MASS

Comprehensive Program Design and Progression for Strength

Part I: Integration of Periodized and Programming Strategies

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Everything To Cover

- *1. Definition of Terms and Overall Research Results*
- *2. Understanding Research Limitations*
- *3. Integrate "Types"*
- *4. Intros and Tapers*
- *5. Programming vs. Periodization*
- *6. Volume Recommendations*
- *7. Intensity Recommendations*
- *8. Autoregulation Strategies*
- *9. Weekly Volume Allocation*
- *10. Load Progression*
- *11. Programming Strategies and Alterations to the Typical Macrocycle*
- *12. Bodybuilding Examples*
- *13. True peaking examples*
- *14. Overreaching*
- *15. Volume with Low Reps?*

Today's Objectives

-***4 Parts:***

- 1. Definition of Terms and Overall Results

- 2. Various 'Types' of Periodization and Integration of These Types

- 3. Programming Strategies and Alterations to the Typical Macrocycle

- 4. Allocating Weekly Volume Appropriately

HOW TO IMPLEMENT RESEACH INTO PRACTICE?

CONCEPTUALIZE AND INTEGRATE

- **Programming vs. Periodization**
- **Most Studies are Short-Term**
- **Need a Scientific Appreciation and Practical Experience**

Part 1: Definitions and Overall Results

Periodization: Planned manipulation of training variables to maximize adaptations (Buford et al. 2007)

Various **'Types'**

Linear, Undulating, Block

Autoregulation

Non-Periodized: Constant intensity and volume throughout a training cycle. (Fleck 1999)

Meta-Analyses / Systematic Reviews

- **Rhea et al. 2004**

"As a result of this statistical review of the literature, it is concluded that PER training is more effective than Non-PER training for men and women, individuals of varying training backgrounds, and for all age groups. In line with the overload principle, additions to volume, intensity, and frequency result in additional training adaptations."

Meta-Analyses for Maximal Strength

Williams et al. 2017

Periodized Training > Non-Periodized Training:
Effect Size = 0.43

Undulating Models > Traditional or Linear Models:
Effect Size = 0.23

Likely greater effects in trained than untrained

“Higher frequency may be preferred (i.e. 2-3/wk.)”
“Difference between programming and periodziation”
“Linear and Undulating models should be integrated”

Overall Results Are Clear

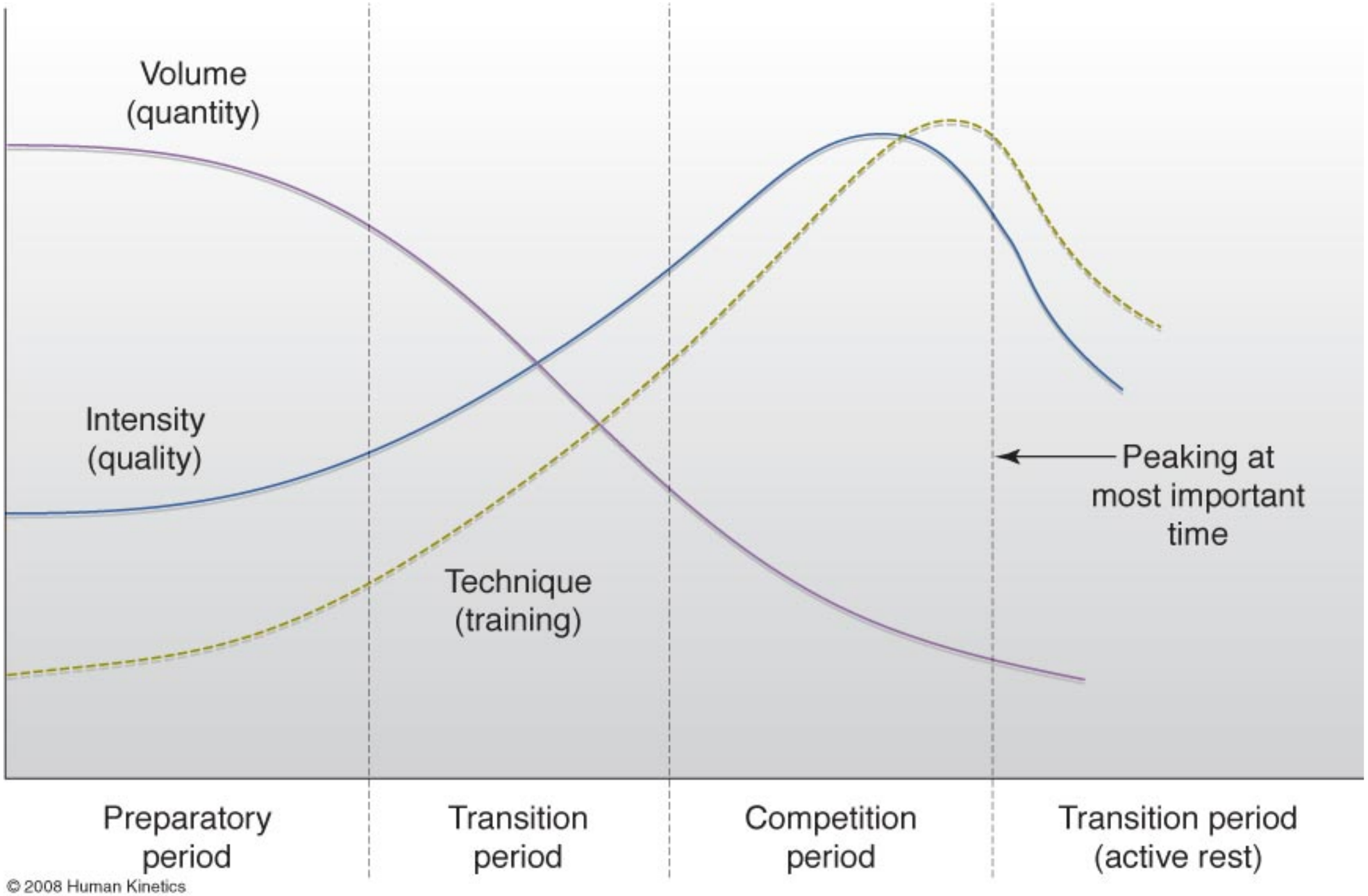
But, more information needed

- Periodization vs. Programming?
- Integration of ***TYPES***: LP, Block, DUP?
- Periodization over the long-term
- Autoregulation (RPE)
- Setting up training blocks and progression
- Training Frequency = 2-3X/wk. per exercise/muscle group, likely 8+ sets for strength and 10+ sets for hypertrophy
- *Limitations of that recommendation?*
- *Volume Allocation During a Week?*

Part 2: **'Types'** of Periodization and Integration of these types

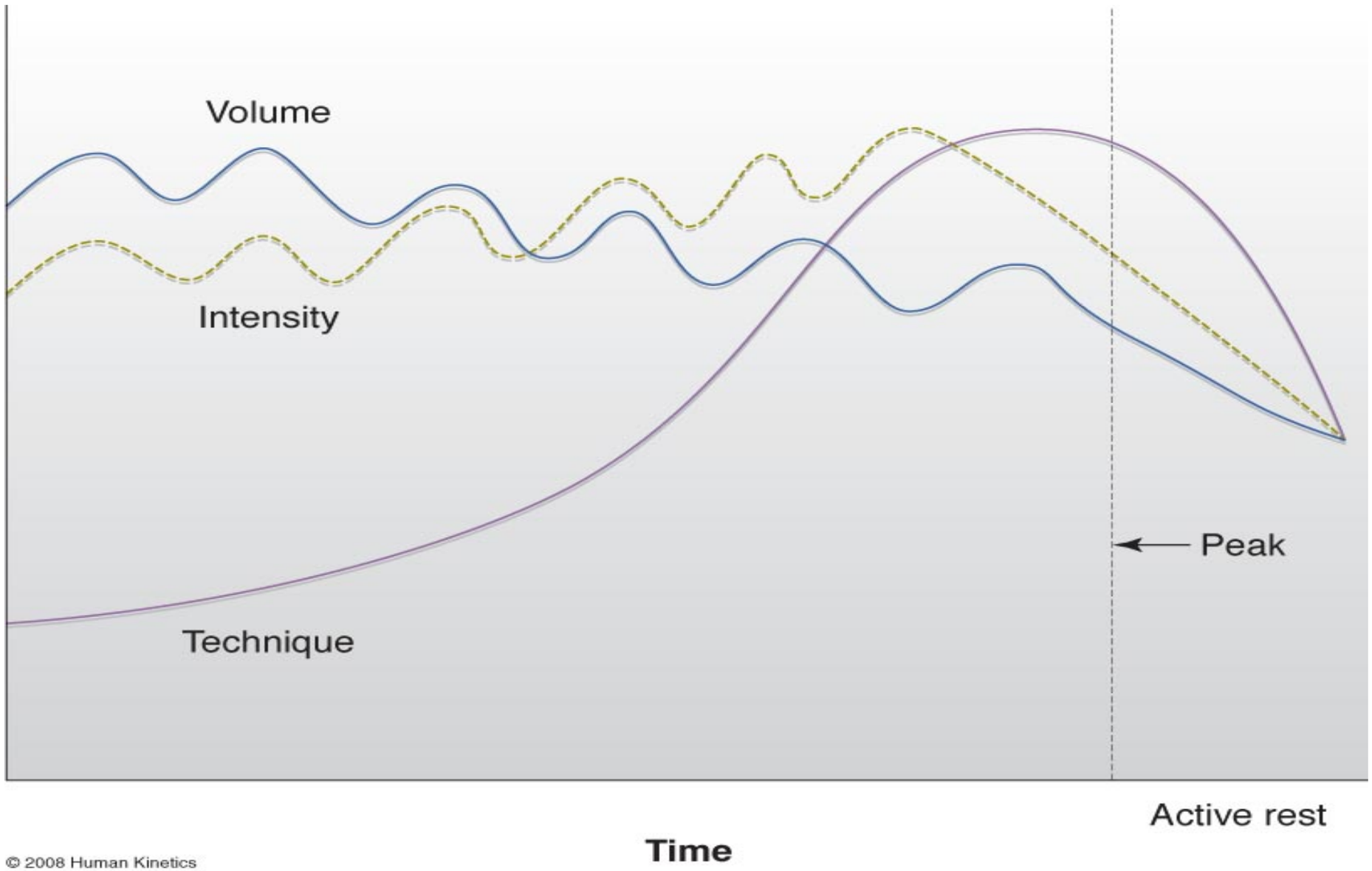
Linear, Block, and DUP are NOT mutually exclusive

Traditional (Linear) Periodization



Stone and O'Bryant, 1987.

Non-Linear/Undulating Model



Stone and O'Bryant, 1987.

DUP Design

DUP = Daily Undulating Periodization

DUP	Day I	Day II	Day III
Squat	Hypertrophy	Power	Strength

DUP = Daily Undulating Programming

DUP	Day I	Day II	Day III
Squat	4X8	5X6	6X4

Block Periodization for Strength

- ***Basic Block Periodization***
  - Preparatory Phase
  - Multiple Mesocycles
    - Volume Blocks (How to decide reps?)
- Peak Phase
  - Multiple Mesocycles
  - Intensity Blocks (How to decide reps?)

RPE For Resistance Training/ Repetitions in Reserve

RESISTANCE EXERCISE-SPECIFIC RATING OF PERCIEVED EXERTION (RPE)

Rating	*Description of Perceived Exertion*
10	*Maximum effort*
9.5	*No further repetitions but could increase load*
9	*1 repetition remaining*
8.5	*1-2 repetitions remaining*
8	*2 repetitions remaining*
7.5	*2-3 repetitions remaining*
7	*3 repetitions remaining*
5-6	*4-6 repetitions remaining*
3-4	*Light effort*
1-2	*Little to no effort*

Zourdos et al. 2016

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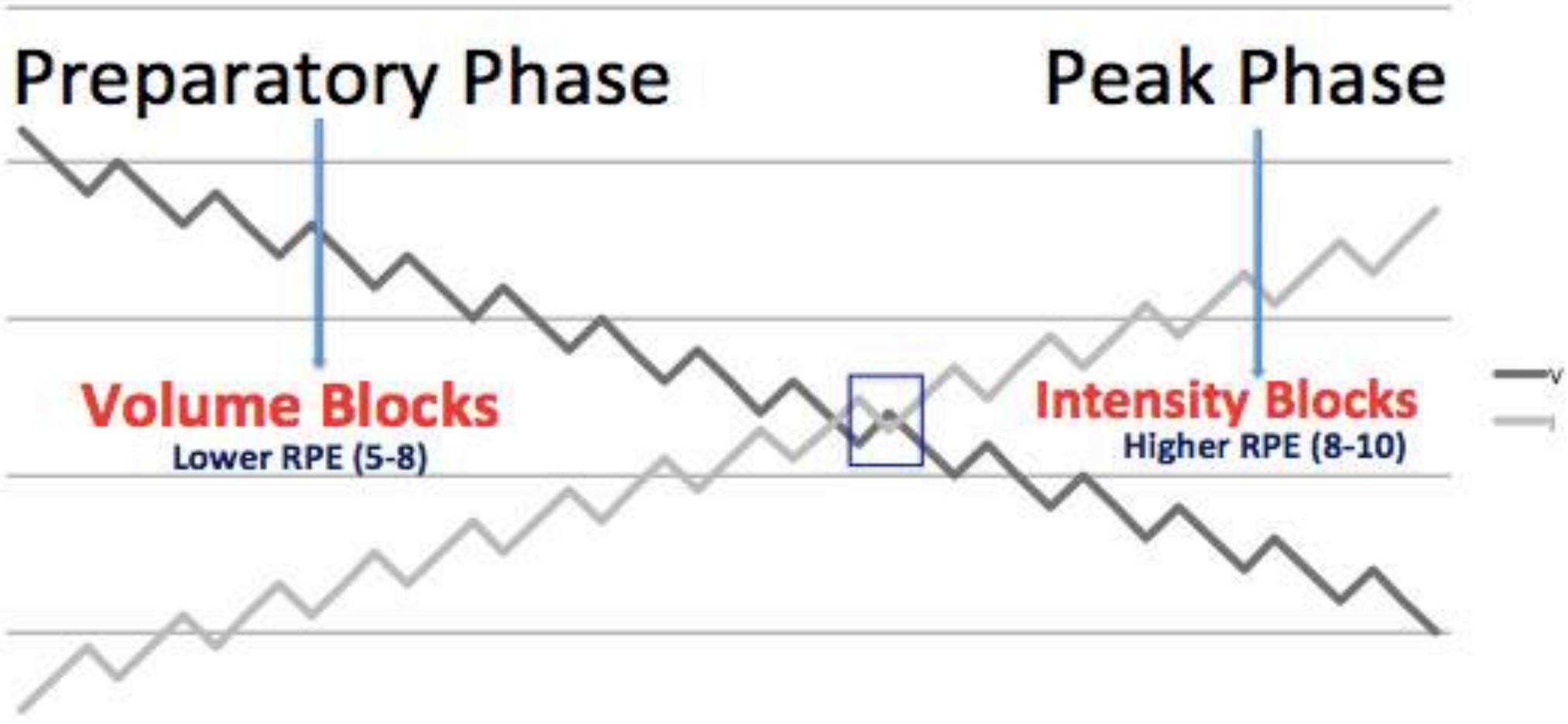
New Foundations:

Integrated Periodization Macrocycle



-Daily Undulating Programming Strategy is used within each week

-Yet, this fits into Yearly Linear/Block Periodization Design

Stress per set increases as intensity increases

High Volume = Lower RPE Per Set

High Intensity = Greater RPE Per Set

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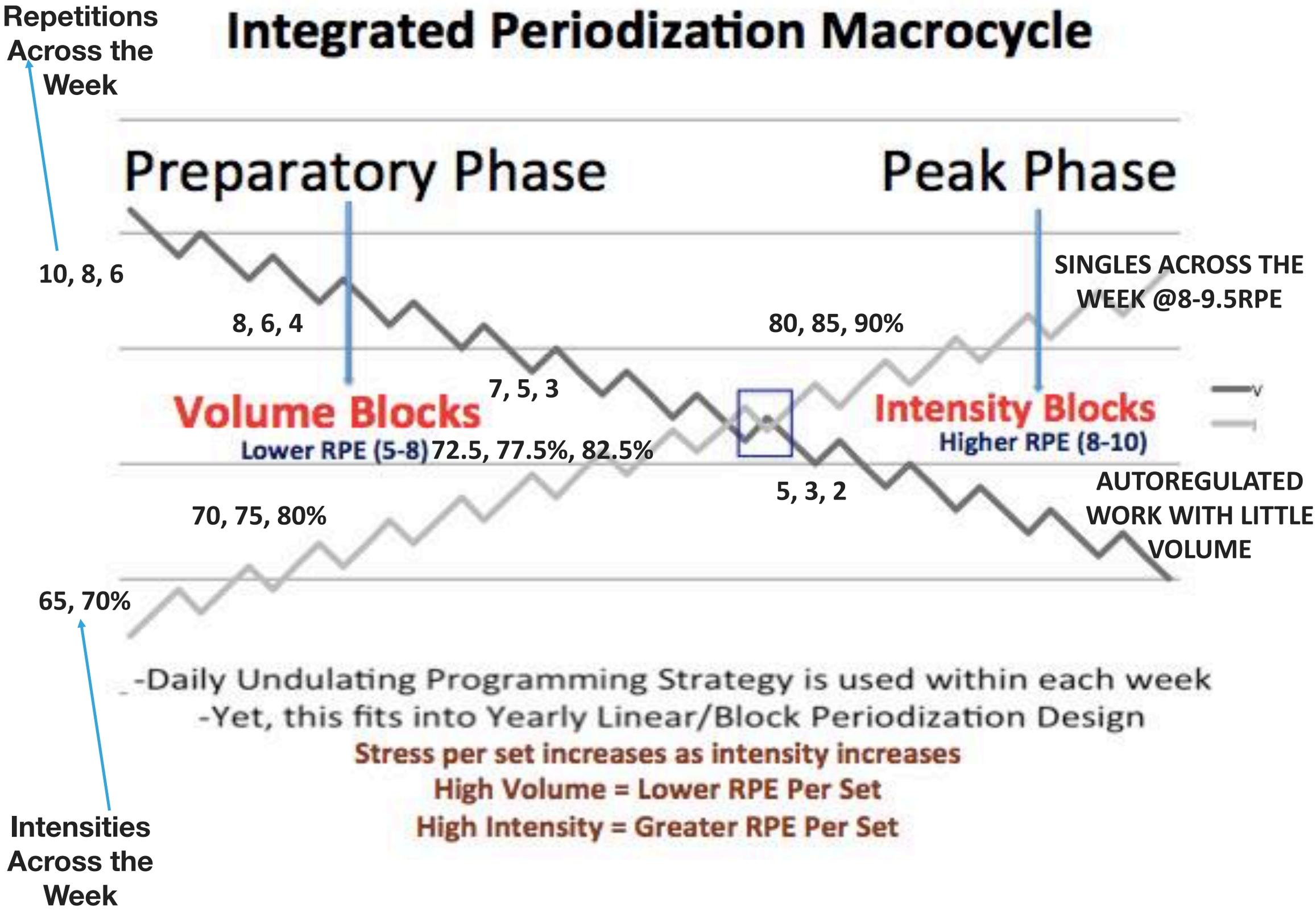
New Foundations:



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Part 3: Programming Strategies and Macrocycle Alterations

- *Periodization*
  - Long Term Trends

- *Programming*
  - Short-Term Strategies
    - Undulating Reps
    - Rest-Pause
    - Super Sets
    - Drop Sets

Where you are in a periodization macrocycle determines your programming strategy

Overarching Macrocycle

The figure presented is not fixed as things are open to interpretation

QUESTIONS:

- **1. Can you go immediately from lowest to highest volume?**
- **2. Volume gradually decreases, but does it ever spike during the macrocycle? Overreaching?**
- **3. Interspersing intensity with volume, but still gradual decreasing?**
- **4. Is undulation used at ALL points in a macrocycle?**
- **5. Using singles at various points in the macrocycle as to not stray to far from strength (if strength is your main goal)?**

Part 4: Volume Allocation

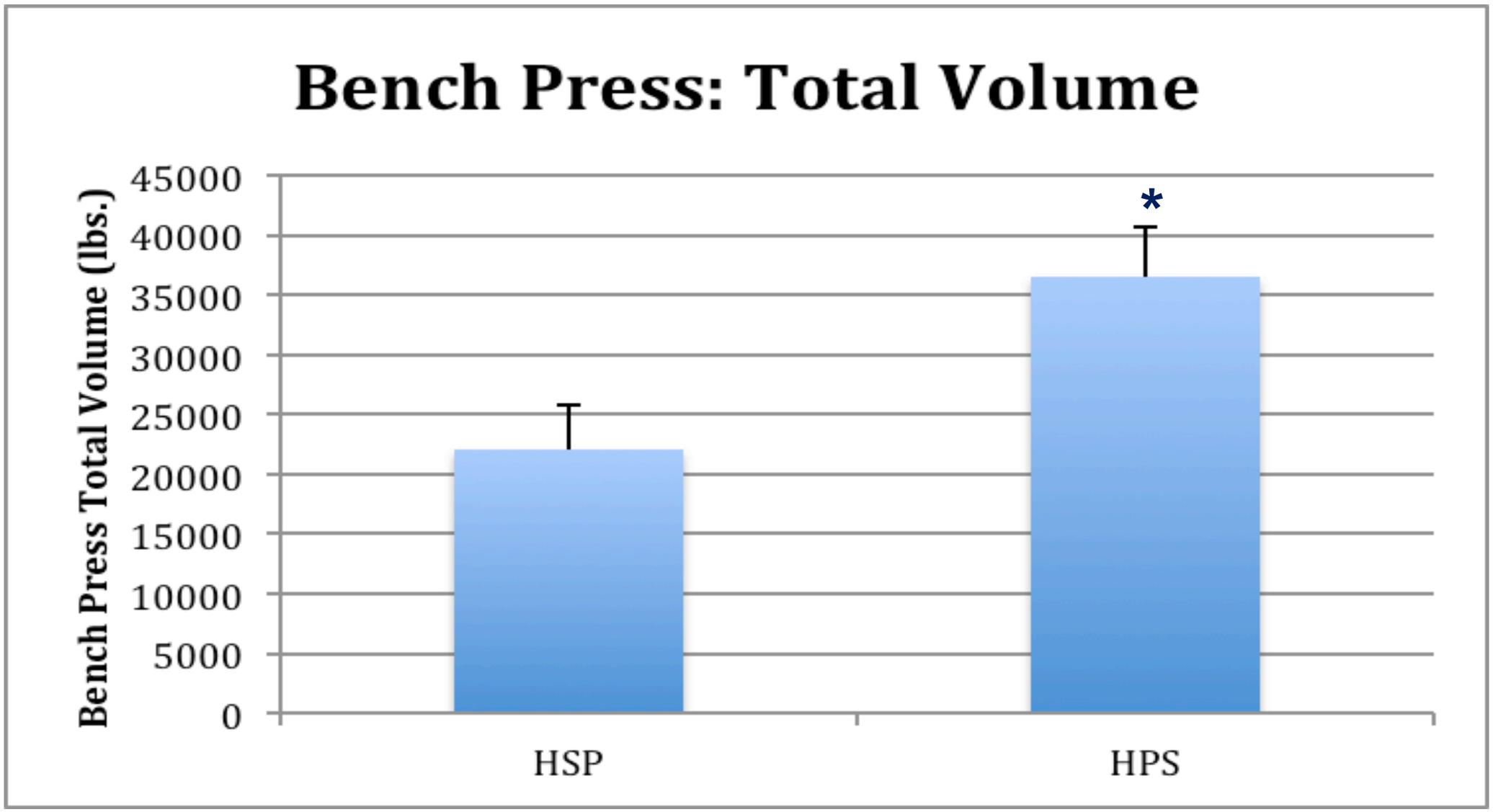
DUP = Daily Undulating Periodization

DUP	Day I	Day II	Day III
Squat	Hypertrophy	Power	Strength

DUP = Daily Undulating Programming

DUP	Day I	Day II	Day III
Squat	4X8	5X6	6X4

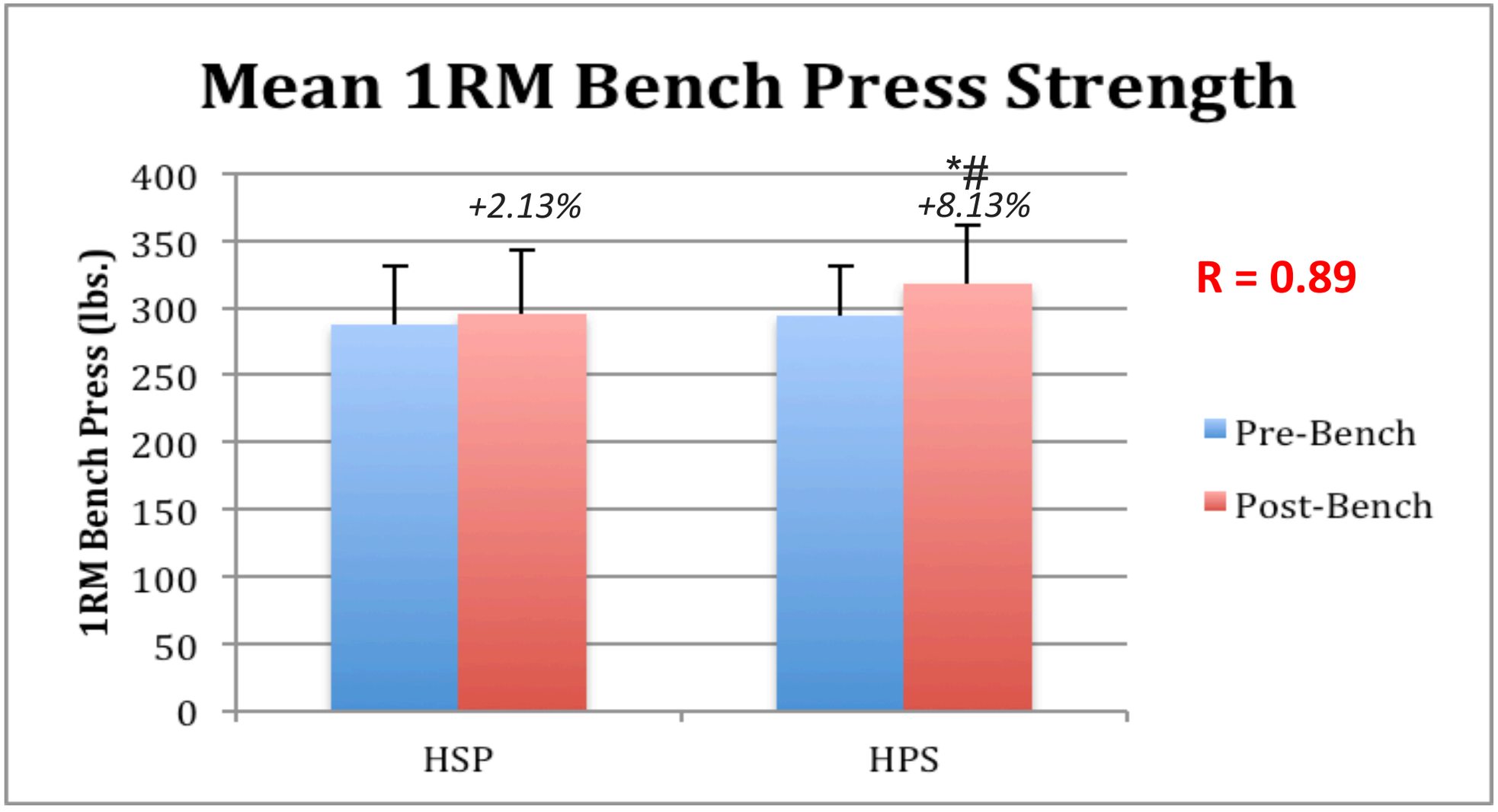
Greater Volume in Modified Model



*p<0.05, significantly different from HSP

Zourdos et al. 2016

Results: 1RM Bench Press Strength



*p<0.05, significantly different from pre-training
#p<0.05, significantly different from post-training HSP

Zourdos et al. 2016

A Conceptual Understanding

- This does NOT mean that HPS is the most optimal model, it is simply comparing one model to another and it shows the **CONCEPT** that more volume is superior
- This is also not saying do the MOST volume you can, it is saying, whatever volume you have structure it so you are the most recovered….even in an intensity block…everything is conceptual

Prep Phase – Volume Block: Mesocycle GOAL = 5-8RPE

Week 1	Day I	Day II	Day III
Squat	4X8 @70%	5X6 @75%	6X4+ @80%

Week 2	Day I	Day II	Day III
Squat	4X8 @W1+5kg	5X6 @W1+5kg	6X4+ @W1+5kg

Week 3	Day I	Day II	Day III
Squat	4X7 @W2+2.5kg	5X5 @W2+2.5kg	6X3+ @W2+2.5kg

Week 4	Day I	Day II	Day III
Squat	4X7 @W3+2.5kg	5X5 @W3+2.5kg	6X3+ @W3+2.5kg

INTRODUCTORY MICROCYCLE

Taper	Day I	Day II	Day III
Squat	*3X8 @65%*	*4X6 @70%*	*5X4 @75%*

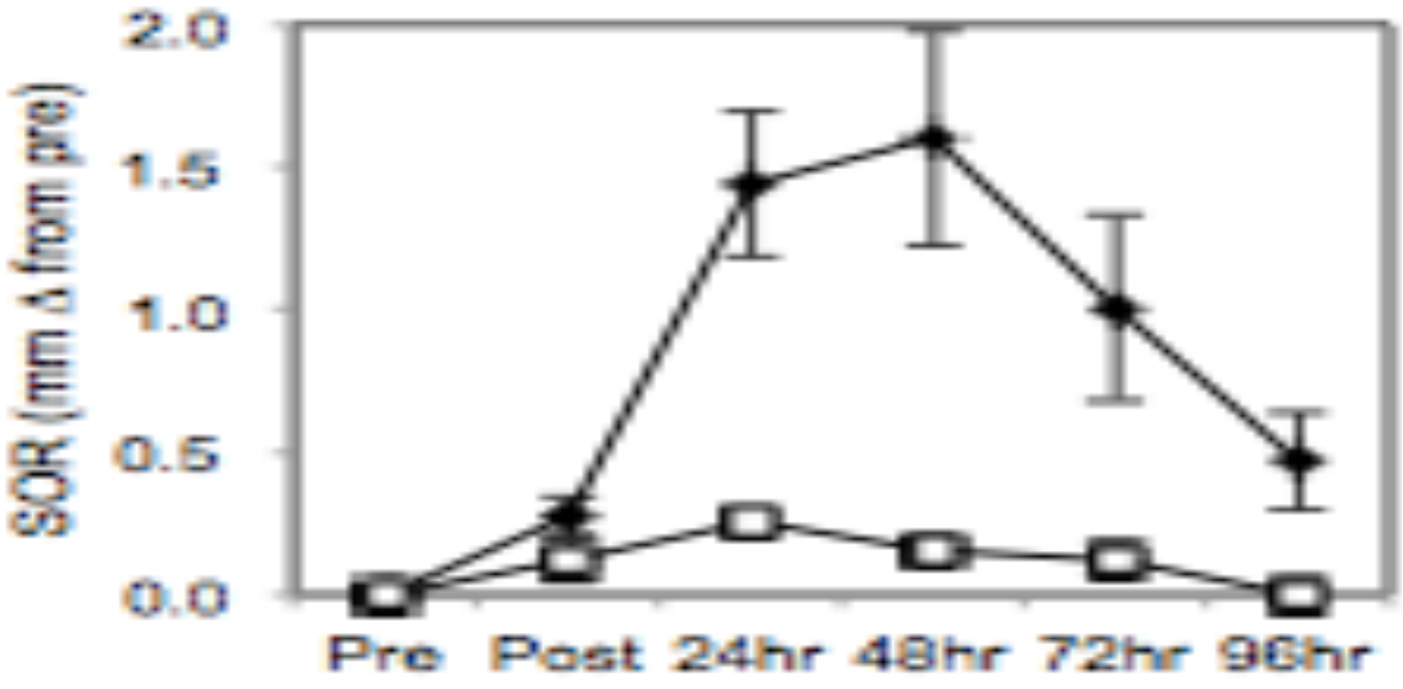
RPE Goal for Volume Intro =

About 5, maybe even less

RBE

Repeated Bout Effect

The Protection Against Damage



Zourdos et al. 2015

Intro Week Recommendations

- About 5-10% lower than week 1 of block
- 1-2 less sets per session
- Try not to get frustrated

TAPERING

- Decrease Volume (50-80%)
- Maintain Intensity
- Maintain Frequency

This is again a concept, little data regarding tapering in strength athletes

STRUCTURE

- 1. BLOCK SPECIFIC INTRO
- 2. MAIN MESOCYCLE (BLOCK)
- 3. TAPER

- 1. BLOCK SPECIFIC INTRO
- 2. MAIN MESOCYCLE
- 3. TAPER…

Of course, alterations an be made
Intra-Mesocycle INTRO (Deload?)

Simple Example of Recovery Allocation in Intensity

Taper	Day I	Day II	Day III
Squat	*Single @8RPE, 3X2 @90% of single*	*Single @7-8RPE, 2X1 @90% of single*	*Single @9RPE, 4X2 @90% of single*

Applications and Takeaways

- **Research has limitations in this area**
- **“Types” of periodization and programming strategies can and should be integrated**
- **Allocated volume appropriately to manage recovery during a week**
- **Utilize introductory cycles (5-10% lower intensity than week 1 of training block)**

NEXT TIME

Greater Incorporation of Autoregulation.

Structuring throughout a Macrocycle.

Intensity Examples

Theory is not enough, we need implementation and progression specifics…thus examples in practice

Assistance Work? Bodybuilding?

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<u>Life Tip For August:</u>

Don’t Say “My Bad”

We all know it was “your bad”, just don’t mess up again…