



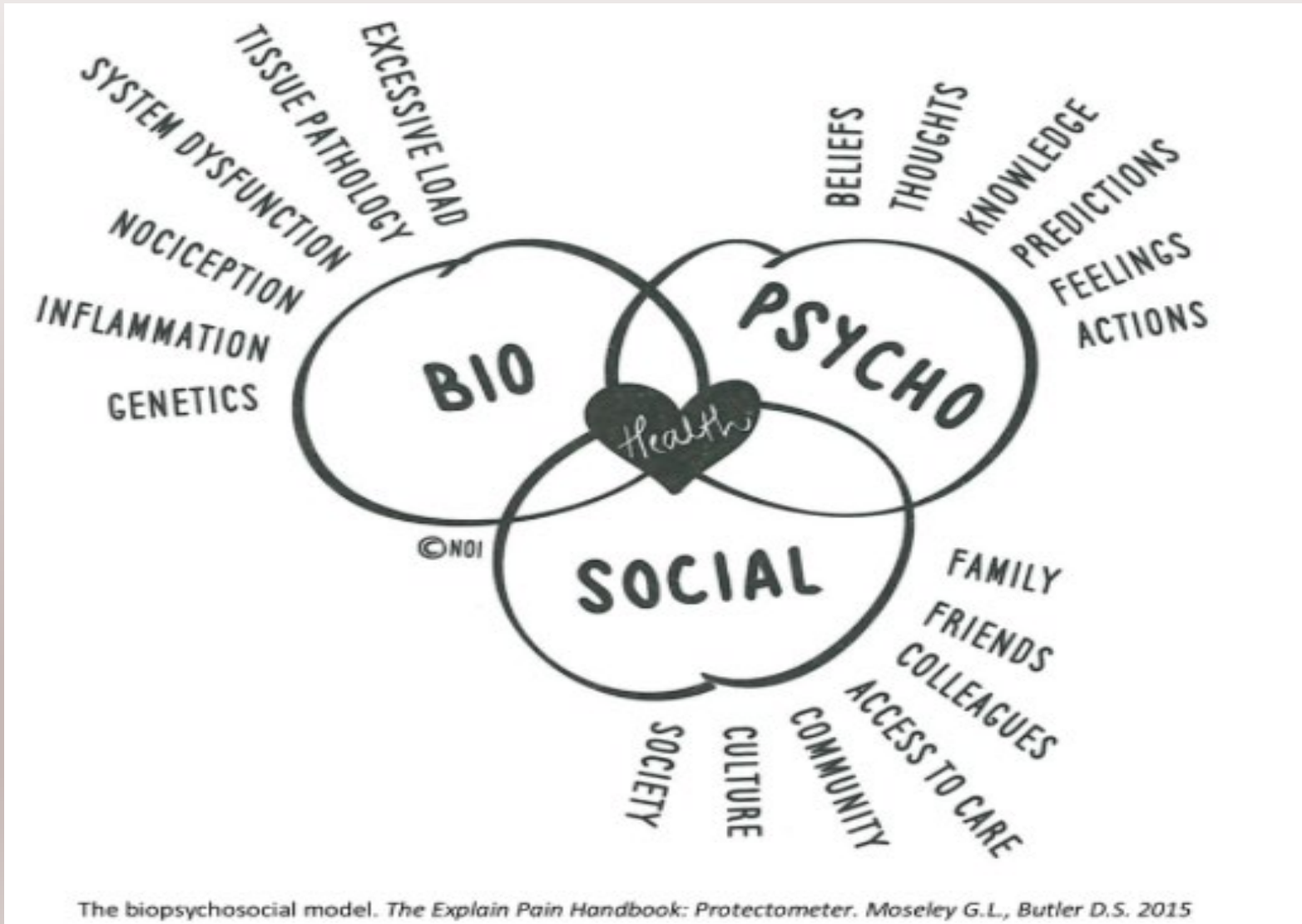
# OBJECTIVES

1. Offer an alternative approach to pain management.
2. Identify specific strategies to promote improved function and improve quality of life.
3. Verbalize ways to protect against developing chronic pain.

Pain centers should include physicians, nurses, mental health professionals (e.g., clinical psychologist, psychiatrist, social workers), pharmacists, and physical and occupational therapists.



# BIO-PSYCHO-SOCIAL MODEL



# EXERCISE IS PROVEN AND EFFECTIVE

Improves quality of life and physical function

Reduces severity of pain

Reduces central nervous system excitability

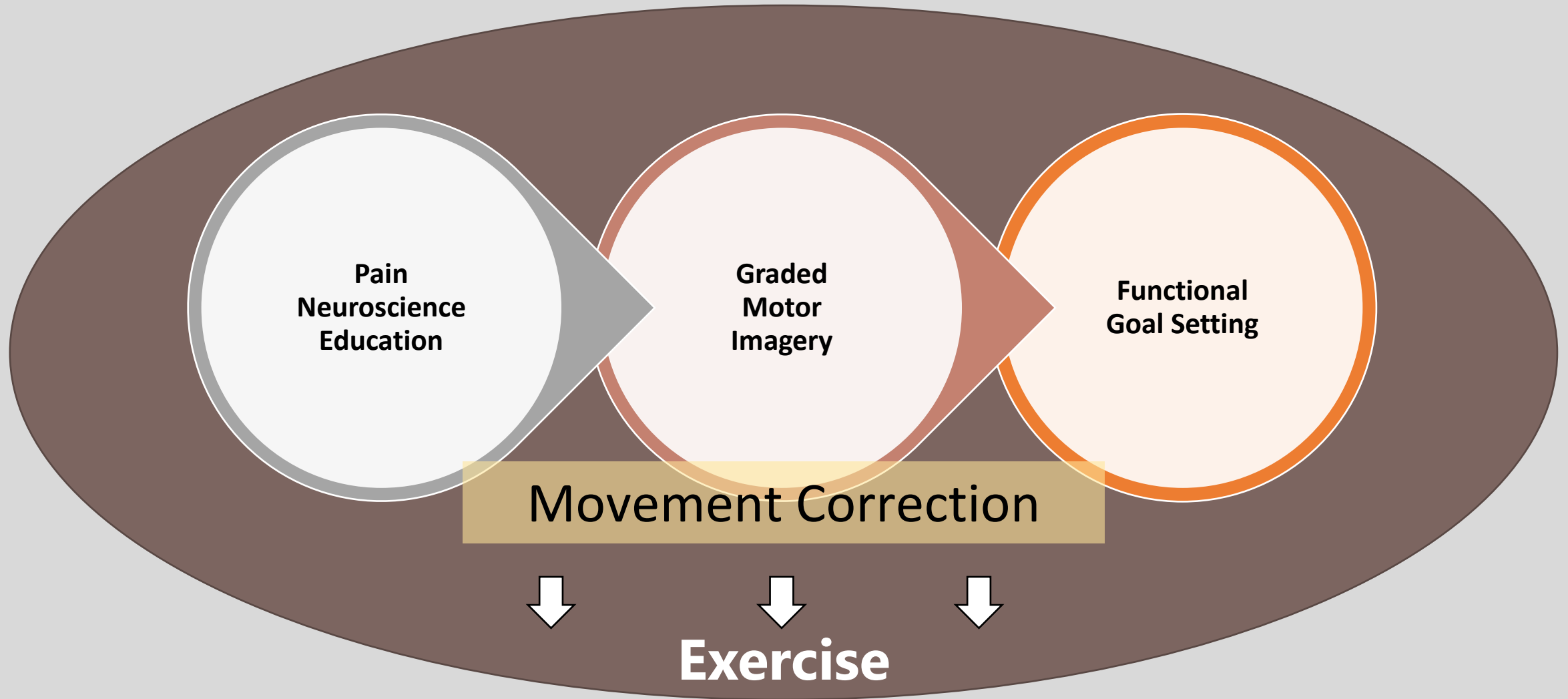
Increases release of endogenous opioids and serotonin

Increases anti-inflammatory cytokines

Protection against developing chronic pain



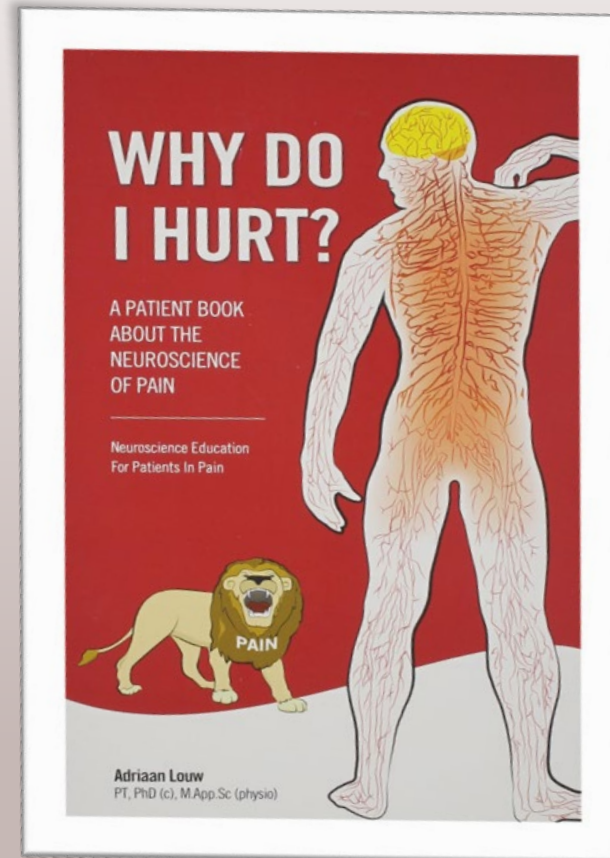
# Psychologically- Informed Physical Therapy



# Pain Neuroscience Education

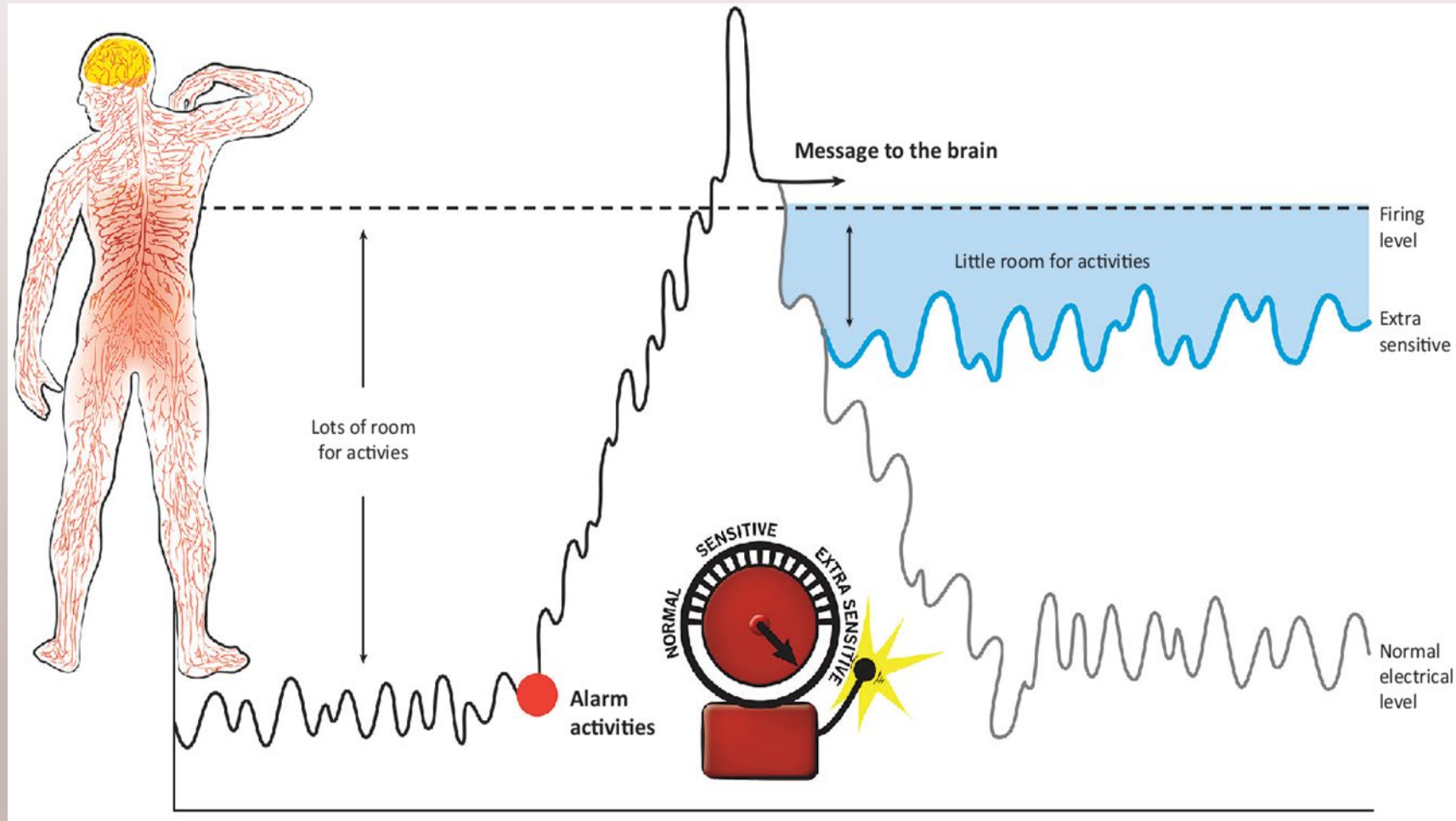


[www.noigroup.com](http://www.noigroup.com)



<https://evidenceinmotion.com/people/adriaan-louw/>

# Stories are Sticky



Adriaan Louw, Ina Diener, David S. Butler, and Emilio J. Puentedura. "The Effect of Neuroscience Education on Pain, Disability, Anxiety, and Stress in Chronic Musculoskeletal Pain." *Archives of Physical Medicine and Rehabilitation* 92.12 (2011): 2041-056.



# Stories are Sticky

Failed Treatments

Fear and Anxiety

Persistent Pain

Family Concerns

Different Explanations

Work and Home Issues

# Words Matter

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## Sticks and Stones: The Impact of Language in Musculoskeletal Rehabilitation

JOSPT, 2018

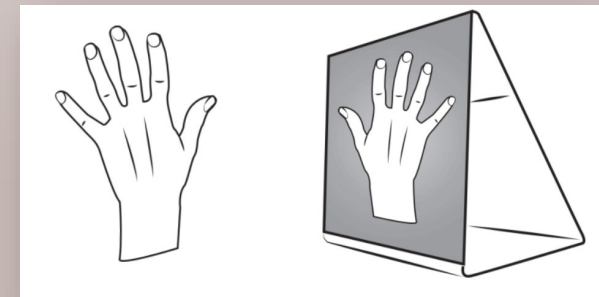
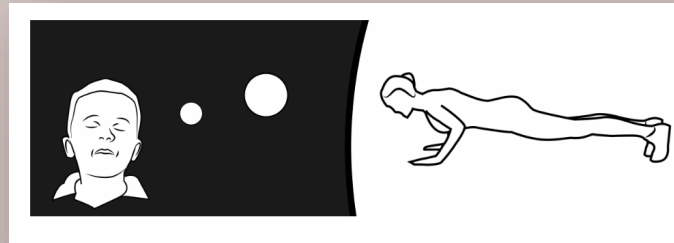
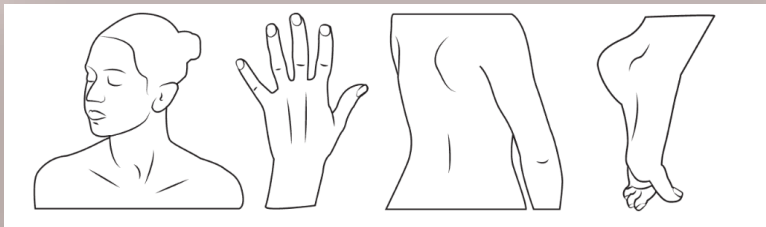
TABLE	TYPICAL WORDS TO AVOID AND ALTERNATIVES FOR PATIENTS	
Words to Avoid	Alternatives	
Chronic degenerative changes	Normal age changes	
Negative test results	Everything appears normal	
Instability	Needs more strength and control	
Wear and tear	Normal age changes	
Neurological	Nervous system	
Don't worry	Everything will be okay	
Bone on bone	Narrowing/tightness	
Tear	Pull	
Damage	Reparable harm	
Paresthesia	Altered sensations	
Trapped nerve	Tight, but can be stretched	
Lordosis	The normal curve in your back	
Kyphosis	The normal curve in your back	
Bulge/herniation	Bump/swelling	
Disease	Condition	
Effusion	Swelling	
Chronic	It may persist, but you can overcome it	
Diagnostics	X-ray or scan	
You are going to have to live with this	You may need to make some adjustments	

# Graded Motor Imagery

Left Right  
Discrimination

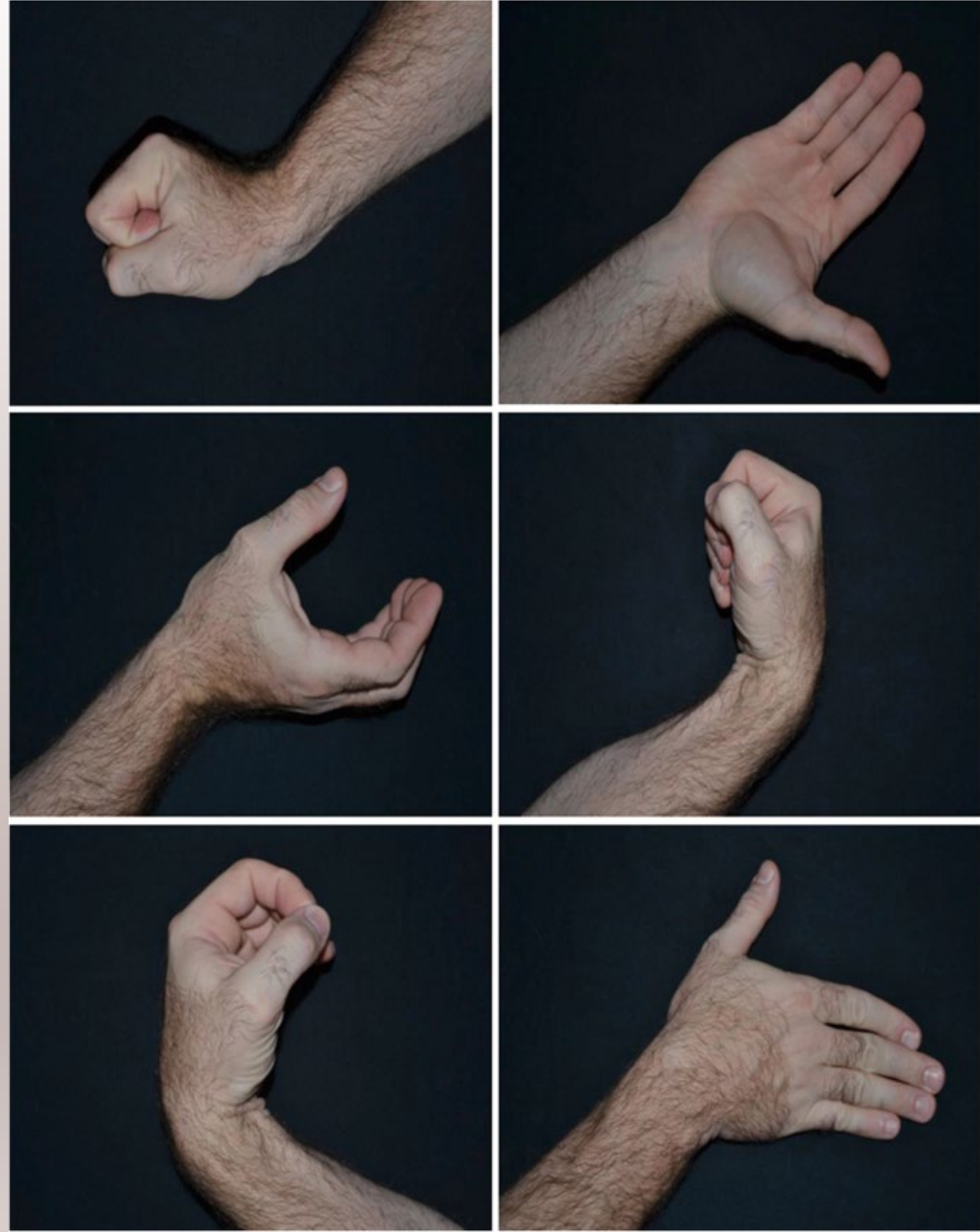
Explicit Motor  
Imagery

Mirror  
Training



Graded Motor Imagery (GMI) is the most up to date rehabilitation program- based on the latest science and clinical trials- to treat many complex pain, and movement problems.

# LEFT RIGHT DISCRIMINATION

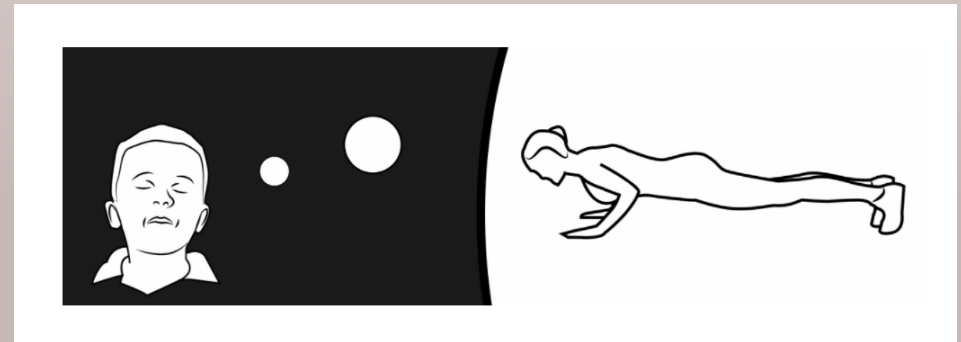
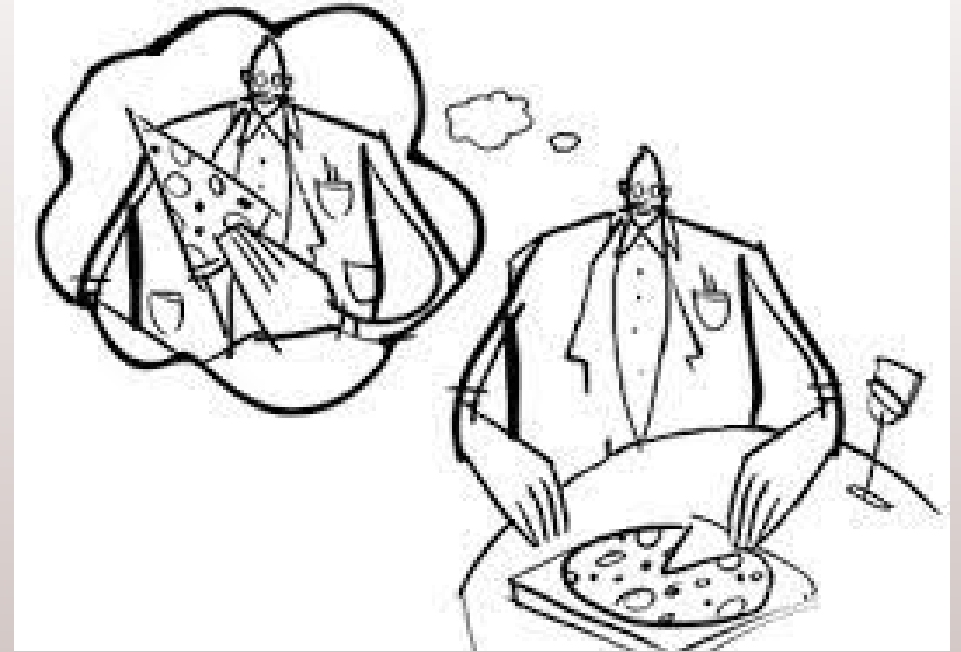


McGee, C., Skye, J. & Van Heest, A. Graded motor imagery for women at risk for developing type I CRPS following closed treatment of distal radius fractures: a randomized comparative effectiveness trial protocol. *BMC Musculoskeletal Disord* **19**, 202 (2018). <https://doi.org/10.1186/s12891-018-2115-6>

# EXPLICIT MOTOR IMAGERY

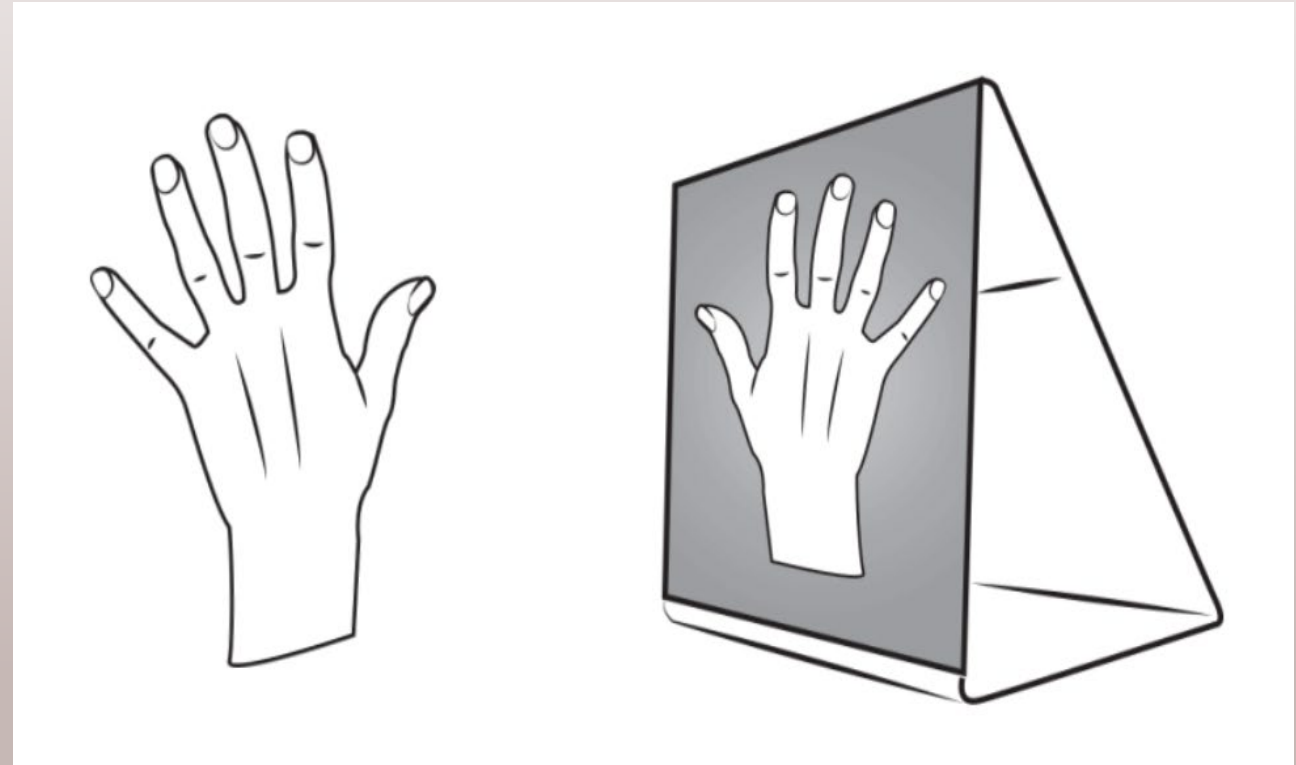
The process of thinking about moving without actually moving

25% of the neurons in the brain are 'mirror neurons' and start firing when you **think** of moving or even watch someone else move



# MIRROR BOX THERAPY

Using movements of the stronger body part to “trick our brain” into thinking that the weaker body part is moving



# IT TAKES A VILLAGE!

Behavioral Health

Rehabilitation

Pharmacists



Physicians and  
nurses

Social Work

Community  
Resources



Ask if providers have experience in chronic pain rehab.

Inquire about an interdisciplinary pain program.

If you are a provider, refer to rehab when in doubt.  
We can help triage and get you/your patient to the right provider.



# INTERDISCIPLINARY PAIN PROGRAM OUTCOMES

**5x SIT TO STAND TEST**

Improved from average 19.4 seconds to **12.3 seconds** (Goal <15seconds)

**2 MINUTE WALK TEST**

Improved from average .9m/sec to **1.2m/sec** (Goal 1.2m/sec or greater)

**FEAR AVOIDANCE BELIEF QUESTIONNAIRE**

Work related Fear Avoidance decreased by **13 points**. Physical Activity Fear Avoidance decreased by **10.2 points**.

**OSWESTRY DISABILITY INDEX**

Improved from average by **16 points** (12 points is clinically significant change)

# SELF MANAGEMENT INTERVENTIONS

Change  
Psychological Factors



Change Behavioral  
Factors

# VIRTUAL INTERDISCIPLINARY PAIN SCHOOL

## Description:

Virtual Interdisciplinary Pain School is a **four-session educational program** for adults living with chronic pain conditions. This program is an introduction to healthy lifestyle and specialized skills for living a full life with pain. Pain School uses an **interdisciplinary team approach** and includes staff from nursing, social work, occupational therapy, physical therapy, nutrition, and pharmacy.

## Program Format:

Four group virtual sessions led by a multidisciplinary pain team

Individual counseling, nutrition services, pharmacy consultation, and brief behavioral intervention for insomnia available upon request



# VIRTUAL INTERDISCIPLINARY PAIN SCHOOL

	Date	Pain & Wellness Education Topics	STAFF
<b>Week 1</b>	2/2	<ul style="list-style-type: none"> <li>• What is chronic pain and what are the best treatment approaches?</li> <li>• Bio-psycho-social model of pain</li> <li>• Active treatments versus passive treatments</li> <li>• Difference between hurt (pain) and harm (damage, injury)</li> <li>• Difference between pain sensations and pain behavior</li> </ul>	Pain Social Worker Pain Nurse Practitioner
<b>Week 2</b>	2/9	<ul style="list-style-type: none"> <li>• Spine health</li> <li>• Posture retraining</li> <li>• Body mechanics</li> <li>• Activity management &amp; pacing skills</li> <li>• Pain self-management skills</li> </ul>	Pain Physical Therapist Pain Social Worker
<b>Week 3</b>	2/16	<ul style="list-style-type: none"> <li>• Pain medications as <i>part of your care plan</i></li> <li>• Different types of pain medications</li> <li>• Anti-inflammatory diet</li> <li>• Mindful eating practices</li> </ul>	Pain Pharmacist Dietitian Pain Social Worker
<b>Week 4</b>	2/23	<ul style="list-style-type: none"> <li>• Pain and sleep</li> <li>• Mindfulness skills</li> <li>• Program review and next steps in your journey</li> </ul>	Pain Social Worker Pain Occupational Therapist

# CASE STUDY

- 61-year-old Caucasian female
- Reports pain since 1983 (Chronic, persistent, generalized pain)
- History includes RA, OA, Lupus, COPD, Asthma, CHF, GERD, HTN, hypothyroid, obesity
- Chronic opioid use for 10+ years
- Married, lives with spouse in 2 story house
- On disability; unable to work



# CASE STUDY

**Initial PT Evaluation (May 18<sup>th</sup>, 2021):**

## Clinical Testing

### Hip Joint Measures:

Right Hip Strength: 4/5

Left Hip Strength 4/5

### Knee Joint Measures:

Right Knee Extension Strength: 3+ /5

Right Knee Flexion Strength: 4 (Good)

Left Knee Extension Strength: 4 (Good)

Left Knee Flexion Strength: 4 (Good)

### Lumbar Spine and Sacroiliac Joint Measures:

Lumbar Flexion AROM (%): 50 %

Lumbar Extension AROM (%): 50 %

Lumbar Right Rotational AROM (%): 70 %

Lumbar Left Rotational AROM (%): 70 %

Lumbar Right Lateral Flexion AROM (%): 100 %

Lumbar Left Lateral Flexion AROM (%): 100 %

## Functional Testing

**5X Sit to Stand Test** recorded time 21.19

### 2 Minute Walking Test

Timed Walk test dist (ft) 300

Timed Walk test time (min) 2

Timed Walk test dist (m) 91.44

Timed Walk test speed (m/s) 0.76

Timed Walk test assistive device No device

**LE Functional Scale:** Transformed Score 33.75

**FABQ Work Scale Score** 40

**FABQ Physical Activity Scale Score**

30

# CASE STUDY

Initial PT Evaluation (May 18<sup>th</sup>, 2021):

## Patient's Stated Goals:

1. Improve productivity with daily activities
2. Improve self management techniques for pain, improve overall functional mobility, get back to living!



# CASE STUDY

Patient participated in a 12-week Interdisciplinary Pain Team approach including:

- Physical Therapy
- Occupational Therapy
- Clinical Psychology
- Social Work
- Pain Pharmacy
- Dietician

She was treated with group-based PT, individual PT, group-based psychology, individual psychology, individual OT, and 1:1 with social work, pharmacy, and dietician.



# CASE STUDY

## Initial PT Evaluation (May 18<sup>th</sup>, 2021):

### Hip Joint Measures:

Right Hip Strength: 4/5  
Left Hip Strength 4/5

### Knee Joint Measures:

Right Knee Extension Strength: 3+ /5 (Fair)  
Right Knee Flexion Strength: 4 (Good)  
Left Knee Extension Strength: 4 (Good)  
Left Knee Flexion Strength: 4 (Good)

### Lumbar Spine and Sacroiliac Joint Measures:

Lumbar Flexion AROM (%): 50 %  
Lumbar Extension AROM (%): 50 %  
Lumbar Right Rotational AROM (%): 70 %  
Lumbar Left Rotational AROM (%): 70 %  
Lumbar Right Lateral Flexion AROM (%): 100 %  
Lumbar Left Lateral Flexion AROM (%): 100 %

## PT Discharge (September 14<sup>th</sup>, 2021):

### Hip Joint Measures:

Right Hip Strength: 5/5 ✓  
Left Hip Strength 5/5 ✓

### Knee Joint Measures:

Right Knee Extension Strength: 5 ✓  
Right Knee Flexion Strength: 5 (Good) ✓  
Left Knee Extension Strength: 5 (Good) ✓  
Left Knee Flexion Strength: 5 (Good) ✓

### Lumbar Spine and Sacroiliac Joint Measures:

Lumbar Flexion AROM (%): 100 % ✓  
Lumbar Extension AROM (%): 100 % ✓  
Lumbar Right Rotational AROM (%): 100 % ✓  
Lumbar Left Rotational AROM (%): 100 % ✓  
Lumbar Right Lateral Flexion AROM (%): 100 % ✓  
Lumbar Left Lateral Flexion AROM (%): 100 % ✓

# CASE STUDY

Initial PT Evaluation (May 18 <sup>th</sup> , 2021):		PT Discharge (September 14 <sup>th</sup> , 2021):	
<b>5X Sit to Stand Test recorded time</b>	21.19	<b>5X Sit to Stand Test recorded time</b>	9.51 ✓
<b>2 Minute Walking Test</b>		<b>2 Minute Walking Test</b>	
Timed Walk test dist (ft)	300	Timed Walk test dist (ft)	450
Timed Walk test time (min)	2	Timed Walk test time (min)	2
Timed Walk test dist (m)	91.44	Timed Walk test dist (m)	137.16 ✓
Timed Walk test speed (m/s)	0.76	Timed Walk test speed (m/s)	1.14 ✓
Timed Walk test assistive device	No device	Timed Walk test assistive device	No device
<b>LE Functional Scale: Transformed Score</b>	33.75	<b>LE Functional Scale: Transformed Score</b>	77.5 ✓
<b>FABQ Work Scale Score</b>	40	<b>FABQ Work Scale Score</b>	0 ✓✓
<b>FABQ Physical Activity Scale Score</b>	30	<b>FABQ Physical Activity Scale Score</b>	5 ✓✓

# CASE STUDY



Canceled scheduled Knee surgery (scheduled for November 2021)

Joined the YMCA and continued with prescribed home program, machines, and aquatic therapy (went 4-5 days/week)

Improved walking tolerance to walk 3 miles/day

Traveled to Virginia Beach, Virginia to visit her son and grandchildren- she had never been able to undergo the travel since they moved 6 years ago

Began volunteering at local family farm 2 days/week

*"Lauren, I just want to thank you again for everything that you have done for me. **I have my life back, yeah!!** I just can't believe how much better I feel, both mentally and physically. The support that this program has to offer is absolutely the best therapy that I have ever done!! Again, thank you. **You have turned my world around!**"*



Thank You

# Q&A

1. What are the challenges of putting together and working with a multi-disciplinary team?
2. How do you improve patient consistency and compliance?

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