Health and fitness professionals possess various levels of expertise regarding the preventive and medicinal value of muscular strengthening activities. This session will significantly enhance the knowledge and skills of health and fitness professionals prescribing muscular strengthening activities in both apparently healthy individuals and across a broad range of cardiometabolic and other chronic health conditions. Participating in regular strength training has been shown to favorably impact body composition, bone health, and human performance while simultaneously providing a protective effect from many chronic health conditions. This forum will briefly review today’s most common chronic health conditions and disseminate some of the recent evidence illustrating the risk reducing benefits of engaging in regular strength training exercises. Health and fitness professionals will be exposed to evidence-based strength training guidelines and recommendations that have been shown to help reduce morbidity and mortality.

I. Welcome and Presentation Objectives

II. What is strength training?

Types/Modes

- Free Weights
  - Benefits and caveats.
- Selectorized machines
  - Why choose machines over other modes of strength training equipment?
- Elastic Bands
  - Are they really any good for eliciting change in any populations?
- Body Weight (e.g., pull-ups, dips)
  - Can everyone perform these tried and true exercises?
- Isometric
  - Important information regarding the safety considerations in certain populations.

III. Most Common Chronic Conditions

- Type 2 diabetes
- Hypertension
- Overweight/Obesity
- Dyslipidemia
- Special Topic

IV. Type 2 Diabetes

- Briefly discuss the etiology of diabetes
• Prevalence estimate 8-9% (known)
• Diagnosing chronic hyperglycemia
• Discuss strength training with associated comorbidities (e.g., neuropathies)
• How and why muscular strengthening activities are beneficial.
• Recommendations and prescriptions
  o Do elastic bands work in this population?

V. Hypertension
• Briefly discuss the etiology of prehypertension and hypertension
  o 90-95% essential (no known cause) - 5-10% etiology is known
• Discuss strength training and precautions with associated comorbidities.
• How and why muscular strengthening activities are beneficial.
  o Can strength training make blood pressure worse?
• Recommendations and prescriptions.

VI. Overweight/Obesity
• Briefly discuss the etiology of overweight/obesity.
  o Discuss body mass index. Does it really mean more lean body mass in everyone?
• Discuss strength training and precautions with associated comorbidities.
• How and why muscular strengthening activities are beneficial.
• Muscular strengthening activities.
• Recommendations and prescriptions.

VII. Dyslipidemia
• Briefly discuss the etiology of dyslipidemia.
• Discuss strength training and precautions with associated comorbidities.
  o Statins?
• How and why muscular strengthening activities are beneficial.
• High-density lipoprotein cholesterol.
  o Does strength training impacts this important component of dyslipidemia or is it intensity?
• Triglycerides
  o Does strength training impacts this important component of dyslipidemia or is it weight loss?
• Muscular strengthening activities.
• Recommendations and prescriptions.

VIII. Special Topic
• This section will discuss in similar format a special topic that may be an area of recent investigation in strength training research.

IX. Three Tips To Take Away And Implement In Your Job From This Presentation
• Following this presentation the health and fitness professional should have an optimal understanding of the current evidence illustrating the preventive and medicinal benefits of strength training.
• Following this presentation the health and fitness professional should understand and be able to discuss with their clients or patients how strength training can improve their cardiometabolic profile and potentially prevent, delay and manage many of today’s most common chronic health conditions and associated comorbidities.

• Following this presentation the health and fitness professional should know how to best prescribe muscular strengthening activities for apparently healthy individuals and those with cardiometabolic or other chronic health disorders based on the most recent evidence and recommendations.

X. Selected References


