An Everyday Approach to Metabolic Resistance Training (MRT)

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What is Metabolic Resistance Training?

- A concept that involves a combination of different training styles and protocols to maximize caloric expenditure and increase metabolic rate.
- Focus
  - How many calories you burn
    - During exercise
    - Post-exercise
The Advantage of EPOC

- What is EPOC and what does it do?
  - Excess Post-Exercise Oxygen Consumption
  - The Oxygen consumed to bring the physiological components back to resting levels
    - I.E. – hormone balancing, replenishment of fuel stores

MRT, EPOC & Metabolism

- High Intensity Training
  - Builds strength & muscle
  - Ramps up anaerobic metabolism
  - Creates a large post-workout afterburn for up to 38 hours after completing your workout (Schuenke et al., 2002)
    - Caloric burn up to 300 post-workout (Heden et al., 2001)

Take Home Concept

- Intensity of effort has the greatest effect on EPOC
  - Greater effort = Greater EPOC (La Forgia et al., 2006)(Borsheim et al., 2003)

AHA !!!!!!!!
What About Fat Loss?

- Resistance training can have a greater impact on fat burning than traditional aerobic exercise (Scott et al., 2011)
- Fuel shifting: forces your body to repeatedly shift from using carbs to fat and back (Sonko et al., 2005)

Improving performance (strength, power, etc) is NOT the FOCUS with MRT, though it will still occur!

More About Fat Loss

- Focus on the the amount of fat burned in an entire day, not an hour to hour situation (Hansen et al., 2005)
- By burning more carbohydrates in a workout, you will ultimately burn more fat in the post-workout time frame.

Exercise Selections

- Hip Dominant (Hinge)
- Knee-Dominant
- Upper Body Push
- Upper Body Pull
- Core
- Total Body
- Cardio
Circuits

- A series of exercises performed in succession
- Circuit training has a greater effect on the magnitude & duration of EPOC than traditional strength training (Murphy and Schwarzkopf, 1992)

Circuits

- Limiting rest between sets is more important for fat loss than the amount of the load.
  - Circuit-style training @ 50% of 1 RM using 30 seconds rest between sets had greater effects on EPOC than traditional training protocol using 80% 1 RM with 120 seconds rest (Murphy and Schwarzkopf, 1992)

Circuit Guidelines

- 4 to 6 exercises are the easiest to implement
- 8 to 12 total exercises are the most fun and balanced
- Alternate between upper body, lower body, total body and cardio exercise categories
- My favorite – 40:20, 8 -10 exercises, 3 times through)
Circuit Guidelines Cont.

- *Max Power 15:45s or 10:50s
- *Max Strength 20:40s
- Max Muscle Gain 30:30s
- Strength / Power Endurance 40:20s, 45:15s
- Fat Loss / Cardio 45:15s, 50:10s or 60:15s
  - These are all time based

Complexes

- Select 2 or more exercises using the same training tool; load and complete a fixed number of reps or for time
- Done without rest between movements
- 2 types of Complexes
  - Succession
  - Sequences

Complexes

- Succession
  - Complete prescribed number of reps for time for each move before moving to the next one
  - Ex 1.) 10 reps of 3 exercises
  - Ex 2.) 20 seconds of 3 exercises
  - Mountain Climbers/ Cross Mountain Climbers/ Spiderman Mountain Climbers
Complexes

• Sequence:
  – Complete a single rep of each movement and immediately move to the next one; then repeat that sequence for a set number of rounds or time.
  • Ex 1) DB Burpee, Push-up Rows, Curl to Press
  • Ex 2) KB 1-Arm Clean, Reverse Lunge, OH Press

Performing supersets showed significantly greater energy expenditure compared to traditional strength training (Kelleher et al., 2010)

Density

• Perform Max reps or rounds for time
  – Ex 1) 15 push-ups, 20 jumps squats, 15 TRX rows = 1 round. Complete as many rounds as possible in 6 minutes
  – Ex 2) 8 DB bench, 6 lunges each leg, 8 DB bent over rows = 1 round. Complete as many rounds as possible in 7 minutes.

Tabatas

• Original study: Most of the Japanese cyclists couldn’t complete all 8 rounds for 20-10’s (Tabata et al., 1996)
• Perform alternating sets of non-competitive exercises to minimize cross-fatigue
• Pair upper / lower body, unilateral L/R, or core/ cardio moves
• Body weight exercises and functional training tools seem to lend best to fat loss population.
References

• Haden, T., Law, C., Ross, P., Reid, S., EP. One-set resistance training elevates energy expenditure for 72 h similar to three sets. Eur J Appl Physiol. 2011 Mar;111(3): 477-84

References (Cont.)