

Mi-CCSI

Center for Clinical
Systems Improvement

PHYSICAL THERAPY

A Valuable
Tool for Pain
Management

Non-Pharmacological Therapies for Chronic Pain States

Strong Evidence

- Education
- Aerobic exercise
- Cognitive behavior therapy



Modest Evidence

- Strength training
- Hypnotherapy, biofeedback, balneotherapy



Weak Evidence

- Acupuncture, chiropractic, manual and massage therapy, electrotherapy, ultrasound



No Evidence

- Tender (trigger) point injections, flexibility exercise



PT's CONTRIBUTION TO E.R.A.S.E.

EMOIONS

- Stress management
- Pleasant activity scheduling
- Resilience

REFLECTIONS

- Reframing
- Relaxation

ACTIONS

- Exercise
- Pacing
- Problem solving

SLEEP

- Reinforce sleep hygiene

ENVIRONMENT

PAIN & PT

- **Low back pain.** A review of >60 randomized controlled trials (RCTs) evaluating exercise therapy: decrease pain, improve function, and help people return to work.¹
- **Before & after surgery.** A review of 35 RCTs (~3,000 THA patients): preoperative exercise and education led to significant reductions in pain, shorter lengths of stay postoperatively and improvements in function.²
- **Arthritis.** PT exercise programs can reduce pain and improve physical function among individuals with hip and knee osteoarthritis.^{3,4}

HOW?

Advantages:

- **Time**
 - Assessment
 - Treatment
 - Education
- **Experts** in neuromusculoskeletal assessment and treatment
- **Screen** for red flags, impact of co-morbidities, patient safety
- **Provides Experiential Learning**
- **Effective Training** regimens
- **Timing** of Care
 - Secondary Prevention: halt the progression from Acute to Chronic Pain
- **Able to simultaneously** treat an **acute flare up** in the presence of a **chronic pain state**.

BEST EVIDENCE: AEROBIC EXERCISE

E.R.A.S.E: **ACTION**

Evidence Based Formats^{5,6}

- RPE: 6-7 is the target for effort that produces *optimal results*
- Graded Exposure
 - To foster patient engagement: may start lower... however, too low jeopardizes results.

Rating of Perceived Exertion scale (RPE)

1	Very Light Activity (anything other than complete rest)
2-3	Light activity (feels like you can maintain for hours, easy to breath and carry on a conversation)
4-5	Moderate Activity (feel like you can exercise for long periods of time, able to talk and hold short conversations)
6-7	Vigorous Activity (on the verge of becoming uncomfortable, short of breath, can speak a sentence)
8-9	Very Hard Activity (difficult to maintain exercise intensity, hard to speak more than a single word)
10	Max Effort (feels impossible to continue, completely out of breath, unable to talk)

MODERATE EVIDENCE: STRENGTH TRAINING

E.R.A.S.E: **ACTION**

Impairment with ADL's

- Transfers
- Stair climbing
- Lift / push / pull / carry.

■ Pro's ^{7,8}

- Efficient: 1-2 times a week
- Prior history of strength training
- Endogenous opiate release

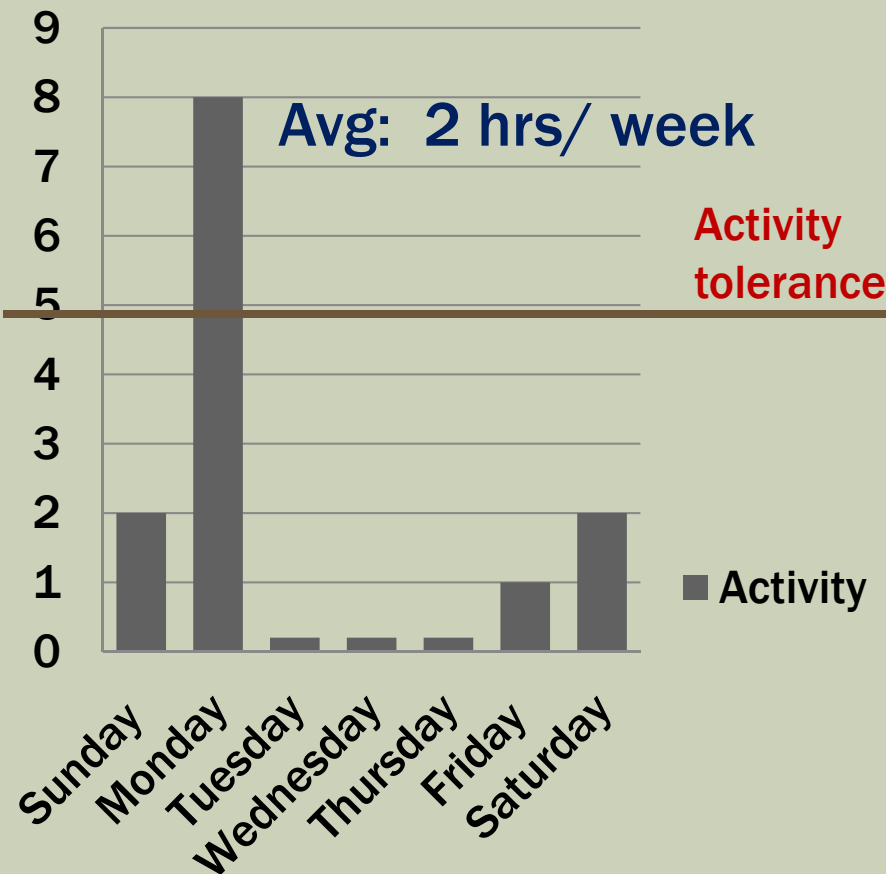
■ Con's

- Dose/response carefully monitored and scripted to not further sensitize patient to becoming active.

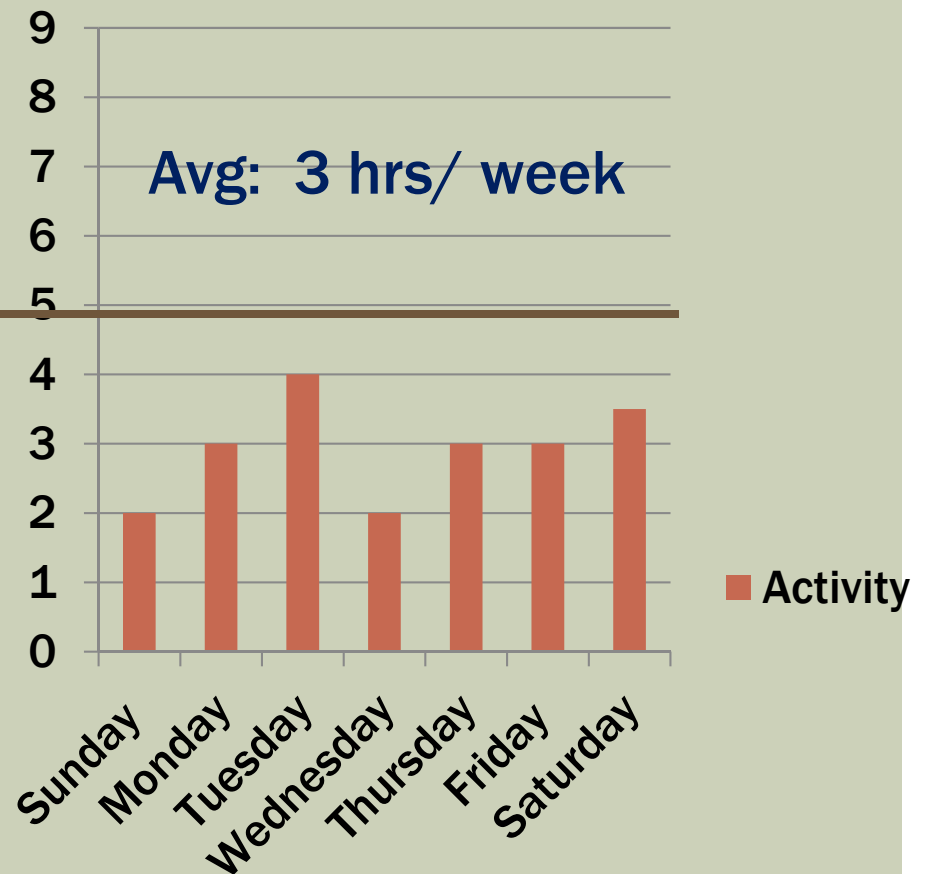
BEST EVIDENCE: EDUCATION

E.R.A.S.E: ACTION

Boom / Bust Cycle



Pacing / Graded Activity^{9,10,11}



BEST EVIDENCE: EDUCATION

E.R.A.S.E: REFRAMING

Neuroscience of Pain

Nerves send messages to your brain and your brain decides how much pain you feel—a **lot**, **a little**, or none at all.²¹

- **Pain is always real**, but not always the result of a physical injury.
- **The brain is constantly asking:**
 - How **dangerous** is this?
 - Constantly scanning the body and environment for potential **threats**.
 - The brain notices a threat and reacts with a pain sensation.
- Sometimes the brain continues to send a pain signal long after the injury has healed for several reasons:
- Increased stress and anxiety from:
 - Not knowing the cause of the pain
 - Not knowing how long the pain will last
 - Unsuccessful pain treatments
 - Pain limiting normal activity

E.R.A.S.E:

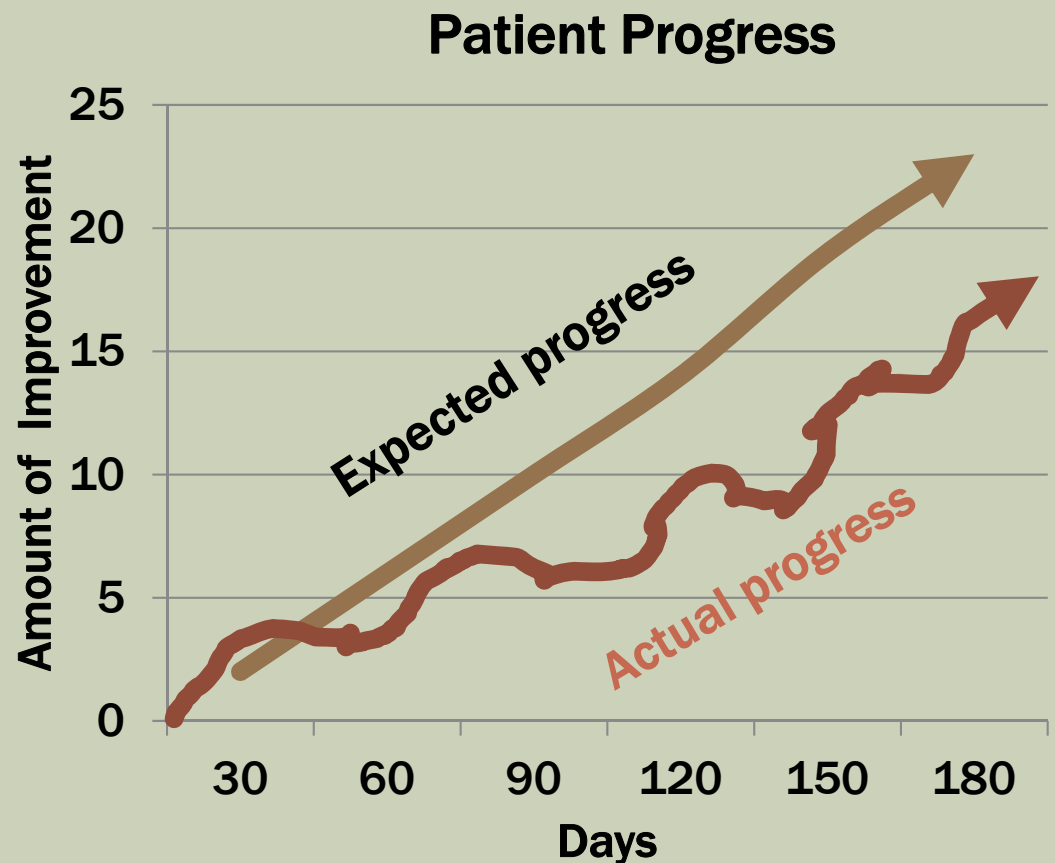
STRESS MANAGEMENT & RELAXATION

- **Diaphragm Breathing**
 - Stop accessory muscles (limbic system activation)
 - Emphasis on slowing respiration rate through increased length of exhalation
 - “Gap” after full exhalation
 - Intentional practice
 - Habits/Mneunonics
- **Concept of total “stress”**
 - Biopsychosocial contributions to pain (SPACE)

LIFE IS CURVY

Chronic Pain

- Set Proper Expectations
- Goal is: *Less pain & Increased Activity*
 - Time
 - 6+ months, not 6 visits
 - Neuroplastic changes take time
 - Setbacks are to be expected
 - Focus is on building **Resilience**



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