Advanced Foam Rolling Techniques

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Objectives

- Define self-myofascial release
- Understand a progressive soft tissue approach
- Learn to program SMR for different levels of clients
What is Self-Myofascial Release?

• A flexibility technique used to inhibit overactive muscle fibers
  – Using one’s own bodyweight to attempt to change the state of the tissues

• Myofascial Release
  – Soft-tissue technique that facilitates a stretch into restricted myofascia

• How does SMR differ from Foam Rolling?
Primary reasons for SMR

• Alleviate side effects of Trigger Points
Myofascial Trigger Points

• Hyperirritable bundle in skeletal muscle that is associated with a hypersensitive nodule
  – Painful with compression
  – Characteristic referred pain—so pain may be present in other places
  – Motor dysfunction

• Muscles with TrPs display:
  – Decreased ROM
  – Pre-fatigued and fatigue more rapidly than healthy muscle
  – Delayed recovery
SMR and TrPs

- Autogenic Inhibition
  - Muscle spindle and GTO
- Gamma Loop
  - Keep muscle spindles taut
  - Adjust the muscle spindle sensitivity
Primary reasons for SMR

- Influence the ANS
Autonomic Nervous System

• Peripheral Nervous System
  – Acts below conscious control
  – Divided into 3 main subsystems
    • Parasympathetic
    • Sympathetic
    • Enteric

• Parasympathetic—"rest and digest"
• Sympathetic—"fight or flight"
• Enteric—governs the function of the GI System
### Functions of Autonomic Nervous System

<table>
<thead>
<tr>
<th>Sympathetic</th>
<th>Parasympathetic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heart</strong></td>
<td><strong>Heart</strong></td>
</tr>
<tr>
<td>– Increased heart rate</td>
<td>– Decreased heart rate</td>
</tr>
<tr>
<td>– Increased force of contraction</td>
<td>– Decreased force of contraction</td>
</tr>
<tr>
<td><strong>Blood vessels</strong></td>
<td><strong>Blood vessels</strong></td>
</tr>
<tr>
<td>– Constriction</td>
<td>– No effect</td>
</tr>
<tr>
<td><strong>Lungs</strong></td>
<td><strong>Lungs</strong></td>
</tr>
<tr>
<td>– Bronchodilation</td>
<td>– Bronchoconstriction</td>
</tr>
<tr>
<td><strong>Gastrointestinal tract</strong></td>
<td><strong>Gastrointestinal tract</strong></td>
</tr>
<tr>
<td>– Decreased motility</td>
<td>– Increased motility</td>
</tr>
<tr>
<td>– Sphincter contraction</td>
<td>– Sphincter relaxation</td>
</tr>
<tr>
<td>– Decreased secretions</td>
<td>– Increased secretions</td>
</tr>
</tbody>
</table>

- Heart: Increased heart rate, Increased force of contraction
- Blood vessels: Constriction
- Lungs: Bronchodilation
- Gastrointestinal tract: Decreased motility, Sphincter contraction, Decreased secretions
- Heart: Decreased heart rate, Decreased force of contraction
- Blood vessels: No effect
- Lungs: Bronchoconstriction
- Gastrointestinal tract: Increased motility, Sphincter relaxation, Increased secretions
SMR and ANS

• Type III and Type IV Receptors
  – Pain receptors, but also respond to mechanical tension and pressure
  – Serves a mechanoreceptor function and:
    • Increases vasodilation
    • Better tissue dynamics
    • Reduces prolonged faulty muscle contractions
Effects of tissue pressure

- Changes in tissue response
  - Change in tonus of skeletal motor units
  - Global muscle tonus
  - Local fluid dynamics
  - Intrafascial smooth muscle cells
- Tissue Pressure
  - CNS-TrPs
  - Stimulation of mechanoreceptors
  - Proprioceptive function
  - Interstitial receptors
- Hypothalamus
- ANS

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SMR Devices
When should we use SMR

- In the presence of muscle imbalances
- When tissue is identified as being restricted
- Pre-exercise
- Post exercise
Identifying muscle imbalance

- Overhead Squat Assessment
- Single Leg Squat Assessment
- Pushing Assessment
- Pulling Assessment
Overhead Squat Assessment
# Solutions

<table>
<thead>
<tr>
<th>Compensation</th>
<th>Probable Overactive Muscles</th>
<th>Key Exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feet Turn Out</td>
<td>Lateral calf complex; biceps femoris (short head)</td>
<td>Single-leg Balance</td>
</tr>
<tr>
<td>Knee Moves In</td>
<td>Adductor complex, biceps femoris (short head); TFL/IT Band</td>
<td>Bridging, Single-leg Balance, Lateral Tube Walking</td>
</tr>
<tr>
<td>Forward Lean</td>
<td>Calf complex, hip flexor complex</td>
<td>Ball Cobra, Bridges, Ball Wall Squat</td>
</tr>
<tr>
<td>Low Back Arches</td>
<td>Hip flexor complex, erector spinae, latissimus dorsi</td>
<td>Prone Iso-abs, Quadruped Arm/Leg Raise, Bridges</td>
</tr>
<tr>
<td>Arms Fall Forward</td>
<td>Latissimus dorsi, pectoral complex, teres major</td>
<td>Ball Cobra, Ball Combo I, Squat-to-Row</td>
</tr>
</tbody>
</table>
Pre-Exercise SMR

• Inhibit overactive muscles
• Delays onset of fatigue
• Increases flexibility
• Increases ROM
• Increases performance
Integrated movement prep

• Prior to stretching
Key Points

- Breathing
- Hydration
- Pain
Calves
Biceps Femoris
Adductor
TFL/IT BAND

[Image of woman performing a side plank exercise using a foam roller]

[Image of woman performing a plank exercise using a foam roller]
Quadriceps
Glutes/Piriformis
Latissimus Dorsi
Pectorals
Thoracic Spine
Case Study 1

• Which muscles would you roll?
Case Study 2

• Which muscles would you roll?
Case Study 3

• Which muscles would you roll?
Case Study 4

- Which muscles would you roll?
Wrap-Up

✔️ Define self-myofascial release

✔️ Understand a progressive soft tissue approach

✔️ Learn to program SMR for different levels of clients
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Thank You!

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