



Owens Recovery Science Certified BFR Providers

- Oklahoma City Thunder
- New York Giants
- New England Patriots
- Tampa Bay Buccaneers
- Miami Dolphins
- Houston Texans
- Houston Rockets
- Houston Astros
- Chicago Bears
- Detroit Redwings
- Detroit Lions
- Carolina Panthers
- Portland Trailblazers
- San Antonio Spurs
- Cleveland Browns
- Jacksonville Jaguars
- Pittsburgh Steelers
- Cleveland Indians
- Los Angeles Dodgers
- Buffalo Bills
- Memphis Grizzlies
- Tennessee Titans
- New York Yankees
- Cincinnati Reds
- St. Louis Cardinals
- Anaheim Angels
- Toronto Blue Jays
- San Diego Padres
- San Diego Chargers
- Baltimore Ravens
- Vancouver Canucks
- Vancouver Whitecaps
- Calgary Flames
- University of Florida
- University of Nebraska
- University of Missouri
- University of Memphis
- University of Southern California
- Ohio State University
- University of Michigan
- University of California Los Angeles
- University of Alabama
- Tulane University
- Loyola Marymount University
- University of Miami
- Arkansas State University
- Florida State University
- University of Jacksonville
- Eastern Kentucky University
- Western Kentucky University
- University of Louisville
- University of Arkansas
- University of Georgia
- Marshall University
- North Carolina State
- University of North Carolina
- Mississippi State University
- University of Mississippi
- Department of Defense
- Memorial Hermann Healthcare System
- Methodist Healthcare System, Houston
- Beaumont Health Care System, Detroit
- Kaiser Permanente, Norcal



Ongoing Personalized Blood Flow Restriction Trials

The amount of clinical research assessing the efficacy of Personalized Blood Flow Restriction (PBFR) continues to grow.

The studies registered on Clinicaltrials.gov include:

- Knee Osteoarthritis
- Kidney Failure
- Sarcopenia
- Inclusion Body Myostis
- Low Back Pain.

Additionally, other groups are starting or in the planning phases to study PBFR and:

- Anterior Cruciate Ligament Repairs
- Rotator Cuff Repairs
- ICU patients

Below is a list of the current trials that we are directly involved in:

Knee Arthroscopy Trial (completed/submitted for publication)

Unfunded pilot study performed at the Center for the Intrepid at SAMMC. It was a prospective randomized trial in which post-operative knee arthroscopy patients were randomized to a Personalized Blood Flow Restriction (PBFR) group or work matched control. Subjects started the study within the first post-op week. Full study details cannot be discussed since it was just recently submitted for publication. However, we can say that pre and post training (4 weeks) full bilateral leg Doppler US scans did not reveal thrombus formation in the experimental or control group (as we hypothesized).

Anterior Cruciate Ligament Reconstruction

Funding mechanism: Army Advanced Medical Technology Initiative (AAMTI)

<http://www.tatrc.org/www/labs-and-programs/aamti/>

Funding Amount: \$215,000

Status: Currently Enrolling



Location: SAMMC/Center for the Intrepid

This is a randomized prospective trial assessing patient outcomes after anterior cruciate ligament surgery following either standard of care or Personalized Blood Flow Restriction rehabilitation. Subjects are randomized and enrolled at 2 weeks post-op. (<http://www.ncbi.nlm.nih.gov/pubmed/12635796>)

80 subjects

Chronic Thigh Weakness After Surgery

Funding mechanism: Army Advanced Medical Technology Initiative (AAMTI)
<http://www.tatrc.org/www/labs-and-programs/aamti/>

Funding Amount: \$215,000 (same funds as ACL study)

Status: Currently Enrolling

Location: SAMMC/Center for the Intrepid

Chronic weakness after surgery has been noted both clinically and in the literature. Although the exact mechanism is unknown the lack of hypertrophy and motor unit recruitment appears to be a causal link. Eligible patients are those with persistent thigh weakness (>20% of the uninvolved extremity) after 6 months post-operatively. The study is a cross-over design.

60 subjects

REPAIR Study

Funding Mechanism: Congressionally Directed Medical Research Programs (CDMRP) <http://cdmrp.army.mil/proprp/default.shtml>

Funding Amount: \$4,000,000

Proposed Start Date: 2nd quarter 2016

Based on our clinical success with long bone fractures, tibia and femurs, we were able to secure funding for a very large PBFTR trial assessing outcomes after femur fractures. The primary outcome will be strength and hypertrophy, however bone healing is a secondary measure. This is a multi-center randomized prospective trial. The 9 centers involved in the study are listed below:



Site Name	Site Type	PI
Carolinas Medical Center	Civilian	Joseph Hsu, MD
Methodist Hospital	Civilian	Todd McKinley, MD
MetroHealth Medical Center	Civilian	Heather Vallier, MD
Washington University-Barnes Jewish Hospital	Civilian	William Ricci, MD
University of Texas at Houston	Civilian	Joshua Gary, MD
University of Pittsburg	Civilian	James Irrgang, PhD
University of Maryland	Civilian	Robert O'Toole, MD
The Center for the Intrepid San Antonio Military Medical Center	Military	Daniel Stinner, MD
Walter Reed National Military Medical Center	Military	Kyle Potter, MD

250 subjects

Chronic Achilles Tendinopathy

Funding Mechanism: Army Advanced Medical Technology Initiative (AAMTI)

<http://www.tatrc.org/www/labs-and-programs/aamti/>

Funding Amount: \$221,000

Proposed Start Date: 2nd Quarter 2016

Location: Ft Bragg, NC and Army-Baylor DPT Program

Study will assess the potential benefits on Achilles tendon structure, assessed via shear wave elastography, by applying PBFR to a standard eccentric loading protocol.

50 subjects

Distal Radius Fractures

Funding Mechanism: Internal

Status: Currently Enrolling

Location: Center for the Intrepid, SAMMC

Chronic weakness after distal radius fractures is a persistent problem, especially in the elderly. This prospective randomized controlled trial is assessing the use of PBFR to improve strength, hypertrophy and functional outcomes after wrist



fractures. A secondary aim is to assess improved bone healing (less non-unions) and bone healing times.

40 subjects

Meniscus Repairs

Funding Mechanism: Army Advanced Medical Technology Initiative (AAMTI)

<http://www.tatrc.org/www/labs-and-programs/aamti/>

Funding Amount: \$60,000

Proposed Start Date: 2nd Quarter 2016

Location: Multi-center MEDCOM, main site West Point and Ft Bragg

Prospective randomized controlled trial comparing outcomes after meniscal repair with standard of care or PBFR.

60 subjects

Regenerative Medicine and BFR

Funding Mechanism: Armed Forces Institute of Regenerative Medicine (AFIRM)

<http://www.afirm.mil/index.cfm?pageid=home>

Funding Amount: \$1,430,000

Proposed Start Date: Awaiting IRB Approval

Location: Institute of Surgical Research/SAMMC

Volumetric muscle loss after trauma is a debilitating and costly injury. This study will assess a novel new regenerative medicine technique combined with PBFR to potentially restore lost soft tissues.

10 Subjects

Additionally, we have recently submitted IRB protocols to study the effects of PBFR on Total Knee Arthroplasty and Achilles repairs.