Functional Restoration in the Military Population

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Disclosures

- None
The view(s) expressed herein are those of the author(s) and do not reflect the official policy or position of Brooke Army Medical Center, the U.S. Army Medical Department, the U.S. Army Office of the Surgeon General, the Department of the Air Force, the Department of the Army or the Department of Defense or the U.S. Government.
Agenda

• Background
• Functional Restoration history in the military
• Functional Restoration Program (FRP) at BAMC
  – Program participation criteria
  – Program schedule
  – Outcome measures
Background

• DoD pays over $1.5 billion to disabled service members
• MSK conditions are 40-50% of this cost
• Cost of retraining a highly trained soldier, sailor, airman, marine such as pilots or Special Operations can exceed $1,000,000 per individual.
• Data from Operation Iraqi Freedom (OIF) indicated that 70% of all injuries were upper and lower extremity MSK. (Gatchel et al. 2009)
• Up to 44% of combat deployed soldiers report chronic pain
• 15% of combat deployed soldiers report opioid use (Toblin et al. 2014)
In 2011, The Army Surgeon General established Interdisciplinary Pain Management Centers (IPMC)s to “...maximize function, decrease disability and optimize treatment” of pain (OPORD 10-76 USAMEDCOM Surgeon General’s Comprehensive Pain Management Campaign Plan). The plan states that Functional Restoration Programs (FRPs) are to be developed by the IPMCs.
Initial pilot study done in early 2000s at Wilford Hall Medical Center – AF hospital in San Antonio, TX (Gatchel et al. 2009)

• 66 patients, randomized between a functional restoration program N=30 and standard anesthesia pain clinic medical care (ST) N=36 Only preliminary results were published

• 6 month follow up 45 subjects had reached this point
  – Significant improvement in psychosocial measures in the FRP group
  – Decreased healthcare utilization in the FRP group

• 12 month follow up only 24 total (12 in each group)
  – ST group had 4 times as many medical appointments.
• Cochrane Review for chronic lower back pain – 2014
  – Multidisciplinary biopsychosocial rehabilitation
  – Pain for greater than 12 weeks
  – Conclusions:
    • FRP patients likely to experience less pain and disability compared to usual care
    • Effects are of modest magnitude

• Cochrane Review for subacute lower back pain – 2017
  – Pain for 6-12 weeks
  – Conclusions
    • FRP patients will do better than if they receive usual care
    • Low to very low quality evidence
Functional Restoration in the Military

• Eisenhower Army Medical Center
• Brooke Army Medical Center
• Madigan Army Medical Center
• Naval Medical Center San Diego
• Landstuhl Regional Medical Center
• Evans Army Community Hospital, Ft. Carson, CO
• Additional sites under development
Our Program

- Completed 29 cohorts
- 1st group Mar 2014
- Currently in our 30th cohort
- 160 total patients have completed FRP
- Primarily active duty
- Have treated some dependents or military retirees
- Youngest patient - 22 years old
- Oldest patient - 65 years old
- 6-8 patients per cohort
Program Participation Criteria

- Pain is chronic, >3 months, time not likely to yield improvement

- Musculoskeletal or neuropathic pain

- Physical condition/activity level is neither too low to participate, or already too high to benefit (program minimum consists of 4 hours activity daily)

- “Treatable” conditions have been ruled out, PM&R/Pain physicians will also clear patient upon referral.

- Condition is stable, e.g. stable fusion, patient is not in recovery from surgery, etc.
Program Participation Criteria

• No medical contraindications to vigorous exercise, i.e. poorly controlled hypertension/cardiac status

• No psychiatric/behavioral contraindications such as:
  – Active psychoses/thought disorders
  – Severe personality disorders
  – Severe depression/suicidal ideations/homicidal ideations
  – Anxiety disorders precluding group participation, i.e. severe PTSD, agoraphobia, or social anxiety
  – Active substance abuse
Program Participation Criteria

- No pending pain interventions or procedures/tests that might lead to pain interventions. Exceptions may be considered on a case-by-case basis.
- Willingness to voluntarily participate and exert effort
- Must be weaned off opioids prior to participation in program
- Utilized Pain Stages of Change for screening prior to evaluation
Our Team

• Pain/PM&R physician
• Psychologist – Director
• PT
• OT – also a certified yoga instructor
• PTA
• COTA
• Clinical pharmacist
• Dietitian
• Program Coordinator
Our Program

- Initially evaluated by PT and Psychology for cohort assignment
- 17 day program
- Day 1 – Initial assessments with PT, OT, PsyD, and RD
- Day 2 – Physician evaluation and physician led team meeting with patient, discuss outcome measures with patient
- Day 16 – Final assessments with PT, OT, PsyD
- Day 17 – Repeat physician led team meeting discussing initial outcomes measures and comparing to final outcome measures
- 1 month follow up – re-assessments and newly instituted team meeting
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# FRP Group Activities Week 2

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<td>Vocational Education Resource</td>
<td>Discharge Planning at Computer Lab</td>
<td>Running Coach</td>
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Education Concepts

• Therapeutic Neuroscience Education / Explain Pain
  – Understanding Hurt ≠ Harm
  – Concepts of neuroplasticity
  – Cognitive restructuring
  – Addressing fear/misunderstandings of diagnosis

• Mindfulness/Meditation
  – Introduce free smartphone apps
  – Yoga
  – Tai Chi

• Nutrition outing to the commissary
  – Dietician and OT run
  – Labels
  – Pacing
  – Body mechanics
Educational Concepts

• Appropriate Goal Setting
• Graded Exercise Progressions
  – Motor Control
  – Body Mechanics
  – Work Hardening
• Archery
• FATS – Firearms training simulator
• Volunteering at the WFSC (Warrior and Family Support Center)
  – Gardening, utilizing concepts taught during the program
• AlterG treadmill for return to run program
• Running coach
Educational Concepts

• Cognitive Behavioral Therapy
• Sleep hygiene
  – Sleep Position
• Neuroplasticity
• Coping strategies
• Homework during the program
  – Evening meditation
  – TED talks
During the program patients design their own discharge plan.

Utilize the following components:

- Muscular Strength and conditioning
- Core strengthening
- Flexibility
- Cardiovascular fitness
- Balance
- Fun (activities or hobbies that are fun or patient enjoys which are physical in nature. Ways in which patient can incorporate physical activities into their routine while having fun like kayaking, hiking, walking dog, walking or hiking with spouse or kids, sporting activities, etc.)
Outcome Measures

- Defense and Veterans Pain Rating Scale (DVPRS)

Defense and Veterans Pain Rating Scale

MILD (Green)

MODERATE (Yellow)

SEVERE (Red)

0: No pain
1: Hardly notice pain
2: Notice pain, does not interfere with activities
3: Sometimes distracts me
4: Distinctly discomforting, can do usual activities
5: Interrupts some activities
6: Hard to ignore, avoid usual activities
7: Focus of attention, prevents doing daily activities
8: Awful, hard to do anything
9: Can’t bear the pain, unable to do anything
10: As bad as it could be, nothing else matters
OUTCOME MEASURES

- Defense and Veterans Pain Rating Scale (DVPRS)

**DoD/VA Pain Supplemental Questions**

For clinicians to evaluate the biopsychosocial impact of pain

1. Circle the one number that describes how, during the past 24 hours, pain has interfered with your usual **ACTIVITY**:

   0 (Does not interfere) 1 2 3 4 5 6 7 8 9 10 (Completely interferes)

2. Circle the one number that describes how, during the past 24 hours, pain has interfered with your **SLEEP**:

   0 (Does not interfere) 1 2 3 4 5 6 7 8 9 10 (Completely interferes)

3. Circle the one number that describes how, during the past 24 hours, pain has affected your **MOOD**:

   0 (Does not affect) 1 2 3 4 5 6 7 8 9 10 (Completely affects)

4. Circle the one number that describes how, during the past 24 hours, pain has contributed to your **STRESS**:

   0 (Does not contribute) 1 2 3 4 5 6 7 8 9 10 (Contributes a great deal)

Outcome Measures

- Pain Interference
- Pain Catastrophizing
- Oswestry Disability Index (ODI) – low back pain
- Neck Disability Index (NDI)
- Roland Morris Disability Questionnaire
- PHQ-9 – measuring severity of depression
- GAD-7 – generalized anxiety disorder
- Fear-Avoidance Belief Questionnaire (FAB-Q)
- Canadian Occupational Performance Measure (COPM)
Outcome Measures

• Lifting evaluation
  – Waist to floor
  – Waist to shoulder
  – 40 ft. carry
  – Start with 10lb, increase by 10 lb until self-perceived limit or safety stop
• Y-balance test
• Grip and pinch strength
• BMI
Military Function Test:

- 7 to 1 pyramid style of performance of 6 different physical tasks/exercises. The patient has 5 minutes to perform as many repetitions as possible. The first round consists of 7 repetitions of each exercise in order:
  - Push-ups
  - Prone rows
  - Supine rows
  - Squats
  - Dips
  - Burpees

- Each subsequent round goes down by one repetition until the five minutes have expired. All the repetitions are added together to yield a total score for the test.

- Modifications are allowed, these are made for subsequent testing.
Initial Testing
Initial Testing
Exercise Group
Yoga
Work Hardening
Aquatic
• 7 patients
• MFT change ranged from 40-118% improvement
• “Awesome program! This program needs to be educated/advertised more to the chronic pain population. Can change countless lives!”

• “The team was extremely helpful. I appreciated the knowledge/support they provided us. I’m excited to continue to apply what I learned these past three weeks.”

• “I wish everyone with chronic pain had this amazing opportunity. It is life altering to show myself what I’m capable of and how my pain doesn’t have to limit me as much as I thought before FRP. My mindset towards activity with pain has drastically improved. I’m very excited about the future. I anticipate I’ll continue to improve. There might be bumps in the road, but I’m prepared to deal with them now.”
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- Andre Griggs, PTA
- Damon Rush, COTA
- Winford Campbell – Program Coordinator
References


• USAMEDCOM OPORD 10-76 (Comprehensive Pain Management Campaign Plan). October 2010.

• http://www.dvcipm.org/clinical-resources/defense-veterans-pain-rating-scale-dvprs/

Questions?