

Key Clinical Study Summary

Study	Summary	Key Points
<p>The effects of the modified intermittent sequential pneumatic device (MISPD) on exercise performance following an exhaustive exercise bout</p> <p>BR J Sport Med 1993 Zelikovski et al</p>	<ul style="list-style-type: none"> Consecutive cycling sessions to exhaustion separated by 20 mins of either passive recovery, or Lymphapress (MISPD) treatment at 50 mmHg Hypothesis of study was that MISPD would remove metabolites that cause fatigue. This study sampled blood to test that hypothesis but did not find that metabolites were removed by use of IPC They suggest that the primary recovery mechanism is the removal of excess fluid which inhibits normal muscle function. 	<ul style="list-style-type: none"> 45% improved performance (time to fatigue) in subsequent exercise session after using sequential compression Supports quicker recovery and improved performance between repeat bouts of exercise Used Mego Afek Lymphapress product - medical manufacturer of RecoveryPump Excess fluid in and around the muscle cells can compromise normal muscle function Effective removal of that fluid contributes to improved muscular performance and endurance
<p>Intermittent Pneumatic Compression Technology for Sports Recovery</p> <p>Engineering of Sport 2006 Tom Waller, Mike Caine and Rhys Morris</p>	<ul style="list-style-type: none"> Study focuses on use of sequential compression after intense shuttle run exercise Vertical jump and calf / thigh circumference were recorded prior to and immediately following the completed treatment session and soreness was assessed at 1 hour, 24 hours and 48 hours Recovery following shuttle runs compared between resting versus 60 mins of sequential low-pressure (20:15:10mmHg) and high-pressure (70:65:60mmHg) compression 	<ul style="list-style-type: none"> Sequential IPC significantly reduced soreness 1 hr, 24 hrs and 48 hrs after exercise Significantly improved performance in vertical jump after 60 min IPC treatment IPC is capable of maintaining performance levels even after high intensity work DOMS damages muscle fibers and causes muscle pain that can persist for several days. This has disruptive effects upon the training schedules of athletes and can lead to injury IPC reduced soreness immediately and over the days following exercise Athletes undertaking IPC as part of their training regime should be able to increase their training volume with a reduced risk of discomfort and injury HR & Blood Pressure recovers significantly more quickly during recovery period using IPC
<p>Enhancement of Tibialis Anterior Recovery by Intermittent Sequential Pneumatic Compression of the Legs</p> <p>Basic Appl Myol 2010 Avi Wiener, Joseph Mizrahi and Oleg Verbitsky</p>	<ul style="list-style-type: none"> This study was designed to induce substantial fatigue on the tibialis anterior muscle in order to assess the role of rapid removal of water and metabolites in the process of active recovery Max speed fast walking on a treadmill, followed by 2 min of isometric strength work and 3 mins of either active or passive recovery and then 2 more min of isometric strength load Performance and fatigue is measured in mean power frequency (MPF) using electromyography 	<ul style="list-style-type: none"> Used Mego Afek Lympha Wave product – medical manufacturer of RecoveryPump Good adjunct to Zelikovski study as it addresses some of the weaknesses in that study and findings are consistent Focuses on fatigue and a specific muscle group - less fatigue is experienced by subjects Demonstrates ability of ISPC to promote effective active recovery in a short (3 minute) period between bouts of exercise Fatigue is characterized by the accumulation of water and catabolites in both the intra- and extra-cellular compartments of the muscular tissue Active recovery of the fatigued muscle using ISPC yielded better muscle performance than passive recovery by enhancing water removal from the muscle tissue.
<p>Intermittent Pneumatic Compression Effect on Eccentric Exercise-Induced Swelling, Stiffness, and Strength Loss</p> <p>Arch Phys Med Rehabil 1995 Chleboun et al</p>	<ul style="list-style-type: none"> Examines swelling, stiffness, and strength loss after intense eccentric strength exercise of the elbow flexor muscles Swelling, stiffness & strength measured immediately after exercise and daily for 5 days IPC with single chamber sleeve that delivered uniform compression to the whole arm. Pressure intensity was set at 60mmHg, and duration was 20 minutes alternating 40 seconds inflation and 20 seconds deflation 	<ul style="list-style-type: none"> Eccentric exercise causes muscle injury that leads to local swelling, stiffness, and strength loss Intermittent compression is effective in temporarily decreasing exercise-induced swelling and stiffness Uses uniform compression rather than sequential compression