JOINT MOBILITY FOR LIFELONG MOVEMENT
Session 311

FitFighter

Presented by:
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We know that joint mobility can decrease or prevent joint injury. Simple muscular strength, mobility, activation and correction strategies with light, loaded movement is the secret sauce to keeping joints healthy and injury-free. In this workshop you will discover tried-and-true joint health and muscle strengthening movements and programs that can help your clients move without restriction, pain or injury.

I. Objectives:
A) **Learning:** Understanding the research behind what it takes to maintain proper joint integrity. How executive function and tissue activation are key and the need to redefine strength and how we approach training our clients.
B) **Communicating**: Delivering the "Why" to our clients.
C) **Implementing**: Program designs and movement selection (Putting it all together.)

II. The Research is in: Moving efficiently begins with focused training of proximal stability for better distal mobility. There needs to be an emphasis on activation, balance, coordination, as well as strength. Challenge the mental alongside the physical. Neuromuscular activity is at the center of it all.

1. Joint Mobility & Stability
https://www.acefitness.org/fitness-certifications/ace-answers/exam-preparation-blog/1189/joint-mobility-and-stability/
"The goal of stability/mobility is to develop postural stability throughout the kinetic chain without compromising mobility at any point in the chain. This boils down to the idea that parts of the body that should be stable are stable, and the parts of the body that move should move correctly which leads to postural stability."

2. The Role of Instability Rehabilitative Resistance Training for the Core Musculature
https://journals.lww.com/nsca-scj/Fulltext/2011/06000/The_Role_of_Instability_Rehabilitative_Resistance.6.aspx
"Instability resistance exercises promote co-contractions, increasing joint stability. of greatest importance to joint stability is not necessarily strength or endurance but motor control. "

3. Instability Resistance Training Improves Working Memory, Processing Speed, and Response Inhibition in Healthy Older Adults: A Double Blinded Randomized Controlled Trial

https://www.nature.com/articles/s41598-020-59105-0

"Free-weight instability resistance training enhances executive functions and achieves physical gains at a lower load. Safer for older clients."

4. Instability Resistance Training Optimally Impacts Balance and Joint Stability

https://www.researchgate.net/publication/8079290_The_Impact_of_Instability_Resistance_Training_on_Balance_and_Stability

"Although force outputs are diminished under unstable conditions, the decreased balanced associated with instability resistance training may force limb and trunk musculature to play a great role in joint stability…..As this high level of muscle activation can be achieved with less resistance, this training modality may have positive implications in progressive muscle and joint rehabilitation as well as sport specific training."

5. Aging With Strength and Grace - IDEA Fitness Journal - Winter 2023 Written by Zachary Mang, PHD

"The greater stability and balance requirements of FWT may lead to greater motor unit recruitment, muscular activation and synchronization "(i.e. muscle groups firing together) (Schwanbeck et al.2020)

<u>The Research is in: Grip Strength is a critical path to any other kind of strength</u>

1. **A biomarker for longevity and long term health**

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6778477/

2. **An indicator of heart health**

https://www.health.harvard.edu/blog/grip-strength-may-provide-clues-to-heart-health-201505198022

3. **Associated with cognitive health**

https://www.frontiersin.org/articles/10.3389/fnagi.2021.625551/full

III. Let's Summarize the Research:

A) The Challenge: During the aging process individuals experience a decline in:

* Neuromuscular control
* Motor performance & cognition
* Physical functionality - specifically w/in locomotion, leading to falls
* Postural stability

B) The Solution: Proper resistance training that requires an element of body stabilization, will enhance executive functions which will in turn improve movement efficacy in general.

C) Digging Deeper: Utilizing IRT methods increases proper neuromuscular coordination of the agonist, antagonist, synergists and stabilizers, therefore enhancing the efficiency of joint mobility. The increase in co-contractions that enhances the stability factor also reduces the amount of external force.

D) The Why - Key Benefits of IRT when addressing proper joint mobility:

1) Challenges us mentally as well as physically.

2) Enhances muscle coordination/activation via increased processing speeds, proprioceptive information, and higher levels of the control system.

3) Improvement in cognitive performance; increase in IGF-1 (Insulin Growth Factor) and BDNF (brain-derived neurotrophic factor) while lowering Homocysteine levels (high levels of homocysteine impairs cognitive performance via neurotoxicity.)

4) Improvements in strength, balance, and executive functions appear under lighter loads than stable based resistance training. This makes it safer for older adults or any athlete that is recovering from an injury or severe asymmetry in a set area of the body. (Think training specificity!)

5) Creating movements within your training program that resemble the instability of your activities of daily living enhances your motor control, proprioception and you become more efficient performing functional tasks. Move Strong, Move Well, and Move Often.

IV. IMPLEMENTING: JOINT INTEGRITY BASED RESISTANCE TRAINING

- Program Specificity
- Focus on postural stability throughout the kinetic chain
- Training Movements for all environments. Address Stability, Strength, Balance & Proprioception
- Versatility
- Programming template with a sliding scale
- Grip & Stability are critical components

THE 3 BENEFITS & PRINCIPLES OF REINVENTING STRENGTH

1) Pillar 1: Find Your Gecko Grip
2) Pillar 2: Build Your Sturdy Trunk
3) Pillar 3: Grease Your Joints and Enhance Their Integrity

Understanding and Coaching the Differences of Flexibility & Mobility, Balance & Stability

Building IRT Loaded Movement Programs:

1. Start with MACE: Mobility / Activation / Correction / Engagement
2. Always return to the 6 Fundamental Movements
    a) Squat
    b) Hinge
    c) Push
    d) Pull
    e) Crawl
    f) Rotation

Layer in Movement Complexes from the onset & become increasingly sophisticated.
When in doubt, keep the load light (Start at Block Zero & earn the progression.)

V. Your Charge for *Tomorrow*!

1. **Redefine Strength**. Introduce your new principles of loaded movement and instability into your own routine and your clients' programs. Shift your vocabulary to Move Weight instead of Lift it. Redefine how your clients think of "strength" to include strong grip, stable trunk, and joint integrity with proper mobility.
2. **Relocate Strength**. Take strength training out of the gym and into the home, onto the porch, to the park, to the beach, or on a bench. Make it accessible! Laugh a little!
3. **Reconsider the Business of Strength**. Consider a Strength-Based Group Fitness or Personal Training Program as an exclusive offering and revenue generator. Take IRT Strength from a niche type of workout to a broad-based & versatile program offering.

Results will be copious and immediate!

1. Limitless Physical and Recovery Benefits
2. Mental Health and Emotional Competency
3. Revenue Generating Opportunities

Reach out anytime!

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