Early Symptom Intervention: A Sports Medicine Approach to Keeping the Industrial Athlete in the Game

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Continuum of Services

- Hiring
  - POET Post-Offer Employment Testing
- Safety
  - Prevention/Behavioral Programs
- Injury
  - Acute & Sub-Acute Injury Management
- Recovery
  - Job Simulation Programs FCEs
- Closure
  - Outcome & Data Analysis
Early Symptom Intervention
Program Goals

- Reduce employee soreness.
- Reduce OSHA recordables for work related musculoskeletal disorders.
- Reduce claim cost for work related musculoskeletal disorders.
- Reduce days away, restricted or transferred associated with work related musculoskeletal disorders.
- Improve employee discomfort.
- Improve employee job satisfaction and workforce morale.
- Improve employee quality of life.
- Improve company modifier rate.
- Improve company profitability.

Why Early Symptom Intervention

- There are nearly 500,000 work related strains, sprains, tears, and back injuries in the US each year. (BLS)
  - Commonly are not caused by a single event but due to a number of work related (ergonomic) and employee related factors (comorbidities).
  - Between 2009 and 2013 the cost of work-related injuries increased nearly 20% with an estimated cost of nearly $90 billion. (NASI)
- OSHA Recordables of influence Premiums and are a measure of the Safety Dept/Professional’s Performance.
Early Symptom Intervention

- A comprehensive injury prevention program
  - Ergonomic assessment
  - Preventative Exercises (Ergonomic Stretch Breaks)
  - Injury Triage
  - First Aid according to OSHA definition
    - Includes Relax and Restore
      - A hands on technique for muscle soreness.
  - Job specific coaching
    - Behavioral modification based
      - Job specific stretching/Counter-balancing techniques
      - Ergonomic administrative controls.

Early Symptom Intervention

- Key components to reducing recordable injuries and reducing overall spend on post injury treatment and lost work time.
  - An environment that encourages early reporting of soreness.
  - A thorough understanding of OSHA reporting and definition of first aid.
  - Ability to maximize first aide use in the case of early reporting to mitigate soreness without the need for more intensive care.
PT/ATC for WRMSD Triage

- Musculoskeletal Experts
- Well versed in treatments allowed under First Aide
  - Taping, thermal agents, massage, education
- Earlier access to treatment
  - Affordable onsite or in close proximity.
- Confidence with Physical Exam and when to refer out.
  - Don’t order imaging
- Standardly work in confines of non-prescription meds
- Experts in Biomechanics and Kinesiology
  - Easy transition to Ergonomics

Ergonomic Assessments

- Understanding the risk factors of each job task
  - Set up job specific protocols for preventative
    - Exercises (stretching and ergonomic mini-breaks)
    - Massage Techniques
  - Assists in root cause analysis of employee complaints.
  - Basis on which to perform
    - Ergonomic training in reference to complaint
    - Behavioral modification
    - Other administrative ergonomic interventions
Triage

- The right care, at the right time, every time.
  - Decreases recordable injuries.
  - Builds trust of employees in the process.
  - Doesn’t allow for a serious problem to get more serious.
  - Can be a cost saver by skipping steps in the normal healthcare process.

First Aid

OSHA 1904.7 Definition of First Aid

1904.7(b)(5)(ii)

What is “first aid”? For the purposes of Part 1904, “first aid” means the following:

1904.7(b)(5)(ii)(A)

Using a non-prescription medication at non-prescription strength (for medications available in both prescription and non-prescription form, a recommendation by a physician or other licensed health care professional to use a non-prescription medication at prescription strength is considered medical treatment for recordkeeping purposes);

1904.7(b)(5)(ii)(B)

Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment); 1904.7(b)(5)(ii)(C)

Cleaning, flushing or soaking wounds on the surface of the skin;
First Aid

1904.7(b)(5)(ii)(D)
Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™ (other wound closing devices such as sutures, staples, etc., are considered medical treatment);

1904.7(b)(5)(ii)(E)
Using hot or cold therapy;

1904.7(b)(5)(ii)(F)
Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes);

1904.7(b)(5)(ii)(G)
Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.).

1904.7(b)(5)(ii)(H)
Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister;

1904.7(b)(5)(ii)(I)
Using eye patches;

1904.7(b)(5)(ii)(J)
Removing foreign bodies from the eye using only irrigation or a cotton swab;

1904.7(b)(5)(ii)(K)
Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means;

1904.7(b)(5)(ii)(L)
Using finger guards;
First Aid

1904.7(b)(5)(ii)(M)
Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes); or

1904.7(b)(5)(ii)(N)
Drinking fluids for relief of heat stress.

1904.7(b)(5)(iii)
Are any other procedures included in first aid? No, this is a complete list of all treatments considered first aid for Part 1904 purposes.

First Aid

1904.7(b)(5)(iv)
Does the professional status of the person providing the treatment have any effect on what is considered first aid or medical treatment? No, OSHA considers the treatments listed in § 1904.7(b)(5)(ii) of this Part to be first aid regardless of the professional status of the person providing the treatment. Even when these treatments are provided by a physician or other licensed health care professional, they are considered first aid for the purposes of Part 1904. Similarly, OSHA considers treatment beyond first aid to be medical treatment even when it is provided by someone other than a physician or other licensed health care professional.
First Aid
Relax and Restore

- A message technique to reduce stress in working muscles to relieve soreness and restore normal blood flow.
- Is based on previous theories and techniques that other release techniques are based on such as ART (Active Release Techniques), Jone’s Strain-Counterstrain (Positional Release), or Travell’s Trigger Point Massage (Spray and Stretch).
- The object of Relax and Restore is to target muscles prone to overuse based on a specific job positions analysis of working musculature, repetitive motions, and injury trends.
- Muscles targeted in the program should be the same muscles for which a targeted job specific self-stretching program has been developed for and the use of stretching in ergo mini breaks should be reinforced as the primary prevention mechanism for injury prevention.
First Aid
Relax and Restore

- Why do muscles need Relax and Restore
  - Static or high repetition muscle use
    - Leads to hypertonic tender points in muscle.
    - Inhibits blood flow.
    - Inhibits blood and lymph return.
    - Results in accumulation of waste products and changes muscle pH.
    - Reduces force production ability
    - Leads to fatigue

The goal of WorkRelief is to “Relax and Restore”

RELAX
RELAX areas of muscle that are hypertonic due to either static or repetitive use during job specific tasks.

RESTORE
RESTORE blood flow through a decrease in abnormal muscle tone.
First Aid
Relax and Restore

- Strain and Counterstrain/Positional Release - Jones Technique
  - Lawrence Jones, DO, FAAO defined strain and counterstrain as a “passive positional procedure that places the body in a positional procedure of greatest comfort, thereby relieving pain by reduction and arrest of inappropriate proprioceptor activity that maintains somatic dysfunction.”
  - Somatic Dysfunction- Impaired or altered function of related components of the somatic (body framework) system; skeletal, arthrodial, and myofascial structures; and related vascular, lymphatic and neural elements.

- Kusonose states, “From the definition it is clear that the strain and counterstrain concept is not directed toward tissue injury or tissue damage but aberrant neuromuscular reflexes within that tissue.”
First Aid
Relax and Restore

- Indirect Technique - The action of the technique is away from the barrier.
  - The operator effects faulty information from the primary proprioceptive nerve endings to the central nervous system which is propagating somatic dysfunction.
  - This is done through passive positioning of the dysfunctional segment toward comfort or ease and away from pain, bind, and restricted barriers.
  - The position results in maximal shortening of the involved muscle and its proprioceptors leading to reduction of neuromuscular firing to normal tonic levels.

Muscle Specific Massage Technique
Relax and Restore Demonstration

- Elbow soreness example

<table>
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<tr>
<th>Area of soreness</th>
<th>Tenderpoint location</th>
<th>Position of release</th>
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<tbody>
<tr>
<td>Lateral epicondyle</td>
<td>Anterolateral surface proximal head of radius</td>
<td>Fully extend, supinate, abduct forearm</td>
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<tr>
<td>Medial epicondyle</td>
<td>Inferior and lateral to medial epicondyle</td>
<td>Full flex and pronate forearm, flex wrist</td>
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</table>
First Aid

Kinesiology Tape – What it does

- Supports muscles, tendons and ligaments
- Corrects movement
- Promotes circulation of blood and lymph which promotes healing
- Decreases pressure on an injured area, thereby promoting healing and reducing pain

Kinesiology Taping- Relief Strap – Carpal Tunnel
Shoulder - Push/Pull or Reach Required

- Arm position
  - Muscles stretched during application
  - Anchor ends

Low Back Pain

- H Design
- Tape Paraspinals
  - Gluteal Anchor
- Relief Strap
  - Cross @ discomfort
  - Anchors & 50% stretch
**Fluid Dynamics**

- Create a basket weave around the area for edema, swelling, post surgical & lymph drainage

**First Aid Other**

- Other taping and soft bracing options
- Application and advice about thermal modalities
  - Heat and Ice
- Advice about over the counter modalities
  - Trans-dermal patches
  - Tylenol
  - NSAIDs (Advil, Alleve, etc)
Job Specific Coaching

- Ergonomic administrative controls
  - Different way to do the job to decrease stress to sore tissues.
  - Task rotation in same job.
  - Counter-balancing activities
  - Reinforce stretching and ergo mini-breaks
- Health counseling as appropriate
  - Hydration
  - Stress management

Steps to Developing a Early Symptom Intervention Program

- Identify target jobs through
  - OSHA 300 log.
  - Claim history.
  - Soreness surveys.
- Use information from above along with WorkTask Analysis to determine target muscles.
- Develop and role out targeted stretching program.
- Develop job specific Relax and Restore protocols for muscles included in stretch program.
- Identify job specific best practices for job coaching program implementation.
Onsite vs Offsite models

**Onsite**
- PT or ATC onsite with a business
- Quick and easy access to care
- Can be certain hours/days or full time

**Offsite**
- Employees travel to a nearby clinic for care
- Still same day or next day appointments
- Follow up onsite in next few days as appropriate for behavioral training

Testimonials
Testimonials

Return on Investment

- Major Airline – Return on Investment

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Change: -9.61, -2.48, -11.83, -3.35, -1.02

Change %: -58%, -26%, -72%, -25%, -11%

*Dropped by an Average of 39% Across All Locations Since 2007*

"The Quicker You Act, The Easier The Cure"
Return on Investment

- Manufacturing – Return on Investment
  
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<th>Month</th>
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<th>OSHA Recordables</th>
<th>Resolve Rate</th>
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Value of Saves: $526,032
Total Cost: $48,352
ROI: 1088%
OSHA Recordables: -54%
Resolve Rate: 96%

- Major Package Handling & Delivery Company – Return on Investment

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Questions

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