

# ACE Program Design for Losing Weight and Toning Up

*Presented by:* Jonathan Ross, [www.AionFitness.com](http://www.AionFitness.com); [www.AbsRevealed.com](http://www.AbsRevealed.com)

Let's face it, most clients state "losing weight and toning up" as their primary goals for starting an exercise program. Is working in the "fat burning" zone for cardiorespiratory exercise the most efficient way to lose weight? Are "light weights for high reps" really that effective for adding lean muscle and a creating a sculpted look? What is metabolic conditioning and how is it applied to help clients? This lecture will review the science and latest research behind these questions while providing exercise program design strategies to deliver the results clients want.

## Common myths:

### Fuel utilization during exercise

- Fats
- Carbohydrates
- Crossover point

### Energy Pathways

- ATP-PCr
- Glycolytic
- Aerobic

### Muscle fiber physiology

- Type I
- Type II
  - Motor unit activation
  - Stimulate motor units to engage, use muscle fibers

### Total Daily Energy Expenditure (TDEE)

- RMR
- TEPA
- TEF

### Resting metabolic rate (RMR) – Using the Mifflin/St. Joer equation

#### Women

- $(9.99 \times \text{BW-kg}) + (6.25 \times \text{HT-cm}) - (4.92 \times \text{age}) - 161$
- $(4.54 \times \text{BW-lbs}) + (15.875 \times \text{HT-in.}) - (4.92 \times \text{age}) - 161$

#### Men

- $\text{RMR} = (9.99 \times \text{BW-kg}) + (6.25 \times \text{cm}) - (4.92 \times \text{age}) + 5$
- $\text{RMR} = (4.54 \times \text{BW-kg}) + (15.875 \times \text{HT-in.}) - (4.92 \times \text{age}) + 5$

### Applying the activity factor

Category	Physical Activity (PA)	Activity Score
Sedentary	< 30 min/day	1.2
Lightly active	Light PA 1-3 days/week	1.375
Moderately active	Moderate PA 3-5 days/week	1.55
Very active	Hard PA 6-7 days/week	1.725

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## **Estimating energy expenditure using Metabolic Equivalents (METs)**

- METs x 3.5 x BW-kg / 200 = kcal./min.

## **Identify MET values using 2011 Compendium of Physical Activity**

- Available online (using favorite search engine)

## **Exercise program design for energy expenditure and motor-unit stimulation**

- Principles
- Variables

## **Endocrine response to exercise stimulus**

- Anabolic hormones
- Catabolic hormones
  - Promote anabolism – protein synthesis using exercise program design

High Intensity Interval Training

Tabata Training

Recent research – effects of HIIT

- Schoenfeld / Gibala

## **Exercise program design**

- Understanding physics – increase work-rate and power output
  - Change mass / change acceleration → change power output
- Resistance training
  - Manipulate volume and rest/recovery interval
- Energy system training (cardiovascular)
  - Use metabolic markers:  $VT_1$  /  $VT_2$
  - Interval training – adjusting intensity/volume
- Adjust intensity/volume to tweak training stimulus / recovery time (periodization)
  - Nonlinear / undulating periodization aka “muscle confusion”
- Exercise is a function of movement
  - Fitness = high-quality, efficient movement performed at a sufficient intensity to produce a physical response
- ACE IFT Model for movement/exercise choice

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Main site for the book: [www.AbsRevealed.com](http://www.AbsRevealed.com)

- **Book, iPhone app, video library** available: [www.AbsRevealed.com/buynow.php](http://www.AbsRevealed.com/buynow.php)
- Extra exercises not included in the book available on the “Deleted Scenes” page

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