HEALTH IN OUR HANDS!

The Arkansas State University Wellness Program Newsletter
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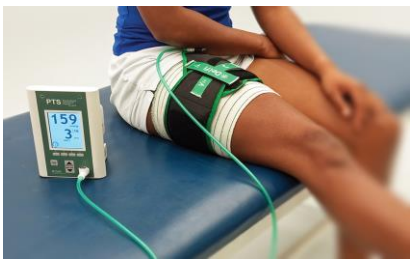
New Training Strategy

Introduction

Are you looking for a new way to train or exercise? Training by briefly limiting blood flow to a muscle group is starting to make its way through the health and fitness world. It is a way to increase muscle mass and strengthen your muscles without the high intensity training or heavy weight lifting requirements. The blood that is flowing through our extremities is restricted for a short amount of time in exchange for improved growth and strength in our bodies. "The State of Profession" journal states, "At first glance, BFR (Blood Flow Restriction) sounds like fringe science, but a deeper look makes it clear that the science is legitimate and the potential is huge". We are going to talk about what blood flow restriction is, how it can be beneficial, and different ways to use blood flow restriction.

What is Blood Flow Restriction Training?

Blood flow restriction training was initially developed in the 1960's in Japan and was known as KAATSU training. Today you commonly hear it called blood flow restriction. Blood flow restriction is a training technique that uses an inflatable cuff that goes around an extremity of the upper or lower body. The inflatable cuff looks similar to a blood pressure cuff. When the cuff is inflated to a specific pressure the blood flow is limited in that limb. During temporary blood occlusion of a limb, there is a reduction of oxygen that is delivered to the muscle. Due to less oxygen, the muscle releases lactate. Lactate is a substance that turns cells in our body into energy. With more energy in the limb that is occluded, the muscle grows and strengthens. While the limb is occluded, the participant performs low intensity strength exercises specific to the body part and muscle they are focused on treating. The limb is occluded usually for 7-10 minutes or the time it takes you to complete an exercise set/repetitions. The most common sequence is 30 reps with a 30 second rest period, then 15 reps with a 30 second rest period and then two more sets of 15 reps with a 30 second rest in between. Total repetition count is 75 repetitions of one exercise. After completion, you rest for at least one minute with the cuff being deflated to let your limb have complete rest. You can continue this sequence throughout your treatment or workout session.



How Blood Flow Restriction is Beneficial

Adding this one simple technique to your training could result in health benefits.

Benefits:

- Improves cardiovascular endurance
- Increases muscle mass
- Improves bone density

- Increases growth hormone response
- Improves muscle activation
- Improves muscle protein synthesis
- Increases muscle strength with low intensity
- Puts less stress on joints
- Notes quicker recovery time

Ways to use Blood Flow Restriction

Blood flow restriction training is new to the fitness world. Many different populations of people can take advantage of this phenomenon--young or old, strong or weak, injured or not injured. There are numerous ways to use blood flow restriction exercise because it is a low intensity training with large strength gains.

Ways to use:

- Strength training
  - Powerlifting
  - CrossFit
  - Olympic lifting
- Aerobic training
  - Biking
  - Swimming
  - Walking
  - Running
- Recovery after injuries
  - Muscle strains
  - Fractures
  - Nerve injuries
- Regain muscle after surgery
  - Rotator cuff repairs
  - Total joint replacement
  - ACL reconstruction
  - Achilles repairs
- Increase older adult strength
  - Osteoarthritis
  - Sarcopenia (loss of muscle mass and strength)

Final Thoughts

As you can see, blood flow restriction training can be a valuable and rewarding technique to many people with different goals in mind.
If you are interested in blood flow restriction training you can check out a local physical therapy clinic or you can purchase your own set of cuffs online. Blood flow restriction training is safe IF you know and understand the protocols before taking part in this type of training.

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Other News:

**If you have any suggestions for newsletter topics, please contact Dean Susan Hanrahan at hanrahan@astate.edu.

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The Arkansas State University Employee Wellness Newsletter is published monthly during the academic year by the College of Nursing and Health Professions. Health questions can be addressed to Dean Susan Hanrahan, Ph.D., ext. 3112 or hanrahan@astate.
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