

Periodization Planning Overview

Current training status/needs assessment



Individualize goals



Accessible resources



Time and schedule



Strategically plan phases



Ongoing evaluation



Systematic progression

CREATING INTENTY

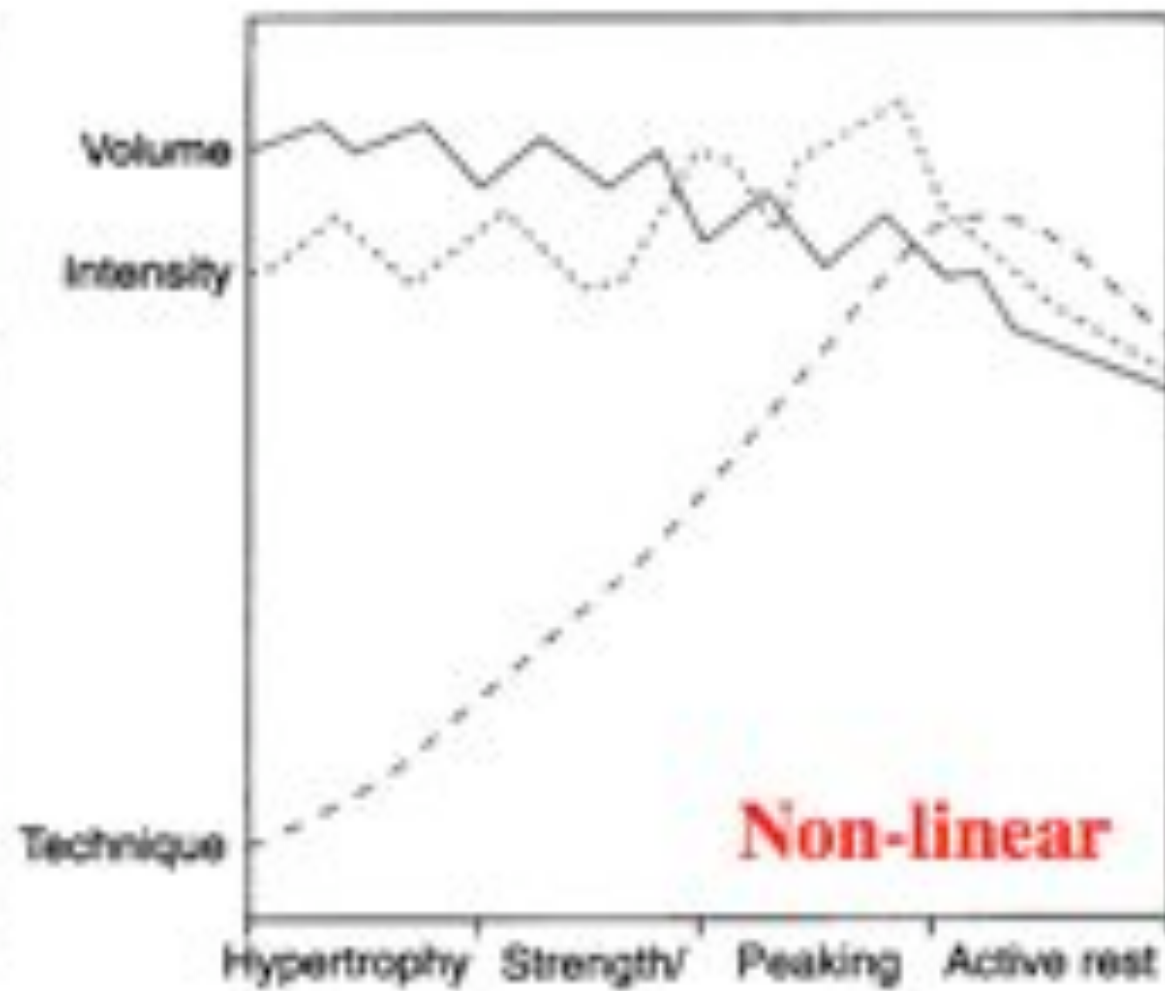
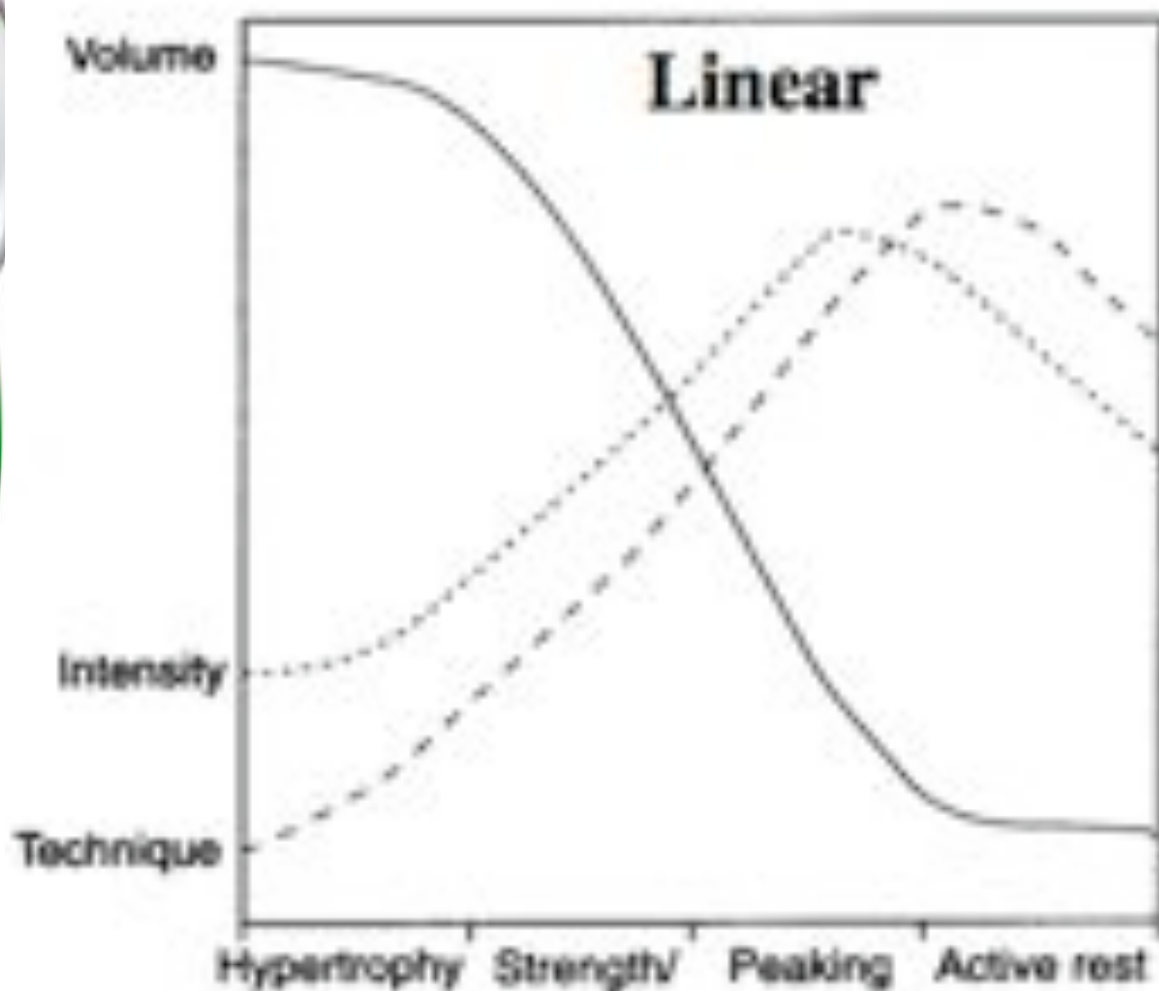




Periodization Models:

Linear vs. Non-linear

What Can We Learn From the Research?

Linear vs Non-linear Periodization





Journal of Strength and Conditioning Research, 2003, 17(1), 62-67
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A Comparison of Linear and Daily Undulating Periodized Programs With Equated Volume and Intensity for Local Muscular Endurance

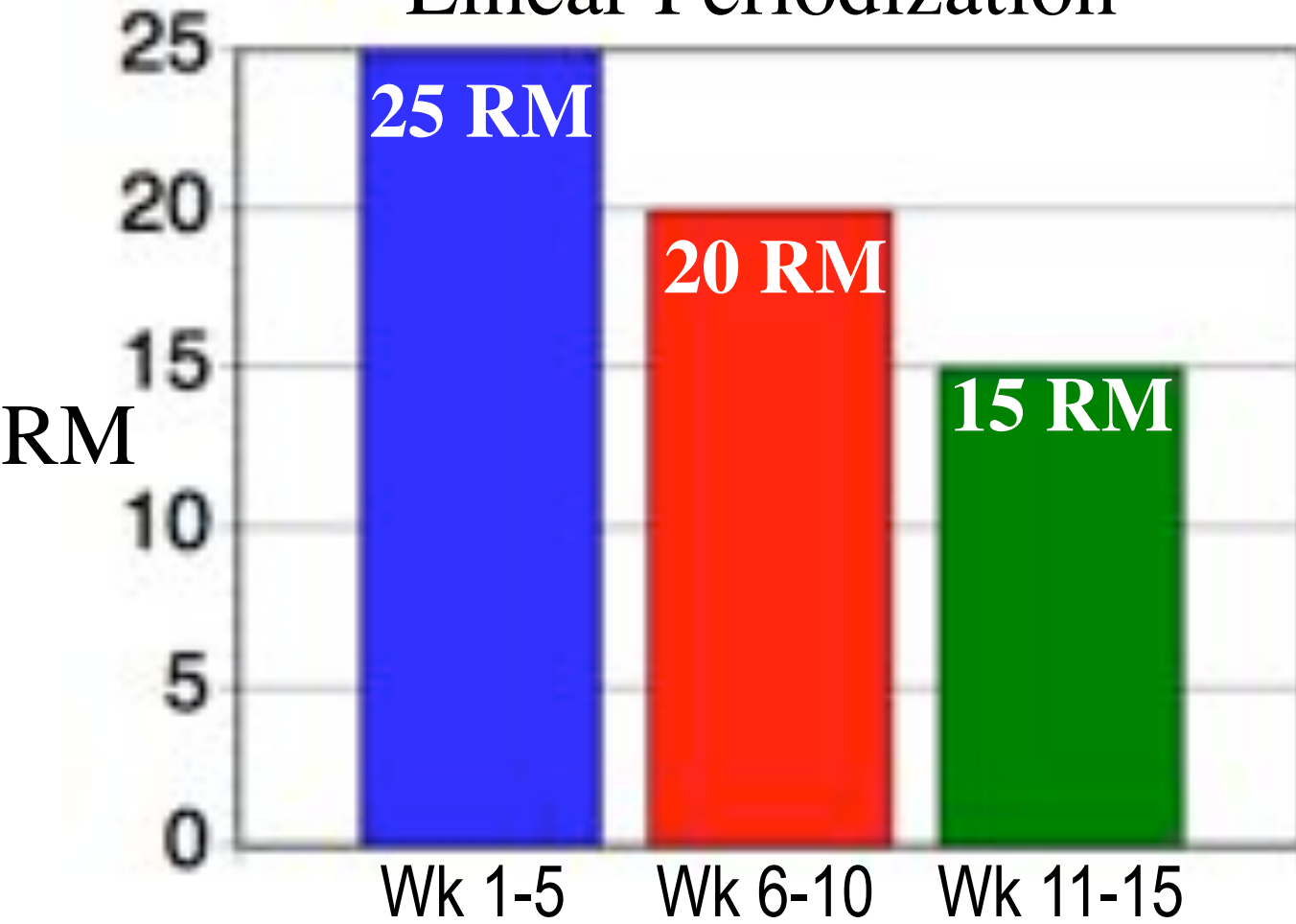
**MATTHEW R. RHEA, WAYNE T. PHILLIPS, LEE N. BURKETT, WILLIAM J. STONE,
STEPHEN D. BALL, BRENT A. ALVAR, AND AARON B. THOMAS**

Exercise and Wellness Research Laboratory, Department of Exercise Science and Physical Education, Arizona State University, Tempe, Arizona 85212.

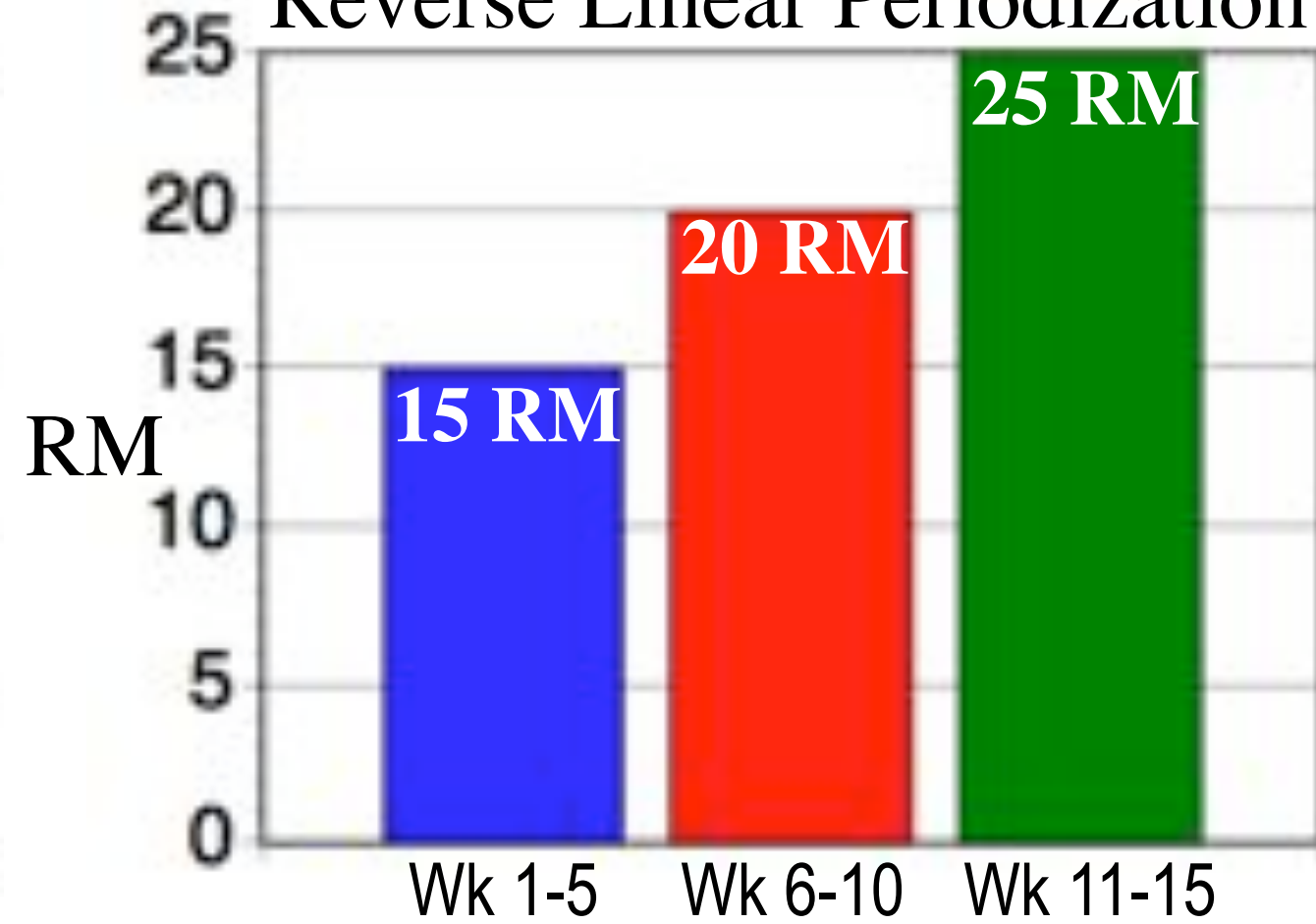
Linear, Reverse Linear, Daily Undulating

- 60 subjects (30 m, 30 f, age=21) with ≥ 12 months resistance training experience; randomly assigned to groups
- LP (10 m, 10 f), RLP (10 m, 10 f), DUP (10 m, 10 f)
- Training equated: (reps x sets x weight lifted)
- Lower body studied in 15-week study (2x/week train)
- Reps performed on a 1-s upward, 2-s lower cadence
- 1-2 minute rest between 3 sets
- **Testing**
 - Muscular endurance: as many reps as possible with 50% of body weight (test repeated for reliability); knee extension tested (just trained knee flexion)

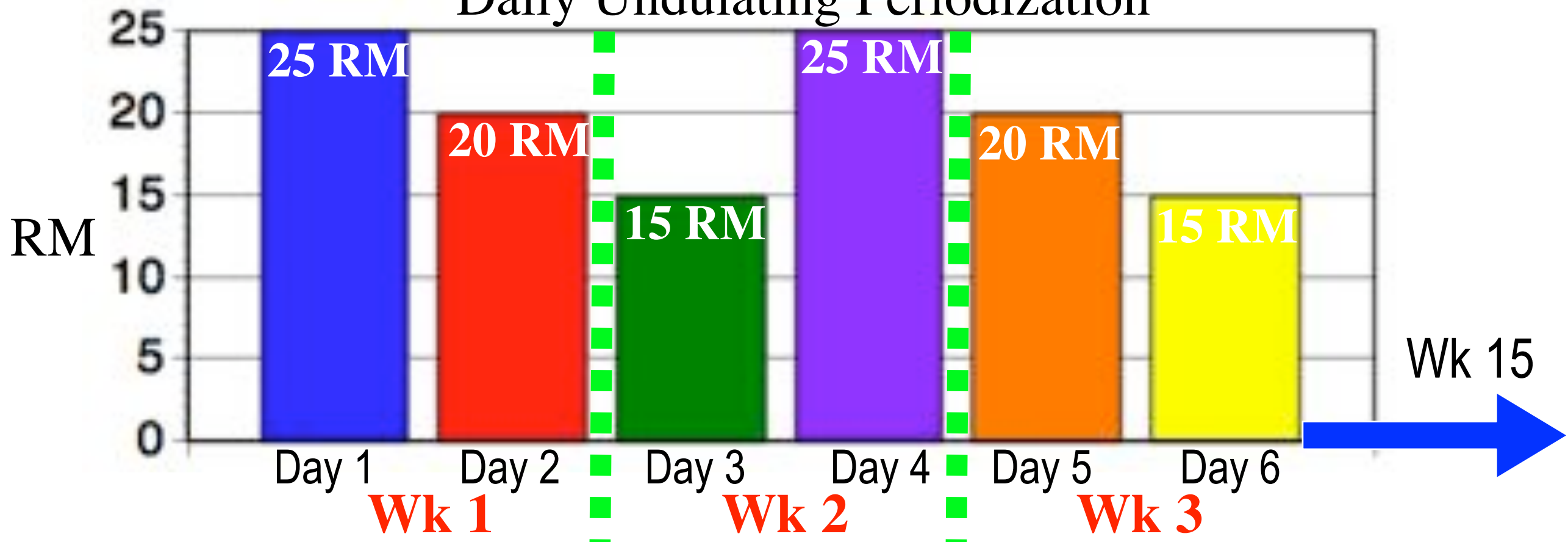
Linear Periodization



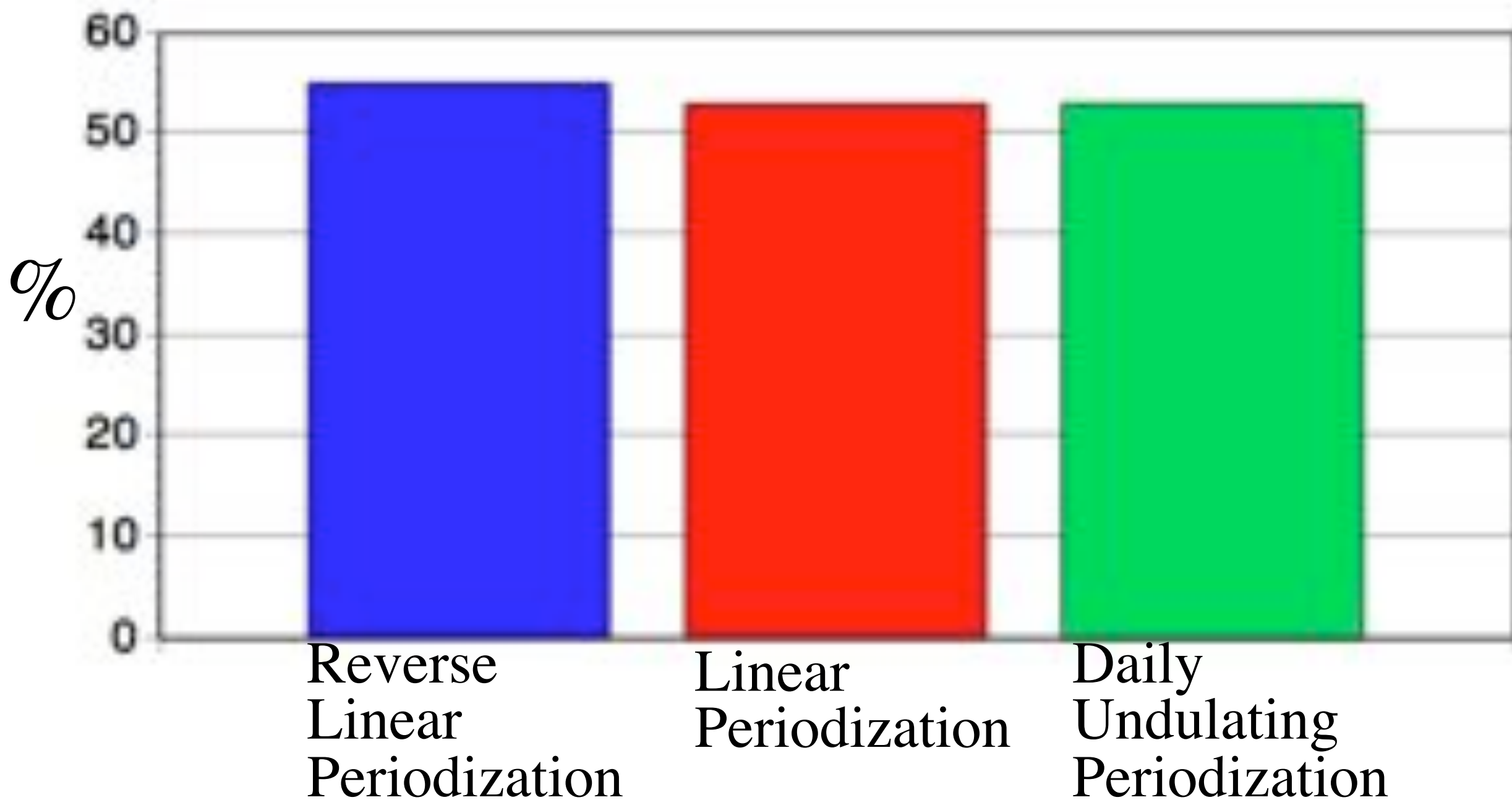
Reverse Linear Periodization



Daily Undulating Periodization



Results: Endurance Performance, Percent Increase



A Comparison of Linear and Daily Undulating Periodized Programs with Equated Volume and Intensity for Strength

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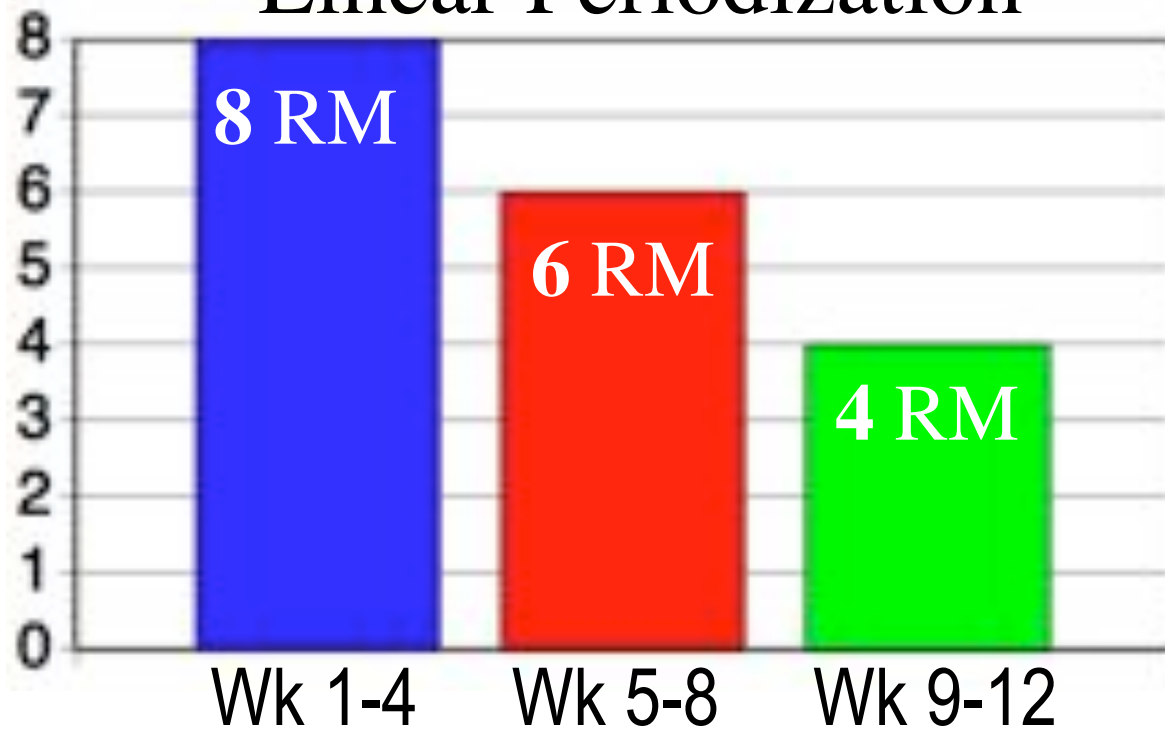
**Only Study Comparing
Linear and Daily Undulating Periodization
for Strength**

Linear (L) vs. Daily Undulating (DUP) in Strength

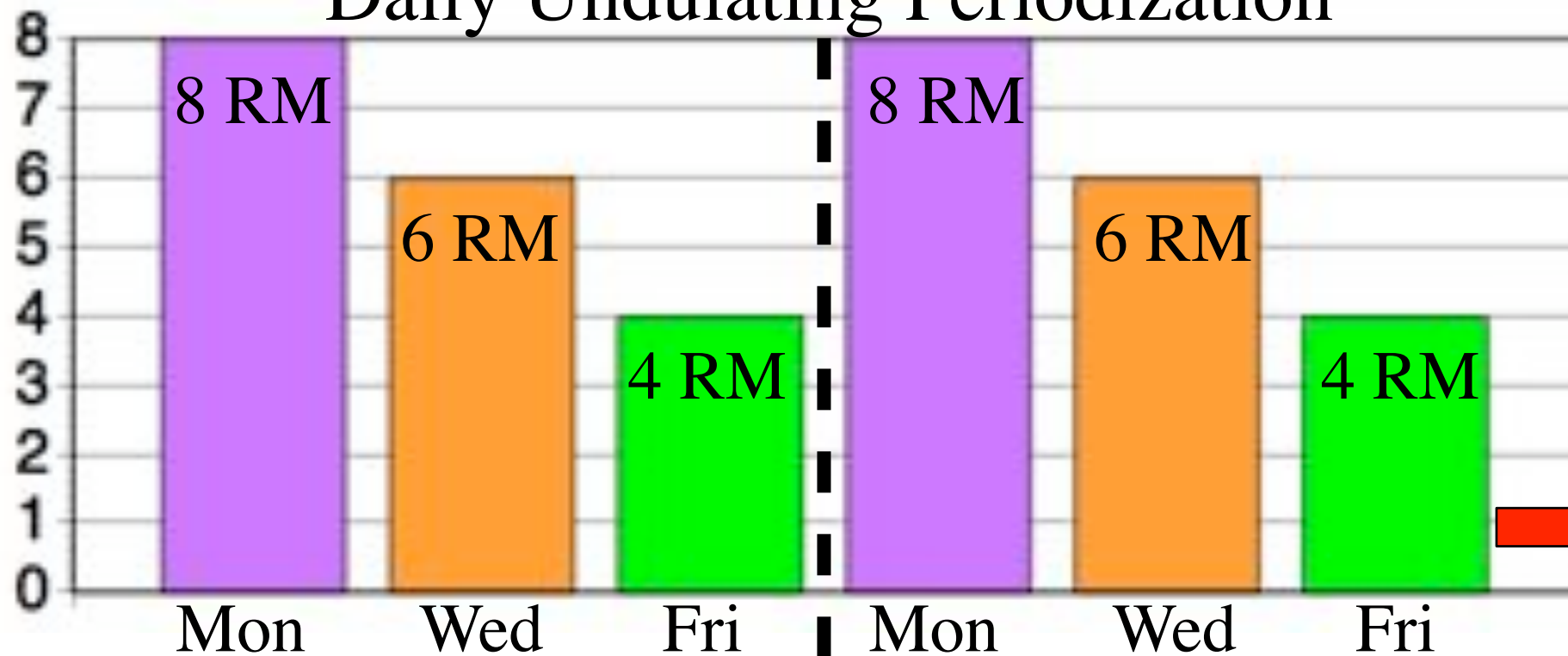
- 20 male (age=21) with ≥ 2 yrs resistance training experience; randomly assigned to L and DUP groups
- Training equated: (reps x sets x weight lifted)
- Training: 3 sets of bench & 3 sets of leg press
- 12-week study training 3x/week
- Also did biceps curls, lat pull-downs, crunches (no other exercises)
- Testing
 - 1 RM of bench press & 1 RM of incline leg press
 - Did three separate days of testing for reliability

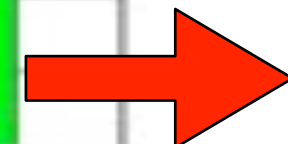
Linear (L) vs. Daily Undulating (DUP) in Strength

Linear Periodization

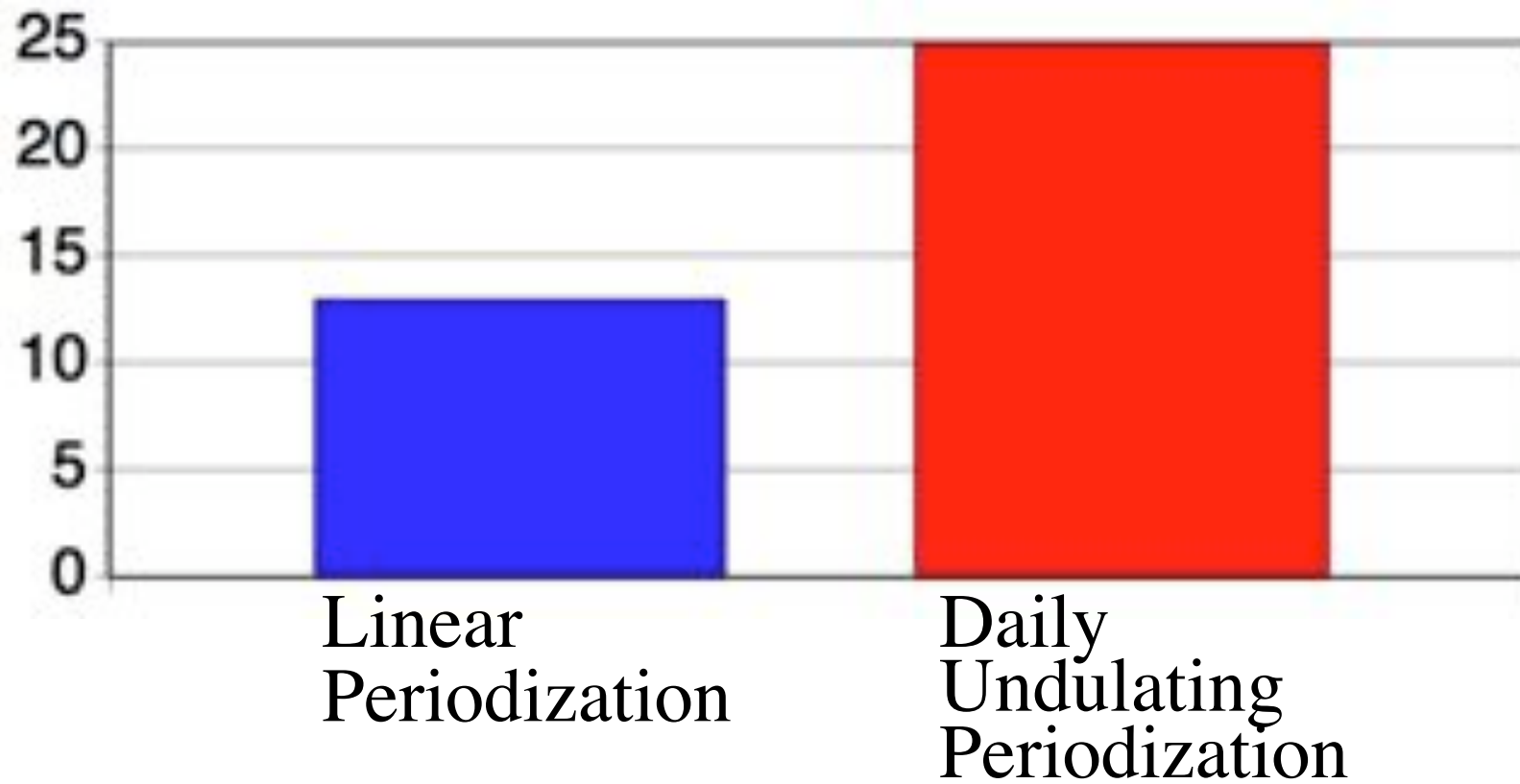


Daily Undulating Periodization

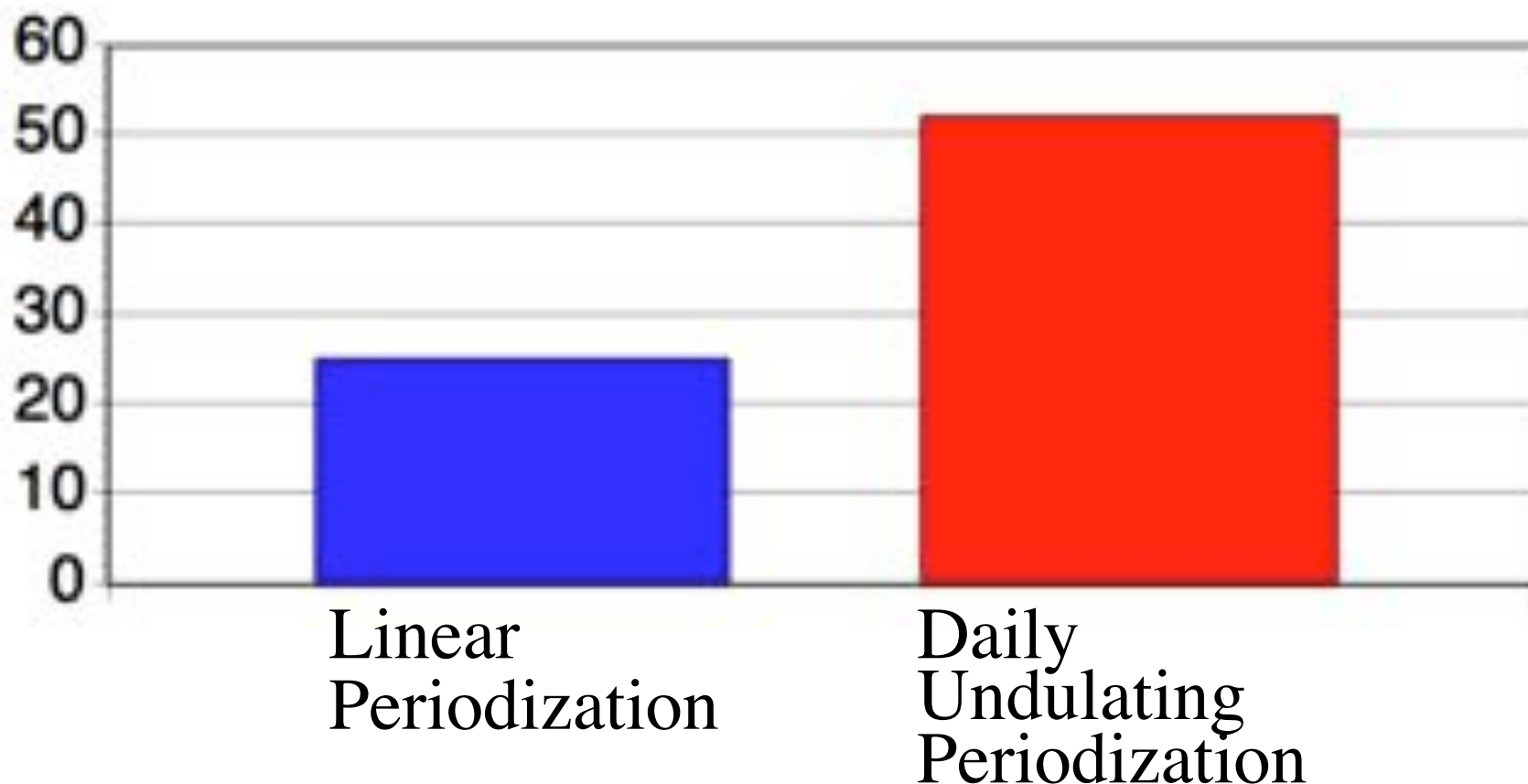


 **12 Weeks**


Results: Strength, Percent Increase



**Bench Press
% Increase**



**Incline
Leg Press
% Increase**



COMPARISON OF LINEAR AND REVERSE LINEAR PERIODIZATION EFFECTS ON MAXIMAL STRENGTH AND BODY COMPOSITION

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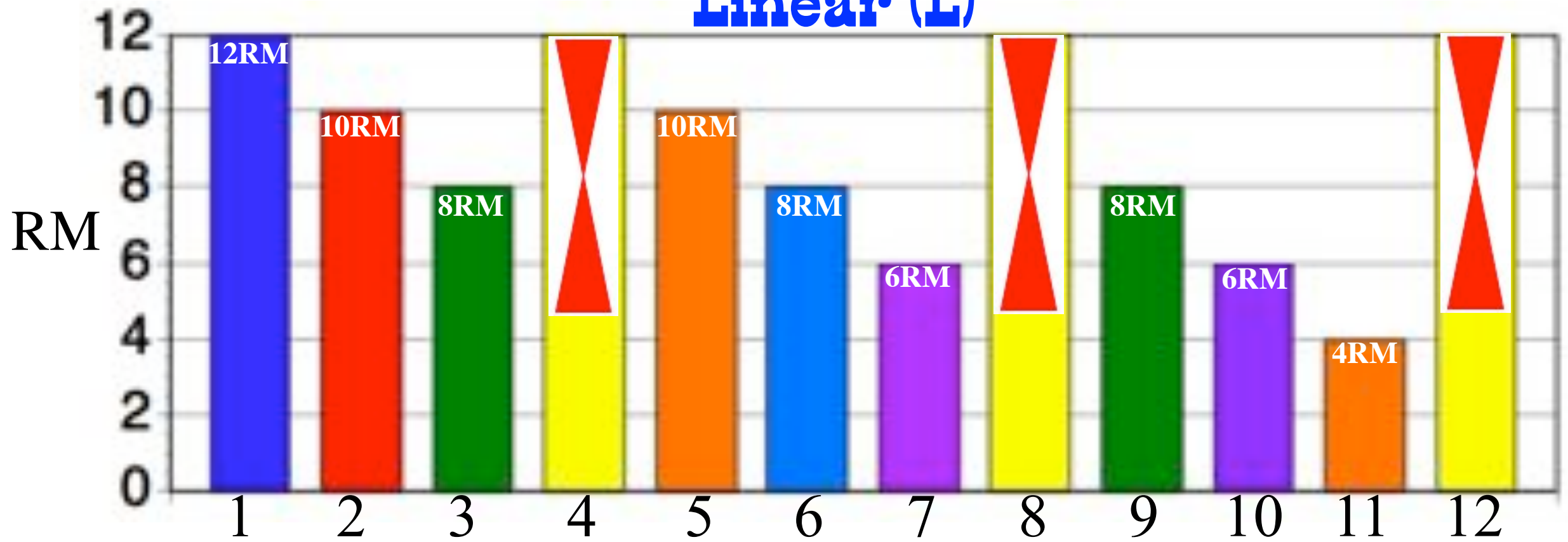
2009 Journal of Strength and Conditioning Research

**Linear vs. Reverse Linear
for Strength**

Linear (L) vs. Reverse Linear (RL) in Strength

- 20 females (age~27) with ≥ 6 months resistance training experience; randomly assigned to L (10 subjects) and RL (10 subjects) groups
- 12-week study training 3x/week
- Testing
 - 1 RM of bench press, lat pull-down, arm curl, leg extension

Linear (L)



Reverse Linear (RL)



Linear (L) vs. Reverse Linear (RL) in Strength

STRENGTH TRAINING PROGRAM

Performed exercises	
M & F Training A	W Training B
1. Bench press	1. Back squat
2. Inclined chest fly	2. Leg extension
3. Dumbbell shoulder press	3. Leg curl
4. Lateral raise	4. Glute kickbacks
5. Standing arm curl	5. Hip abduction
6. Biceps preacher curl	6. Hip adduction
7. Triceps extension	7. Standing calf raise
8. Close-grip bench press	8. Lat pull-down
	9. Seated row

Series X Repetitions	Rest interval
3 X 12 - 14 repetitions	45s
3 X 10 - 12 repetitions	1min
3 X 8 - 10 repetitions	1min and 20s
3 X 6 - 8 repetitions	1min and 40s
3 X 4 - 6 repetitions	2min

Prestes et al. (2009). Comparison of linear and reverse linear periodization effects on maximal strength and body composition. *Journal of Strength and Conditioning Research*. 23(1), 266-274.

Linear (L) vs. Reverse Linear (RL) in Strength

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Repetition Zone Characteristics

1 - 5 Reps

100 - 85% 1RM

Strength

6 - 8 Reps

84% - 77% 1RM

Strength
& Hypertrophy

9 - 12 Reps

76% - 70% 1RM

Hypertrophy

13 - 20 Reps

69% - 60% 1RM

Endurance gains
Less hypertrophy
Less strength

Traditional Linear Periodization (Health/Fitness) Kravitz (removed power phase)

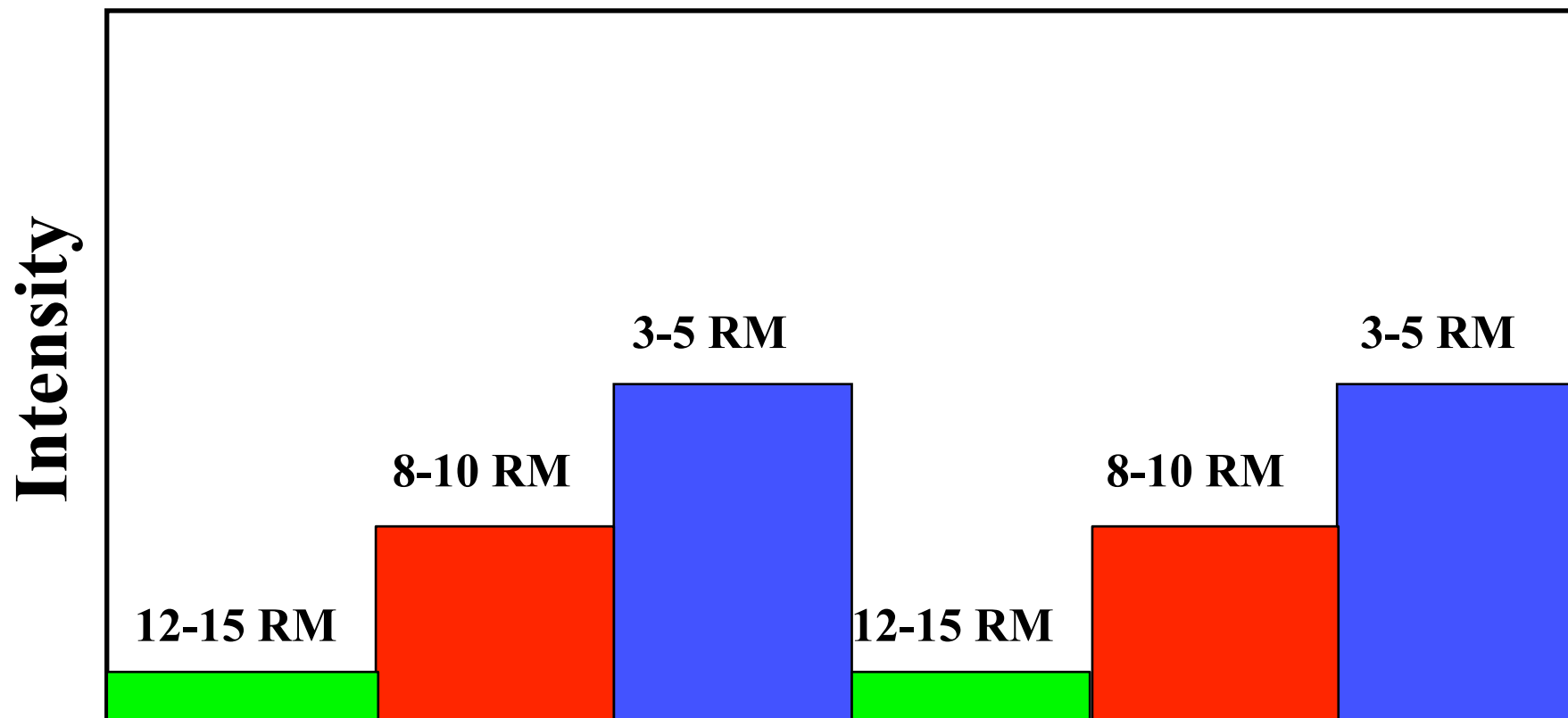
Proposed theoretical mechanism

	Hypertrophy	Strength & Hypertrophy	Strength	Transition
Sets	1-5	1-5	1-5	1-2
Reps	9-12 Type I, IIa	6-8 Type IIa	1-5 Type IIbx	13-20 Type I
Weeks	2-3	2-3	2-3	1-2

Fleck & Kraemer. The Ultimate Training System, 1996.

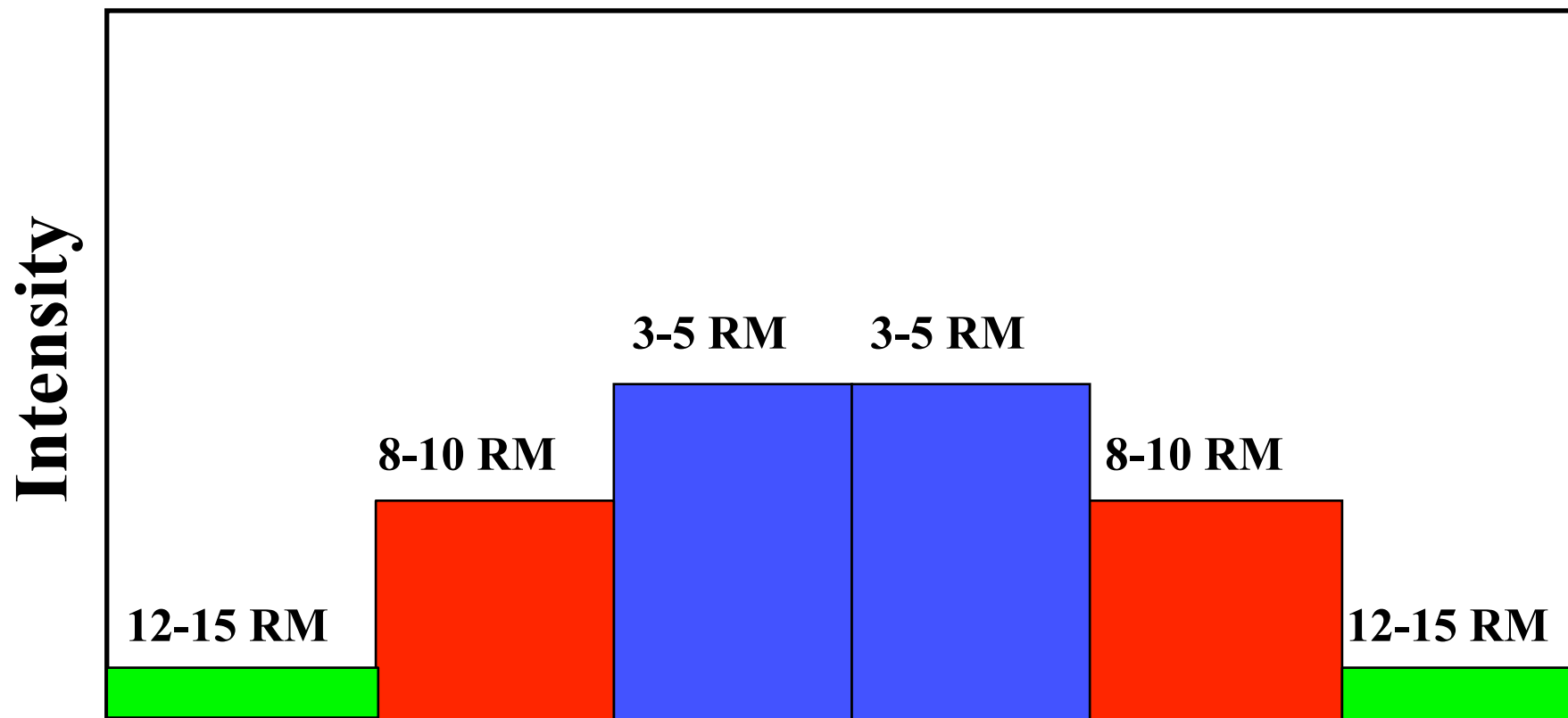
Undulating

2-4 sets per exercise (7-10 exercises)

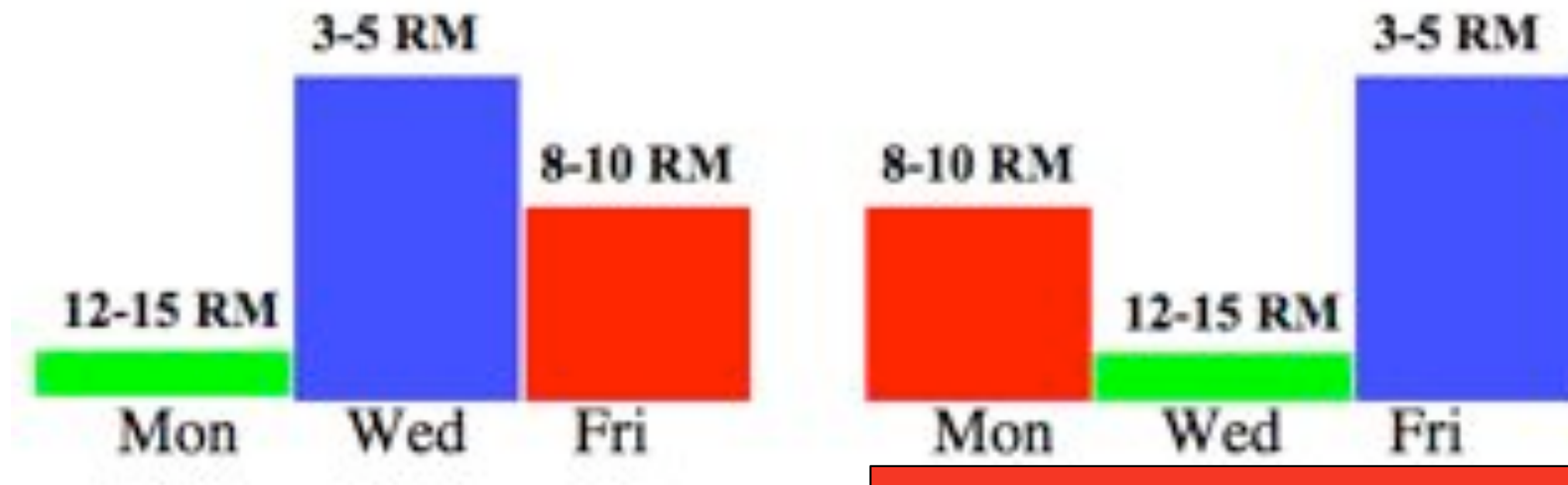


Undulating

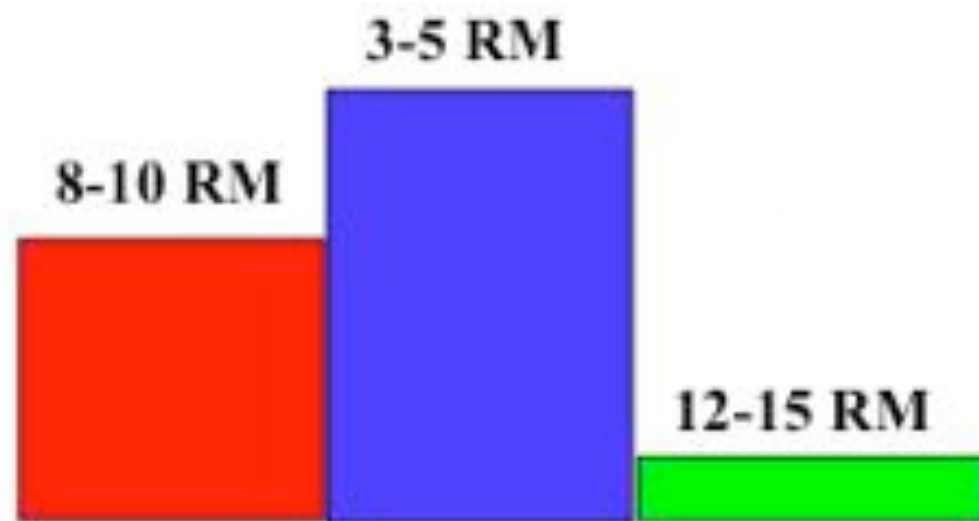
2-4 sets per exercise (7-10 exercises)



Random Order Undulating Periodization



Week



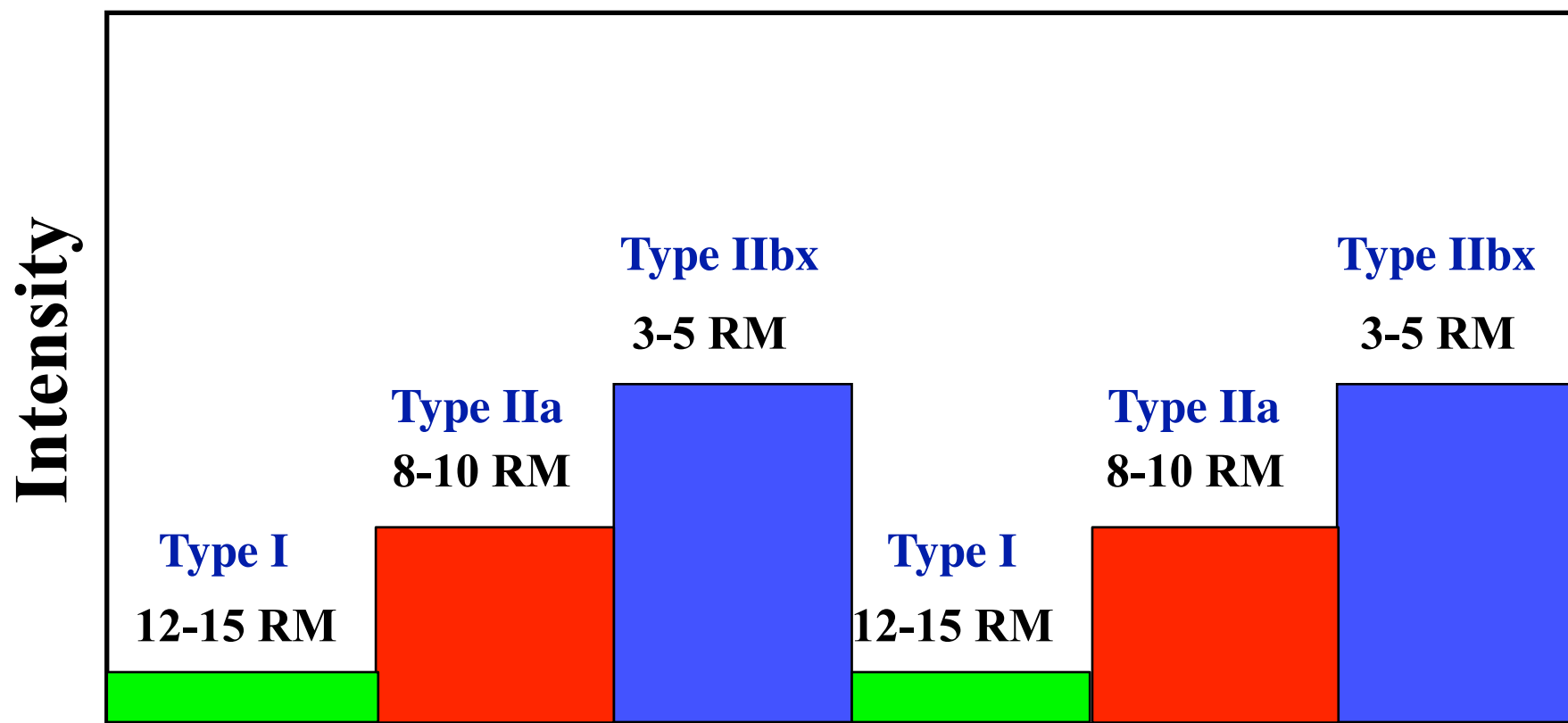
Week

**Every 4 to 6 weeks
plan a transition week(s)**

Circuit training
Single set training
Calisthenics only
Tubing workouts
Stability/Function

Why Does Daily Undulating Periodization Work? Any Theories?

Fiber Type Theory???



What if your client only does resistance training 2x a week?

