

Patient Expectations: Why You Should Care



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Objectives

Summarize patient expectations and the role it plays in the outcome of treatment

Explain what most patients want and how you can utilize their expectations to maximize treatment outcomes

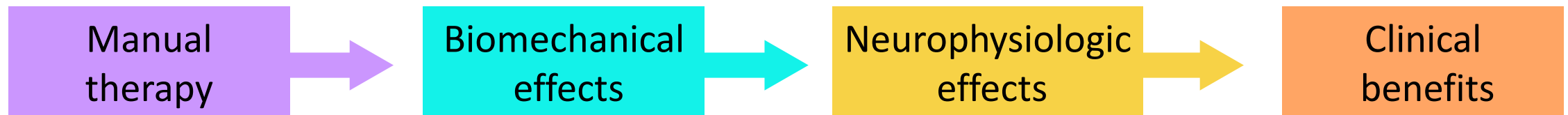
Describe how patient expectations can be positively modulated to maximize outcomes

Implement strategies to synchronize patient and provider expectations

Physical therapists too often are identified by what they do, and not by what they know as professionals

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Unraveling the Mechanisms of Manual Therapy: Modeling an Approach



Bialosky, J.E. et al. Unraveling the Mechanisms of Manual Therapy: Modeling an Approach. *JOSPT* 2018; 48(1):8-18

Walker BF, Koppenhaver SL, Stomski NJ, Hebert JJ. Interrater reliability of motion palpation in the thoracic spine. *Evid Based Complement Alternat Med*. 2015;2015:815407. <https://doi.org/10.1155/2015/815407>

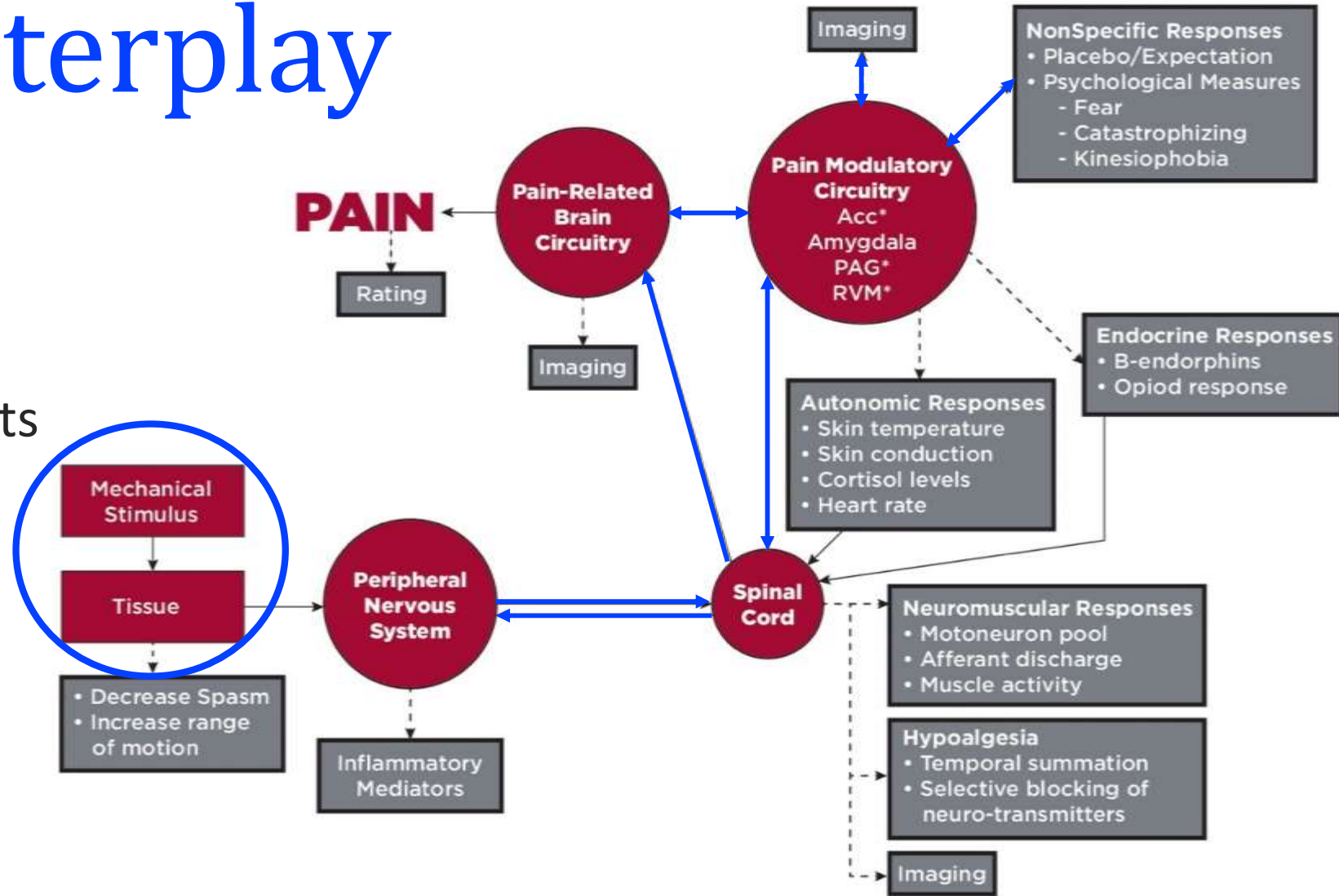
Snodgrass SJ, Haskins R, Rivett DA. A structured review of spinal stiffness as a kinesiological outcome of manipulation: its measurement and utility in diagnosis, prognosis and treatment decision-making. *J Electromyogr Kinesiol*. 2012;22:708-723. <https://doi.org/10.1016/j.jelekin.2012.04.015>

Landel R, Kulig K, Fredericson M, Li B, Powers CM. Intertester reliability and validity of motion assessments during lumbar spine accessory motion testing. *Phys Ther*. 2008;88:43-49. <https://doi.org/10.2522/ptj.20060179>

Koppenhaver SL, Hebert JJ, Kawchuk GN, et al. Criterion validity of manual assessment of spinal stiffness. *Man Ther*. 2014;19:589-594. <https://doi.org/10.1016/j.math.2014.06.001>

Complex Interplay Between...

- Biomechanical Effects
- Neurophysiological effects
- Non-Specific Effects
 - Patient expectation
 - Placebo
 - Psychosocial Variables
 - Therapeutic alliance

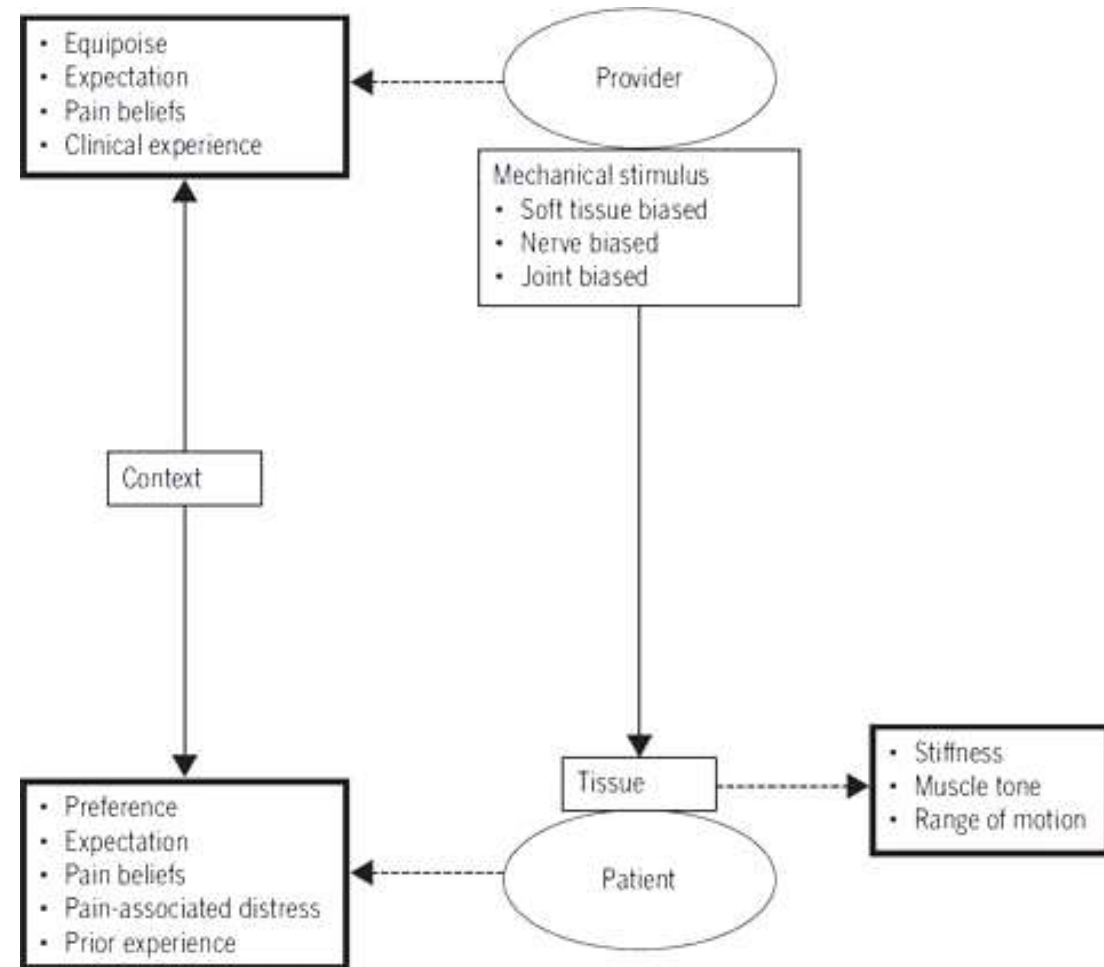


*ACC=anterior cingular cortex; PAG=periaqueductal gray; RVM=rostral ventromedial medulla

Interaction Between Provider and Patient

The outcome of every healthcare intervention is influenced by 2 factors:

1. A specific/active biological component (Treatment)
2. A contextual/psycho-social component (Contextual Factors)



Many Contextual Non-Specific Factors Affect Physical Therapy Outcomes

Placebo and expectations play a large role in any treatment outcome



Placebo:

- A treatment or intervention that lacks a specific therapeutic effect for the condition being treated.

Placebo effect:

- A phenomenon where a patient experiences improvement in their symptoms or condition solely because they believe they are receiving a treatment

Expectation:

- Patient's anticipated outcomes related to a medical treatment or intervention
- Encompasses beliefs and hopes regarding treatment, prior experiences, and outside Information

What if manual therapy worked predominantly through A placebo mechanism?

Placebo Effect: The Joke

- Sometimes we think of a placebo effect as something shallow, something that only works for gullible people, or something that is a joke
- “A psychological trick”
- “The placebo effect lies not in the treatment itself, but in the patient’s own mind (or brain)”



I'm not using anything that has a "placebo" effect, I'm too good for that.

[VIEWPOINT]

JOEL E. BIALOSKY, PT, PhD^{1,2} • MARK D. BISHOP, PT, PhD¹ • CHARLES W. PENZA, DC, PhD¹

Placebo Mechanisms of Manual Therapy: A Sheep in Wolf's Clothing?

[J Orthop Sports Phys Ther 2017;47\(5\):301-304. doi:10.2519/jospt.2017.0604](#)

“To best serve our patients, we must stop considering placebo as the benchmark of an ineffective intervention and accept placebo mechanisms as part of any treatment for pain.”
-Joel Bialosky

Maybe we should call it:

Priming neurophysiological capacity for endogenous pain modulation

Bigger Pills and More Invasive Procedures



vs.



vs.



>



vs.



>

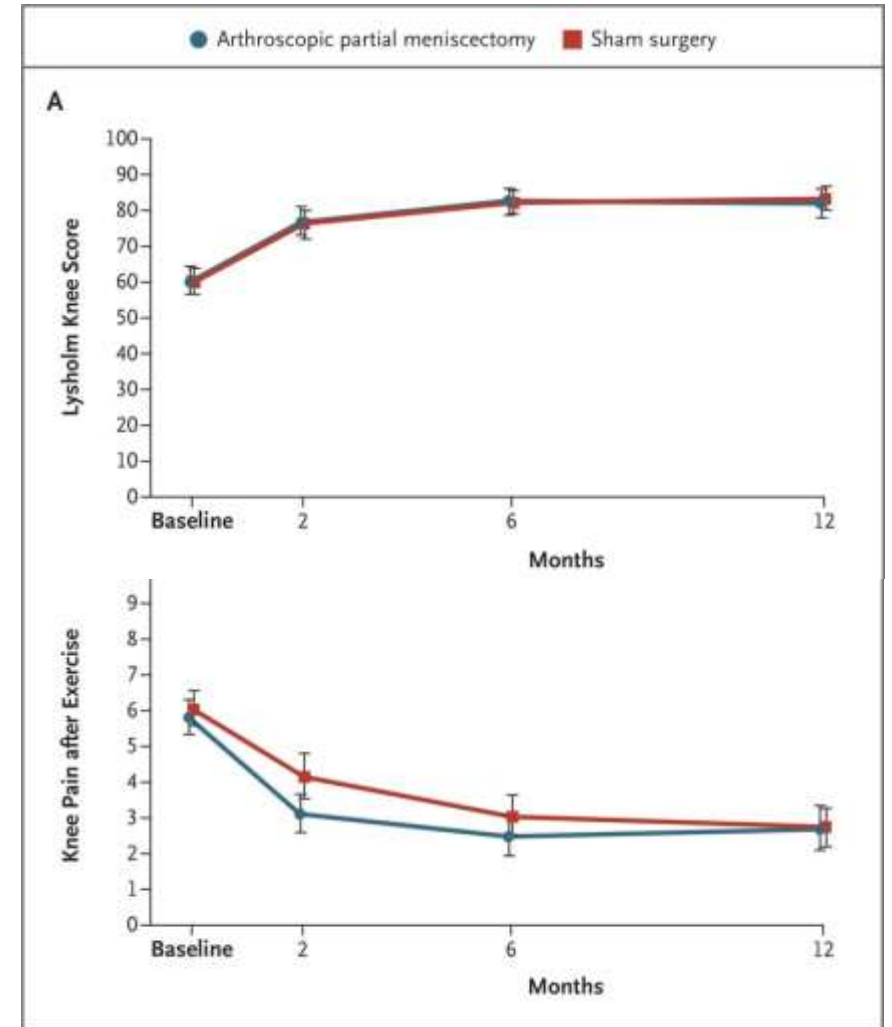


Surgery is the Ultimate Placebo

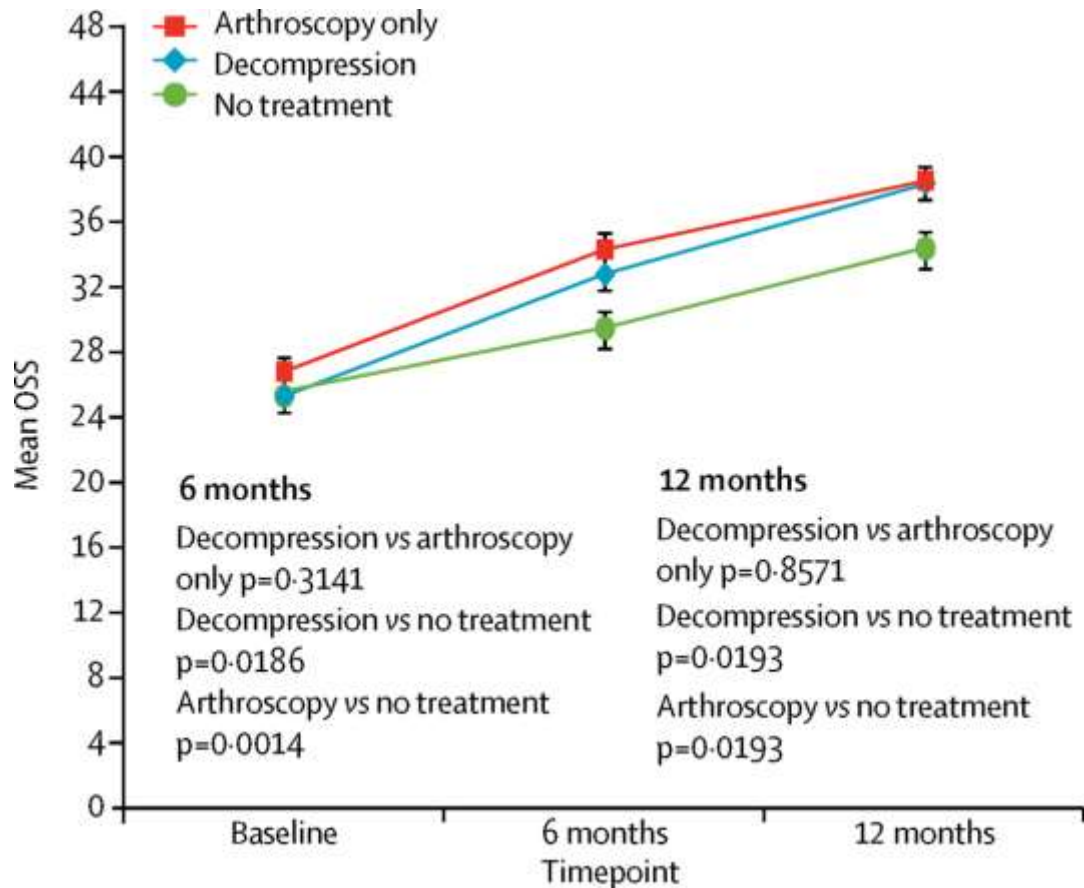


Surgery is the Ultimate Placebo: Partial Meniscectomy

- 146 patients (age 35-65) with degenerative medial meniscus tear and no knee osteoarthritis
- Patients randomly assigned to:
 - Arthroscopic partial meniscectomy
 - Sham surgery (just received the incisions)
- Outcomes after arthroscopic partial meniscectomy were no better than after a sham surgery



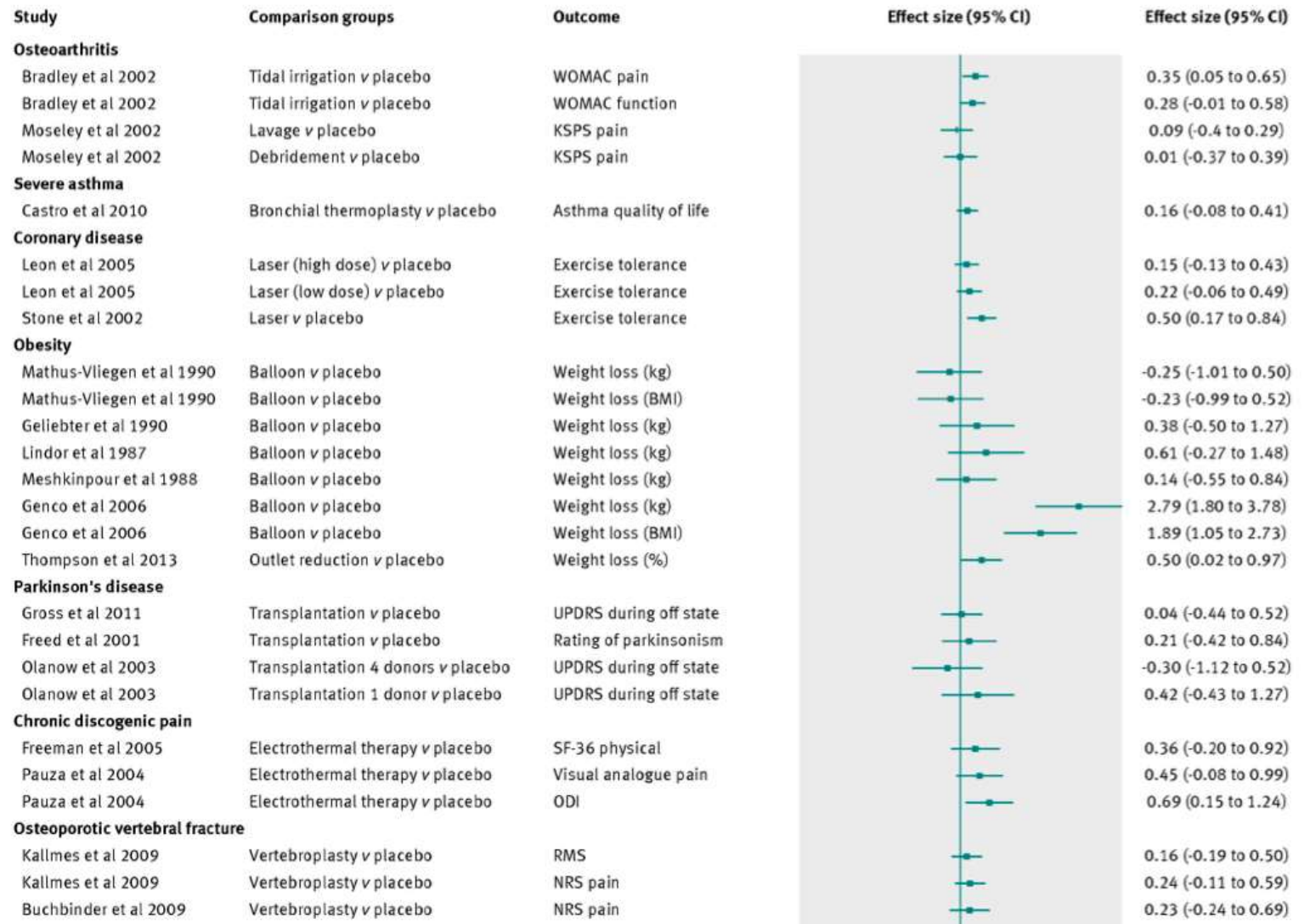
Surgery is the Ultimate Placebo: Subacromial Decompression



- 313 patients with >3 months subacromial pain
 - 106 decompression
 - 103 to arthroscopic placebo
 - 104 to no treatment
- Surgical decompression offered no extra benefit over surgical placebo

Surgery: Systematic Review

- 53 clinical trials
- 74% trials placebo group improved
- 51% of trials the effect of placebo did not significantly differ from that of surgery



Favors Placebo Favors Surgery

Treating Asthma

Subjective Improvement vs. Physiologic Improvement

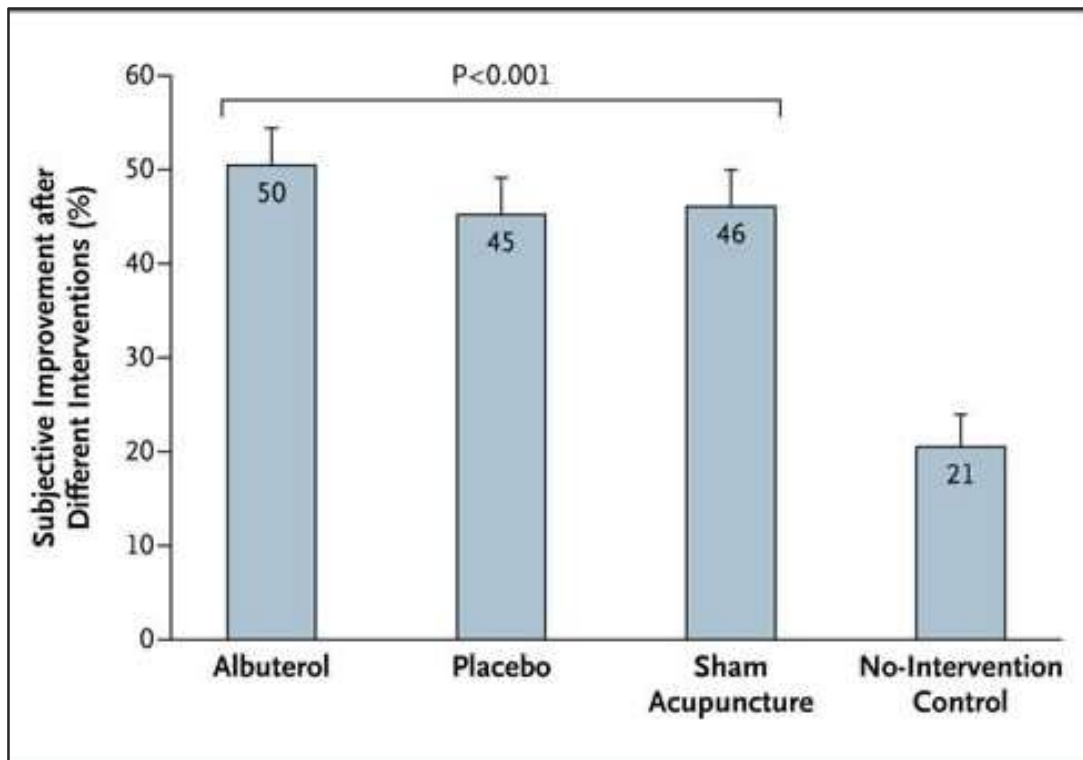


Figure 4. Percent Change in Subjective Improvement with Each of the Four Interventions.

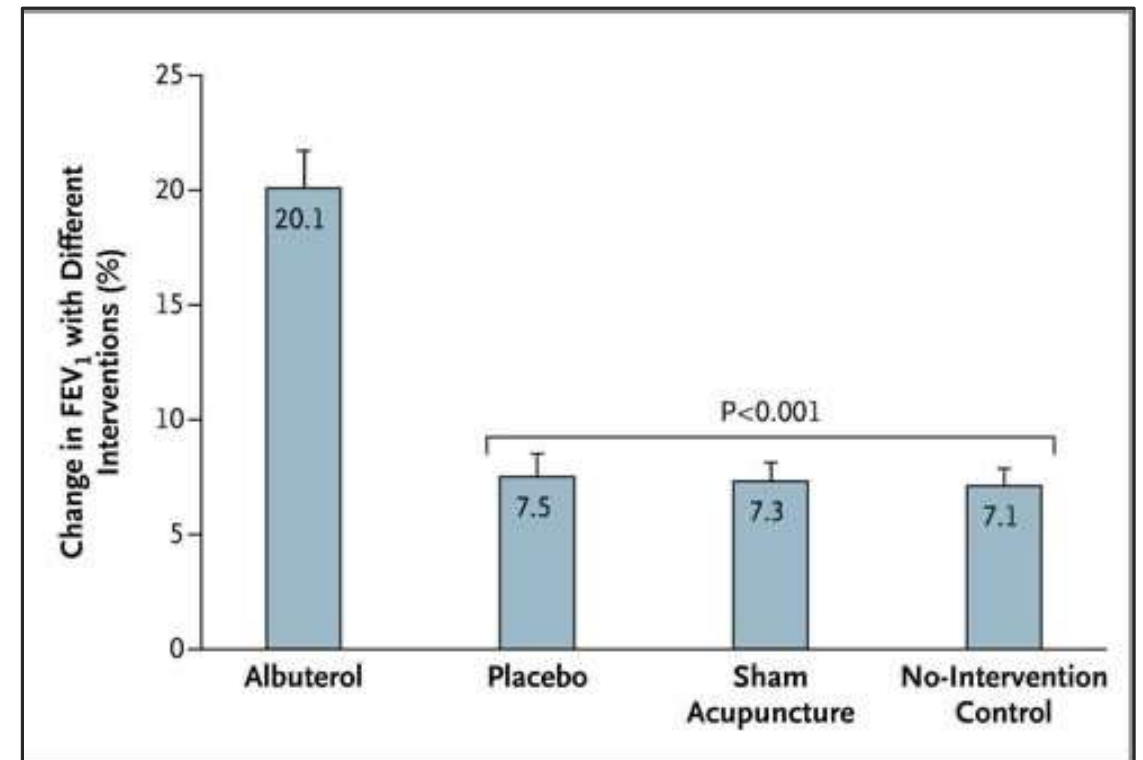
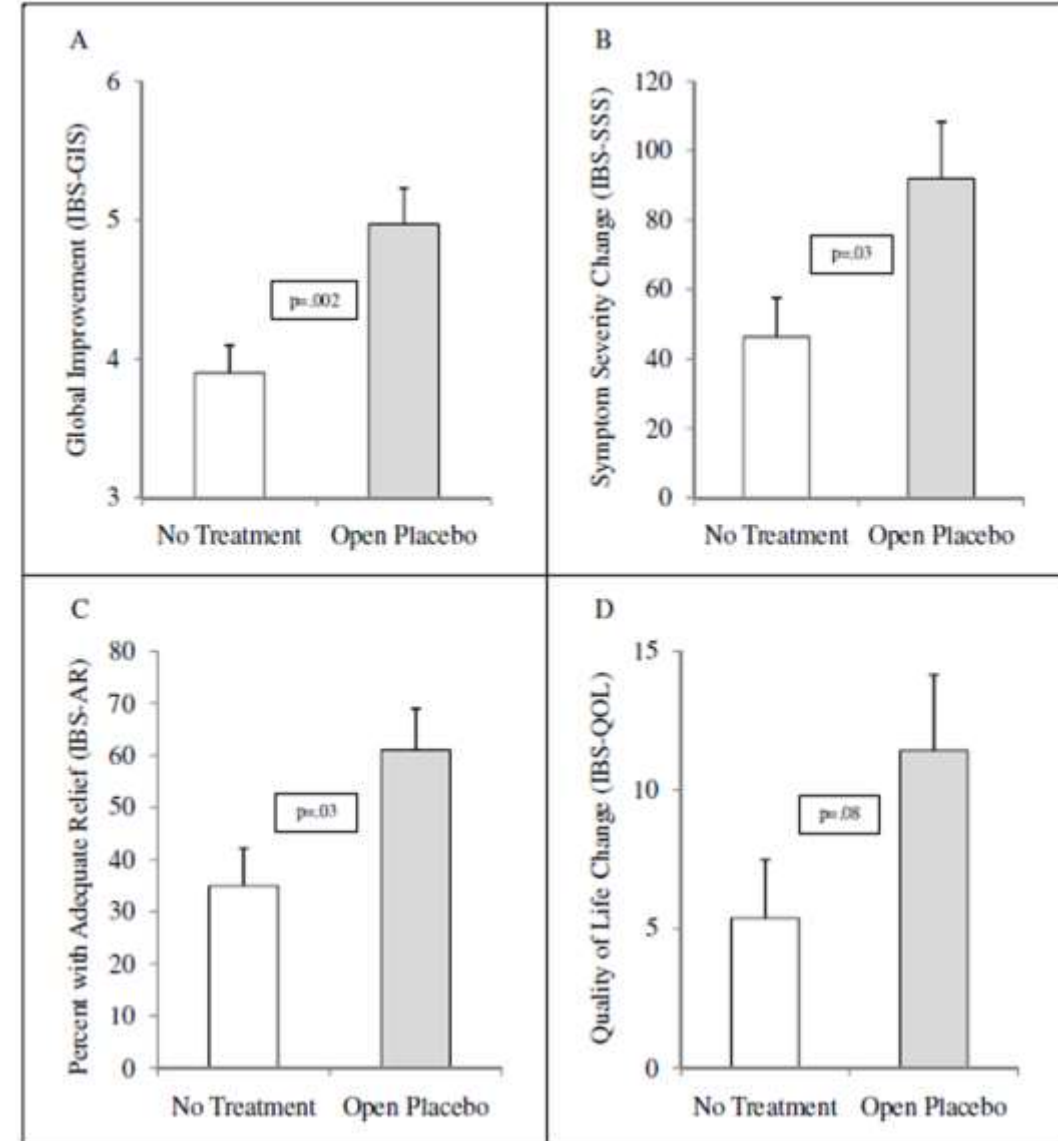


Figure 3. Percent Change in Maximum Forced Expiratory Volume in 1 Second (FEV₁) with Each of the Four Interventions.

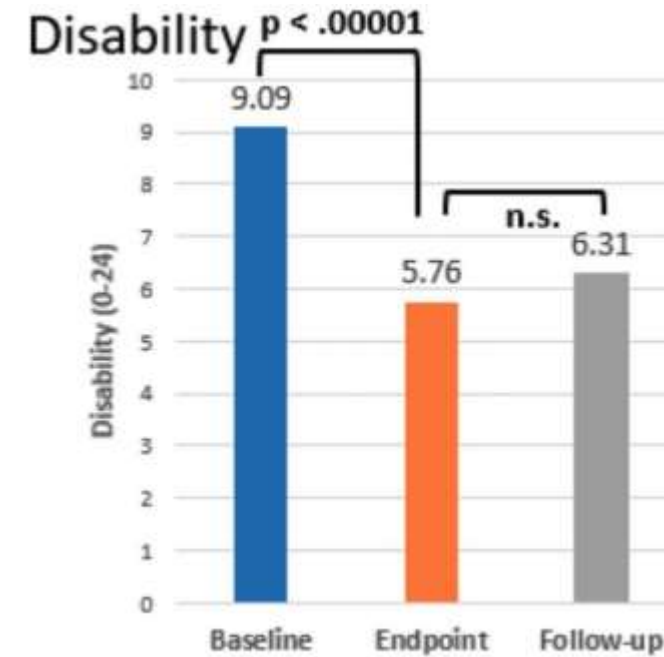
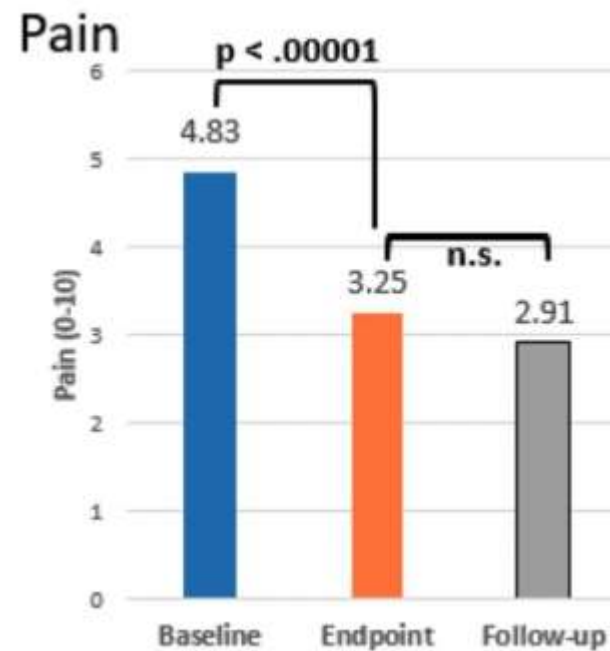
Open-Label Placebo, Irritable Bowel Syndrome

- 80 IBS patients randomized to 3 weeks of:
 - Open-label placebo pills presented as:
“Placebo pills made of an inert substance, like sugar pills, that have been shown in clinical studies to produce significant improvement in IBS symptoms through mind-body self-healing processes”
 - No-treatment with the same quality of interaction with providers
- Open-label placebo produced significantly higher:
 - Global improvement scores
 - Reduced symptom severity
 - Adequate relief
 - Quality of Life



Open Label Placebo (OLP) Reduces cLBP Out To 5 Years!

- Randomized 97 subjects with cLBP to 3 weeks of open-label placebo (OLP) treatment or treatment as usual (TAU)
- Significant reductions in pain & disability after OLP intake for 3 weeks that was maintained at 5-year f/u
- Substantial reductions in:
 - Pain medication (87% to 39%)
 - Antidepressants (24% to 11%)
 - Benzodiazepines (15% to 5%)



Open Label Placebo (OLP) Reduces cLBP Out To 5 Years!

OLP patients told “placebo pill was an inactive substance, like a flour pill, that contained no active medication in it”

- The placebo effect can be powerful
- The body automatically can respond to taking placebo pills like Pavlov dogs who salivated when they heard a bell
- A positive attitude can be helpful but is not necessary
- Taking the pills faithfully for the 21 days is critical.

How Long Does The Placebo Effect Last?

Placebo effect can last for a long time if 3 necessary elements are maintained:

1. Beliefs and expectations of patients
2. Beliefs and expectations of the providers
3. A good relationship between the two
 - 8 weeks for panic disorder
 - 6 months for angina pectoris
 - 2.5 years for rheumatoid arthritis
 - 5 years for chronic LBP and shoulder pain

So Why Do These Patients Get Better?

Patients think something is being done that they EXPECT will help them

This stimulates a complex cascade of engaging their body's healing capabilities

They think they are "fixed" so they start to move and act like they are back to normal

What about Nocebo?

Nocebo in Latin means “I will be harmful”



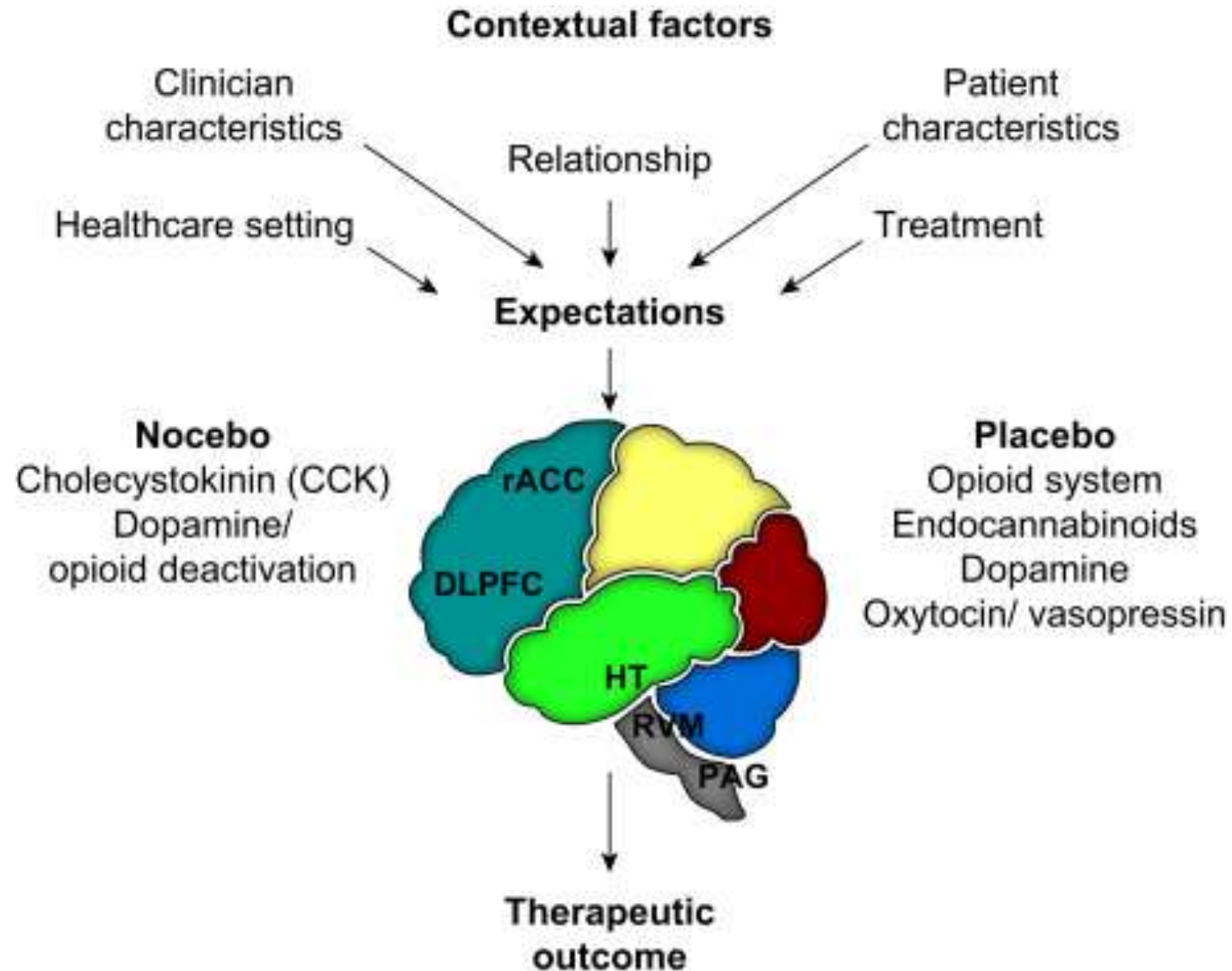
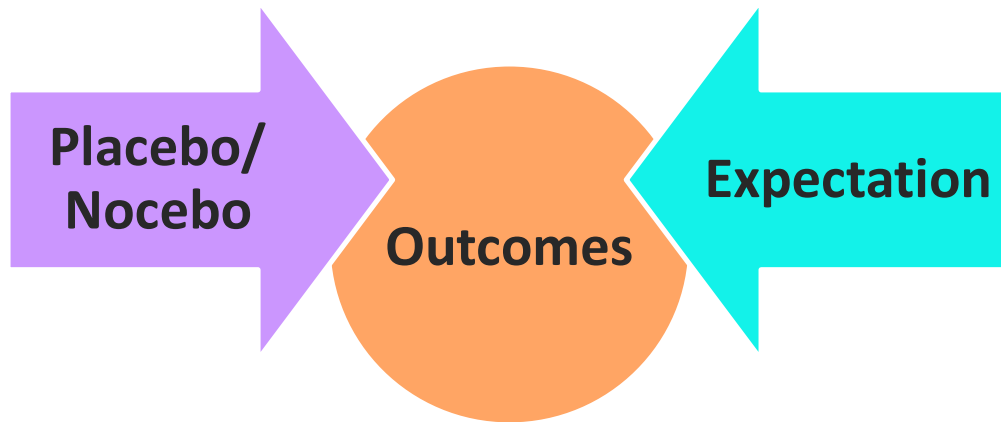
Expectation and Nocebo Can Kill: Bone Pointing



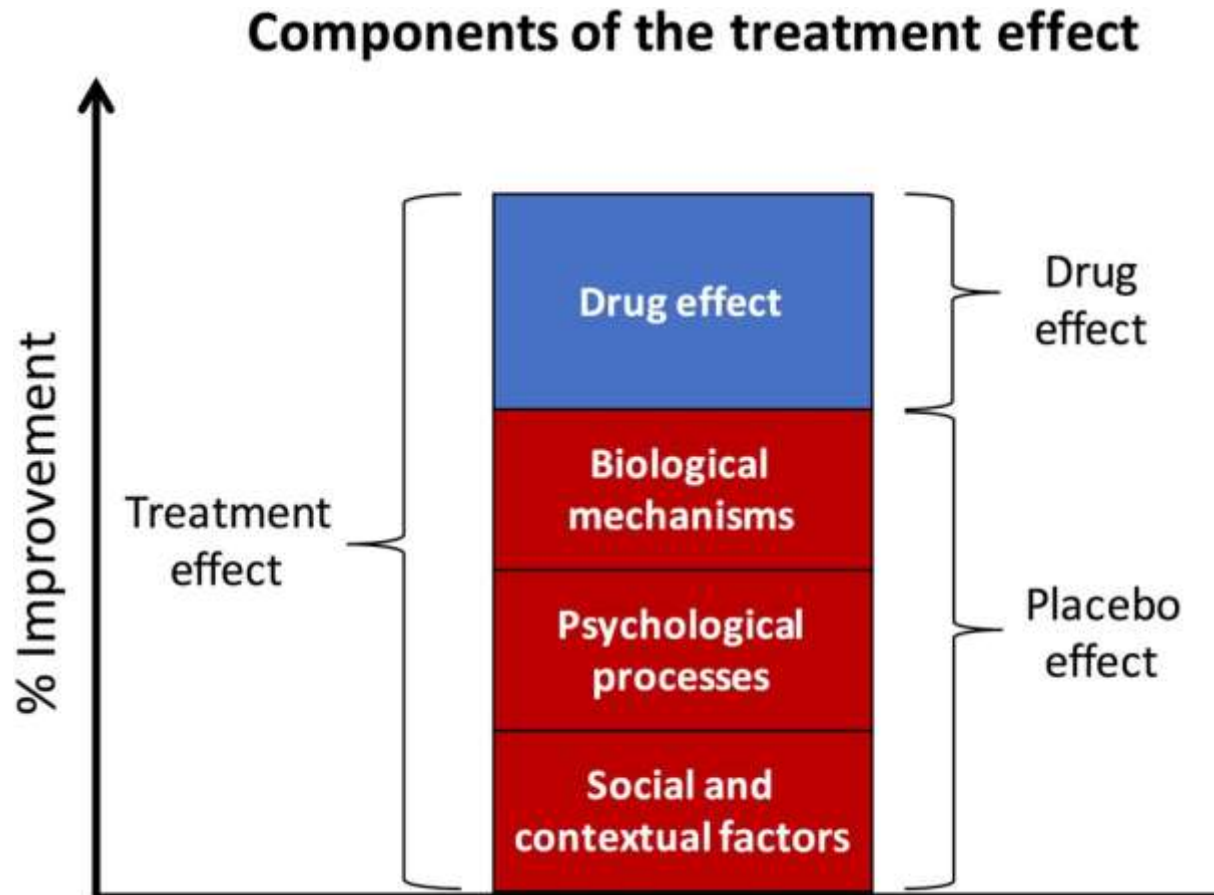
- Aborigines in Australia
- Shaman can curse a criminal and sentence them to death
- The belief is so strong the cursed person dies within days
- Their thoughts kill them...

Patients' Expectations

Patients' expectations have been identified as one of the major mechanisms contributing to placebo effects



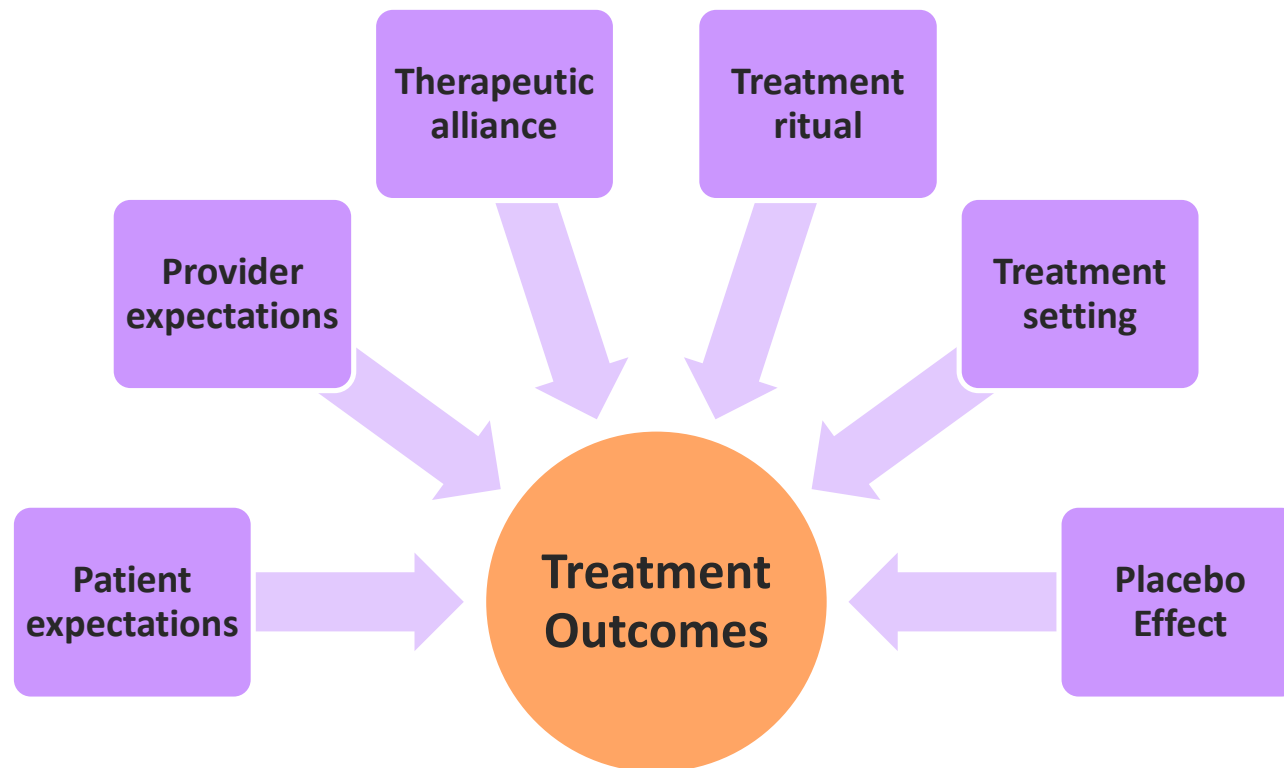
Contextual or Non-Specific Factors Create a Legitimate Physiological Response



- 186 trials (16,655 patients)
- 54% of the overall treatment effect in RCTs is attributable to contextual effects rather than specific effect of treatments

Contextual Effects

- Components of all therapeutic encounters and may constitute the majority or the entirety of the perceived effects of the intervention itself
- Can “boost” the treatment effect of an active intervention



“Sometimes it’s not the treatment, it’s everything AROUND the treatment, the ritual, the context, the interaction, the information.”
-Ted Kaptchuk

Contextual Effects

External context

Verbal suggestions:
"This is going to make you feel better"

Place cues:
Doctor's office

Social cues:

- Eye gaze
- Body language
- Voice cues
- White coat



Treatment cues:

- Syringe
- Needle puncture

Internal context

• **Outcome expectancies:**
"My pain will go away"

• **Emotions:**
"I am less anxious"

• **Meaning schema:**
"I am being cared for"

• **Explicit memories**

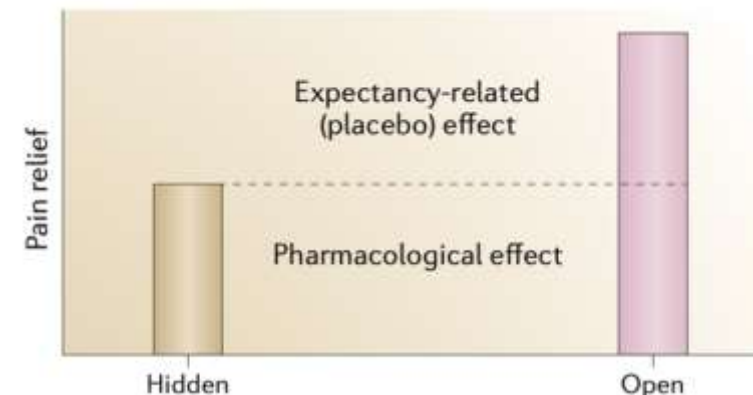
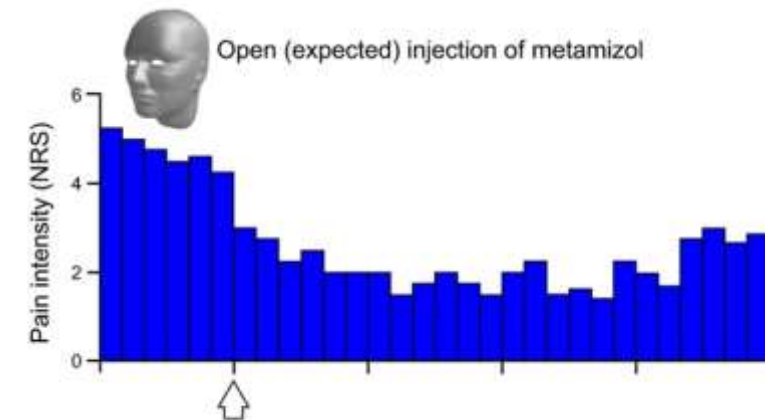
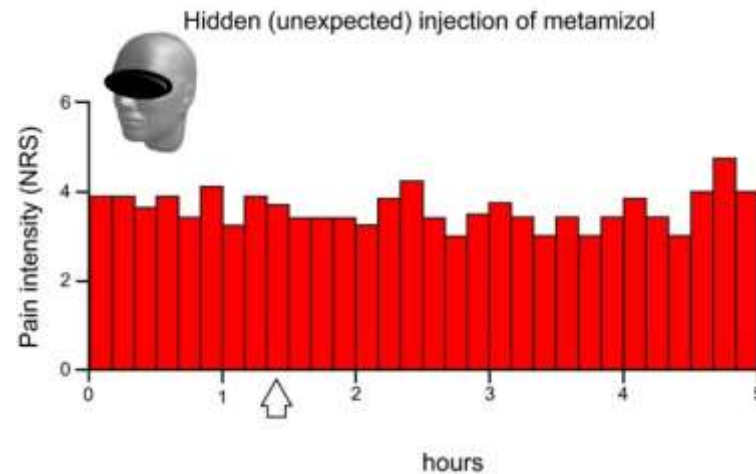
• **Pre-cognitive associations**

Patient Expectations: Open- Hidden Paradigm

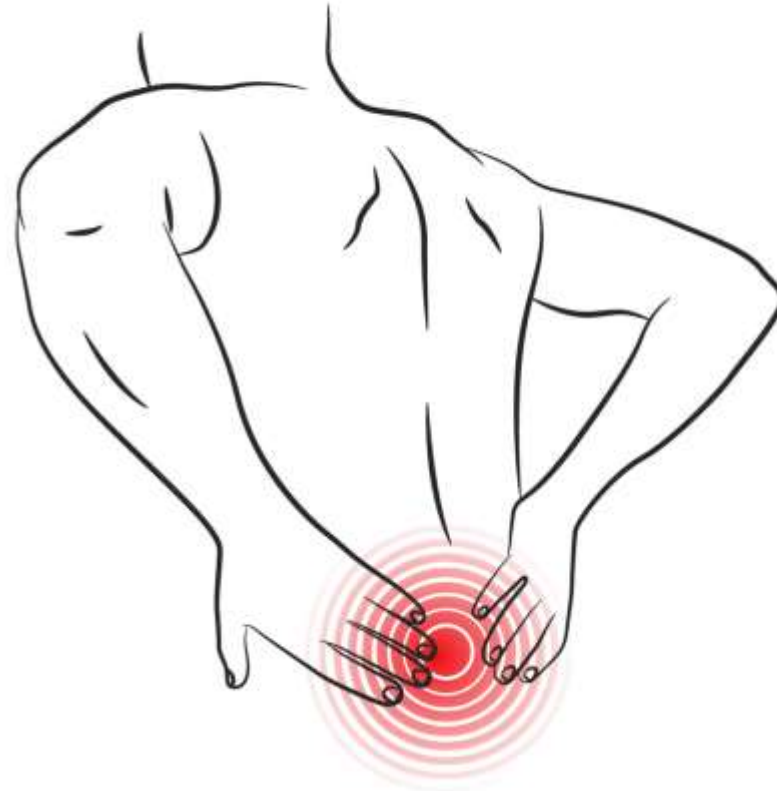
Open: Patient fully views treatment

Hidden: Patient doesn't know when treatment is given

Patient only experiences full benefit when they know they are receiving the treatment



Our Data



McDevitt AW, Mintken PE, Cleland JA, Bishop MD. Impact of expectations on functional recovery in individuals with chronic shoulder pain. *J Man Manip Ther.* 2018;26(3):136-146.

Bishop MD, Mintken P, Bialosky JE, Cleland JA. Factors shaping expectations for complete relief from symptoms during rehabilitation for patients with spine pain. *Physiother Theory Pract.* 2019;35(1):70-79.

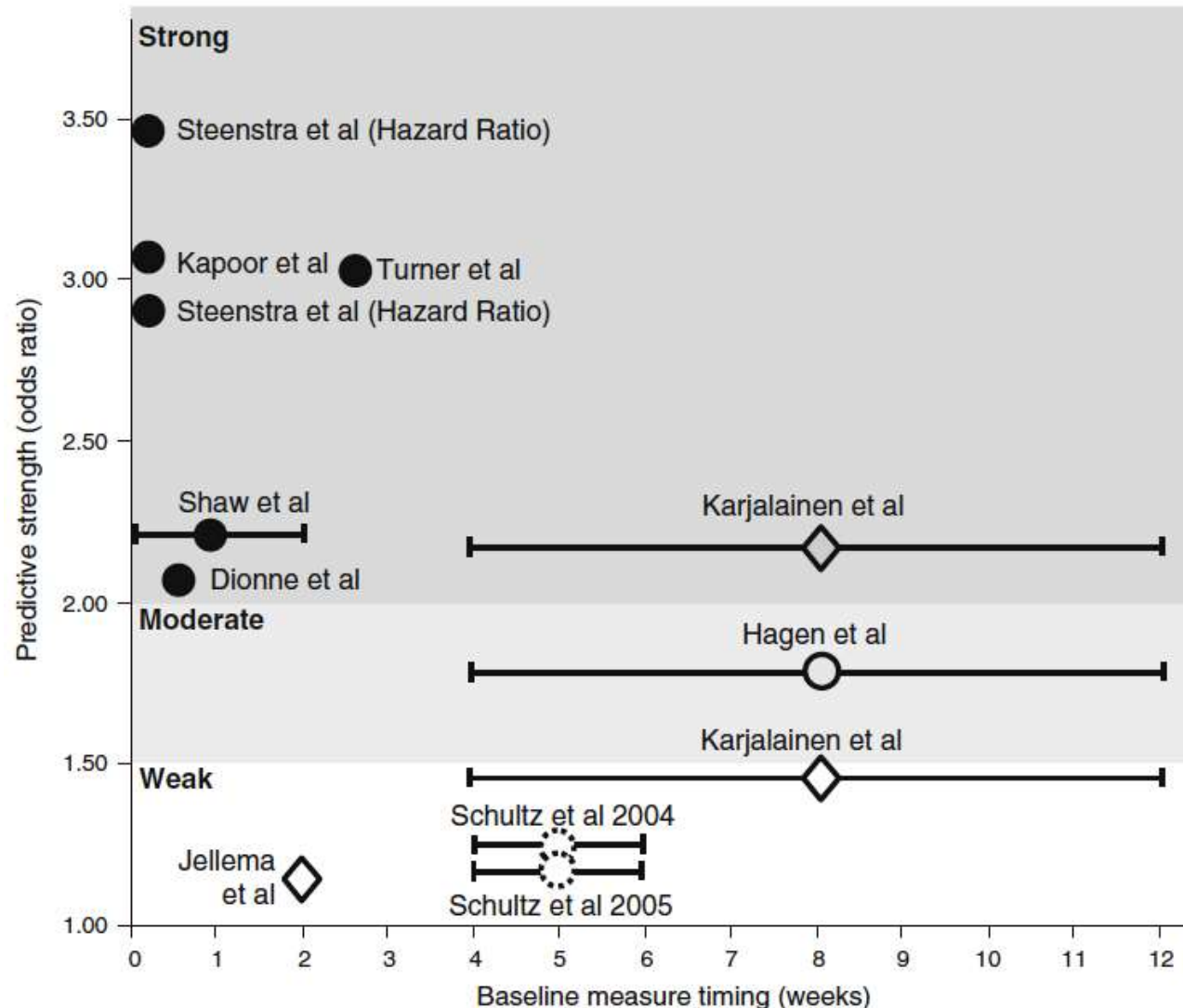
Bishop MD, Mintken PE, Bialosky JE, Cleland JA. Patient expectations of benefit from interventions for neck pain and resulting influence on outcomes. *J Orthop Sports Phys Ther.* 2013;43(7):457-465.

Puentedura EJ, Cleland JA, Landers MR, Mintken PE, Louw A, Fernandez-de-Las-Penas C. Development of a clinical prediction rule to identify patients with neck pain likely to benefit from thrust joint manipulation to the cervical spine. *J Orthop Sports Phys Ther.* 2012;42(7):577-592.

Bishop et al.. Patient expectations of benefit from common interventions for low back pain and effects on outcome: secondary analysis of a clinical trial of manual therapy interventions. *J Man Manip Ther.* 2011;19(1):20-25.

Systematic Review of the Ability of Recovery Expectations to Predict Outcomes in Non-Chronic Non-Specific Low Back Pain

Ross A. Iles · Megan Davidson · Nicholas F. Taylor · Paul O'Halloran



- 10 studies (n = 4,014)
- Recovery expectations in individuals with LBP were the strongest predictors of outcomes

Patient Expectations

2013 Neer Award: predictors of failure of nonoperative treatment of chronic, symptomatic, full-thickness rotator cuff tears

- Identify predictors of failure of nonoperative treatment
 - (n = 433 with RC tears, 87 had surgery)
- Patient expectations regarding physical therapy ($P < .0001$) was the strongest predictor of surgery
- A patient's decision to undergo surgery is influenced more by low expectations of PT than by symptoms or anatomic features of the rotator cuff tear

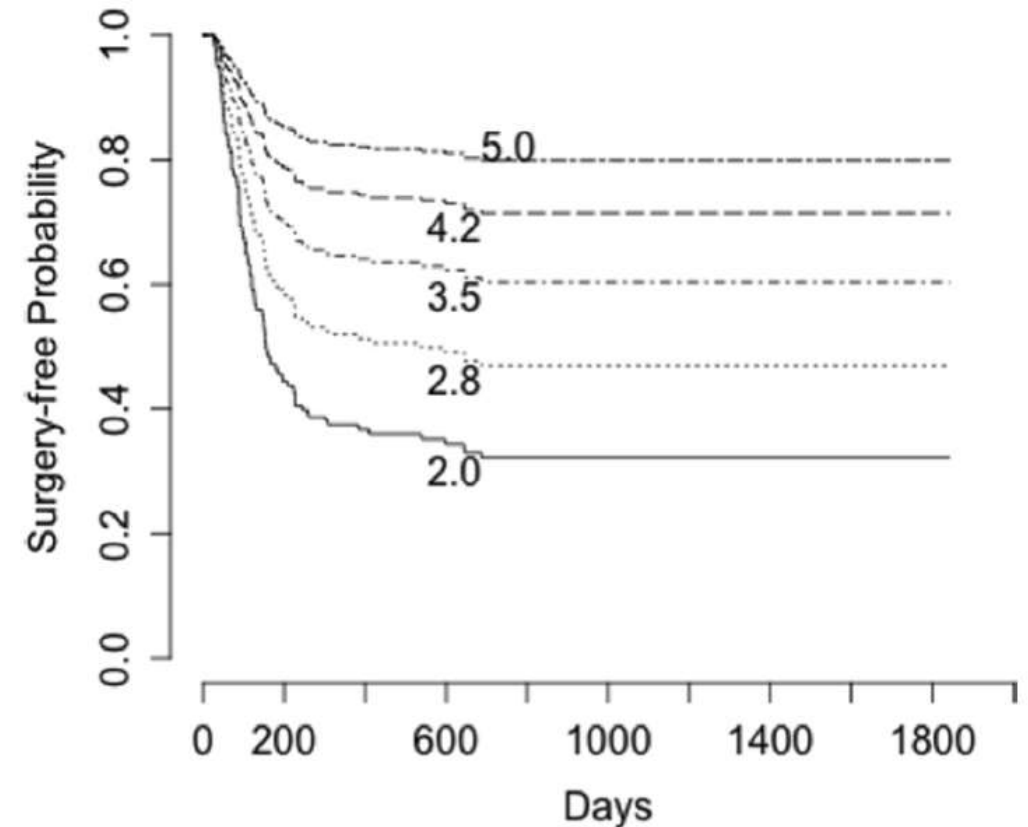
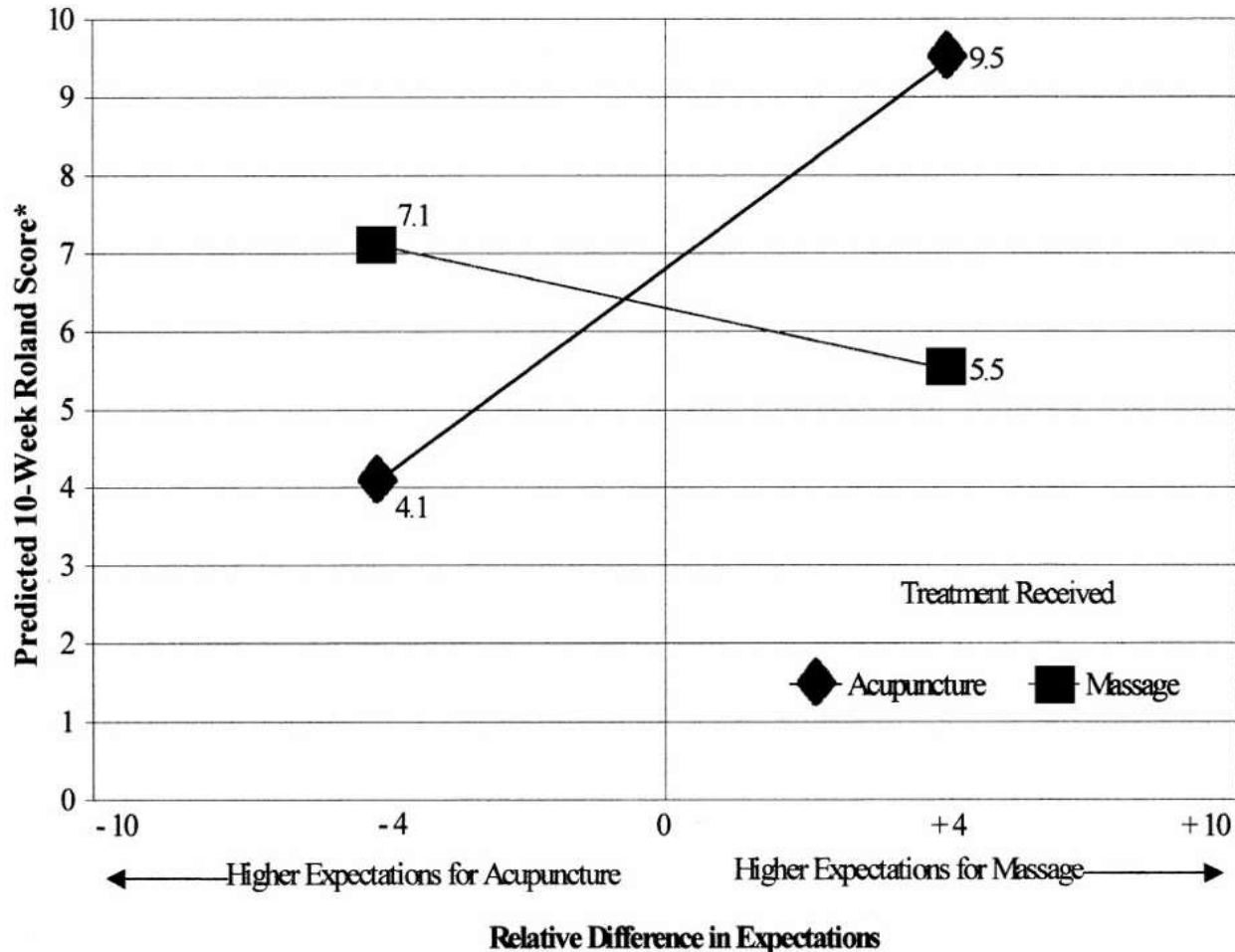


Figure 2 Survival plot of surgery-free probability stratified by patient expectations regarding physical therapy, with a score of 5 indicating high expectations that physical therapy will lead to improvement and lower scores indicating lower expectations.

Lessons from a Trial of Acupuncture and Massage for Low Back Pain

Patient Expectations and Treatment Effects



- N=135 participants with chronic LBP
- Randomly assigned to receive acupuncture or massage
- Outcome Roland Morris Score
- Patients who expected greater benefit from massage were more likely to experience better outcomes with massage than with acupuncture, and vice versa (P = 0.03)

Can We Change “Expectation” and the Outcome?

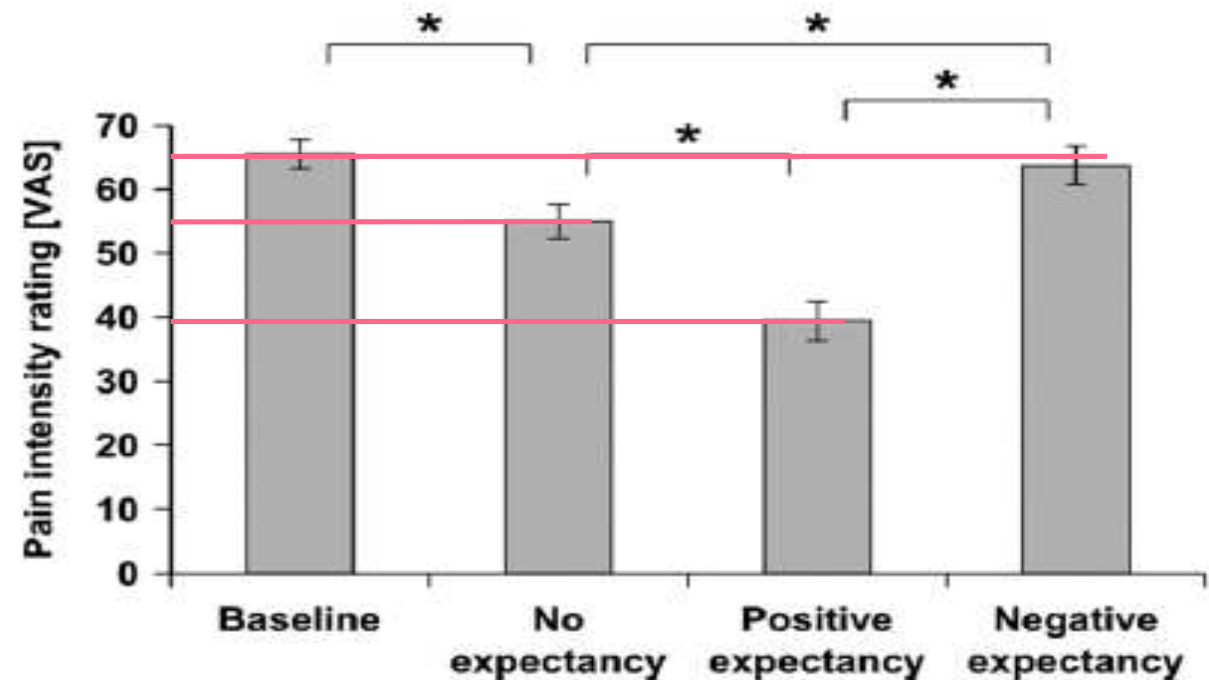


Maybe this **CAN**
make me feel
better?

The Effect of Treatment Expectation on Drug Efficacy: Imaging the Analgesic Benefit of the Opioid Remifentanyl

Ulrike Bingel,^{1,2*} Vishvarani Wanigasekera,¹ Katja Wiech,¹ Roisin Ni Mhuircheartaigh,¹ Michael C. Lee,³ Markus Ploner,⁴ Irene Tracey¹

- 22 healthy participants
- Thermal pain stimuli
 - (7/10 pain)
- FMRI
- IV infusion of Remifentanyl (opioid)
- Expectation “manipulation”
 - No expectation
 - Positive expectation
 - Negative expectation washed out the effect of fentanyl!

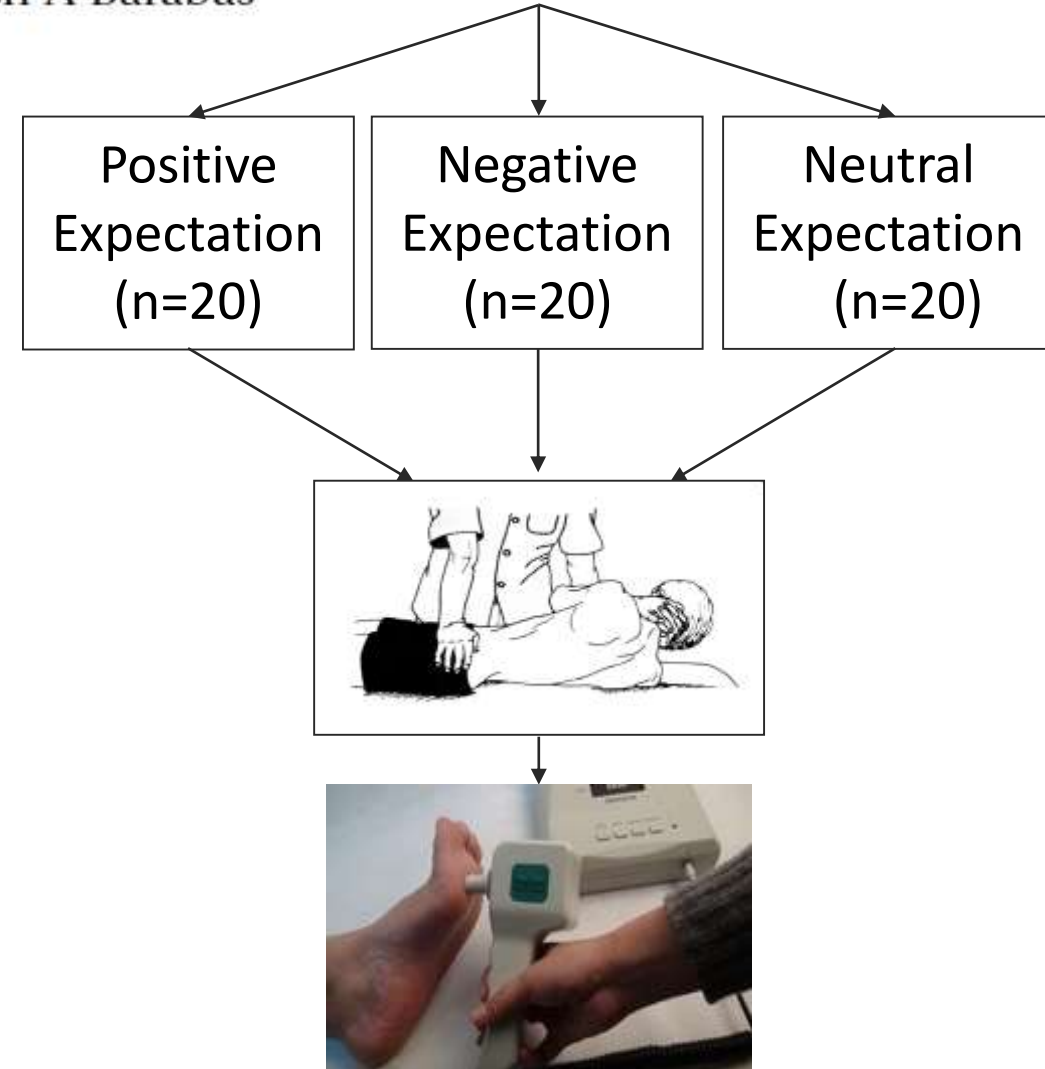


Research article

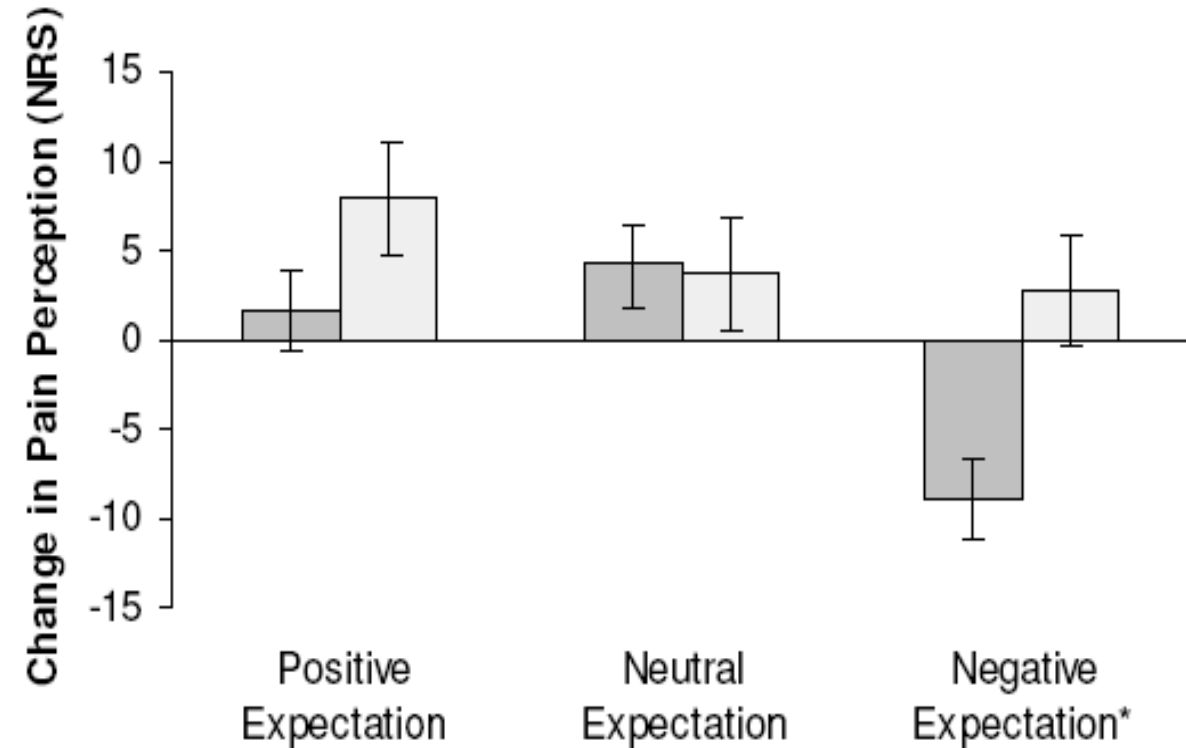
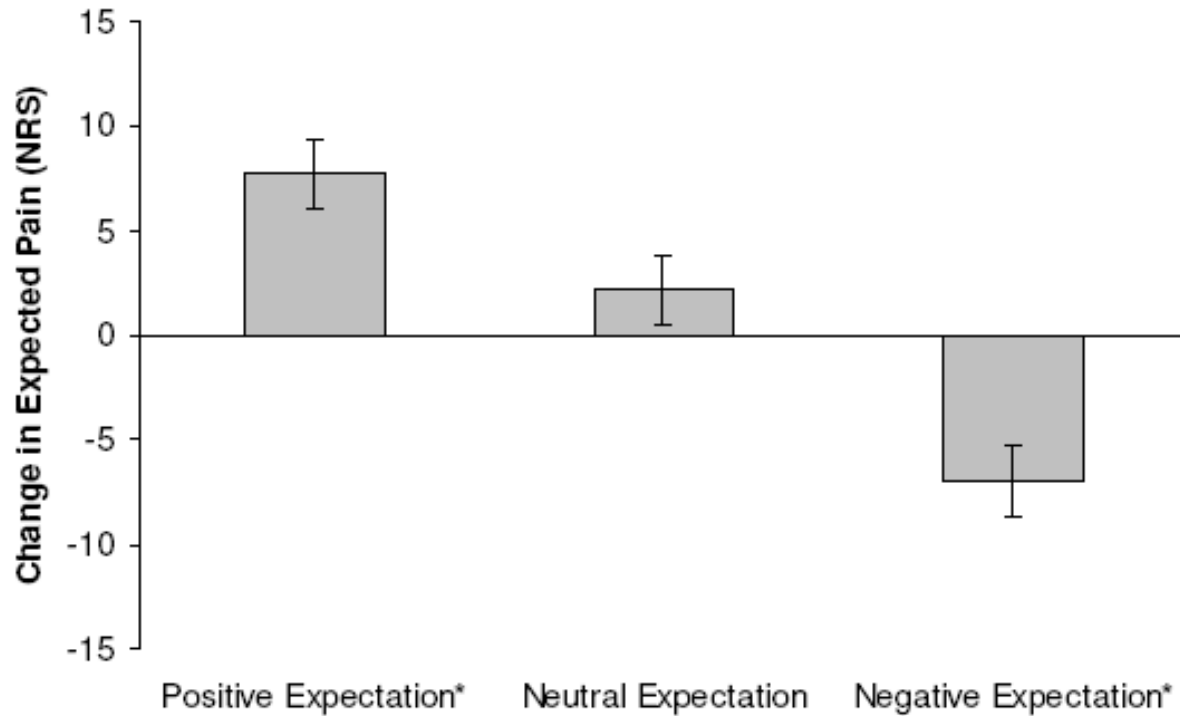
The influence of expectation on spinal manipulation induced hypoalgesia: An experimental study in normal subjects

Joel E Bialosky*¹, Mark D Bishop¹, Michael E Robinson², Josh A Barabas¹ and Steven Z George*¹


- “SMT is a very effective form of manipulation used to treat low back pain and we expect it to **reduce** your perception of heat pain”
- “SMT is a form of manipulation used to treat low back pain that has **unknown effects** on perception of heat pain”
- SMT is an ineffective form of manipulation used to treat low back pain and we expect it to **temporarily worsen** your perception of heat pain



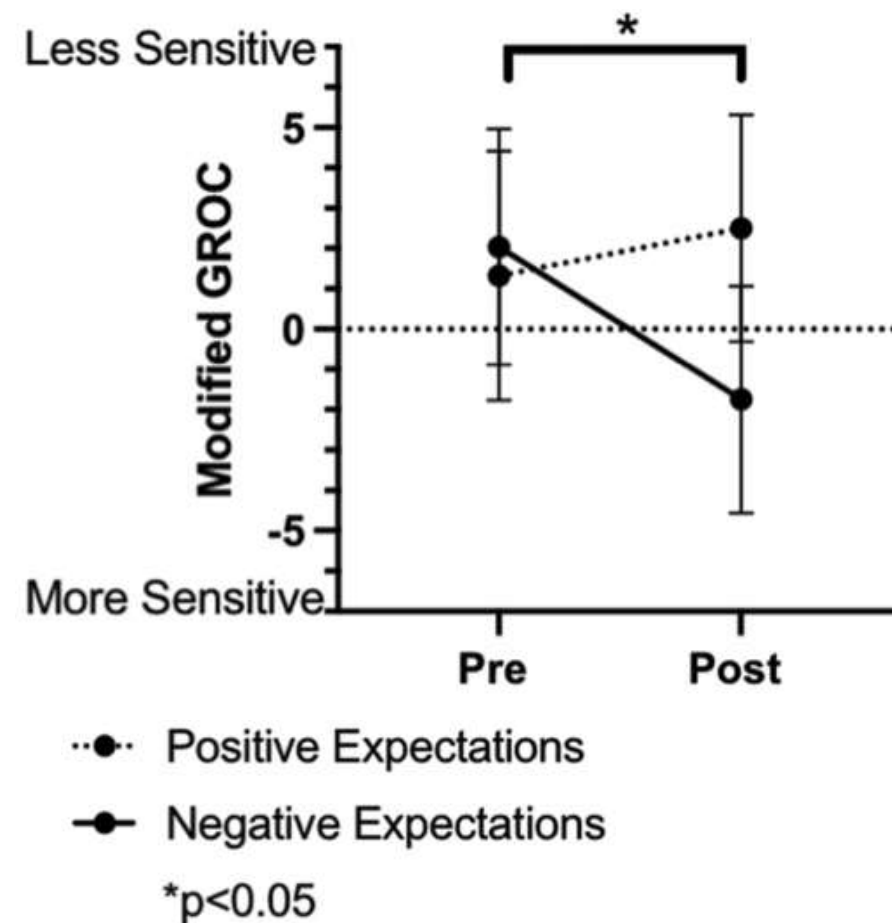
Expectations Can Be Manipulated!



Expectations affect pain sensitivity changes during massage

Abigail T Wilson ^{a,b}, Mark D. Bishop^{c,d}, Jason M. Beneciuk^{c,e}, Hannah E. Tilley^c, Joseph L. Riley III^{d,f}, Yenisel Cruz-Almeida^{d,f} and Joel E. Bialosky^{c,e}

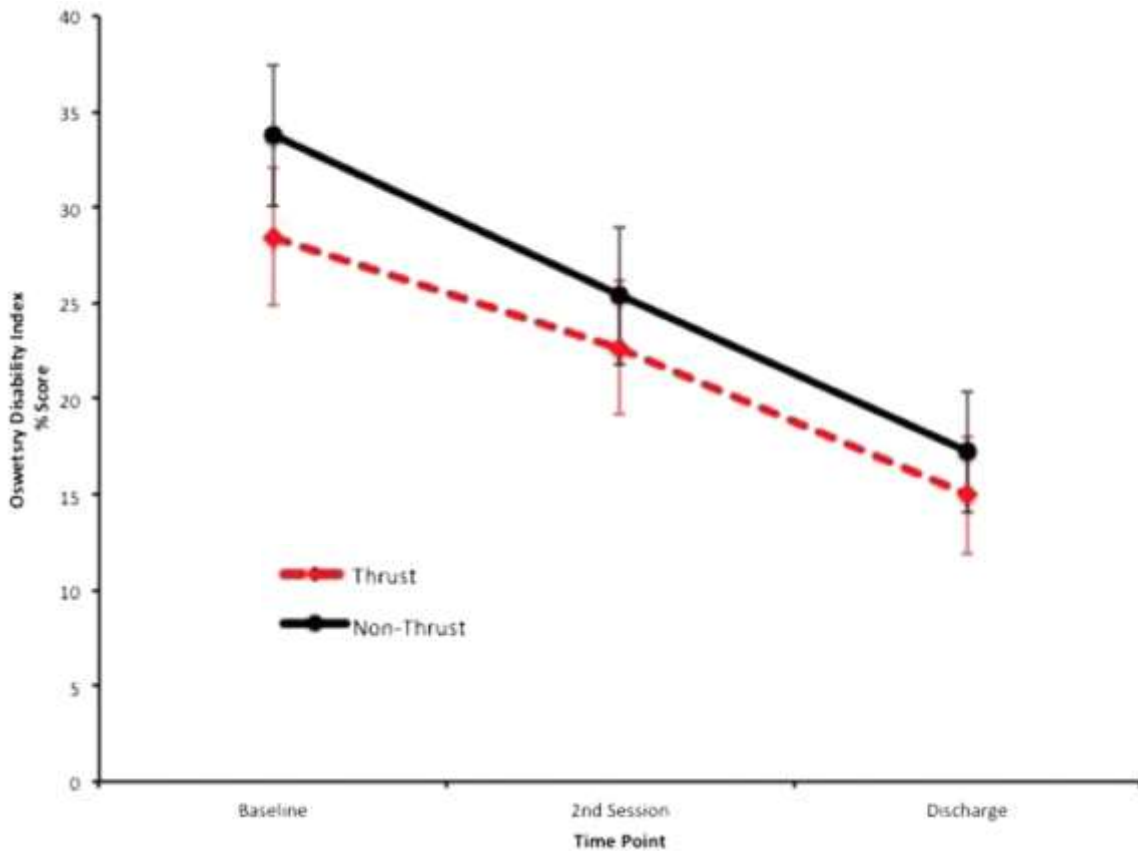
- 56 healthy participants randomized to receive
 - Positive or negative expectation instructional set followed by a pain-inducing massage
 - **Positive** = Massage will make you less sensitive
 - **Negative** = Massage will make you more sensitive
- Pressure pain threshold (PPT) was measured followed by each interval of massage
- **Individuals who received the positive expectation had significantly higher PPT and less sensitivity**
- Authors were able to successfully “manipulate” expectations



Provider Expectations Can Influence Outcomes

- 9900 patients with chronic pain treated by 2781 physicians
- Randomized to receive usual care alone or 10 additional acupuncture treatments
- Patients the physicians expected to have substantial improvement had:
 - More pain reduction ($p < 0.001$)
 - Better physical functioning ($p < 0.001$)

Provider Bias/Preference/ Clinical Equipoise



- 149 Patients LBP
- Thrust manip (TM) versus non-thrust (NTM)
- No sig difference between TM and NTM
- Provider preference stronger predictor of outcome than intervention
- Provider who uses a preferred manual therapy intervention (and has high treatment expectations for) may positively influence pain and disability

Provider Bias/Preference/ Clinical Equipoise

Bishop et al, 2017

- Receiving an intervention from a provider with a strong preference (expectation) for the intervention increased odds of meeting patient's expected pain relief 68.3 times ($p=0.01$)

Griswold et al, 2018

- Patients treated by clinicians with a preference toward thrust manipulation for that patient had better outcomes, regardless of treatment group



Clinical Takeaways

- A patient with chronic LBP comes to see you
- **His expectation: Physical therapy can't help my back pain**
- If you don't explore and confront these expectations, his prediction will come true
- And his negative expectations may affect other aspects of his health, like his life span!
- Our job as providers is to present the evidence and "sell" the treatment without deception

Expectation and Framing

“Words are, of course, the most powerful drug used by mankind.”
- Rudyard Kipling

[VIEWPOINT]

MICHAEL STEWART, MCSP, SRP, MSc, BSc (Hons), PG Cert (Clin Ed)¹ • STEPHEN LOFTUS, PhD²

Sticks and Stones: The Impact of Language in Musculoskeletal Rehabilitation

J Orthop Sports Phys Ther 2018;48(7):519-522. doi:10.2519/jospt.2018.0610

“Words are, of course, the most powerful drug used by mankind.”
Rudyard Kipling¹³

to be acknowledged and understood, and deliberately used as part of therapy. Misunderstanding or ignoring psychological factors carries the risk that they

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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

Catastrophic Language Increases PAIN

The words you speak are biologically active...



Harming terms

- “Wear and tear”
- “Degeneration”
- “Disc space loss”
- “Bone on bone”

Healing terms

- “Normal age-related changes”
- “Grey hair of the spine”
- “Wrinkles on the inside”

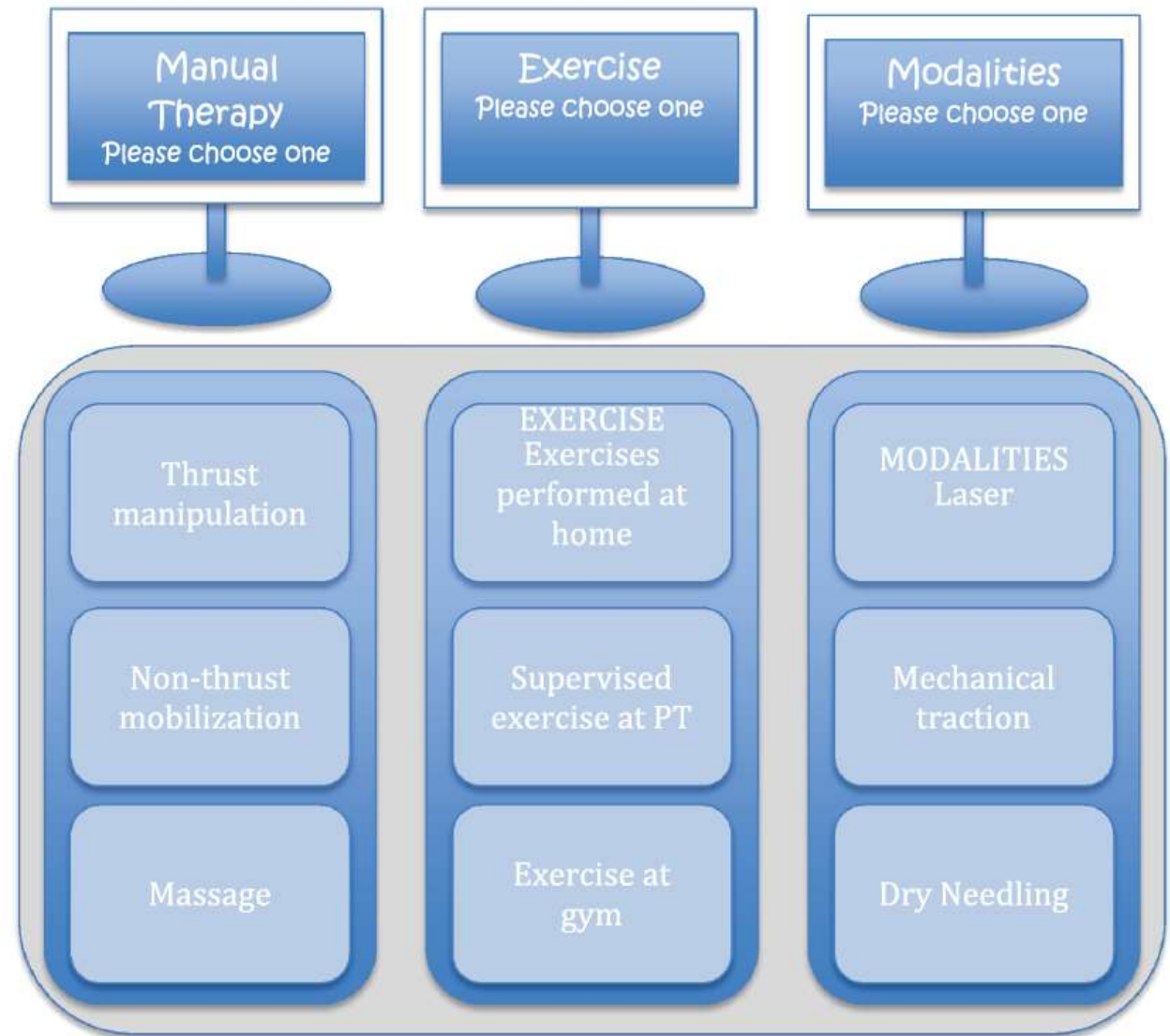
Greene DL, Appel AJ, Reinert SE, Palumbo MA. Lumbar disc herniation: evaluation of information on the internet. *Spine (Phila Pa 1976)*. Apr 1 2005;30(7):826-829.

Morr S, Shanti N, Carrer A, Kubeck J, Gerling MC. Quality of information concerning cervical disc herniation on the Internet. *Spine J*. Apr 2010;10(4):350-354.

Sloan TJ, Walsh DA. Explanatory and diagnostic labels and perceived prognosis in chronic low back pain. *Spine (Phila Pa 1976)*. Oct 1 2010;35(21):E1120-1125.

The Healthcare Buffet

Preferences in the clinical decision-making process for patients with musculoskeletal pain



Where to Start to Maximize Expectations:

Start by asking the patient simple questions like:

- What are your expectations from treatment?
- What are your specific goals?
- What do you want to be able to do?
- What do you think is wrong with your back?
- What 1 or 2 things could we accomplish today to make this a successful visit for you?

A woman with long dark hair, wearing a light blue striped shirt and purple pants, is sitting in a white chair. She has a sad and thoughtful expression, looking down and to the side. Her hands are clasped in her lap. The background is a simple, bright room with a white wall and a light-colored floor.

You Have All Been In Their Shoes...

- Scared
- Anxious
- Uncertain
- Confused

*What were you hoping to get
from your healthcare provider?*

Take Your Eyes Off Your Screen and Listen to Your Patients...



Remember, your patients are people too and deserve empathy...

Your Interaction May Outweigh Your Intervention



Reframe Expectations Without Deception

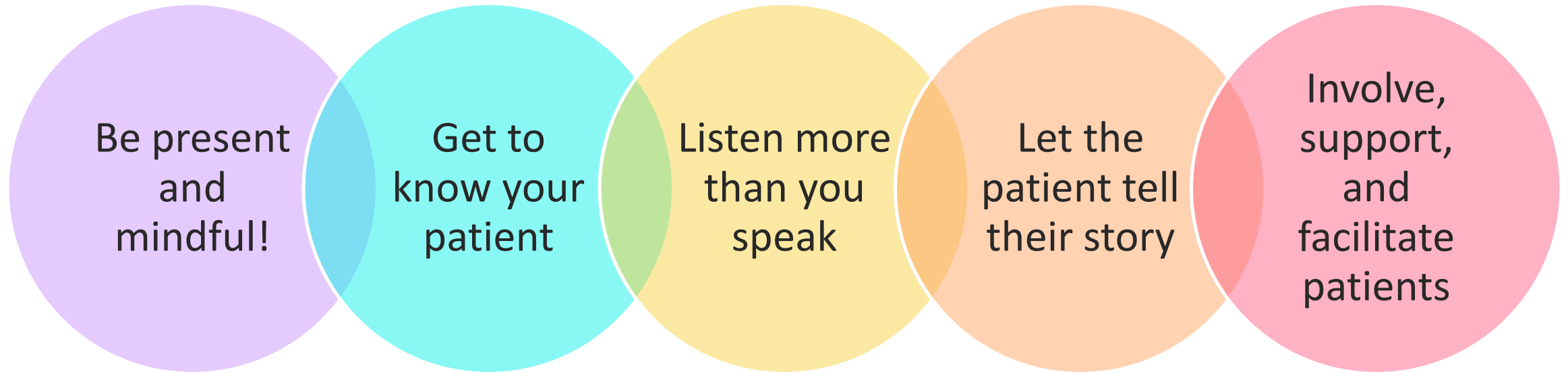
Set realistic but confident expectations for patients

- Without exaggeration
- Avoid false/overly positive descriptions

Consider the interventions you use

- Is there evidence to support it?
- Do you “believe” in the intervention? Does your patient?

Let the Patient Know That You Are a Team!



Treatment Features

- Use open treatment, show and tell when a treatment is applied
- Explain what you are doing, why you are doing it, and the expected outcome
- Emphasize any improvements you see! Test-Retest!
- Use patient-centered care, personalize treatment to patient's values
- Set appointments with adequate length, punctuality, frequency
- Use touch to assist, prepare, and inform patients

Manual Physical Therapy For Chronic Pain

The complex whole is greater than the sum of its parts

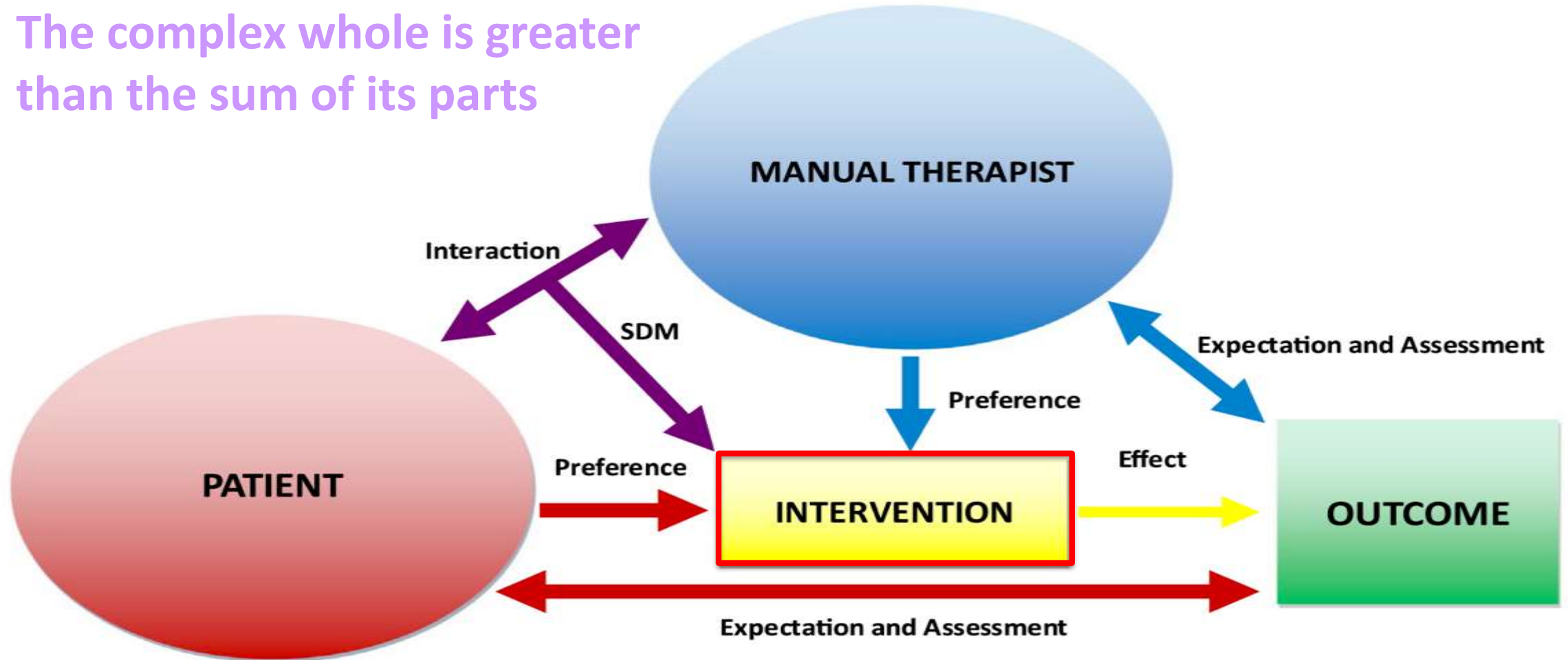
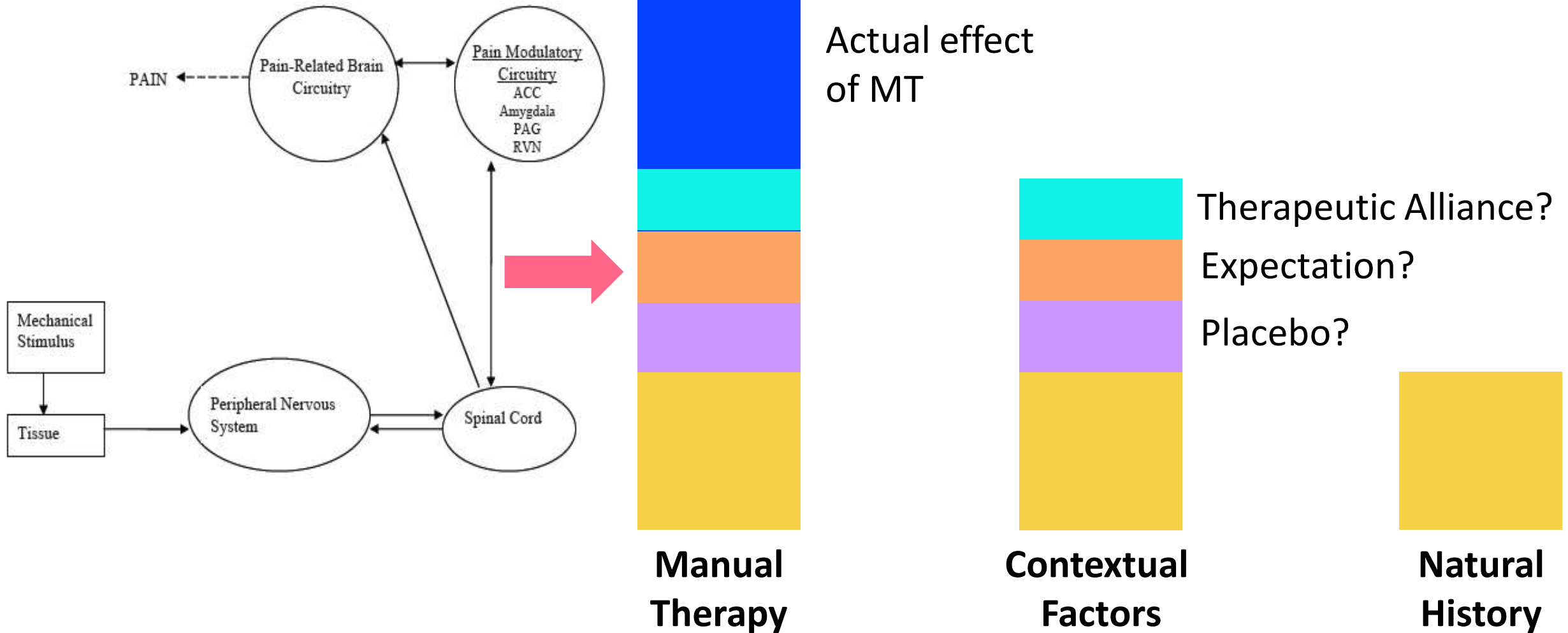


Figure 1. A comprehensive approach to manual physical therapy effectiveness accounting for interactions between patient, therapist, and intervention factors. Examples of factors include preferences, expectations, outcome assessment, and shared decision-making (SDM).

Clinical Implications



Thanks to Joel Bialosky for the slide!

From Evidence to Practice

- Mechanisms of MT are Likely Multifaceted
- Expectation and Placebo play a large role in ANY treatment
- MT effects are transient, short lived, but can be amplified and lengthened via expectation and the placebo effect
- MT techniques should be selected based upon:
 - Shared decision making
 - Patient preference
 - Practitioner preference
 - Current best evidence
- **Successful manual therapists likely skillfully manipulate joints, soft tissue, and expectations!**

Use Manual Therapy



LICENSE TO TOUCH

LICENSE#
007

BIRTH DATE
OLD ENOUGH

EXPIRES
NEVER

RESTRICTIONS
NONE



SECRET AGENT

Tim Flynn
c/o APTA/AAOMPT Dept. Advocacy
Fort Collins, CO, USA

SEX	HEIGHT	WEIGHT	HAIR	EYES
Y	5'7"	SKINNY	SOME	SQUINTY

X *Tim Flynn*
SIGNATURE

Physical Therapy Empowers...



"At the end of the day we listen, we put our hands on people, we educate, we motivate, and we bring people back to where they want to be. That's who we are. We've always been that way. We empower people." - Tim Flynn

Thank You!

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