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Blood Flow Restriction (BFR) & Cupping: Practical Applications



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Outline of Topics:

1. BFR


- 1. Update on usage

2. Cupping Techniques

- 1. Myofascial Decompression
 - 1. Static
 - 2. Passive
 - 3. Active or Active-Assisted

Blood Flow Restriction

- “Brief and intermittent occlusion of **VENOUS** blood flow using a specialized surgical tourniquet while exercising.”



- Significantly **LIGHTER EXTERNAL LOAD**: 20-30% of 1 RM
 - ACSM Guidelines: **75-85% 1 RM** – strength/hypertrophy
- Similar **hypertrophy** and **strength** response

How does it work?

- **What's happening?**
 - Hypoxic environment → ↑ anaerobic metabolism
 - recruits fast twitch motor units → ↑ MPS
 - ↑ Hypertrophy
- Fast twitch – typically with high intensity exercises

How are we using it?

- In-season arm-care/shoulder programs
 - Active exercises
 - Isometric, Isotonic, Isokinetic
 - Tubing/bands/cuffs & free weights
 - 3-4 exercises + BFR
 - 4 sets (30, 15, 15, 15)
 - Manuals (MRE's)
 - Normal routine + BFR
 - 1-2 sets of 12-15 reps
 - May start with just AROM and no manual resistance

Game and/or Bullpen



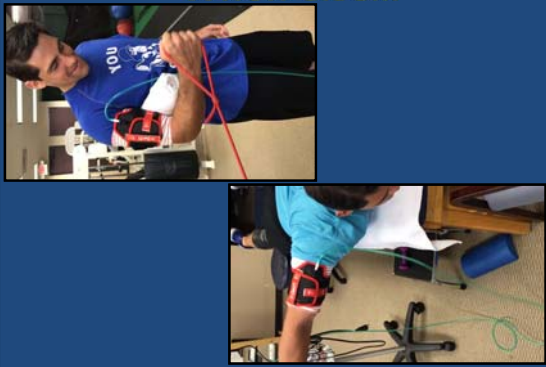
“BFR” Blood Flow Restriction
Shoulder Manuals

When else...

- Post-injury
- Post-surgery
 - Acute Phase – *no to minimal mechanical stress*
 - Sub-Acute Phase – *introduce mechanical tension*



When else...



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REVIEW ARTICLE

Exercise with Blood Flow Restriction: An Updated Evidence-Based Approach for Enhanced Muscular Development

Brendan R. Scott · Jeremy P. Luemeke · Katie M. Shattery · Ben J. Duncanson

- **Key Points:**
 - **Wide cuffs (13.5cm) restrict arterial blood flow at lower pressures than narrow cuffs (5.0cm)**
 - BFR should not be universally applied at an absolute pressure, but should vary relative to each individual.
 - Athletic Populations: 2-4 sessions per week
 - Low load BFR resistance exercise does not appear to increase muscle activation by the same degree as traditional high-load resistance exercise without BFR, and therefore cannot stimulate the complete pool of high-threshold motor units.
 - **Indicate changes in muscular strength following BFR are more closely related to rapid increases in mm hypertrophy as opposed to neural adaptations**

WET  

DRY  

FIRE  

Cupping Technique



- **Static –**
 - **Cups applied and remain for 2-10 min**

Cupping Technique



- **Passive –**
 - Cup (silicone) applied and passively moved over previously covered region

Cupping Technique



- **Active – Assist:**
 - Cups are re-applied and player actively moves arm in different planes

Myofascial Decompression Cupping



What else do we use cupping for in Baseball?



- Decompression
- After compression injury (HBP)



THANK YOU!