

Benefits, Myths & Misconceptions of Resistance Training for the Female Population

Presented By:

Dr. Rori Alter-Petrizzo, PT, DPT



Resistance Training defined:

- ▶ A type of exercise that involves moving the body segments (individually or as a whole system) against an external load
- ▶ For the general population the intended goals of resistance training are usually to:
 - ▶ *Improve muscular strength and size*

Modes of Resistance Training:



Benefits of Resistance Training for Females:

- ▶ Improves resting metabolic rate
 - ▶ → *Improved ability to lose fat*
- ▶ Reduces susceptibility to osteopenia/osteoporosis
- ▶ Reduces risk of sarcopenia with age
 - ▶ → *Reduces risk of falls*
- ▶ Improves hormone production
- ▶ Reduces fatigue

Resting Metabolic Rate:

- ▶ *The number of calories your body would burn if you were to do nothing but rest for 24 hours*
- ▶ *Fat free mass (muscles, bones, organs, etc.) is a major predictor of resting metabolic rate*

Resting Metabolic Rate

- ▶ A 9 month study conducted on 61 healthy adults examining the effects of resistance training and various protein supplementation on RMR concluded that irrespective of protein supplementation, RMR was significantly improved 5% (on average) in all test groups
- ▶ What does this mean for fat loss?
 - ▶ *You are burning more calories even at rest!*

Sarcopenia: The progressive loss of skeletal muscle mass, strength, and function as a result of the normal aging process.

- ▶ Sarcopenia can lead to:
 - ▶ *Loss of functional independence*
 - ▶ *Increased risk for falls, fractures, and hospitalizations → Increased risk of death*



Sarcopenia Continued...

- ▶ What's the best cure? Prevention!
- ▶ Resistance training has been shown to significantly slow or even halt the progression of sarcopenia as we age
 - ▶ "In contrast to aerobic exercise training, resistance exercise training appears to have a larger effect on augmenting muscle mass and strength and attenuates the development of sarcopenia."
 - ▶ "The majority of studies have shown that resistance exercise training must be carried out at a high intensity in order to show substantial improvements in muscle strength."
 - ▶ Burton & Sumukadas, Optimal Management of Sarcopenia. *Clinical Interventions in Aging*. 2010; 5:217-228.

Bone Health: Osteopenia & Osteoporosis

- ▶ Resistance training has a direct effect on the prevention and reduction of osteopenia and post menopausal bone loss
- ▶ In August 2016 the Sports Medicine Journal published an overview of systematic reviews and meta-analyses covering the effects of exercise on bone mineral density in young females through post-menopausal women and concluded that:
 - ▶ “Combined-impact exercise protocols (*impact exercise with resistance training*) are the best choice to preserve/improve bone mineral density in pre- and postmenopausal women. Peak bone mass in young girls can be improved with short bouts of school-based high-impact plyometric exercise programs.”
 - ▶ *Resistance exercise is more important the older you get!*

Bone Health: Osteopenia & Osteoporosis

- ▶ More on Resistance Training:
 - ▶ *“in contrast to traditional pharmacological and nutritional approaches for improving bone health in older adults, resistance training has the added benefit of influencing multiple risk factors for osteoporosis including improved strength and balance and increased muscle mass.”*
 - ▶ *Killing two birds with one stone!*

Progressive Overload:

- ▶ To build muscle and bone the system needs to be stressed to a level at which it is not accustomed to
- ▶ Stress \leftrightarrow Adaptation
 - ▶ *For muscles, bones, and connective tissues!*
- ▶ Over time you must do more to drive continued adaptation:
 - ▶ *More reps*
 - ▶ *More load*
 - ▶ *More sets*

Debunking Common Misconceptions:

“Walking, running, body weight exercises and activities of daily living count as resistance training, right?”

“Pilates, Yoga, and TRX training are good forms of resistance training, right?”

- ▶ *None of these have the ability to be progressively overloaded over time.*
- ▶ When walking and running, our joints, bones and muscles are not worked through their full range of motion
- ▶ Goal oriented resistance training has 3 important traits that these forms of exercise generally do not
- ▶ *Goal* Oriented Resistance Training for Health & Longevity is:
 1. *Quantifiable*
 2. *Planned*
 3. *Progressive*

Debunking a Common Myth:

“If I lift weights I’ll get big and bulky like a man.”

- ▶ It takes a lot of work and a long time to put on enough muscle to look like Arnold!
- ▶ A 2016 study published in the *Journal of Sports Medicine & Physical Fitness* studied the effects of a 12 week resistance training program versus a control group on strength and body composition. All subjects maintained their normal diet during the 12 week study
 - ▶ *The study’s results suggest that resistance training improves muscle strength without altering body composition in older women under dietary intake maintenance*
- ▶ *Women do not have as much testosterone as men!*



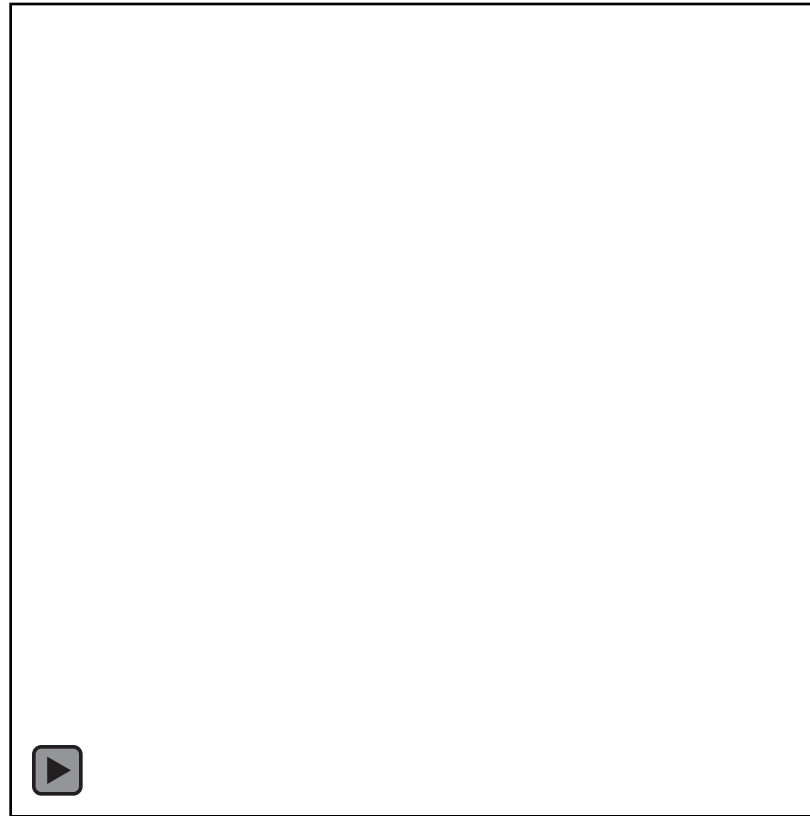




Case in point: Mrs. Gina

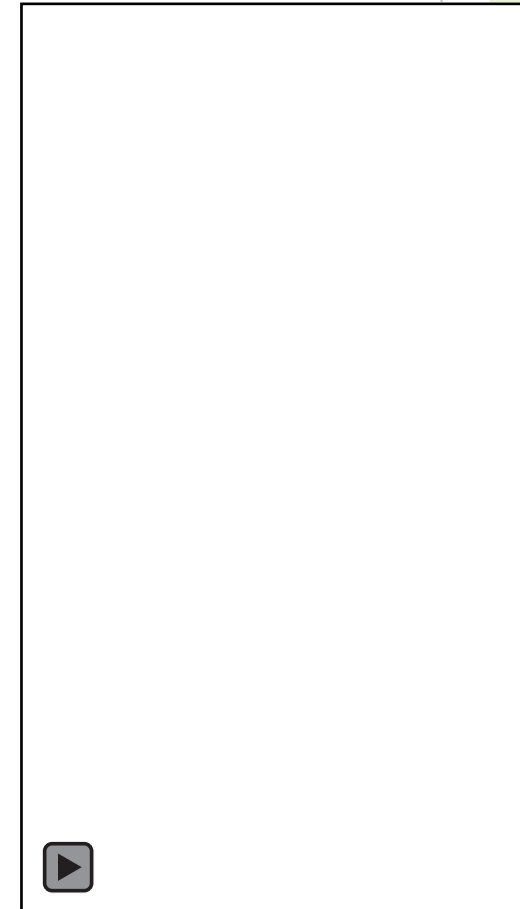
Age: 61

of years Barbell Training: 1



Debunking a Common Misconception:

“You shouldn’t lift weights while you are pregnant”



Resistance Training & Pregnancy:

- ▶ **Journal of Physical Activity and Health: Resistance Training during Pregnancy and Perinatal Outcomes**
 - ▶ Reduces risk for hypertensive disorders and gestational diabetes compared to pregnant women who do not perform resistance training
 - ▶ NO DIFFERENCE in risk of preterm labor, mode of delivery or gestational age at delivery based on exercise status!!!!
- ▶ **Two other studies that support resistance training is safe for the baby:**
 - ▶ *British Journal Of Sports Medicine (2008)*: Does exercise training during pregnancy affect gestational age? Randomized control trial
 - ▶ *International Journal of Obesity (2009)* Resistance exercise training during pregnancy and newborn's birth size: a randomized controlled trial

Resistance Training & Pregnancy

Journal of Early Human Development (2016):

Journal of Early Human Development (2016): Benefits of aerobic or resistance training during pregnancy on maternal health and perinatal outcomes: A systematic review.

- ▶ **Helps reduce fatigue and feelings of low energy:**
 - ▶ "...actue, low-to-moderate intensity muscle strengthening exercise during pregnancy is effective for transiently improving feelings of energy and fatigue."
- ▶ **Helps maintain meternal health:**
 - ▶ "The exercise modality that seems to induce a more favorable effect on maternal health is the combination of aerobic and resistance exercises during pregnancy."
- ▶ **What the ladies say:**
 - ▶ Retains muscle mass throughout pregnancy improving ability to regain "pre-pregnancy body."
 - ▶ Resistance training through pregnancy helps with vaginal delivery



**9
Months
In**



**9
Months
Out**

How to Get Started:

- ▶ *Use available resources!*
- ▶ American College of Sports Medicine Guidelines
 - ▶ *Minimum of 2 x per week*
 - ▶ *Non-consecutive days*
 - ▶ *Train all the major muscle groups*
 - ▶ *Don't be afraid to work hard!*
- ▶ **On Campus**
 - ▶ Adelphi Adult Fitness Program
 - ▶ Campus Recreation



