

Relative Intensity and Program Design

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Training Variables

- Reps
- Sets
- Load
- Rest
- Tempo
- RELATIVE INTENSITY

What is Intensity?

- Absolute - load
- Relative - effort

RELATIVE INTENSITY TABLE (EFFORT)

REPS		1	2	3	4	5	6	7	8	9	10
<i>R E L A T I V E I N T E N S I T Y</i>	100	100	94	91	89	86	84	82	80	78	76
	98	94	91	89	86	84	82	80	78	76	75
	95	91	89	86	84	82	80	78	76	75	73
	93	89	86	84	82	80	78	76	75	73	71
	91	86	84	82	80	78	76	75	73	71	70
	88	84	82	80	78	76	75	73	71	70	68
	86	82	80	78	76	75	73	71	70	68	67
	84	80	78	76	75	73	71	70	68	67	66
	82	78	76	75	73	71	70	68	67	66	64
	80	76	75	73	71	70	68	67	66	64	63
	77	75	73	71	70	68	67	66	64	63	62

How do we figure it out?

- Husker Formula - Predicted 1RM

$$(wt * reps * .03) + wt = 1RM$$

$$\text{i.e. } (94 * 2 * .03) + 94 = 100$$

- Works for all lifts

- Relative Intensity (RI)

$$(wt / RM \text{ for rep range}) * 100 = RI$$

Example

- 1RM = 250
2RM = 235
- 4x2@80,82.5,85,87.5%

SET	Set 1 80%	Set 2 82.5%	Set 3 85%	Set 4 87.5%
LOAD	200	206	212	218
RI CALC	200/235	206/235	212/235	218/235
RI	85%	88%	90%	93%

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		<i>LOAD</i>									
<i>R</i>	100	100	94	91	89	86	84	82	80	78	76
<i>E</i>	98	94	91	89	86	84	82	80	78	76	75
<i>L</i>	95	91	89	86	84	82	80	78	76	75	73
<i>A</i>	93	89	86	84	82	80	78	76	75	73	71
<i>T</i>	91	86	84	82	80	78	76	75	73	71	70
<i>I</i>	88	84	82	80	78	76	75	73	71	70	68
<i>N</i>	86	82	80	78	76	75	73	71	70	68	67
<i>T</i>	84	80	78	76	75	73	71	70	68	67	66
<i>E</i>	82	78	76	75	73	71	70	68	67	66	64
<i>N</i>	80	76	75	73	71	70	68	67	66	64	63
<i>S</i>	77	75	73	71	70	68	67	66	64	63	62

More Examples

- Volume Constant – Increase RI each week for training stimulus

	Week 1	Week 2	Week 3
Sets/Reps	5x5	5x5	5x5
Load	72.5%	75%	77.5%
RI	84%	86%	91%

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More Examples

RI constant/Reps Vary

	Week 1	Week 2	Week 3
Sets/Reps	10-8-6-4-2	10-8-6-4-2	10-8-6-4-2
Load	66-68-71-75-78	68-71-75-78-82	71-75-78-82-86
RI	84%	88%	93%

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Another Example

- Warm-up Sets prior to heavy sets – know RI to prescribe loads

	Warm-up 1	Warm-up 2	Work Set 1	Work set 2
Reps	5	3	2	1
Load	68%	73%	86%	94%
RI	77%	80%	93%	98%

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Program Design

- Movements not Muscles (exception Rehab)
- Upper – Push/Pull
- Lower – Squat/Bend
- Total Body – Explosive/Combo
- BALANCE!

Upper Body

- Push
 - Horizontal
 - Vertical
- Pull
 - Horizontal
 - Vertical

Basic Exercise Menu: Upper Body

Push – Horizontal	Push – Vertical	Pull – Horizontal	Pull – Vertical
Bench Press	Shoulder Press	Bent Over Row	Pull-Up
Pushups	Pike Press	Inverted Row	Chin-Up
Dips	Military Press	1 Arm DB Row	Lat Pull-down

Lower Body

- Squat
 - 2 Leg
 - 1 Leg
- Bend
 - Straight Leg
 - Bent Leg

Basic Exercise Menu: Lower Body Exercises

Squat – 2 Leg	Squat – 1 Leg	Bend – Straight Leg	Bend – Bent Leg
Back Squat	Lunge	SLDL	Dead-lift
Leg Press	Step Up	Hypers	Glute Ham
Front Squat	Split Squat	Hip Lift	Bucks

Total Body

- Explosive
Olympic
Jumps
- Combination
Upper-Lower
Upper-Upper

Basic Exercise Menu: Total Body Exercises

Explosive-Olympic	Explosive-Jumps	Combo - Up/Lower	Combo - Up/Upper
Hang Snatch	Jump Squats	Squat to Press	Up Row to Press
Hang Clean	Power Step Ups	Lunge to Up Row	Bent Over Row to Curl
Push Jerk	Box Jumps	Step Up to Press	Curl to Press

Setting Up a Week

■ Questions:

- 1) How many days?
- 2) What equipment?
- 3) How many in a group?
- 4) How long is the training session?
- 5) What are priorities (numbers vs. performance) ?
- 6) Know Limitations
(coaching/equipment, etc.)

Priorities

- Balance between all movements
Equal Pushes to Pulls
Equal Squats to Bends
- Pre-hab work (hips/scap/rc)
- Mobility
- Core Stability/Strength
- Plyometrics
- Movement (Linear/Lateral) (Time permitted)
- Conditioning (Time permitted)
- Tissue Quality
- Tissue Length

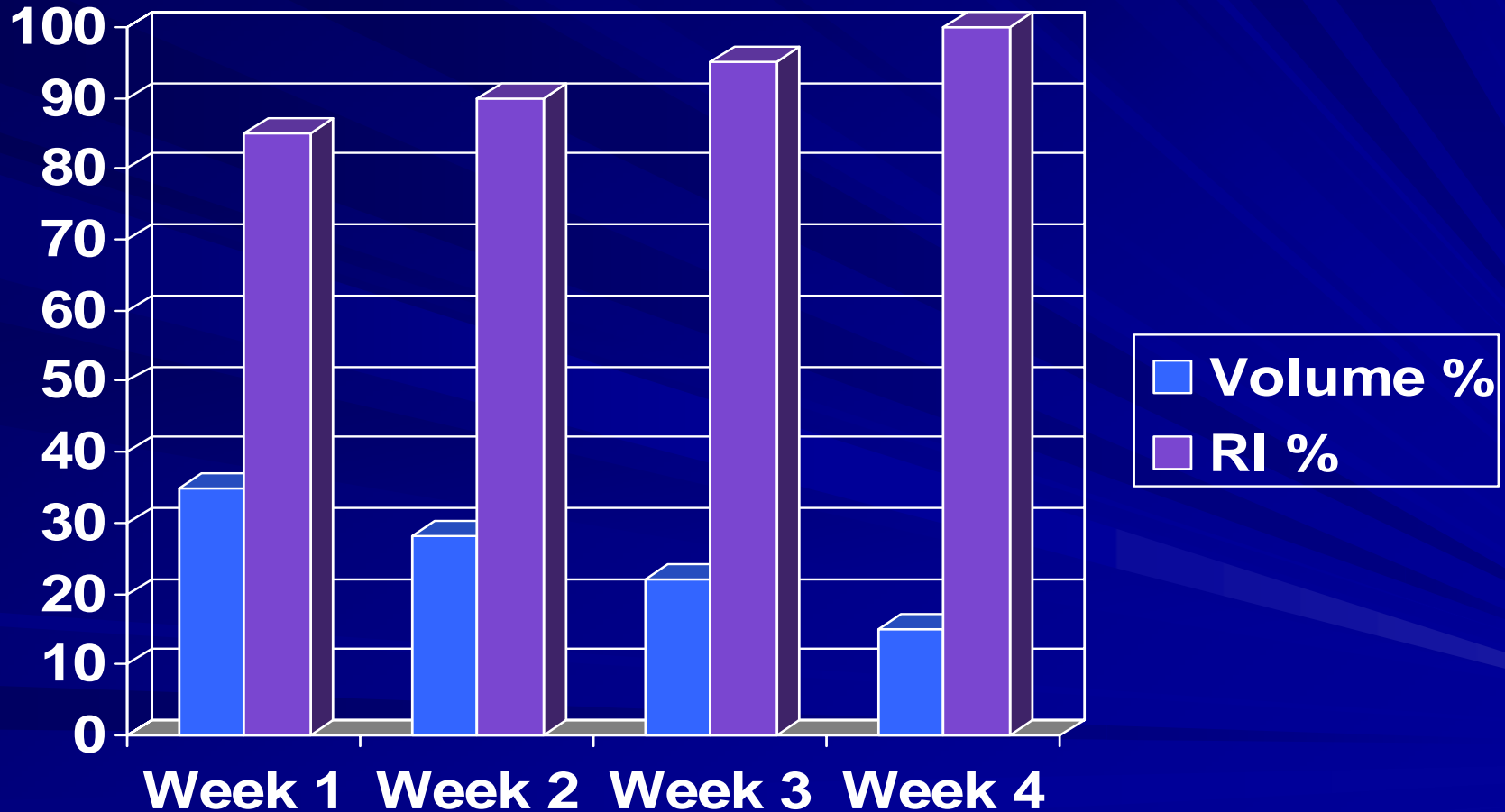
Example

Day 1	Day 2	Day 3
Dynamic/Core/Plyos	Dynamic/Core/Plyos	Dynamic/Core/Plyos
Explosive Snatch	Explosive Clean	Explosive Jump Squats
V Push Steep DB Incline	H Push Pushups	H Push Bench Press
Squat Front Squat	V Pull Pull-ups	BL Bend Glute Ham Raise
H Pull 1 Arm DB Row	1 Leg Squat Slideboard Lunge	H Pull Seated Row
BL Bend 1 Leg Bucks	H Pull Inverted Row	1 Leg Squat Lateral Lunges
V Push Alt. DB Sh. Press	SL Bend SLDL	V Pull Chin-Ups
Scap T's/Y's/W's/L's	Glute Lateral Walks	RC Lying External Rotation

Periodization

- PLAN
- Overload Principle - the body will adapt to the stresses placed upon it.
- Volume vs. Load in Overtraining
- Back off Weeks/Unloading Weeks
- 3 or 4 Week Phases

Integrating RI into Program Design



Putting it all together

- RI is one variable
- Helps to compare effort and training programs
- Don't overthink it!
- Take outside factors into account (exams, sport stress, boy/girl friends, sleep, nutrition)

Max Intensity Methods

- Open Sets
- Strip Sets
- Rounds – Chris Doyle (x # of reps)
- Forced Reps
- Similar Movement Circuits (pull circuits, push circuits, leg circuits, etc.)
- 2/1 Technique (Conc 2/Ecc 1)

More

■ Eccentric Overload (Negatives)

Seconds	Load %
10	110-115%
8	115-120%
6	120-125%
4	125-130%

Thibaudeau, C. Theory and Application of Modern Strength and Power Methods

One More

- Two-movement techniques
Conc- multi jt./Ecc – single jt.

Concentric	Eccentric
Hang Clean	Reverse Curl
Close-grip Bench	Skull Crusher
DB Bench	DB Fly
DB Clean & Press	DB Lateral Raise
2 Leg Squat	1 Leg Squat
Hyper	1 Leg Hyper
DB Bent Over Row	DB Bent Over Raise