Words that Hurt, Words that Heal

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Placebo

A substance without medical effects, which benefits the health status because of the patient's belief that the substance is effective

Nocebo

A substance without medical effects, but which worsens the health status of the person taking it by the negative beliefs and expectations of the patient

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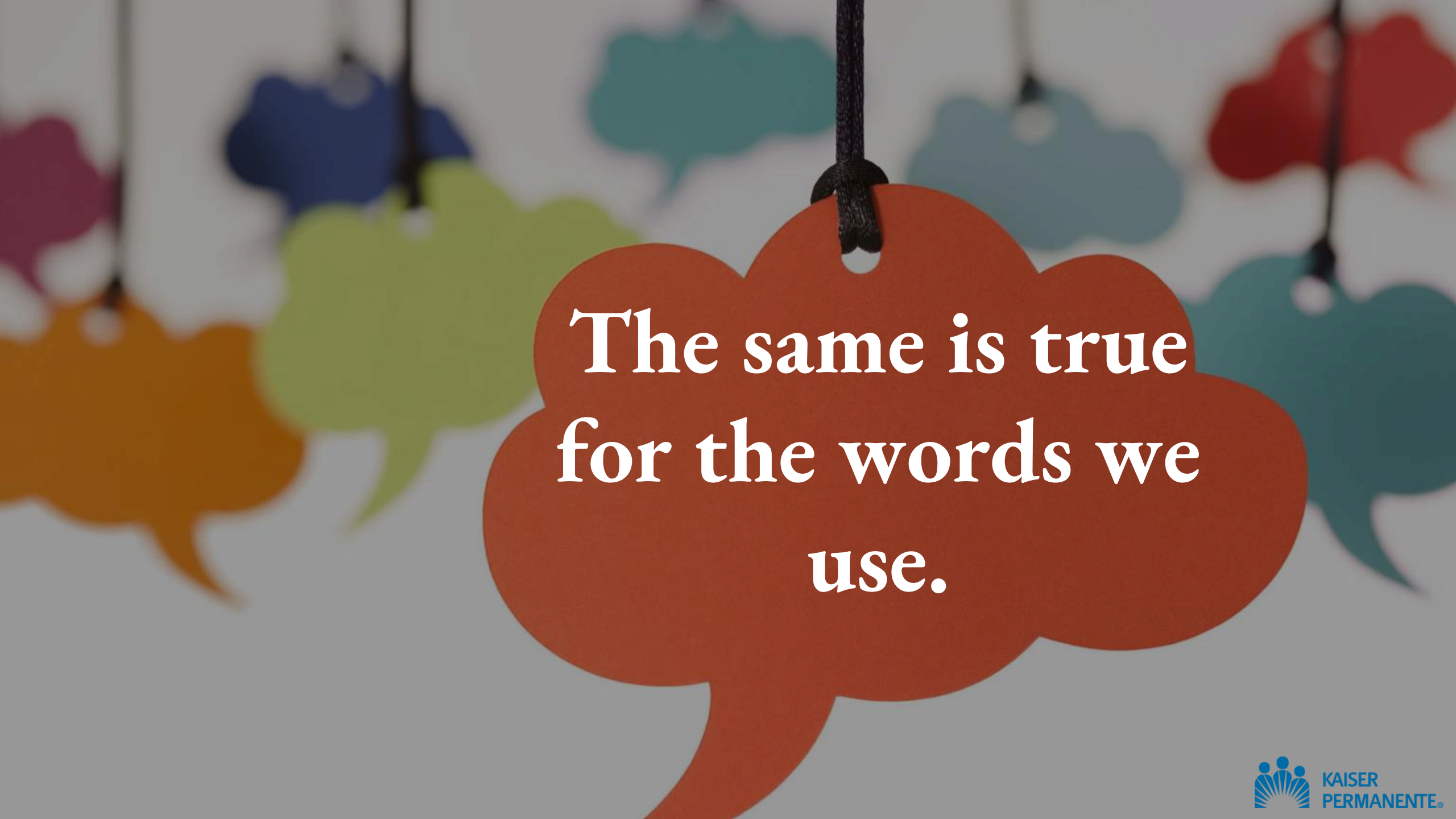
The same is true for the words we use.

Examples of Placebo in Healthcare Research

Some orthopedic surgeries no better than placebo surgery[1]

- Arthroscopic subacromial decompression
- Arthroscopic partial meniscectomy
- Arthroscopic debridement for knee OA
- Vertebroplasty for osteoporotic compression fractures
- Intradiscal electrotheramal therapy
- Open debridement for lateral epicondylitis

Labeling and medication benefits[2]

- Migraines: Maxalt > Maxalt (unlabeled) > Maxalt (labeled as placebo) = Placebo (labeled as Maxalt) > nothing

>50% of treatment outcome attributable to "contextual effects"[3]

- Includes placebo effect, clinician and patient beliefs, relationships, natural history, and regression to the mean

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Examples of Nocebo in Healthcare Research

Recovery from Low Back Pain[4]

- Routine imaging report led to worse outcomes compared to a "clinical report" (reassurance of "incidental findings")

Nocebo Hyperalgesia[5]

- "The cream applied to your arm increases the effect of heat pain you will feel"
- Higher levels of fear of pain (FPQ) significantly ↑ stress levels and was associated with increased nocebo hyperalgesia

Iatrogenic Consequences of Early-MRI in Acute LBP[6]

- Outcomes of "early MRI" (≤ 30 days) vs no-MRI - 2 year follow up
  - Longer length of disability, higher medical cost, and worse outcomes regardless of radiculopathy (even after controlling for severity and demographics)

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Advanced Imaging and Patient Beliefs[7]

Patients believe findings on imaging prove that their pain is real.

Clinicians order imaging to avoid a missed diagnosis and manage patients' expectations

Clinicians are aware of the consequences of unnecessary imaging

Patients rarely considered the potential for harm from imaging

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Cervical Spine

Disk bulging found in 88% of asymptomatic adults (20-79 y/o)[8]

- 75% of those age 20-29
- 80% of those age 30-39
- >90% of those above 40

Spinal cord compression found in 24% of asymptomatic adults[9]

- 7% of those younger than age 60
- 35% of those age 60 and older

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Shoulder

	Asymptomatic	Symptomatic
Subacromial-subdeltoid bursal thickening[12]	78%	
Mild glenohumeral or acromioclavicular osteoarthritis[10,12]	50-70%	50-60%
Mild subacromial bursitis[10]	60%	70%
Rotator cuff tendinopathy[11,12]	25-89%	75-93%
Partial-thickness rotator cuff tears[11,12]	20-22%	27-31%
Full-thickness rotator cuff tears[11]	1-8%	6-21%
Labrum abnormality[12]	14%	

- **Table**. Ultrasound, X-ray, MRI, (Adults 55-74 y/o[10], 18-77 y/o[11], 40-70 y/o[12])

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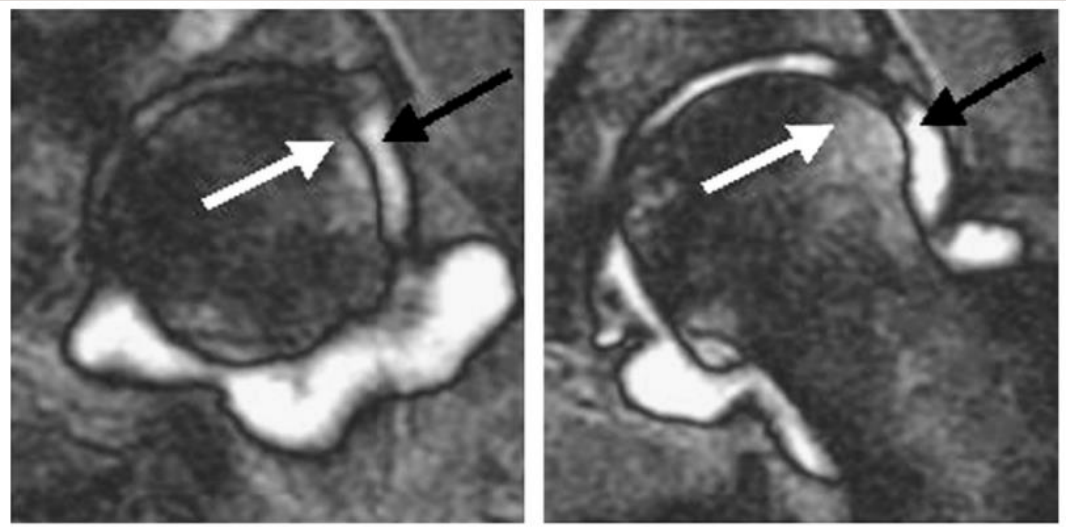

Hip

	Asymptomatic	Symptomatic
Chondral defects[13,14]	**12%**	**64-76%**
Acetabular labral tears[13,14]	**54%**	**62-66%**
Hip dysplasia[15,16]	**15%**	**13%**

- **Table**. MRI or MRA (median ~40 y/o[13,14]), X-ray (18-50 y/o[15,16])

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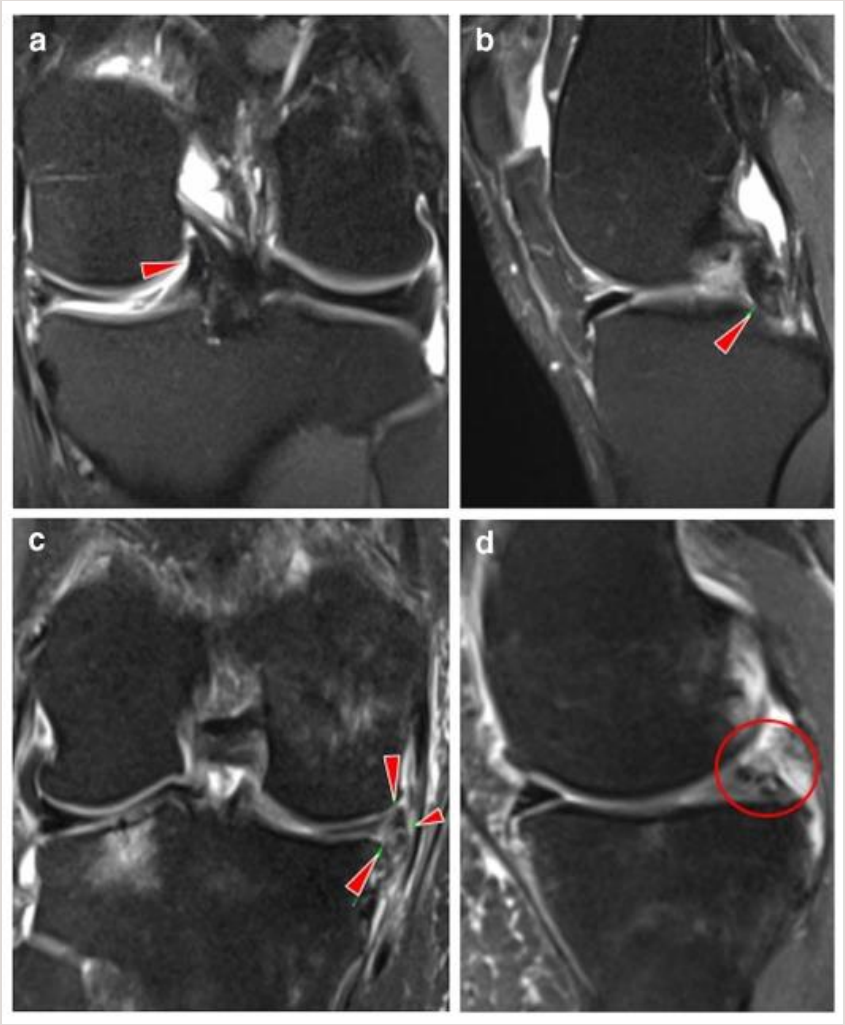
Knee



	Asymptomatic	Symptomatic
Osteoarthritis[19]	**34%**	-
Meniscal abnormalities[17,18,19]	**23-61%** *(majority horizontal tears in posterior horn of medial meniscus[9])*	**32%**
Meniscal abnormalities + Osteoarthritis[19]	**60%**	**63%**
Cartilage lesions[18]	Patellofemoral: **57%** Medial Tibiofemoral: **17%** Lateral Tibiofemoral: **10%**	-
Bone marrow edema[18]	Patellofemoral**: 43%** Medial Tibiofemoral: **13%** Lateral Tibiofemoral: **7%**	-
Ligaments[18]	Grade 1 ACL: **33%**	-
Tendons[18]	Grade 1-2 Patellar: **24%** Grade 1-2 Quads **11%** Grade 1-2 Semimemb: **9%**	-

- **Table.** X-ray or MRI, Adults 20-68 y/o[17], 25-73 y/o[18], 50-90 y/o[19]

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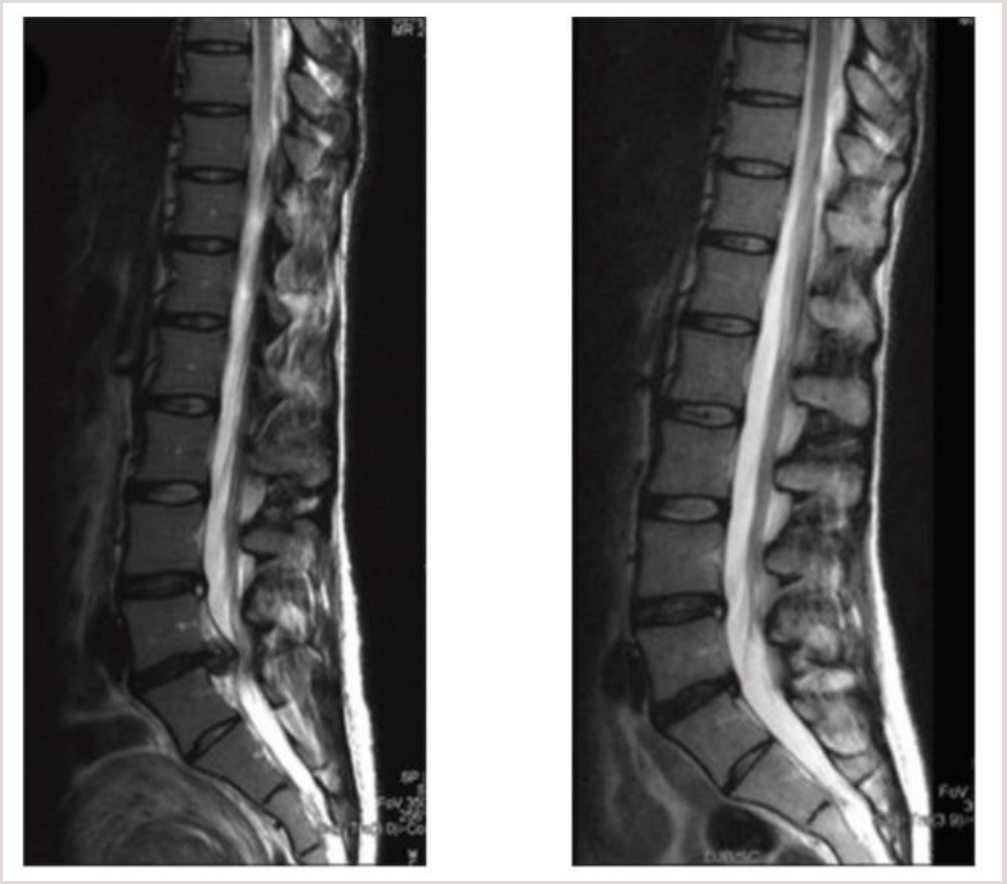
Lumbar Spine[20,21]



Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients[a]

	Age (yr)						
Imaging Finding	**20**	**30**	**40**	**50**	**60**	**70**	**80**
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk signal loss	17%	33%	54%	73%	86%	94%	97%
Disk height loss	24%	34%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%

Outcome	No. of Studies	OR (95% CI)	Prevalence Asymptomatic	Prevalence Symptomatic
Annular fissure	6	1.79 (0.97–3.31)	11.3% (9.0%–14.2%)	20.1% (17.7%–22.8%)
High-intensity zone	4	2.10 (0.73–6.02)	9.5% (6.7%–13.4%)	10.4% (8.0%–13.4%)
Central spinal canal stenosis	2	20.58 (0.05–798.77)	14.0% (10.4%–18.6%)	59.5% (54.9%–63.9%)
Disc bulge	3	7.54 (1.28–44.56)	5.9% (3.8%–8.9%)	43.2% (38.2%–48.2%)
Disc degeneration	12	2.24 (1.21–4.15)	34.4% (31.5%–37.5%)	57.4% (54.8%–59.8%)
Disc extrusion	4	4.38 (1.98–9.68)	1.8% (0.1%–3.7%)	7.1% (5.4%–9.4%)
Disc protrusion	9	2.65 (1.52–4.62)	19.1% (16.5%–22.3%)	42.2% (39.3%–45.1%)
Modic changes	5	1.62 (0.48–5.41)	12.1% (9.6%–15.2%)	23.2% (21.7%–27.3%)
Modic 1 changes	2	4.01 (1.10–14.55)	3.2% (0.7%–9.4%)	6.7% (4.2%–10.4%)
Spondylolisthesis	4	1.59 (0.78–3.24)	3.2% (1.8%–5.8%)	6.2% (4.4%–8.7%)
Spondylolysis	2	5.06 (1.65–15.53)	1.8% (0.0%–5.3%)	9.4% (6.6%–12.4%)

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Imaging Report vs. "Clinical Report"[4]

44 patients w/ chronic non-specific mechanical LBP (no red flags)

Randomized:

- **Group A** – full factual explanation of pathologies reported in MRI
- **Group B** – reassured that MRI was normal with only incidental & age-related findings

Each group underwent 6 weeks of similar conservative therapy

Measured changes on pain (VAS), self-efficacy (PSEQ-2), function (SF-12)

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Group A – full factual explanation of pathologies reported in MRI

Group B – reassured that MRI was normal with only incidental & age-related findings

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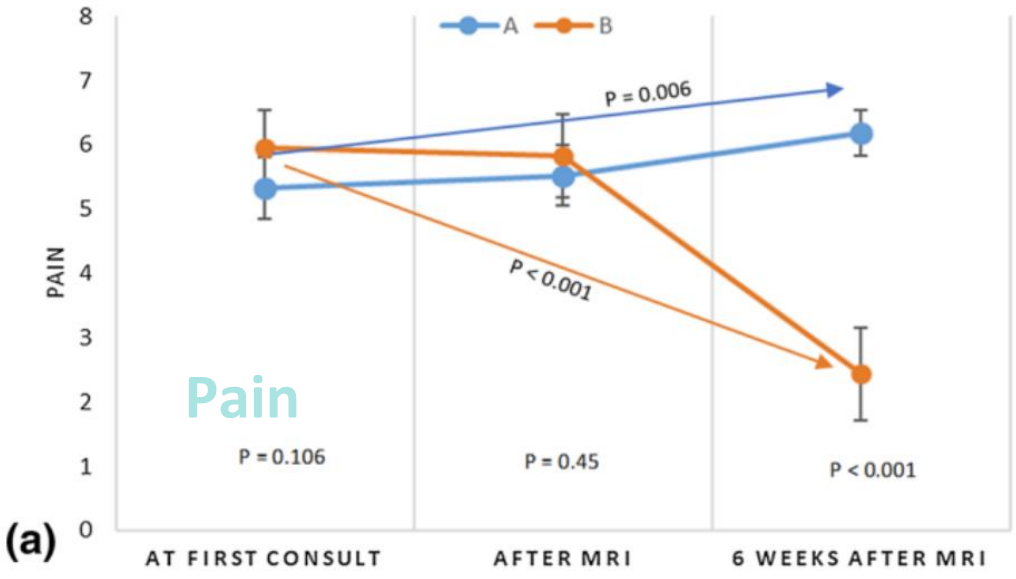

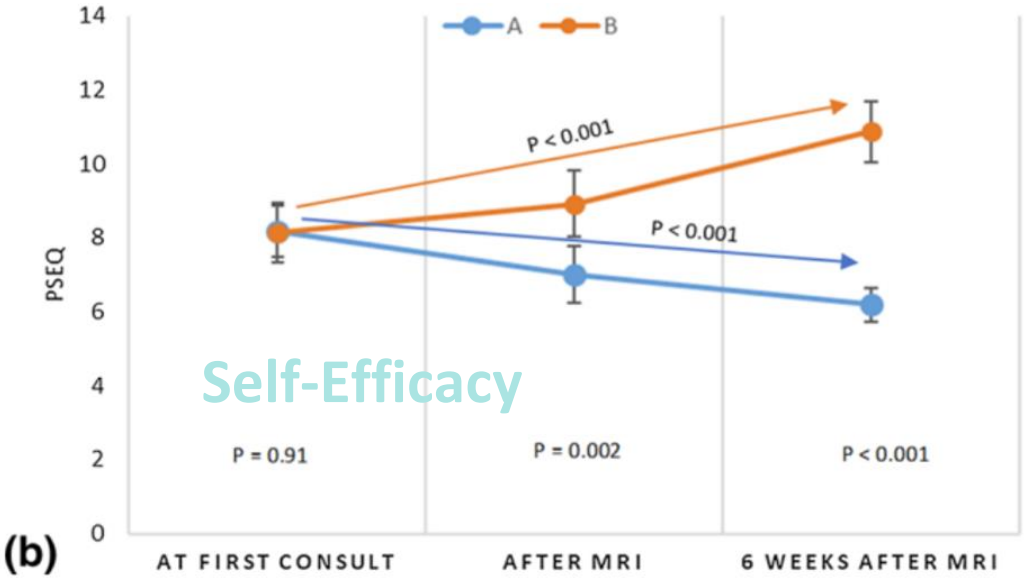

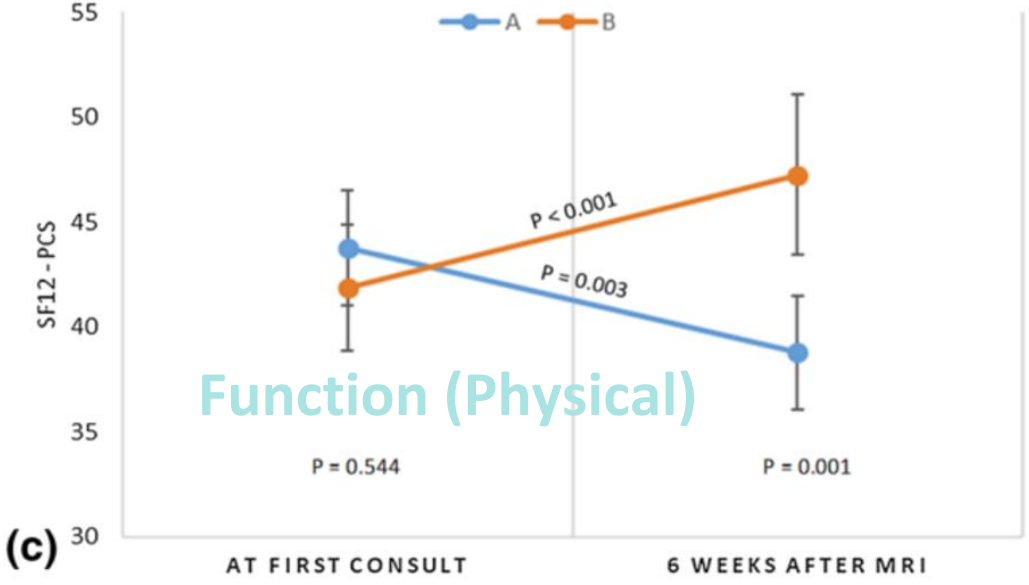

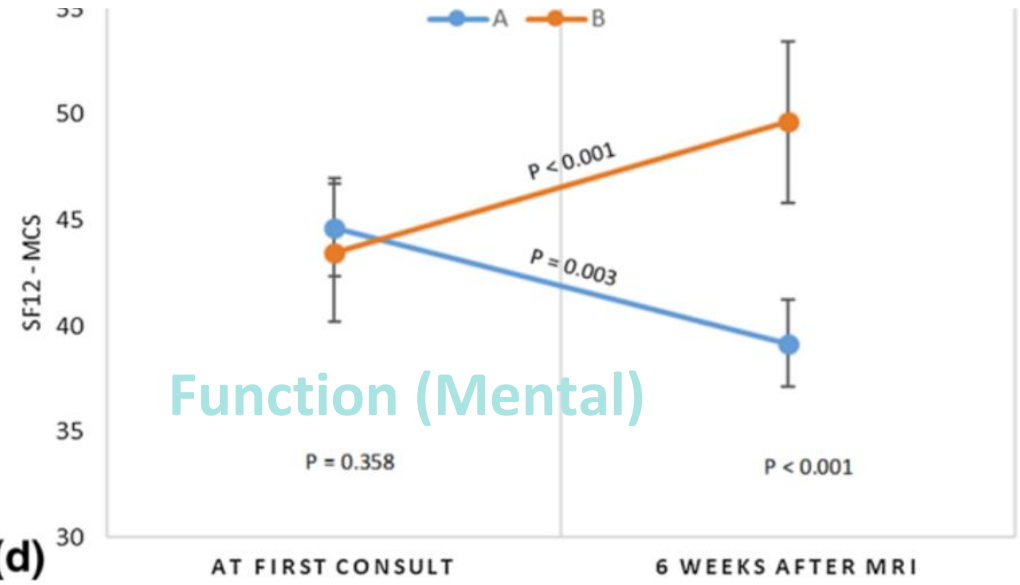

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Words Matter

Provider beliefs can influence patient values

"You have to do _____ before…"

- "…your insurance will cover imaging"
- "…you can have this surgery/procedure/injection"
- "…you can refill your narcotics"

"You have the (joint) of an 80-year-old"

"Your (joint) is bone on bone"

"That is the worst (joint) I have ever seen"

"No wonder you are in pain"

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Words Matter

Ideas to Reframe Wording

"If you do ___, you can…"

- "…avoid surgery"
- "…prevent worsening"
- "…rely less on medication"
- "…get back to valued activities"

"This is exactly what you need right now"

"A lot of people without pain also have this"

"This doesn't have to be a life sentence to pain"

"They have helped a lot of people just like you"

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