OWENS RECOVERY SCIENCE

Course Outlines and Objectives

BFR Throwing: The Future of Arm Care

Brief Abstract:

Return-to-throw programs after upper extremity injury or surgery often rely on progressive overload through submaximal throwing and general strength exercises. However, these protocols may not sufficiently address anabolic resistance or the neuromuscular deconditioning that occurs during prolonged shutdowns. Blood Flow Restriction (BFR) offers a novel solution by amplifying the physiological stimulus of low-load exercises and plyometric patterns, even at reduced intensities. This presentation will explore how BFR can be applied within a throwing-specific context to accelerate strength recovery, improve motor unit recruitment, and bridge the gap to high-velocity return-to-throw phases. Discussion will include key safety considerations, sport-specific dosing strategies, and the potential for BFR to optimize adaptation without increasing tissue strain. This emerging application of BFR represents an innovative adjunct to traditional throwing rehab and performance programming.

Outline

Throwing with Blood Flow Restriction

8:00 Introduction to ORS and Blood Flow Restriction Throwing

8:20 BFR Throwing: The Delfi Difference

8:40 Safety: Contraindications, Potential Contraindications, and Nerve Injury

9:00 Safety: Clotting, Hemodynamics, Muscle Damage in relation to Throwing

9:30 **Lab One**: Cuff Selection, Measuring Occlusion Pressure, and Customizing settings

9:55 5 Minute Break

10:00 Getting Started: Guiding Principles for Throwing

10:15 Throwing Utilization: Plyos, Catch Play, and Long Toss

11:15 **Lab Two**: Intro to Throwing and Safety

12:00 Lunch Break (1 hour)

1:00 Human Movement: Enhancing Practice Design

1:20 Pitch Design

1:30 Throwing Mechanics: Optimizing Efficient Mechanics

1:45 **Lab Three**: Advanced Throwing Drills

2:05 5 Minute Break

2:10 In-Season Utilization and Workload Maintenance

2:40 Off-Season On-Ramping

3:00 Off-Season Phase Progression and Programming

3:20 Veteran Players: Addressing Decline

3:25 5 Minute Break

3:30 Return To Throw: General Principles

3:45 UCL Return To Throw

4:30 Additional Diagnosis Return To Throw

4:45 Forecasting the Future

5:00 Wrap up and Group Exam

5:30 Adjournment

Course Objectives

At the conclusion of the course, the participant will be able to:

- Explain the physiological mechanisms by which BFR enhances neuromuscular adaptation in throwing athletes.

- Integrate BFR into return-to-throw progressions to safely promote strength, endurance, and tissue resilience.
- Individualize limb occlusion pressure to optimize effectiveness and safety in upper extremity BFR applications.
- Manipulate the tourniquet cuff and implement strategies specific to the demands of overhead athletes.
- Design and implement a sport-specific BFR throwing protocol that bridges the gap from rehabilitation to peak performance.

Program Purpose

Successful mastery of this course will prepare clinicians to understand and safely implement Blood Flow Restriction (BFR) training within the context of throwing rehabilitation and performance. Drawing from a growing body of evidence and clinical application, this course explores how BFR can enhance recovery and neuromuscular adaptation while minimizing joint and soft tissue stress in overhead athletes.

Clinicians will learn the underlying physiologic mechanisms of BFR—such as metabolic stress, hormonal response, and increased muscle protein synthesis—as they relate specifically to restoring strength, power, and endurance in throwing athletes. The course will emphasize how BFR can be used to mitigate disuse atrophy, accelerate return to sport, and potentially influence tendon and bone health during prolonged recovery phases.

A core focus of this course is the integration of BFR into a structured Return-to-Throw program. Participants will be guided through the step-by-step design of sport-specific BFR throwing progressions—from isometric and plyometric foundations to ballistic and velocity-based patterns—based on tissue healing timelines and throwing biomechanics. Programming will address dosing variables (e.g., limb occlusion pressure, set/rep structure, rest intervals), individual readiness criteria, and clinical decision-making frameworks for progression.

Participants will also be instructed in the proper use of medical-grade pneumatic tourniquet systems, with a focus on individualized limb occlusion pressure, patient safety, and adherence to regulatory standards. Safety measures, including AORN guidelines, will be addressed to ensure clinicians are proficient in applying BFR in outpatient and on-field environments.

Due to the need for a strong foundational understanding of physiology and applied sport science, this is considered an advanced-level course. It is designed to close a gap in formal education for PTs, ATs, and OTs by introducing innovative techniques not typically covered in traditional academic training. This course equips clinicians with the tools to safely and effectively apply BFR within high-performance rehabilitation models and modern return-to-throw programming.

Desired Education Level

Candidates for the course should hold an active medical license and have completed the necessary coursework and degrees fulfillment for the occupations listed below or be a strength and conditioning specialist or performance coach that works directly with overhead athletes.

Target Audience

Athletic Trainers, Physical Therapists, Chiropractors, Medical Doctors, Occupational Therapists, Strength and Conditioning Specialists, and Sports Performance Coaches

Expected Outcome

At the conclusion of the course, the attendee will be proficient in the science, application, and clinical integration of Blood Flow Restriction (BFR) training within throwing rehabilitation and performance settings. Participants will demonstrate a clear understanding of the physiological mechanisms behind BFR, including its effects on muscle adaptation, metabolic stress, and recovery in overhead athletes.

Attendees will be able to safely and effectively apply BFR using medical-grade tourniquet systems, with competency shown in limb occlusion pressure determination, cuff placement, monitoring techniques, and adherence to safety protocols. Additionally, participants will gain practical experience designing and progressing return-to-throw programs that incorporate BFR to optimize tissue loading, motor control, and performance outcomes.

Competency will be assessed through hands-on lab check-offs covering tourniquet application, dosing parameters, and BFR exercise prescription tailored to throwing athletes. Final proficiency will be evaluated through a group post-course examination, ensuring readiness to implement BFR Throwing techniques in both rehabilitation and performance environments.

Course Website: www.owensrecoveryscience.com

CE Credit:
• Owens Recovery Science is a BOC Approved Provider (P8865), this course is listed for 8.0 contact hours (Category A)
• This course has also been submitted to multiple state

associations and boards for Physical Therapy continuing education credit. Hours approved for Physical Therapists and Physical Therapy Assistants are currently pending and may vary by state.

Faculty to Attendee Ratio: 1 Faculty: 16 Attendees

Refund Policy: If Owens Recovery Science, Inc is notified in writing or by phone 14 or more working days prior to beginning of course a full refund, less a $50 processing fee, will be provided.

Course fees are non-refundable within 14 days of a course.

Course registrations can be held for future courses or transferred to a different course without penalty.