



# **Get Up & Get Moving: Innovative Physical Therapy Techniques**

*Chairperson:*

Maria DelMuto, PT, CCM

Workers' Comp Medical Case  
Manager

Mass General Brigham

**Monday, March 25<sup>th</sup>, 2024**

**10:20-11:20am**



**2024**

**Work Related Injuries  
Workshop**

## **Spinal** Manipulation

Dan Fleury DPT, OCS, FAAOMPT

Co-President

Pinnacle Rehabilitation Network

# SMT

## Spinal Manipulation Therapy

- Spinal manipulation is a manual therapy technique that uses a high velocity low amplitude, mid range thrust to a spinal joint or joints to decrease pain and improve ROM.
- Spinal mobilization is a manual therapy technique that uses graded stretching to a joint without thrust, this technique can be resisted by the patient.

# Theoretical Construct

Similar technique and mechanisms, different clinical reasoning!

## Chiropractic

- Spinal adjustments to address spinal subluxations, and associated nerve energy expression.
- Use adjustments to address other body conditions.

## Physical Therapist

- HVLA Thrust/ Spinal Manipulation to decrease pain, improve range of motion, stimulate neural modulation and pain control mechanisms.
- Do not use manipulation to address other body systems

# Myths

What does the evidence say!

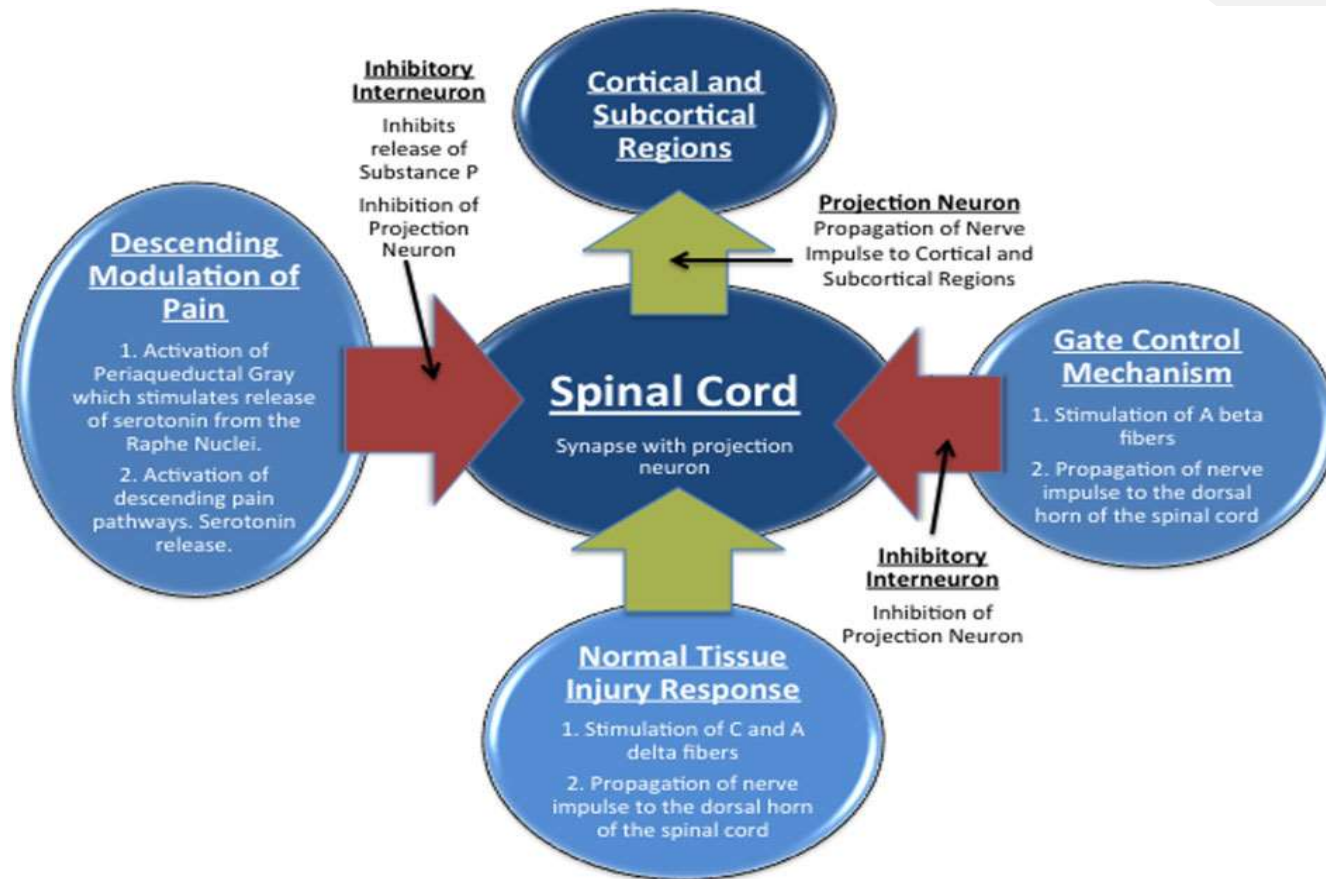
## What it does

- Decreases pain via peripheral and central mechanisms.
- Improve ROM
- Improve motion tolerance
- Quiet the protective pain/spasm cycle

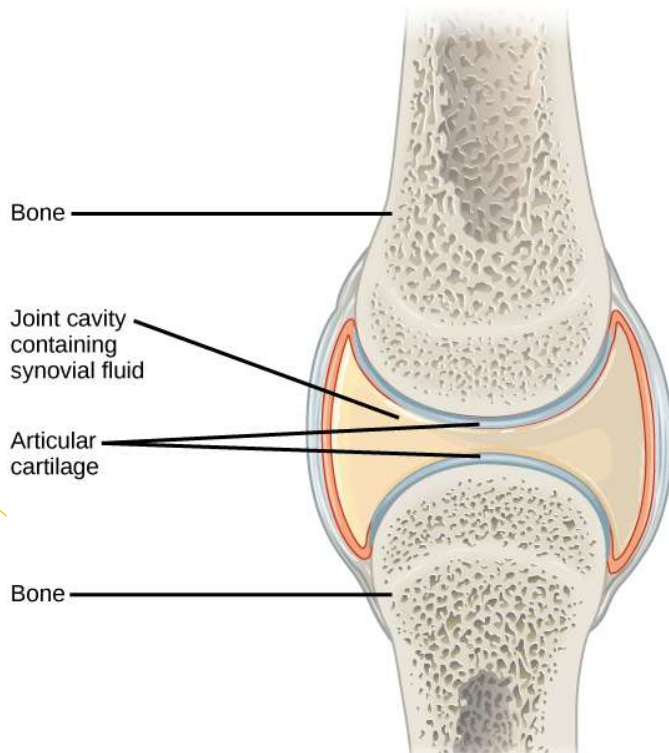
## What it doesn't do

- Move spinal joints back into place!
- Un-slip discs
- Correct bony pelvic malalignments
- Correct bony LLD
- Tends to not be effective long term without active exercise!

# Central and Peripheral Mechanisms



# What is the pop?



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- Escaping gas: Negative pressure , gas is rapidly released.
  - Movement of the joint and tendons
  - Rough surface: Rub of incongruent surfaces
- 
- \*Science Reference Section> Library of Congress 12/16/21

# Does the joint have to “pop”?

- **The audible pop is not necessary for successful spinal high-velocity thrust manipulation in individuals with low back pain**

Timothy W Flynn<sup>1</sup>, Julie M Fritz, Robert S Wainner, Julie M Whitman

- **Impact of audible pops associated with spinal manipulation on perceived pain: a systematic review**

Annelieke Cesanne Moorman<sup>1,2</sup>, David Newell<sup>3</sup>



# American College of Physicians

The guideline, *Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain*, was developed by the American College of Physicians and was endorsed by the American Academy of Family Physicians.

## Key Recommendations

- Nonpharmacologic treatment, including superficial heat, massage, acupuncture, or **spinal manipulation, should be used initially** for most patients with acute or subacute low back pain, as they will improve over time regardless of treatment.

# American College of Physicians

## Recommendation 1:

- *Given that most patients with acute or subacute low back pain improve over time regardless of treatment, clinicians and patients should select nonpharmacologic treatment with superficial heat (moderate-quality evidence), massage, acupuncture, or spinal manipulation (low-quality evidence).*

# NICE Guidelines

13. Consider manual therapy (spinal manipulation... for managing low back pain with or without sciatica, but only as part of a treatment package including exercise....

Recommendations:  
NICE 2020

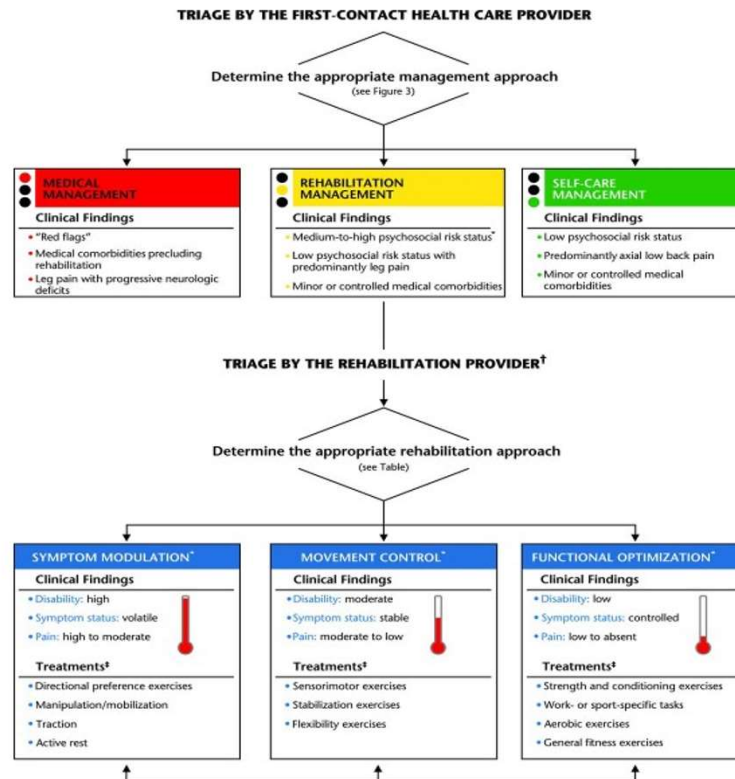
## NICE 2020

### 1.4. Manual therapy

- 1.4.1.

Consider offering a course of manual therapy, including spinal manipulation, comprising up to a maximum of nine sessions over a period of up to 12 weeks.

**Figure 1** Updated 2015 treatment-based classification system. \* Regardless of approach, patients with a medium-to-high ...



# Thank you!

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[Dan@pinnaclerehab.net](mailto:Dan@pinnaclerehab.net)

[www.pinnaclerehab.net](http://www.pinnaclerehab.net)



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## **Trigger Point Dry Needling**

Kayla Roche, PT, DPT

Physical Therapist | Clinic Director

ATI Physical Therapy

# Disclosures

None

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# Learning Objectives

By the end of this presentation, you should be able to:

- Explain what dry needling is, and specifically trigger point dry needling.
- Understand the risks and benefits to utilizing dry needling.
- Explain how dry needling works, and the effectiveness of its use.
- Understand the appropriate person to treat with dry needling, and how it is beneficial in workers compensation PT plan of care.





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## Overview

# Dry Needling (DN)

## Overview of DN:

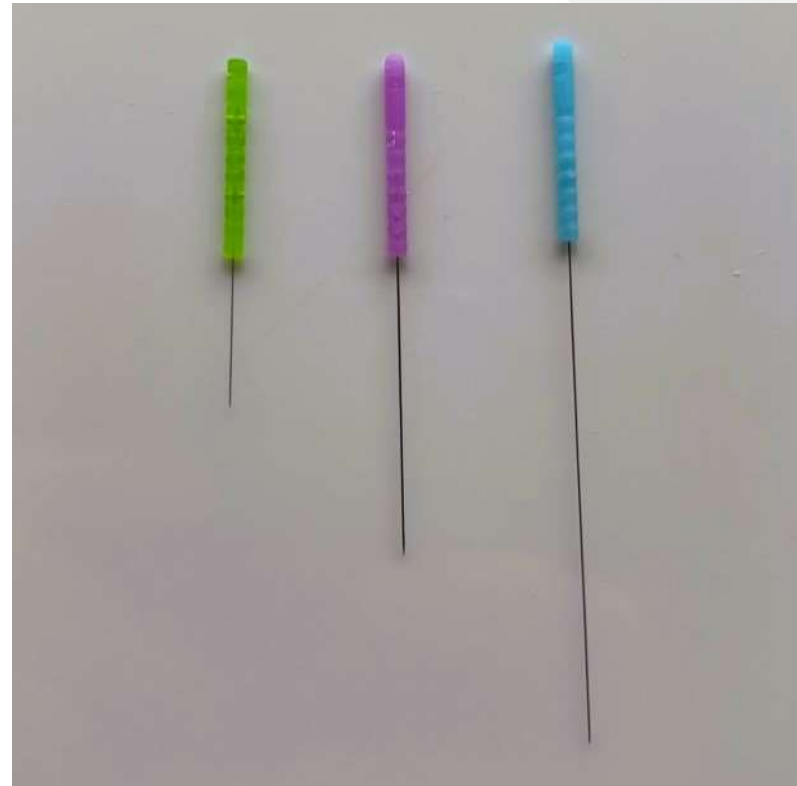
- DN is a technique that can be used to treat and help manage chronic pain, acute pain, muscle stiffness or spasms, myofascial trigger points, swelling, ROM deficits, and other tissue dysfunctions.
- Utilizes thin, flexible, solid filament needles, that are inserted directly into dysfunctional tissues to promote muscle relaxation, improved healing ability and capacity of the tissues, and pain relief
  - Although these needles are the same used in Acupuncture, this is **not** acupuncture.
  - The treatment perspective of DN is based solely on anatomy and physiology, and biomechanical principles.
- Always used as part of a full individualized treatment plan: therapeutic exercise, stretching, etc.

# Dry Needling (DN)

## Trigger Point DN:

- Trigger point dry needling (TPDN) is a specific technique and subset of dry needling to treat symptoms directly associated with myofascial trigger points.
  - Needles are inserted in or around the trigger point to stimulate the muscle to cause a twitch response.
- Utilizes specific needle manipulation: pistoning and winding
  - Nothing is injected into the body, like with trigger point injections.

# Examples of Needles



# Adverse Effects of TPDN

## Most Common

- Bleeding
- Bruising
- Pain
  - At treatment site
- Soreness (lasting 2-3 days)

## Less Common/Rare

- Fatigue
- Presyncopal Symptoms (i.e. lightheadedness, dizziness)
- Irritation at or around the insertion site
- Unexpected emotional response
- Pneumothorax
  - <1 in 100,000 treatments
- Peripheral Nerve Trauma (i.e. numbness)
  - 4 in 100,000 treatments
- Infection
  - 2 in 100,000 treatments

# How does TPDN work?

- Muscles that are weak and overused, “tighten up”
  - Less blood flow, decrease nutrients, increase in spasms, development of trigger points, hypersensitivity of nerves, pain
- TPDN stimulates the muscle/TP
  - Local effects
  - Global effects

# Physiological Effects of TPDN

## Local/Mechanical Effects

- Muscle twitch
  - MUSLCE TWITCH IS NOT NEEDED IN ORDER FOR TREATMENT TO BE EFFECTIVE
- Increased blood flow
- Creates a local inflammatory process via therapeutic lesion created by process of needling
- Stimulates nerve fiber signaling to the brain

## Global Effects

- Pain control through segmental or systemic processes
  - CNS response
    - Release of neurotransmitters

# Who is the right TPDN candidate?

It might be easier to talk about who NOT to needle.

## Contraindications:

- Severe fear of needles
- Current cancer
- Cognitive impairment
- Recent surgery (within past 12 weeks)
- Blood and Systemic disease
- History of spinal surgery (spine DN)
- History of a transplant
- Lymphedema
- Implants (breast, calf, glutes)
- Skin lesions, rash, spray tan
- Metal Allergy
- Valve related heart disease
- Patients under the age of 12



# Who is the right TPDN candidate?

It might be easier to talk about who NOT to needle.

## Precautions:

- Metal Implants
- Current use of blood thinning medications
- History of Cancer
- Diabetes
- Pregnancy
- Pacemaker
- Osteoporosis/osteopenia
- Current or recent infection



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# TPDN and the Workers' Compensation Patient

# TPDN and Performance

Think of our workers' compensation patients like industrial athletes.

- Increase in muscle performance after DN treatment and improved post-exercise recovery
  - Many report: relaxation, feeling energized post-treatment
- Immediate change in ROM
- Immediate changes in pain symptoms, with effect duration changes based on placement, dosage and overall duration of TPDN
  - How to figure out dosage? Intensity?
  - Local vs. global changes (1-2 minutes vs. 20-30 minutes).

## DN: Coverage

For PTs to provide DN to the workers' compensation patient:

- A PT prescription needs to be on file
- Specifically prescribed DN by the referring MD
- In some cases, pre-authorization is required for the service



# Sources

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## **Psychologically Informed Therapy**

Kirstin Lane, PT, DPT, CDN, CEAS

*Regional Manager of WorkStrategies*

Select Medical

## Why are we talking about this?

- Claims leaders ranked psychosocial issues as the **Number 1 barrier** to successful claim outcomes, according to Chicago-based managed care solutions provider Rising Medical Solutions' 2016 Workers' Compensation Benchmarking Study.

# Bio-psycho-social: we all have all of these!

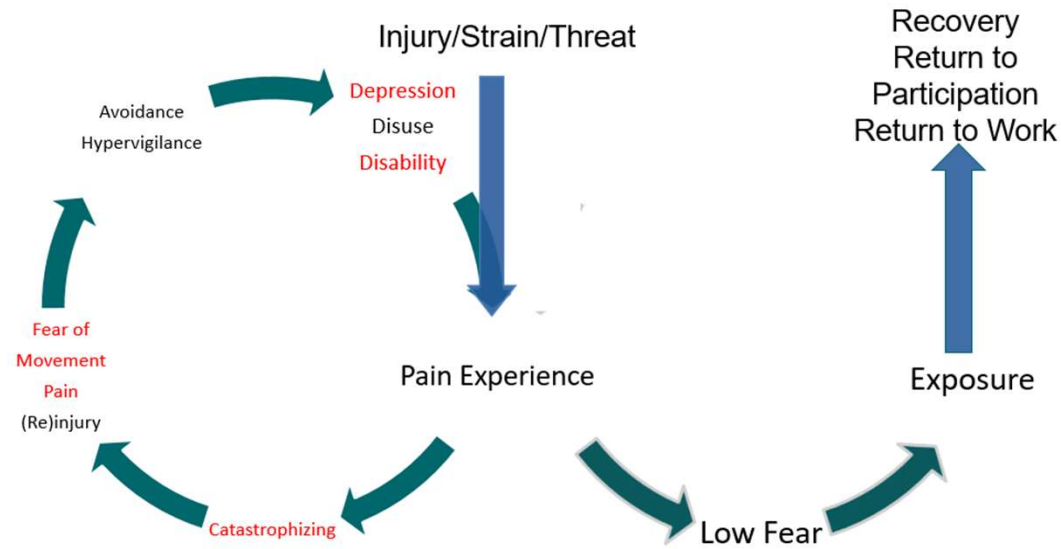




# How do we know if this is an issue?

- OREBRO-12
- PROMIS-10
- General Health Questionnaire-12
- Fear Avoidance Beliefs Questionnaire
- Pain Catastrophizing Scale
- Many others...

# Fear Avoidance Belief Model of Failure to Recover



# What Differs in Psychologically Informed Therapy?

- A focus of addressing the **behavioral aspects** of pain (i.e., peoples' responses to pain) by identifying **individual expectations, beliefs, and feelings** as prognostic factors for clinical and occupational outcomes indicating progression to chronicity.
  - Requires a broader focus than traditional biomechanical and pathology-based approaches that have been traditionally used to manage musculoskeletal pain.

# What do Psychologically Informed Therapists do?

- **Build a therapeutic alliance**
- **Reduce perceived threat**
- **Re-conceptualize beliefs and somatic experience**
- **Foster self-efficacy**

# Therapeutic Alliance Benefits



# Motivational Interviewing Techniques: OARS

- **O**pen ended questions
  - What is one thing you've missed doing most since this injury?
- **A**ffirming statements
  - I can see why you miss that!
- **R**eflective listening
  - I hear you saying that...
- **S**ummarizing
  - You really miss doing X, which is important to you because Y. I want to help you get back to X, let's break down that task together.

MINT. Motivational Interviewing Network of Trainers. [www.motivationalinterviewing.org](http://www.motivationalinterviewing.org). Accessed November 17, 2021.

**Table 1** Examples of applying recommendation 1, patient-centred communication versus 'tick-box' communication, for each of the remaining 10 best-care recommendations for musculoskeletal pain

| Recommendation  | Tick-box communication                | Patient-centred communication  | Communication skills used in a patient-centred approach   |
|---|---------------------------------------|--|---|
| 2. Screen patients to identify those with a higher likelihood of serious pathology/return to work conditions.   |                                       | <i>You've said you feel a MRI will help to diagnose what is</i>  | mix of open and closed questions.   |
| 3. Assess psychosocial factors.   |                                       | <b>Summarises and validates patient perspective.<br/>Explains using a metaphor.<br/>Provides adequate explanation to allay patient concerns.</b>   | <ul style="list-style-type: none"> <li>...nt (as opposed</li> <li>...disturbing topic.</li> <li>...urages</li> <li>...listening.</li> <li>...perspective.</li> <li>...ally patient</li> </ul>   |
| 4. Radiological imaging is discouraged unless serious pathology is suspected; there has an unsatisfactory response to conservative care or unexplained progression of signs symptoms, or it is likely to change management. |                                       | <i>now we manage your problem.</i>   |   |
| 5. Undertake a physical examination, which could include neurological screening tests, assessment of mobility and/or muscle strength.   | <i>Carry out</i><br><i>feel pain:</i> | <i>...ay this: how does it feel when you do this: why do you think it feels like it does? How about if you keep bending forward/relax your trunk/ continue breathing normally when moving? How does that feel? (If a change) why do you think that is?</i> | <ul style="list-style-type: none"> <li>...mission.</li> <li>...ive, open-ended questioning during behavioural assessment.</li> <li>Encouraging patient to express feelings and beliefs.</li> <li>Encourages patient involvement by facilitating self-reflection.</li> </ul> |

# Treating Fear Avoidant Factors

- **Graded Exposure Intervention** encourages the client to confront an activity of which they are fearful during the course of rehabilitation and progress that activity as fear decreases
- **Graded Activity Intervention** begins with an activity that the client is limited from due to pain and progresses that activity based on a set quota



# Treating Functional Impairment

- Identify important (meaningful or joyful) activities.
- Work on adaption and problem solving.
- Consider pacing and rest breaks.

# Treating Psychological Factors

## ■ Depression and Anxiety

- Outside help if appropriate and desired.
- Positive environment, relationship
- Exercise (aerobic, strength training)

## ■ Catastrophizing

- Education
- Examples of similar patients with positive outcomes.
  - “This is a common problem we see a lot. . .”

## ■ Other Techniques

- Gratitude journaling
- Cognitive behavioral techniques
  - Goal setting
- Stress Reduction
  - Mindfulness
  - Meditation

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# **When the Physical Therapist Is the Injured Worker**

Joclyn Hunter PT,DPT

Physical Therapist, Advanced  
Clinician

Mass General Brigham Salem  
Hospital

# Role of an Acute Care PT

- To evaluate and identify impairments and functional limitations for acutely ill patients with both simple and complex medical and physical conditions
- Develop a patient centered plan of care
- Provide all levels of assistance to pt's as needed during evaluation and follow up visits to complete functional tasks such as bed mobility, transfers, ambulation and stairs
- Establish an appropriate discharge disposition to assist patients in returning to their functional baseline and/or maximize their functional Independence.

# Experience as the Injured Worker

## Process

- Injury
- Occupational Health
- Protocols
- Frustrations/Challenges
- Emotional Impact
- Advocating/Thinking Outside the box
- Support from Management, Orthopedic Surgeon, Case Manager and Claims Specialist

## Treatments and Interventions that led to Recovery

- Physical Therapy
- Surgery
- Interventions
  - Deep Tissue Massage
  - Joint Mobilization
  - Cupping
  - Acupuncture
  - Botox Injection
  - Dry Needling
  - Laser Therapy in conjunction with E-Stim and heat
  - Work Conditioning



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## Case Discussion

Maria DeIMuto, PT, CCM



# Case Study

- Adult male being seen for outpatient Physical Therapy under Workers' Compensation, unable to work due to injury
- Recently experienced the death of a child
- Limited participation in PT/frequent cancellations/low participation in activity when present
- Not open to mental health counseling
- Community is organizing a 5k in honor of child and to support research

# Options:

- Treat orthopedic issue as normal (biomedical approach), communicate non-compliance to stake-holders

VS

- Use Psychologically Informed Therapy techniques to build a Therapeutic Alliance and treat the whole person (biopsychosocial approach)

# The results of Psychologically Informed Therapy

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**From:**

**Sent:** Monday, October 11, 2021 10:38 AM

**To:** Hoyle, David <[hoyled@selectmedical.com](mailto:hoyled@selectmedical.com)>;

**Subject:** RE: case discussion

Hi David,

Just wanted to touch base with you regarding my patient we discussed. On Friday he had a great session. He agreed to setting a goal to walk the 5 K for his daughter in the spring and felt it was a great idea. He allowed me to load the "Map my walk" Ap onto his phone and we will use this to document his walking between sessions. He genuinely seemed happy and was able to walk a little longer on treadmill.



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# Q & A