Post-Pitching Recovery with Modalities:

Shoulder Complex

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Outline of Topics:

1. Intro
2. Post-pitching arm care program (game/ bullpen)
   1. BFR + Shoulder Manuals
3. Day 1 or 2 Soft Tissue Regeneration / Recovery
   1. ASTYM
   2. Cupping
   3. FDM, ART, Dry Needling
4. Conclusion
   1. A Piece of the Puzzle

Intro:

Post-pitching arm care program:

Game and/or Bullpen
(day 2 or 3)

"BFR" Blood Flow Restriction
Shoulder Manuals

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


Journal of Science and Medicine in Sport

Review

The efficacy of blood flow restricted exercise: A systematic review & meta-analysis

Joshua Slysz, Jack Stultz, Jamie F. Burr

- Current evidence suggests:
  - Meta-analytic evidence of greater increases in muscle size and strength when exercise is combined with BFR, compared with low load exercise alone.

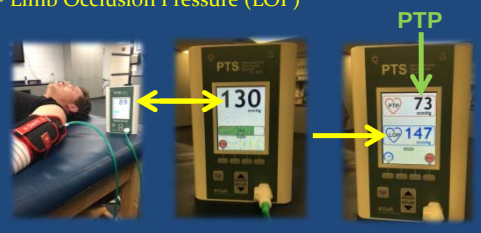
How does it work?

- Limb Occlusion Pressure (LOP)
- Personal Training Pressure (PTP)
  - 80% max for lower limb
  - 50% max for upper limb

- What's happening?
  - Hypoxic environment → ↑ anaerobic metabolism

→ recruits fast twitch motor units → ↑ MPS → ↑ Hypertrophy
- Fast twitch – typically with high intensity exercises

- Limb Occlusion Pressure (LOP)



- Personal Training Pressure (PTP)

How do we use it?

- In-season arm-care/shoulder programs
  - Active exercises
    - Bands / Free Weights
    - 3-4 exercises + BFR
    - 4 sets (30, 15, 15, 15)
  - Manuals
    - Normal routine + BFR
    - 1-2 sets of 12-15 reps
    - Initially may start with just active and no resistance

When do we use it?

- Post-injury
  - Acute –Shoulder Pain
  - Chronic – RTC Tendonosis
- Post-surgery
  - Acute Phase – *no to minimal mechanical stress*
    - Isometrics
  - Sub-Acute Phase – *introduce mechanical tension*
    - Shoulder/Scap Ther-Ex
  - Loading Phase – *increase tolerance to 20-30% 1 RM*
    - 4 sets
    - 30 – 15 – 15 – 15

Sports Med (2015) 45:313–325
DOI 10.1007/s40279-014-0288-1

REVIEW ARTICLE

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

Brendan R. Scott · Jeremy P. Loenneke · Katie M. Slattery · Ben J. Dascombe

- 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.

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- DELFI Medical Inc / FDA Classified (Class 1)
- Built in Doppler / Timer
- Wider Contoured Cuffs

Soft Tissue Regeneration & Recovery: ASTYM and Cupping

Post-Pitching (day 1-2)

ASTYM

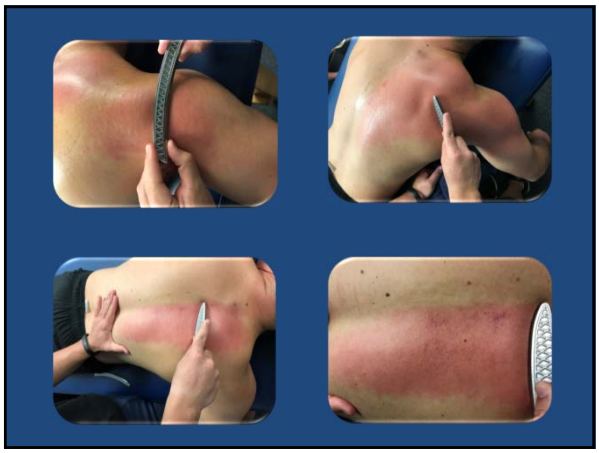
Technique

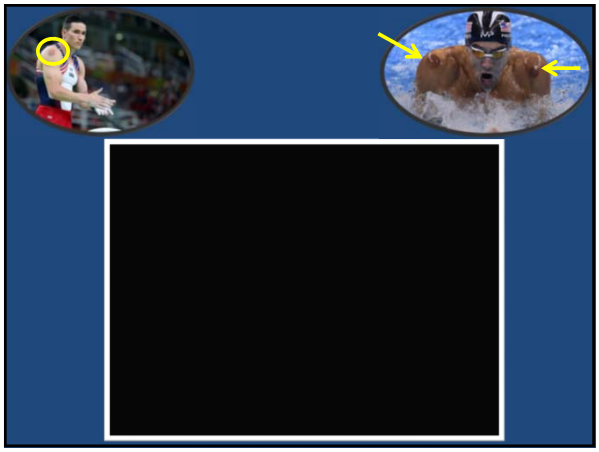
Recovery/Tissue Regeneration

Post-pitching day #1

Prone: B/L paravertebral and trunk mm, Scap & RTC mm

Supine: Pec, Subclavius, Ant. Deltoid, Bicep/Tricep Wrist & Forearm Flexors/Extensor mm





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**

What else do we use cupping for in Baseball?

- Decompression
  - After compression injury (HBP)

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Review

New is the well-forgotten old: The use of dry cupping in musculoskeletal medicine

Evgeni Rozenfeld, BPT[a, 1], Leonid Kalichman, PT, PhD[b]

Summary

Cupping is an ancient technique used in treating pain and various disorders. Different techniques have been developed over time, however, applying a cup to create suction over a painful area, is common to all. Dry or fire cupping, used on the intact skin, leaves bluish circular hematomas. Recently, interest in cupping has re-emerged and subsequently, several studies have begun to investigate the mechanisms of cupping therapy. Mechanically, cupping increases blood circulation, whereas physiologically it activates the immune system and stimulates the mechanosensitive fibers, thus leading to a reduction in pain.

There is initial scientific evidence that dry cupping is able to reduce musculoskeletal pain. Since cupping is an inexpensive, noninvasive and low-risk (if performed by a trained practitioner) therapeutic modality, we believe that it should be included in the arsenal of musculoskeletal medicine. It is essential to perform additional studies clarifying the biological mechanism and clinical effects of cupping.

Other Recovery Tools in Baseball

- Marc Pro / H-Wave
- Hivamat
- Kinesiotape
- Contrast Bath
- GameReady
- Nice
- NormaTec
- Recovery Pump


THANK YOU!