Southern Pain Society

Geralyn Datz PhD, MP

Southern Behavioral Medicine Associates

The Pain Resiliency Phenotype: An Evidence-Based Approach for Busy Practitioners

Objectives:
-Simple evidence-based tools
-Immediate use
-Empower patients
-Improve outcomes

- Acknowledgments
- Disclosures
- About me

Two Patients, Same MRI

Colin *is a 58-yo married teacher with chronic LBP from a snowboarding accident. He fell about 3m off a ledge. He had a burst fracture at L3 and is status post-laminectomy. He reports daily pain but maintains his job & community work.*

Jack *is 49 yo divorced software engineer. He has LBP after falling down a staircase at work. He had a burst fracture at L3 and is status post laminectomy. He reports daily pain and maintains his job. He is a loner with minimal social life and no community involvement.*

Two Patients, Same MRI

Same diagnosis …. different outcomes

Colin reports feeling content, is active with family, and reports average daily pain 4 to 7/10.

When asked about his pain, he states, "It is what it is."

Jack is depressed, has gained 50 lbs since injury, is angry at his employer, and reports average pain 7 to 10/10. When asked about his pain, he states,

"This never should have happened."

Two Patients, Same MRI

What makes the difference?

It's not the MRI — it's resiliency and adaptability

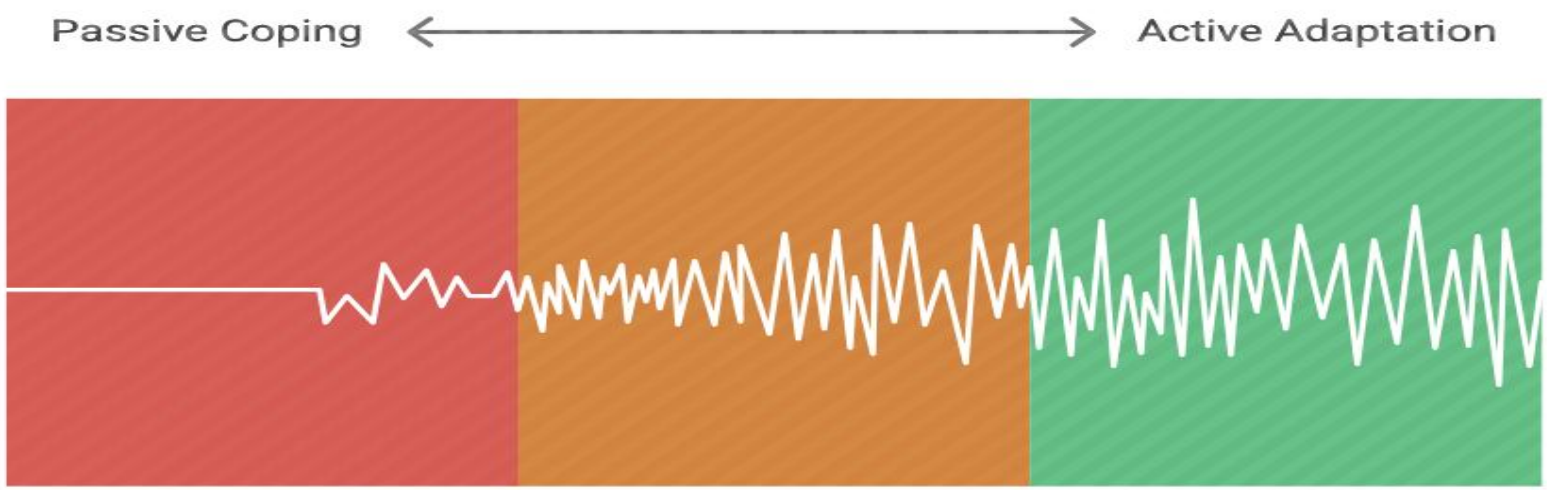
This variability is treated as noise, random, or unfortunate.

The Pain Resiliency Phenotype

- Adaptive functioning despite chronic pain
- High self-efficacy, acceptance, and purpose
- Cognitive flexibility
- Behavioral Persistence

- ***An identifiable pattern of functioning***

Pain resiliency ranges from passive coping to active adaptation.



High Catastrophizing

Focuses on negative aspects of pain

Behavioral Integration

Balances pain management with daily life

Pain Resiliency Phenotype

Actively adapts neural, cognitive, and behavioral responses

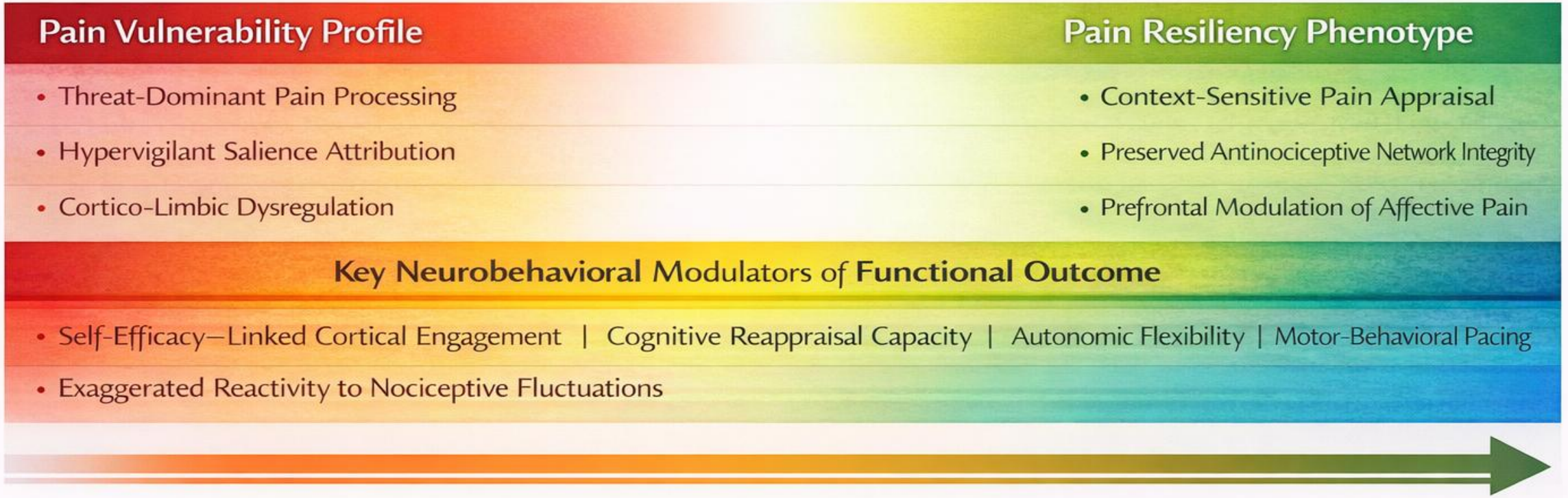
Neurobiological Correlates of Pain Resiliency

System	Resilient Pattern	Contrast: Vulnerability Pattern
CNS processing	Efficient pain modulation, intact descending inhibitory control (periaqueductal gray activity)	Amplified central sensitization
Limbic system	Moderate amygdala activation, increased prefrontal control	Amygdala hyperreactivity, PFC hypoactivity
HPA axis	Adaptive cortisol recovery, stable diurnal rhythm	Dysregulated stress response
Neuroplasticity	Preserved DLPFC and ACC connectivity	Functional decoupling under distress

From Vulnerability to Resiliency:

The Pain Resiliency Phenotype in Pain Medicine

Symptom Load ➡ Functional Engagement



Pain-related disability is not determined by nociceptive input alone.
Functional outcomes reflect *modifiable neurobehavioral patterns* that can be identified and reiniforced within pain medicine.

Hector et al., 2023 | Sturgeon & Zautra, 2024 | You et al., 2024

Resilience & Vulnerability Factors

Psychological Flexibility:

Alignment with one's values and long-term goals, even in the presence of inner discomfort (pain, anxiety, fatigue).

Pain Acceptance: Readiness to engage fully in life despite pain experience. It involves letting go of the struggle to eliminate pain and focusing energy on valued living.

Self-Efficacy: Belief in one's own ability to **manage the pain** and execute the necessary tasks (pacing, exercise, relaxation) to improve daily function.

Positive Emotion/Meaning: Ability to experience **positive emotions** (joy, gratitude, hope) and find **meaning** in life despite the illness.

Social Support:

Maintaining and proactively seeking strong, supportive connections with family, friends, or common interest groups.

BIOPSYCHOSOCIAL MODEL OF RESILIENCE

Domain	Protective Factors	Clinical Indicators / Behaviors
Biological	• Stable HPA axis and cortisol regulation• Balanced autonomic tone (lower sympathetic dominance)• Adequate sleep and energy conservation patterns• Regular physical conditioning within tolerance	• Reports pacing rather than avoidance• Maintains physical activity plan• Minimal secondary deconditioning
Psychological	• Pain acceptance and cognitive flexibility• Active coping (problem-solving vs. catastrophizing)• Optimism, gratitude, humor• High self-efficacy and locus of control	• Uses coping statements ("I can still manage this")• Uses mindfulness or prayer• Low depressive rumination
Social / Cultural	• Supportive family and faith structures• Engagement in valued roles (work, ministry, caregiving)• Prosocial engagement, altruism	• Maintains role identity• Reports emotional fulfillment through service
Spiritual / Existential	• Purpose-driven living• Religious or faith-based meaning making• Resilience through transcendence	• Expresses pain within moral or faith narratives ("God gives me strength")

The 2-Minute Resilience Scan: Quick Insights for Busy Clinics

Challenge: Limited time in pain care appointments.

Solution: One evidence-based question provides a 'clinical window' into coping mindset.

Script 1: Self-Efficacy: "*On a scale of 1-10, how confident are you that you can manage your daily activities despite your pain?*"

Rationale: High self-efficacy predicts better functional outcomes.

Script 2: Validate and Reinforce: "What you're saying makes sense, given how long this has been going on. In addition to finding solutions, we need to find ways to keep you active as possible." Watch their response.

Pain is a Protective Output, Not a Direct Input

Fundamental Truth: Pain is **100% real**, but it is an **output** of the brain, not a simple **input** from the body.

The Brain's Job: The brain's role is protection. It assesses all danger signals (tissue damage, stress, memory, beliefs) and decides if a pain response is required.

Clinical Insight: In chronic pain, the output is often disproportionate to the input—the alarm sounds even when the tissue is safe.

Actionable Metaphor: The volume dial (the nervous system) is turned up, and we need strategies to turn it down, regardless of the tissue state.

The Architects of Pain Neuroscience Education (PNE)

Physiotherapists Dr. Lorimer Moseley and Dr. David Butler.

Their work integrates **neuroscience, pain science, and education principles** to create a communication strategy.

PNE is a paradigm shift—it's not about ignoring tissue damage but placing the **nervous system** (the 'alarm') at the center of the chronic pain conversation.

- **Clinical Impact:** Their model transformed pain education from passive lecture to a *dynamic, therapeutic intervention.*

The Nervous System Volume Dial

The Problem:

Chronic pain represents a "volume dial stuck too high" on the nervous system.

Traditional Approach:

Focus on **Muting the Signal** (pharmacology, identifying *pain drivers*).

Next Frontier:

- We must also **Install a Regulator**—actively building resilience to control and modulate the signal.

(Zautra & Ong, 2025)

Dimming the Threats: The 'Hose' Analogy

PNE Principle: To reduce pain (the alarm), we must reduce the sum of danger signals (**Threats**) and increase the sum of safety signals (**Resilience**).

Imagine a hose filling a bucket labeled 'Pain.'

If the bucket overflows, you feel pain.

- **Threats (Water In):** Stress, poor sleep, fear, bad news, unhelpful beliefs, catastrophizing.
- **Resilience (Water Out):** Self-efficacy, purpose, good sleep, PNE, exercise, safe movement.
- **The Practitioner's Role:** Identify the patient's 'Threats' (the water sources) and provide tools to increase the 'Resilience' drainage.

PNE in Action: Clinical Examples for Busy Providers

The Problem: Patient says, *"My X-ray shows 'wear and tear,' that's why I hurt."*

- **PNE Response:** "Imaging shows *change*, but research confirms these changes are common, even in people *without* pain. Your pain level is currently dictated by **how protective your nervous system is**."

The Problem: Patient says, *"Rest is the only thing that helps."*

- **PNE Response:** "When you rest, the alarm quiets, but the **nervous system remains hyper-vigilant**. We need to gently teach the alarm system (your brain) that movement is safe, starting with the 'Just Five' Rule."
- **The Goal:** Use concrete language (Alarm System, Volume Dial) to make complex neurobiology easily digestible and **actionable**.

The "Just Five" Rule: Re-Engage Movement, Defeat Fear

Patient Challenge: Fear of pain flares, activity avoidance.

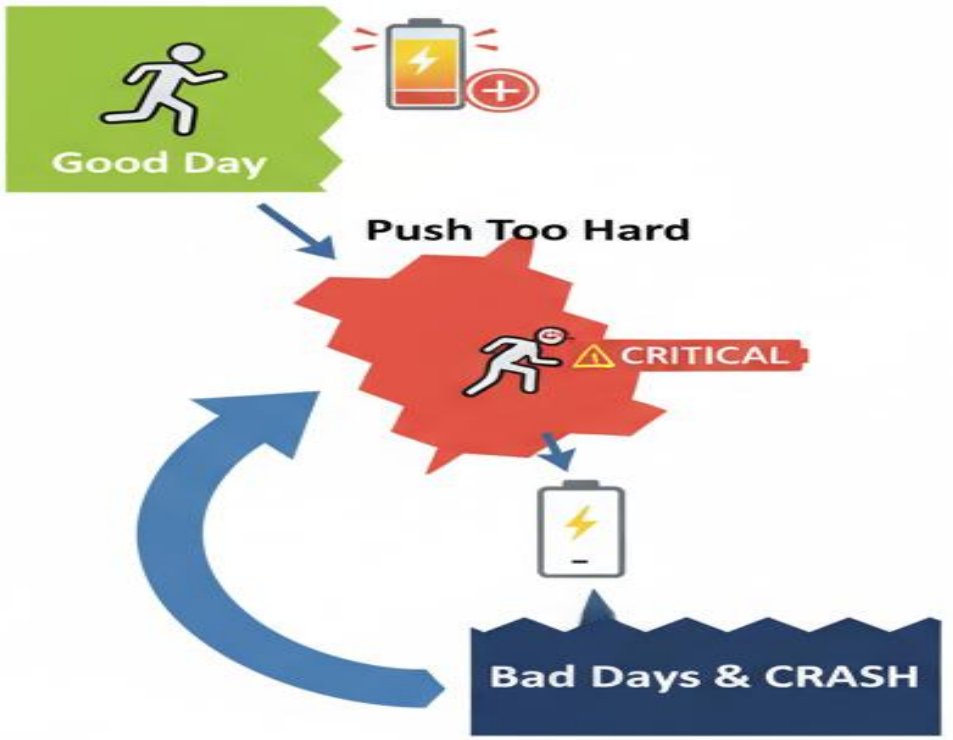
Rule: "Do the task you're avoiding for **just five minutes**, then stop."

Benefits:

- Builds confidence & self-efficacy.
- Breaks cycles of avoidance.
- Prevents post-activity pain flares.

Understanding Pacing:
Not Pushing Through, But Planning Through

Imagine your energy is like a battery.



The "Boom & Bust" Cycle

- Push on 'good days' ⟶ Crash on 'bad days ⟶ Amplified Pain & Frustration

Understanding Pacing

- Manage your 'energy battery' ⟶ Consistent ⟶ Consistent Activity + Scheduled Rest
- Stable Energy & Reclaim Life

The "Purpose" Prescription: Reconnecting Patients to Life

Chronic Pain Impact: Loss of roles, relationships, and meaning.

Question: "What does your pain prevent you from doing that you miss the most?"

Goal:

- Identifies intrinsic motivation.
- Provides actionable, patient-driven goals.
- Shifts focus from pain intensity to valued living.
- **Clinical Value:** A simple question, profound impact on re-engagement.

Exercise: A Dual-Action Intervention

Beyond Pain Relief: Exercise is a robust treatment for comorbid depression & anxiety in chronic pain.

Active Coping: Directly opposes passive strategies (rest, avoidance).

Mechanism: Reduces depressive symptoms independent of pain relief.

Evidence: Meta-analysis shows clinically significant reduction in depressive symptoms in chronic pain patients.

Key Message: Prescribe movement not just for physical health, but for **mental resilience**.

Exercise & Pain

Exercise Type	Evidence Base & Considerations
Aquatic Exercise	Highly recommended for OA, FMS, LBP, joint pain
Walking	Well-established, LBP, sciatica, knee OA
Tai Chi	Highly recommended for OA, FMS, LBP, Headache, Neck
Yoga	Effective for LBP, Neck pain, FMS
Pilates	Recommended for LBP, sciatica, neck and pelvic pain
Resistance Bands	Essential for CRPS, Neck pain, LBP, Knee pain, joint pain
Stretching & Flexibility	Effective for Nerve pain, Sciatica, LBP, Neck pain, FMS
Gardening	gentle mobility in a motivating, purposeful way
Dancing	Beneficial for mobility, joint pain,, and distraction

Sleep: The Foundational Pillar of Resilience

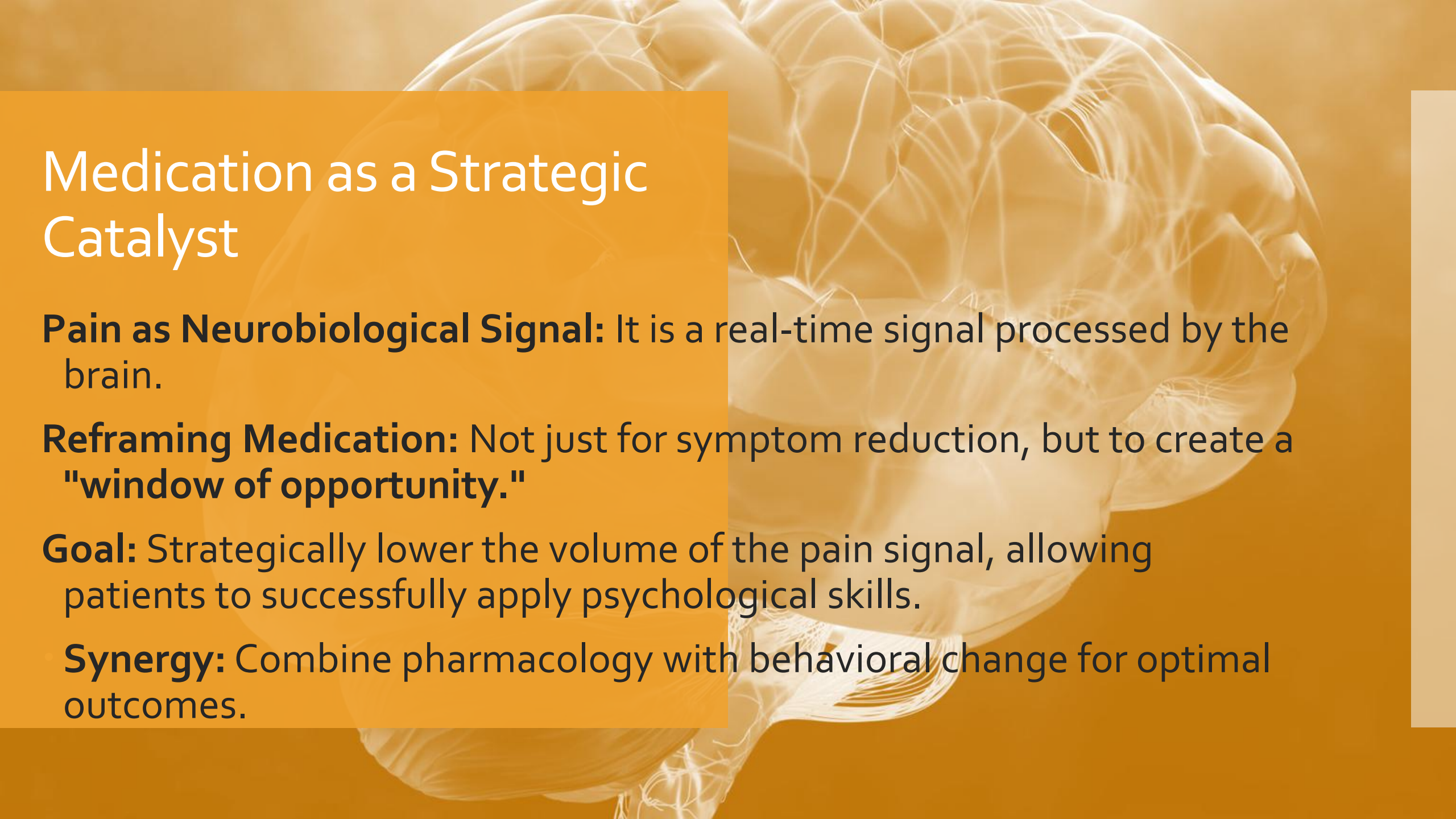
The Vicious Cycle: Poor sleep is not just a symptom of pain; it's a direct pain *worsener*.

Bidirectional Relationship: Chronic pain disrupts sleep; poor sleep exacerbates pain by impairing endogenous pain modulation.

Impact on Resilience: You cannot build resilience on a foundation of exhaustion.

Actionable: Prioritizing sleep hygiene is a critical, foundational step.

Evidence: Dario et al., 2023 details this bidirectional relationship, stressing its clinical importance.



Medication as a Strategic Catalyst

Pain as Neurobiological Signal: It is a real-time signal processed by the brain.

Reframing Medication: Not just for symptom reduction, but to create a **"window of opportunity."**

Goal: Strategically lower the volume of the pain signal, allowing patients to successfully apply psychological skills.

Synergy: Combine pharmacology with behavioral change for optimal outcomes.

The Antidepressant-Resilience Link: Beyond "Mood Drugs"

Dual Mechanism: SNRIs (e.g., Duloxetine) and some TCAs act on descending pain pathways.

Multi-Target Benefit: Reduce pain signal, improve sleep, manage comorbid depression & anxiety.

Clinical Impact: Facilitates engagement in active coping and resilience-building.

Evidence: Meta-analysis (Skelly et al., 2022) confirms a significant reduction in pain intensity independent of depression.

Psychotropics & Pain

Drug Class	Specific Examples	Primary Pain Benefits & Target Conditions	Evidence Base for Pain	
SNRIs	Duloxetine (Cymbalta), Venlafaxine	Inhibits reuptake of both 5HTPand NE, descending pain inhibition pathways.	Strongest Evidence.	
TCAs	Amitriptyline, Nortriptyline	norepinephrine/serotonin reuptake inhibition and sodium channel blocking.	High Evidence, often considered first-line for neuropathic pain. The sedative effect (at low doses) is also beneficial for pain-related insomnia.	
SSRIs	Fluoxetine (Prozac), Sertraline (Zoloft)	enhances serotonin	SSRIs are generally less effective than SNRIs or TCAs for direct pain relief. Use for severe mood/anxiety symptoms alongside pain.	
Atypical Antidepressants	Trazodone	off-label/ insomnia modest efficacy for neuropathic pain at higher doses.	Low/Limited Evidence for direct pain relief. Stronger evidence for improving sleep continuity and total sleep time,	

The Integrated Approach: Medication as a Catalyst

Neural Membrane Stabilizers: Calming the Circuit, Reducing Fear

- **Target:** Neuropathic pain and highly sensitized states.
- **Action: Calm the over-excited nervous system** (e.g., reduce aberrant neuronal firing).
- **Strategic Goal:** Reduce the subjective fear of movement and lower baseline pain intensity.
- **Clinical Synergy:** Prescribe strategically *before* asking a patient to attempt the **'Just Five' Rule**.
- **Evidence:** Systematic reviews support the efficacy of gabapentinoids for neuropathic pain, offering a safer alternative to long-term opioids

(Moore et al., 2023, Ong, Zautra, Reid 2013)

The "Just Five" Rule: Gratitude & Breathwork

Patient Challenge: Negative focus, frustration with limitations

Rule: "Name five things you're grateful for today — large or small." - OR - "Take 5 minutes to breathe deeply."

Benefits:

- Shifts attention away from pain
- Enhances mood and cognitive flexibility
- Strengthens optimism and emotional regulation
- Activates the parasympathetic (calming) system
- Reduces muscle tension and physiological arousal

Patient Objections

"*This sounds like you're saying my pain is psychological .. made up.. or 'all in my head.' "*

The Scientific Counter-Script:

"Absolutely not. Your pain is **100% real**. We're discussing *how your nervous system communicates* and processes that signal. I am using the best evidence available—from brain science—to help your body **re-establish a sense of control**."

Pain Neuroscience Education (PNE)—

Use structured communication to re-conceptualize pain as a nervous system output.

Provider Objections

"*This isn't my job; I'm a physician/ surgeon/ interventionalist/NP/PA, not a psychologist*."

The Scientific Counter-Science: Pain is a **biopsychosocial phenomenon**; treating it requires a biopsychosocial lens.

What we are discussing is **not** psychotherapy, but **simple, evidence-based communication strategies** that are well within the scope of your practice.

Quantitative Evidence: Physician Empathy and a strong patient-provider relationship are independently associated with better pain outcomes.

The Time Factor: These tools (2-Minute Scan, Just Five Rule) are designed for **clinical efficiency**.

- **Key Message:** Your communication is a powerful, measurable intervention.

The Interconnectedness: Mind, Body, & Social Life

Resilience Redefined: Not just 'positive thinking,' but robust **cognitive and emotional self-regulation.**

Multisystem Resilience Framework: Incorporates physiological, psychological, and social factors.

Clinical Implication: Understanding this helps us identify and support these regulatory capacities.

- **Evidence:** Bartley et al., 2022 highlight the crucial role of emotional self-regulation and cognitive function in managing chronic low back pain.

Pain Resiliency Checklist

- ☐ Maintains valued roles
- ☐ Practices pacing and acceptance
- ☐ Keeps hope and humor
- ☐ Moves regularly within tolerance
- ☐ Uses social or faith supports

- Scoring : Mark 4+ items → consider labeling as 'resiliency-leaning'; reinforce and maintain.
  Mark ≤3 items → consider targeted coaching and referral to behavioral health/physical therapy.

Resiliency in 5 Minutes: Micro-Intervention

- 1. Identify – "You've managed this for years — what helps most?"
- 2. Reinforce – "That pacing is great self-management."
- 3. Name It – "That's resiliency."
- 4. Plan Small Wins – "Keep walking, even briefly."
- 5. Connect – "Let's involve PT or BH to build more tools."

"If you can't fix the pain, build the person."

- Every visit is a chance to reinforce strength.
- Resiliency is the one prescription that never runs out.

Scan the QR code for a 1-page Quick Guide.

Actionable Next Steps:

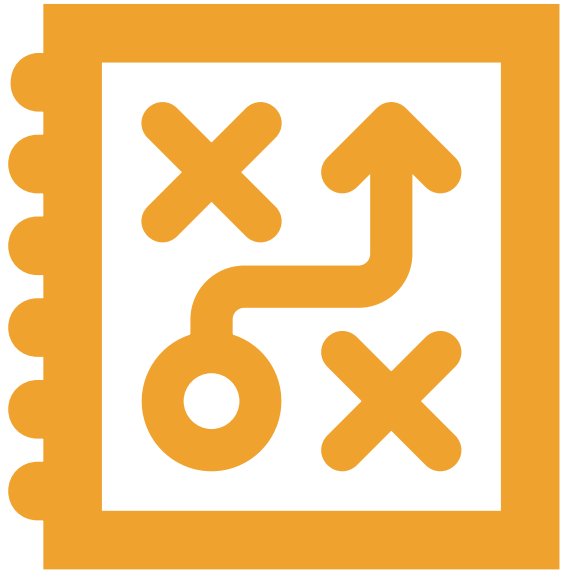
Start with **one new question**

(The Self-Efficacy Script)

Prescribe **one new communication strategy** (e.g., The 'Just Five' Rule)

Consider medication as a **strategic catalyst**, not just a symptom reliever.

Final Thought: You have the power to fundamentally influence your patient's long-term pain trajectory and self-efficacy. **Start today.**



drdatz@southernbmed.com
southernbmed.com

Catastrophizing vs. Resilience:

Two Sides of the Alarm Dial

Pain Catastrophizing: Represents a stuck, amplifying switch (fear, helplessness).

Pain Resilience: Represents the active, modulating control (self-efficacy, positive coping).

Clinical Relevance: We move from diagnosing the "amplification" to prescribing the "control mechanism."