

Research Abstract

Academy Title:Bishop et al

Research Article: Low Tech Rehab of High Level Athletes

INTRODUCTION: There are many articles and times that athletes are rehabilitated using high-tech equipment, e.g. Cybex, Biodex, BTE Primus RS, etc. This study demonstrated the use of low-tech inexpensive equipment in the rehab of high level athletes and allows us to evaluate the differences in low tech and high tech rehab on the following variables - Clinical Outcomes/Patient Satisfaction, cost to the clinician/facility, consumer and healthcare system, space requirements and portability. **BACKGROUND:** Clinical outcomes and patient satisfaction have been evaluated in previous studies to compare low tech and high tech rehab (1) . RCTs comparing clinical manipulative therapy (CMT) , CMT and High Tech Rehab (HT), and CMT and Low Tech Rehab (LT) was performed. Results concluded a significant reduction in pain with both exercise related groups, however, higher levels of patient satisfaction with CMT and LT. Cost is also a significant issue in the healthcare system today. Capital expenditure per piece of equipment can be upwards of \$2,000 - \$100,000. Consensus guidelines for the utilization of Medex Medical Testing and exercise machines in spinal rehabilitation programs were developed by a committee. The Committee was composed of researchers and educators at the University of Florida, the University of California at San Diego, Syracuse University, and Indiana University, as well as numerous practicing clinicians throughout the country utilizing MedX equipment in their orthopaedic rehabilitation programs Data suggests that costs to the healthcare system are doubled for this type of equipment utilization as compared to low tech equipment. Space and portability are important issues because low tech products can be taken home and patients can continue their HEP, and long term patient outcomes maintained. Furthermore allowing patients to purchase products for home usage is an additional revenue stream for clinicians. **METHODS:** Four high level athletes were treated using a combination of Biofreeze® cryotherapy, manual therapy techniques, spinal and extremity manipulation, and low tech rehab. The athletes consisted of the following: (1) A 27 year old Triathlete and former NCAA Division I soccer player with bilateral patellar tendonitis who had pain increases with running, sitting, squats. Pain decreases with rest and wearing Cho-Pat Strap. Manual therapy using Graston Technique® which was incorporated into his rehab; Rehab using the Thera-Band® Exercise Station, iJoy™Board and Thera-Band® Stability Trainers was performed with concentration on dynamic stabilization (proprioception) and dynamic strengthening using Graston Technique® and Thera-Band® Equipment. (2) An 18 year old gymnast and member of the 2006 US Junior Olympics National Gymnastics Team who suffered a partial supraspinatus tear with an onset of 1 month and no specific injury. An MRI revealed a partial supraspinatus tear (~50%) with Type II acromion. Rehab incorporated Thera-Band® Exercise Bands and medicine balls with a rebounder. (3) A 49 year old runner who is a consistent Top 5 Finisher in his age group in regional road races. The athlete was playing volleyball and landing in inversion on another player's foot and suffered a grade II inversion sprain. There was substantial swelling and bruising encompassing the whole foot and ankle. Manual techniques using ART®, rhythmic stabilization, joint mobs was performed in addition to rehab using Medi-Dyne™ ProStretch®, Thera-Band® Exercise Bands, wobble boards, iJoy™Board, and Thera-Band® Stability Trainers with a rebounder. (4) A 15 year old soccer player who is a top player in county suffering from bilateral patellofemoral pain Syndrome/ Patellar Tendonitis (onset – insidious 1 month prior). Her condition was complicated by a rigid, supinated foot and was worse with running during soccer. Manual therapy using ART®, and rehab using iJoy™Board, Thera-Band Stability Trainers using sport specific activities was performed. **RESULTS:** All four athletes returned to competition fully functional and pain free. Average length of treatment was 14 visits and average cost was \$1750. **CONCLUSION:** Pain associated with Rehab may limit care and prolong positive outcomes, therefore it's important to break pain cycle by “Gating” with Biofreeze ® cryotherapy initially to reduce pain sensation

while performing passive (Manual/Graston/ART) and active care. Biofreeze® cryotherapy can be used pre-treatment to reduce patient apprehension and improve satisfaction before adjustment and exercise. It can be used intra-treatment to expand applications in combination with other modalities (i.e. Kinesiotaping®, decompression, laser and prior to ultrasound) and expand applications in combination with the adjustment. Biofreeze® topical analgesic should also be used post-treatment for HEP to reduce post treatment pain, and post rehab and exercise DOMS. Thera-Band® products are clinically effective and cost efficient for the treatment of patients presenting for conservative management of musculoskeletal injuries. Thera-Band® products form the foundation and work extremely well in conjunction with other low tech rehab products and modalities. Our role for our patients is not just getting them through a protocol – It's about restoring health. Restoring health allows for the patient to exercise and maintain a level of fitness which drastically improves health and therefore the quality of life. Thus is our purpose as clinicians.

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