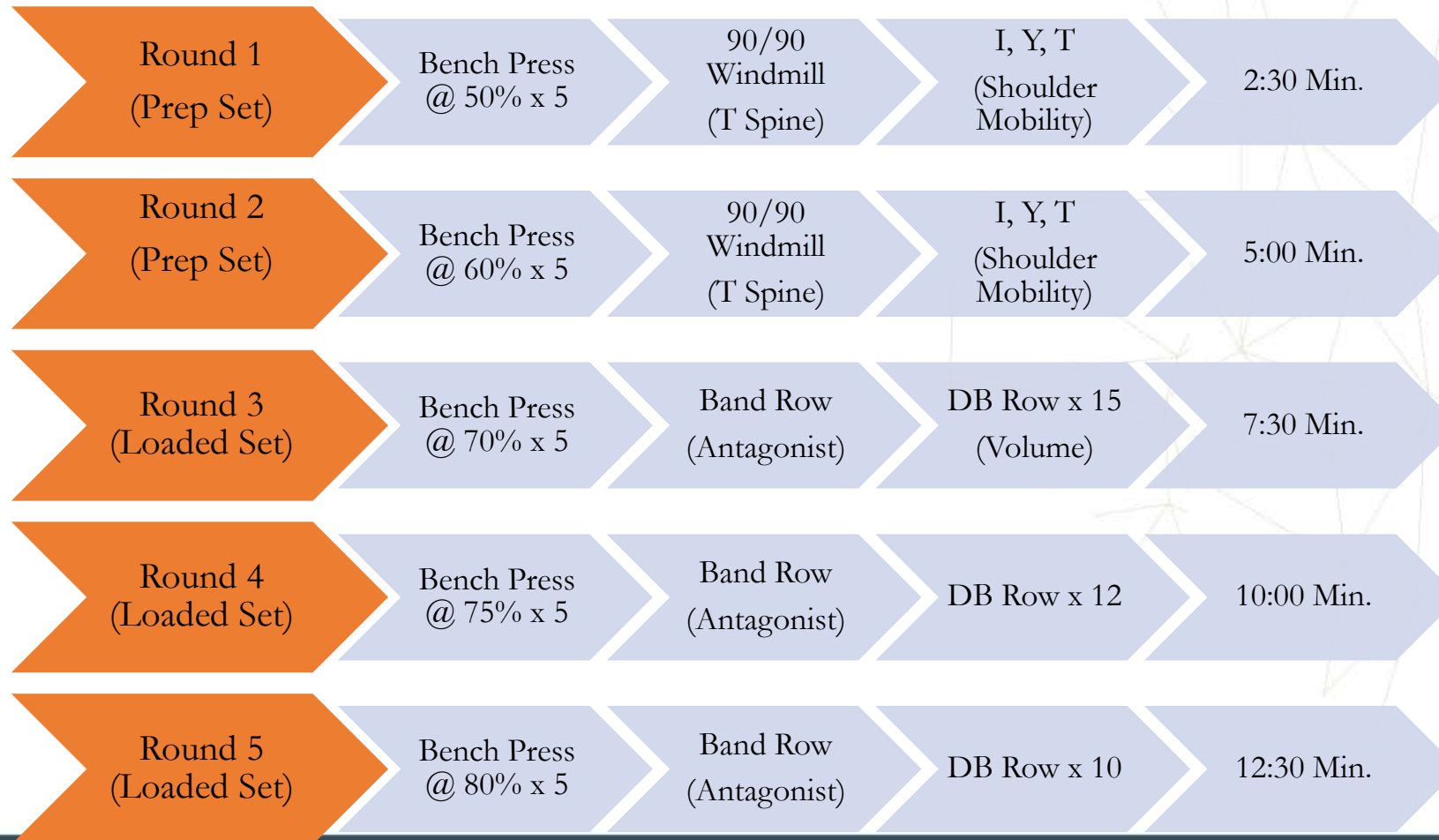
50 Sec. Intervals – 1:40 Min. Recovery





# Upper Push / Pull Model

50 Sec. Intervals – 1:40 Min. Recovery



Corrective Movement



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Tempo Training

Heart Rate Based Training

5/3/1  
Relative Intensity  
Variable Body Types

# 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

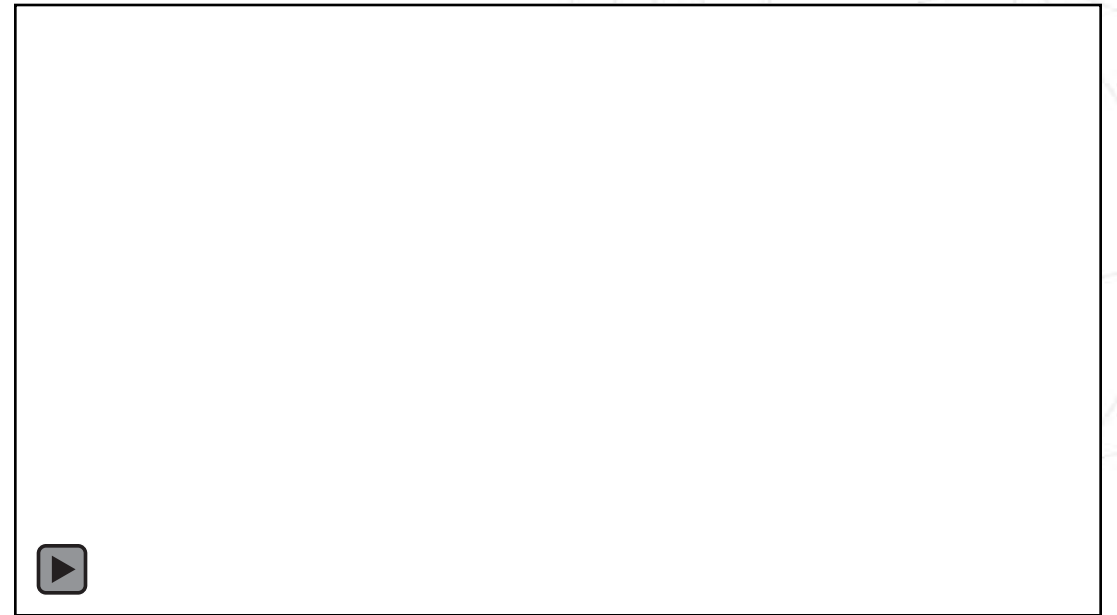
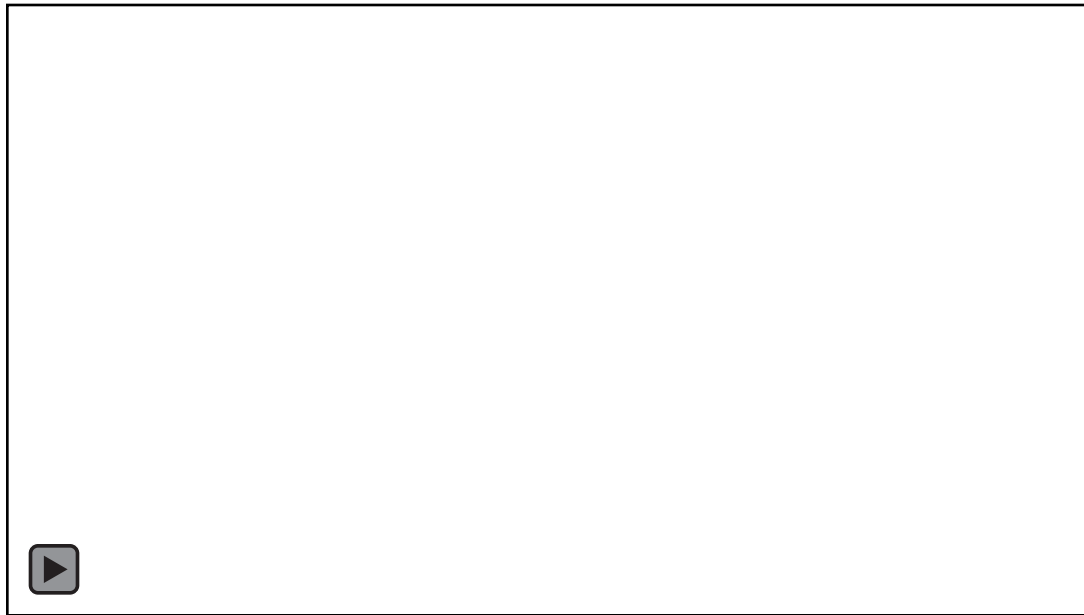
## VERY LIGHT

- 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             |

Corrective Movement



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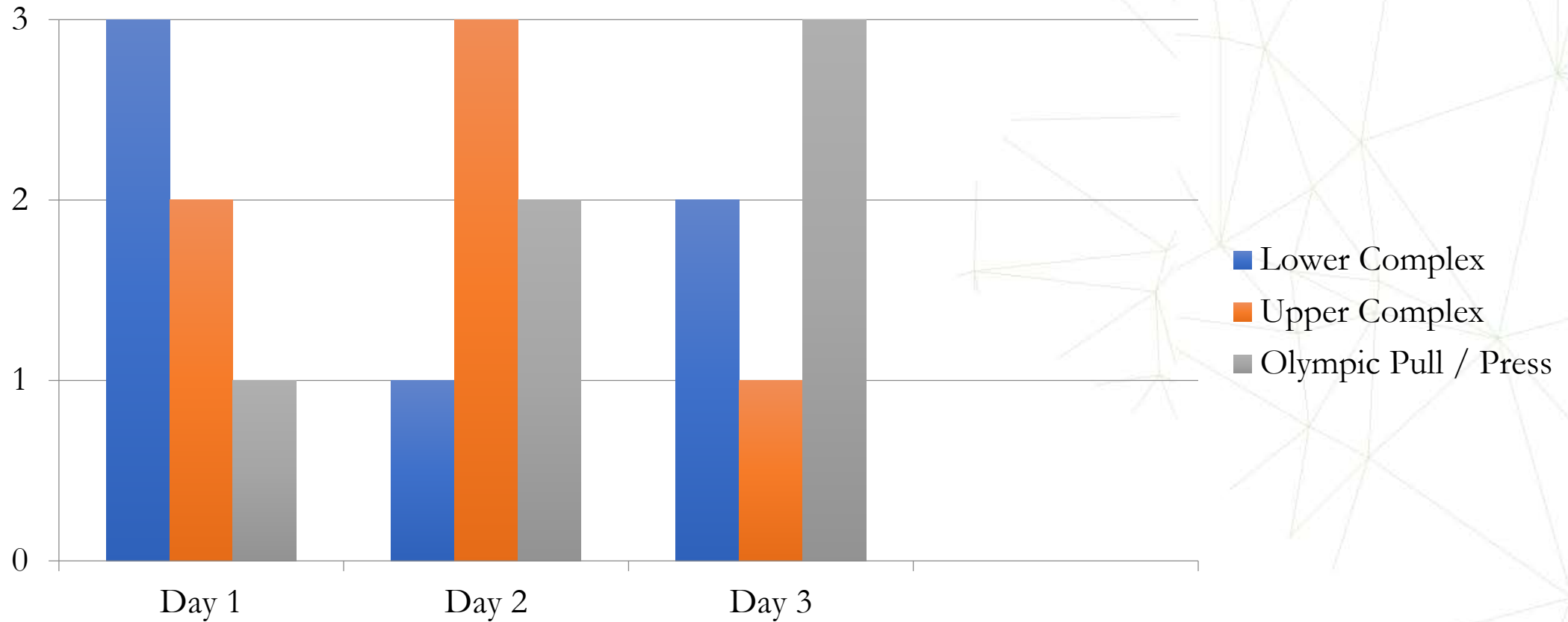
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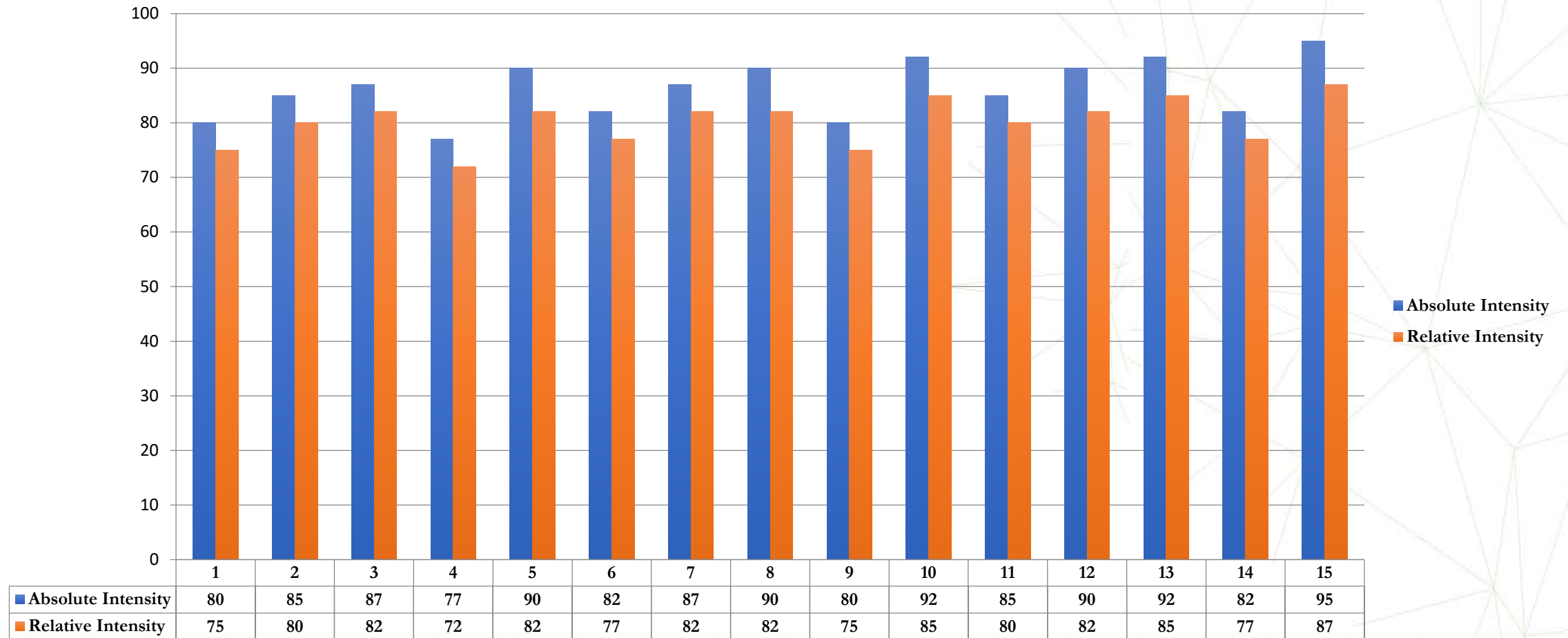
# Rotating Training Intensity



# 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>I</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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