



# Non-Pharmacological management of Chronic Lower Back Pain in Older Adults

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# DEMOGRAPHICS

- Back pain is a common health problem worldwide, with an estimated mean point prevalence of 11.9% and a 1-month prevalence of 23.2%
- The prevalence is highest in adults aged between 40 and 80 years old.
- Therefore, in a globally ageing population, back pain plays a significant role in morbidity figures, and it represents the leading cause of years lived with disability
- [Pain](#). 2021 Jun; 162(6): 1632–1640.



# Risk factors for non-improvement

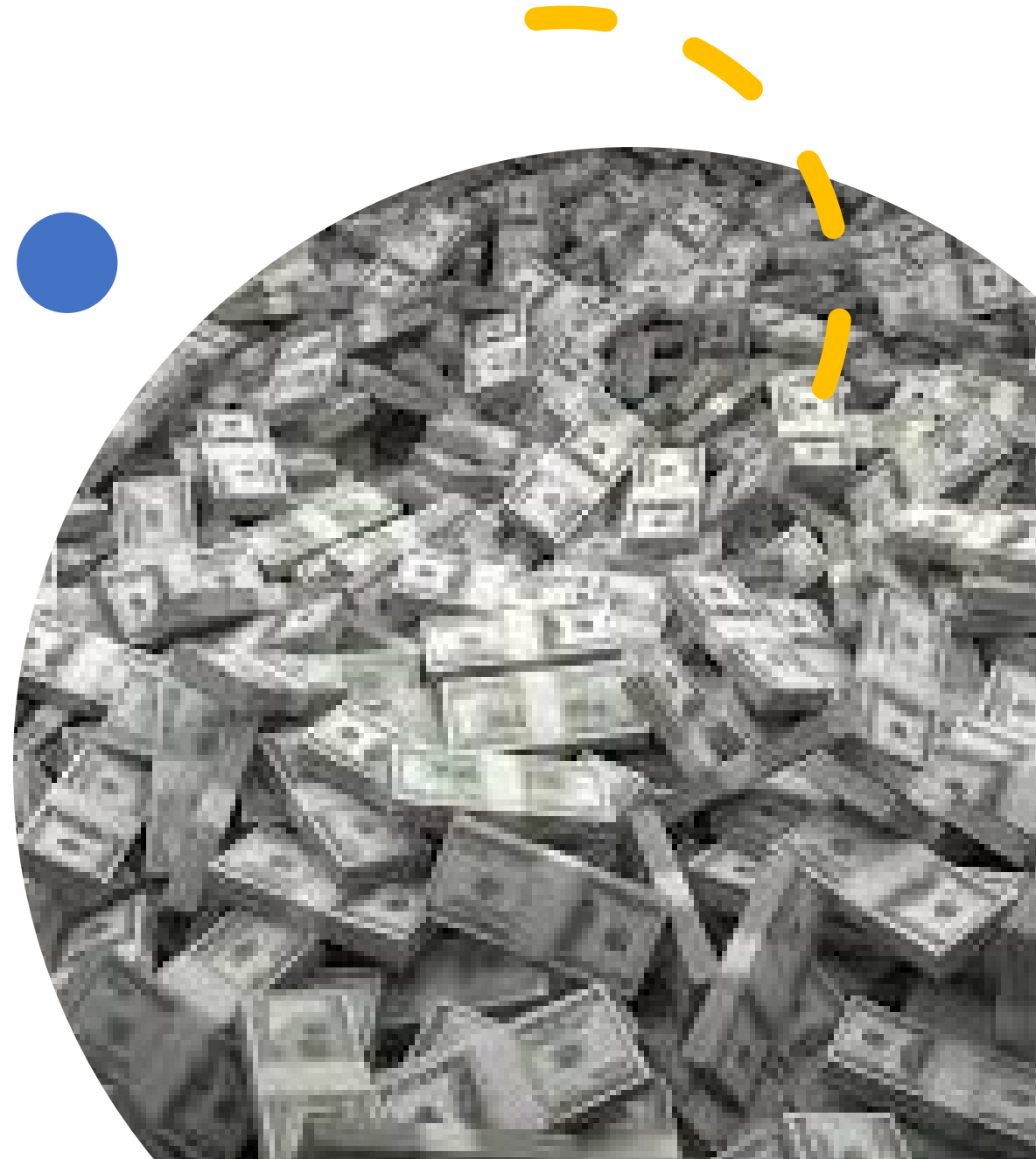
- A prospective cohort study in general practice was conducted (Back Complaints in the Elders, Netherlands), including 675 patients >55 years with a new episode of care for back pain. Three definitions of nonrecovery were used combining 6-month and 12-month follow-up data: (1) persistent back pain, (2) persistent disability, and (3) perceived nonrecovery.
- ***Developing clinical prediction models for nonrecovery in older patients seeking care for back pain: the back complaints in the elders prospective cohort study.*** [Pain](#). 2021 Jun; 162(6): 1632–1640.

# Predictors for persistent nonrecovery after 6 and 12 months.

- Biological factors:
  - increasing age, chronic duration of symptoms, higher pain intensity and higher back pain–related disability, a recent back pain episode, musculoskeletal comorbidity, spinal morning stiffness of over 30 minutes, pain during spinal rotation,
- Psychosocial factors:
  - lower expectation of patients to recover from their back pain, depressive symptomatology, and pain catastrophizing
- ***Developing clinical prediction models for nonrecovery in older patients seeking care for back pain: the back complaints in the elders prospective cohort study.*** [Pain](#). 2021 Jun; 162(6): 1632–1640.

# Financial costs of CLBP in older adults

- A total of 2 498 013 adult patients with a new LBP or LEP diagnosis
- More than half (55.7%) received no intervention.
- Only 1.2% of patients received surgery, but they accounted for 29.3% of total 12-month costs (**\$784 million**).
- Total costs of care among the 98.8% of patients who did not receive surgery were **\$1.8 billion**.
- *JAMA Netw Open.* 2019;2(5):e193676.



# Financial costs of CLBP in older adults

- Patients who did not undergo surgery frequently received care that was inconsistent with clinical guidelines for LBP and LEP: 32.3% of these patients received imaging within 30 days of diagnosis and 35.3% received imaging without a trial of physical therapy.
- *JAMA Netw Open.* 2019;2(5):e193676.



# Predictors of persistent disability

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- Sex, race, worse baseline clinical characteristics of back pain, leg pain, back-related disability and duration of symptoms, smoking, anxiety symptoms, depressive symptoms, a history of falls, greater number of comorbidities, knee osteoarthritis, wide-spread pain syndromes, and an index diagnosis of lumbar spinal stenosis.
- Within the imaging data subset, **central spinal stenosis was not associated with disability or pain.**

*Predictors of Persistent Disability and Back Pain in Older Adults with a New Episode of Care for Back Pain. Pain Med. 2017 Jun 1;18(6):1049-1062.*



# Unnecessary Imaging

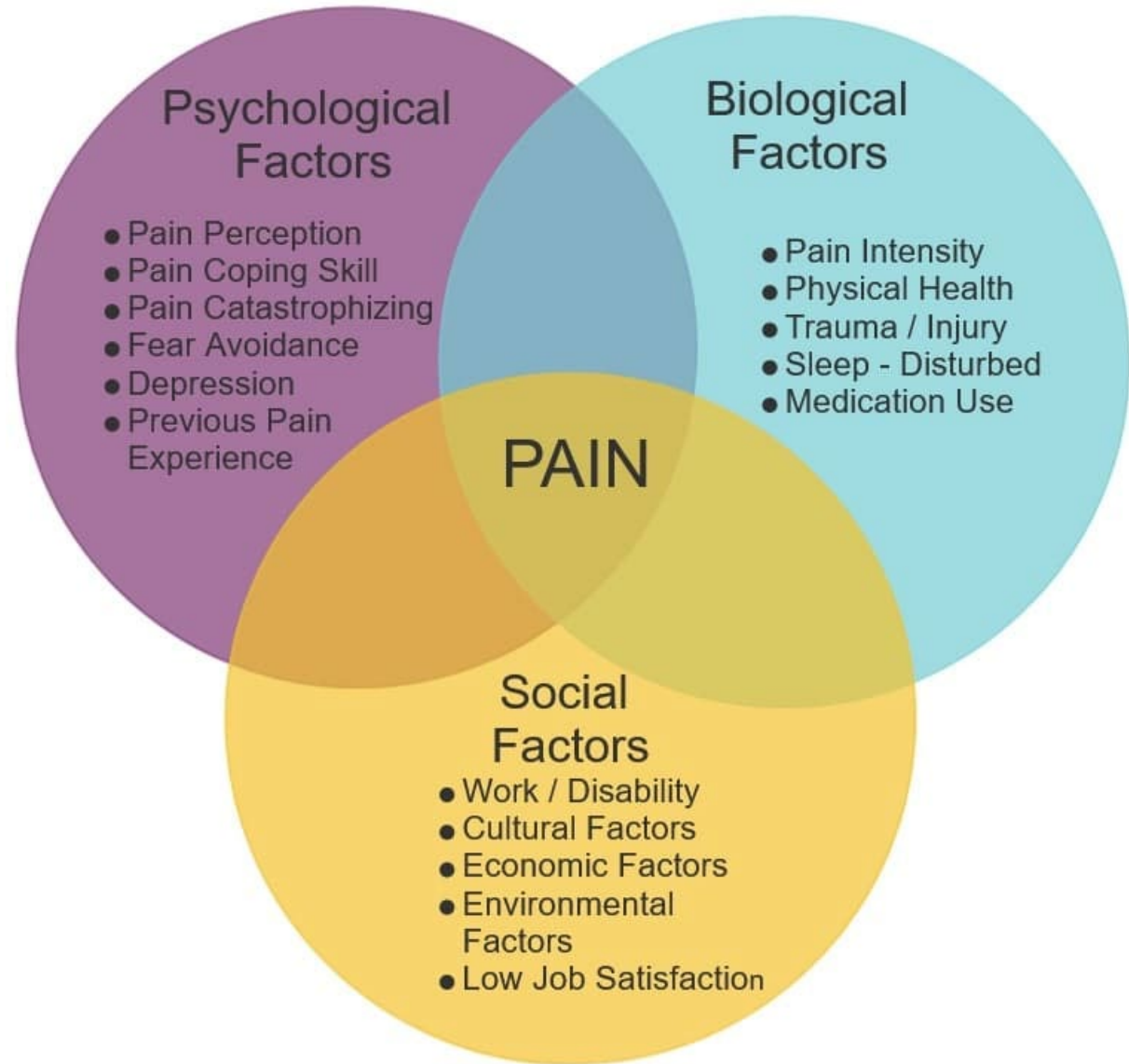
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- Unnecessary imaging:
  - is of limited diagnostic value
  - provides no benefits for function, pain, or disability
  - may lead to worse health outcomes
  - exposes people to unnecessary radiation (for x-ray and CT)
  - Imaging may also lead to **unnecessary invasive diagnostic procedures and subsequent treatment**, increased waiting time for people who are in need of appropriate diagnostic imaging, poor utilization of human resources, and excessive costs
- [BMC Musculoskelet Disord.](#) 2019; 20: 50.





## Biopsychosocial model of pain



# Prevention: public health and prevention strategies

- The percentage of survey respondents agreeing that they should stay active through LBP increased annually from 58.9 to ~72.0%. **Respondents reporting exposure to campaign messaging were statistically significantly more likely to agree with staying active than respondents who did not report exposure to campaign messaging (adjusted OR, 95% CI = 1.96, 1.73-2.21).**
- Long-term evaluation of a Canadian back pain mass media campaign. *Eur Spine J.* 2017 Sep;26(9):2467-2474.

# Prevention



Rochester Lifestyle  
Medicine Institute

- What are some potential upstream prevention strategies?

Jumpstarting Health With a 15-Day Whole-Food Plant-Based Program (Friedman et al)

In summary, a 15-day, intensive program that helps patients adopt an Esselstyn-style WFPB diet, without portion-control or calorie-counting, and that uses education, individualized medical feedback, social support, and facilitated small group work, leads to rapid improvements in health.

These improvements include **weight loss; reductions in blood pressure, cholesterol, and blood sugar; and positive changes to energy, mood, pain, and sleep.** The brevity of the program allows patients experience the benefits of a new eating pattern in a very short period of time. This program also provides a scalable, replicable approach to introducing patients to dietary changes that have the potential for enduring health benefits.

# What is the best way to manage CLBP in Older adults?

The global gap between evidence and practice relates to both overuse of low-value care as well as underuse of high-value care and is apparent across all income settings.

*Prevention and treatment of low back pain: evidence, challenges, and promising directions. Lancet 2018;391:2368–83.*

# Decrease low value care

- The surge in global low-value care for low back pain that includes presentations to emergency departments, liberal use of diagnostic imaging, opioids, spinal injections, and surgery has also led to skyrocketing medical and human costs.
- [Pain.](#) 2020 Sep; 161(1): S57–S64.

# So where do we go from here?

- **Lancet Series: the "Magnum Opus" Regarding the Evidence on Low Back Pain.**



- ***Lancet Low Back Pain Series Working Group. Lancet. 2018 Jun 9;391(10137):2368-2383.***

# Lancet Series:



- Guidelines recommend self-management, physical and psychological therapies, and some forms of complementary medicine
- Place less emphasis on pharmacological and surgical treatments; routine use of imaging and investigations is not recommended

**SOURCES**  
www.cdc.gov/nchs/data/infodiv181810.pdf  
www.lancet.com/series/low-back-pain-2018  
www.painmed.org/painmanagement/low-back-pain  
www.nhs.uk/lowbackpain/low-back-pain-2018/low-back-pain-2018.pdf  
health.lsu.edu/newsroom/2018/03/21/low-back-pain-2018-03-21-181810.pdf

**BACK PAIN** SOUTHERN CALIFORNIA PAIN INSTITUTE

**5 BACK PAIN FACTS**

- #1** BACK PAIN IS THE LEADING CAUSE of disability in people under 45 years old. It's the most common reason for missing work.
- #2** BACK PAIN IS THE MOST COMMON reason for visits to the doctor's office.
- 31 MILLION AMERICANS** experience low-back pain at any given time.
- AMERICANS SPEND AT LEAST **\$50 BILLION** each year on back pain.
- 80% OF PEOPLE** will feel back pain at some point on their lives.

**TIPS TO PREVENT IT**

- maintain a healthy diet and weight.
- remain active.
- warm up or stretch before exercising or other physical activities, such as gardening.
- quit smoking.
- maintain proper posture.
- wear comfortable, low-heeled shoes.
- lift with your knees, keep the object close to your body, and do not twist when lifting.

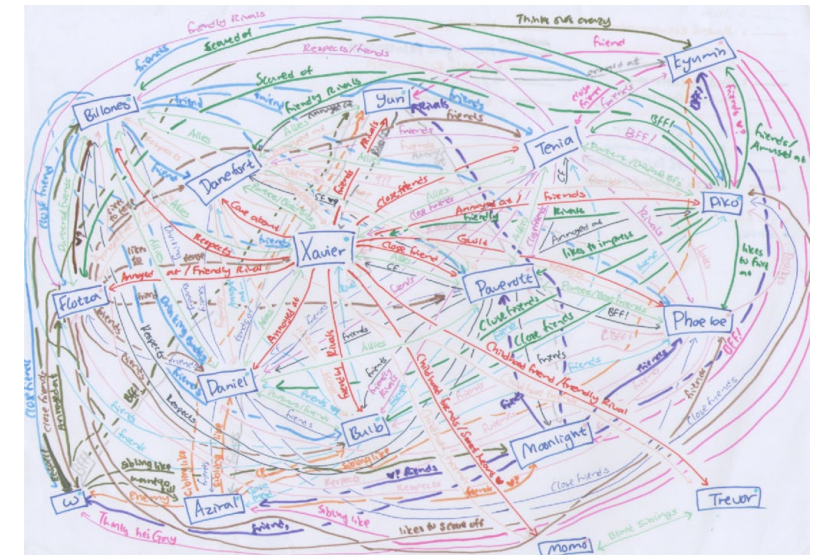
**WHAT ARE THE CAUSES?**

- SCIATICA
- HERNIATED DISCS
- SPINAL STENOSIS
- DEGENERATIVE DISC DISEASE
- FACET JOINT SYNDROME
- SPONDYLOLISTHESIS
- ARTHRITIS
- SCOLIOSIS
- FIBROMYALGIA
- KIDNEY STONES

# Lancet Series:



- Promising solutions include:
  - Focused implementation of best practice
  - The redesign of clinical pathways
  - Integrated health and occupational care
  - Changes to payment systems and legislation
  - Public health and prevention strategies





# Education and self-care

## Acute low back pain (<6 weeks)

- Advice to remain active-
  - First-line treatment, consider for routine use
- Education
  - First-line treatment, consider for routine use
- Superficial heat
  - Second-line or adjunctive treatment option

## Persistent low back pain (>12 weeks)

- Advice to remain active
  - First-line treatment, consider for routine use
- Education
  - First-line treatment, consider for routine use
- Superficial heat
  - Insufficient evidence

# Non-pharmacological therapy

## Acute low back pain (<6 weeks)

- Exercise therapy
  - Limited use in selected patients
- Cognitive behavioural therapy
  - Limited use in selected patients
- Spinal manipulation
  - Second-line or adjunctive treatment option
- Massage
  - Second-line or adjunctive treatment option
- Acupuncture
  - Second-line or adjunctive treatment option
- Yoga
  - Insufficient evidence
- Mindfulness-based stress reduction
  - Insufficient evidence
- Interdisciplinary rehabilitation
  - Insufficient evidence

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- Interdisciplinary rehabilitation
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# Exercise Therapy

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- Good news!
  - Our results found a beneficial effect for strength/resistance and coordination/stabilisation exercise programs over other interventions in the treatment of chronic low back pain and that cardiorespiratory and combined exercise programs are ineffective. ( Clin Rehabil 2015)
- Bad news
  - There is no good evidence that any one exercise program is superior to another.
  - The exercise program that works is the one that they will do!
  - (Cochrane Database Syst Rev 2017 Apr 24;4(4):CD011279.)



# Cognitive Behavioral Therapy

- There is inconsistent, patient-oriented evidence (grade B) to support the use of CBTs and/or psychoeducation strategies by rehabilitation specialists to treat fear-avoidance beliefs.
- Patient-centered and personalized CBTs were most effective to treat these psychosocial factors in patients with LBP when compared with a control treatment.
- *Evaluation of Cognitive Behavioral Interventions and Psychoeducation Implemented by Rehabilitation Specialists to Treat Fear-Avoidance Beliefs in Patients With Low Back Pain: A Systematic Review. Arch Phys Med Rehabil. 2018 Nov;99(11):2287-2298.*

# Spinal Manipulation

- SMT produces similar effects to recommended therapies for chronic low back pain, whereas SMT seems to be better than non-recommended interventions for improvement in function in the short term. Clinicians should inform their patients of the potential risks of adverse events associated with SMT.
- *Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019 Mar 13;364:l689.*



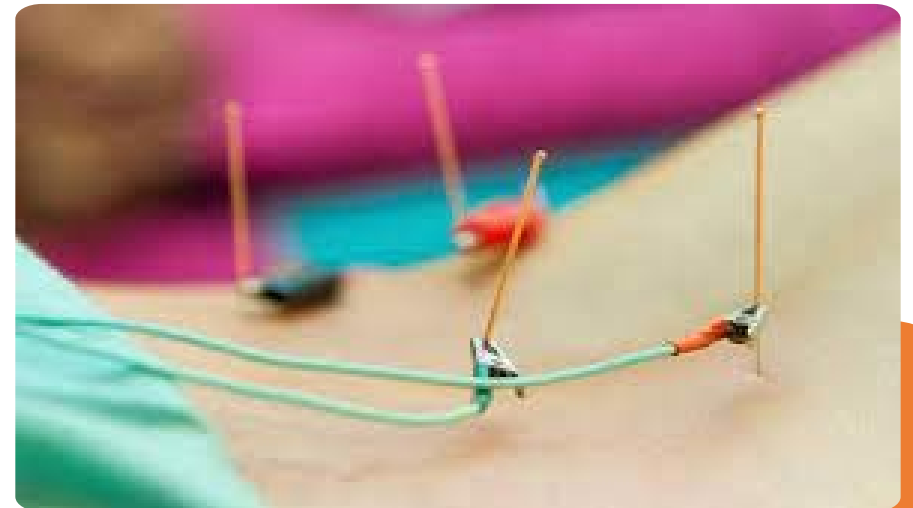
# Massage

- **Conclusion:** Current evidence on myofascial release therapy is not sufficient to warrant this treatment in chronic musculoskeletal pain.
- Effectiveness of myofascial release in treatment of chronic musculoskeletal pain: a systematic review. Clin Rehabil. 2018 Apr;32(4):440-450.



# Acupuncture

- We found that acupuncture may not play a more clinically meaningful role than sham in relieving pain immediately after treatment or in improving quality of life in the short term, and acupuncture possibly did not improve back function compared to sham in the immediate term. However, acupuncture was more effective than no treatment in improving pain and function in the immediate term.
- Acupuncture for chronic nonspecific low back pain. *Cochrane Database Syst Rev.* 2020 Dec 11;12(12):CD013814.
- *Effectiveness of Manual and Electrical Acupuncture for Chronic Non-specific Low Back Pain: A Randomized Controlled Trial. J Acupunct Meridian Stud.* 2020 Jun;13(3):87-93.
- *Efficacy of percutaneous electrical nerve stimulation for the treatment of chronic low back pain in older adults. J Am Geriatr Soc.* 2003 May;51(5):599-608.



# Yoga

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- There is low- to moderate-certainty evidence that yoga compared to non-exercise controls results in small to moderate improvements in back-related function at three and six months.
- Yoga treatment for chronic non-specific low back pain. Cochrane Database Syst Rev. 2017 Jan 12;1(1):CD010671.





# Mindfulness based stress reduction

- This review found inconclusive evidence of effectiveness of MBSR in improving pain intensity or disability in chronic low back pain patients. However, there is limited evidence that MBSR can improve pain acceptance.
- Mindfulness-based stress reduction for low back pain. A systematic review. BMC Complement Altern Med. 2012 Sep 25;12:162..



# Importance of context

- ***Non-specific mechanisms in orthodox and CAM management of low back pain (MOCAM): theoretical framework and protocol for a prospective cohort study***
  - Psychological, social, and environmental factors that act alongside and can interact with the “specific” ingredients of treatment.
  - Felicity Bishop is investigating contextual factors and their effects on pain and disability with ongoing work on context in England.
    - Bradbury K, Al-Abbadey M, Carnes D, et al. Non-specific mechanisms in orthodox and CAM management of low back pain (MOCAM): theoretical framework and protocol for a prospective cohort study. *BMJ Open* 2016;6:e012209. doi:10.1136/bmjopen-2016-012209
    - Bishop F, Al-Abbadey M, et al. Contextual factors predict the outcome of low back pain therapies: a large prospective questionnaire study in physiotherapy, osteopathy, and acupuncture. *Advances in Integrative Medicine*, 2019-05-01, Volume 6, Pages S67-S67. <https://doi.org/10.1016/j.aimed.2019.03.192>




# Contextual Factors

## Patient-Practitioner relationship

- Can patient/practitioner interactions cause psychological/behavioral changes that can predict outcomes?
- Supportive self-care communication, shared goals, increased self-efficacy for coping, and uptake of lifestyle advice.
- Communicate in a patient-centered and empathetic way.

## Patient beliefs

- Patients who expect therapy to be successful are more open to developing positive patient-practitioner relationships which lead to improve outcomes.
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# Contextual Factors

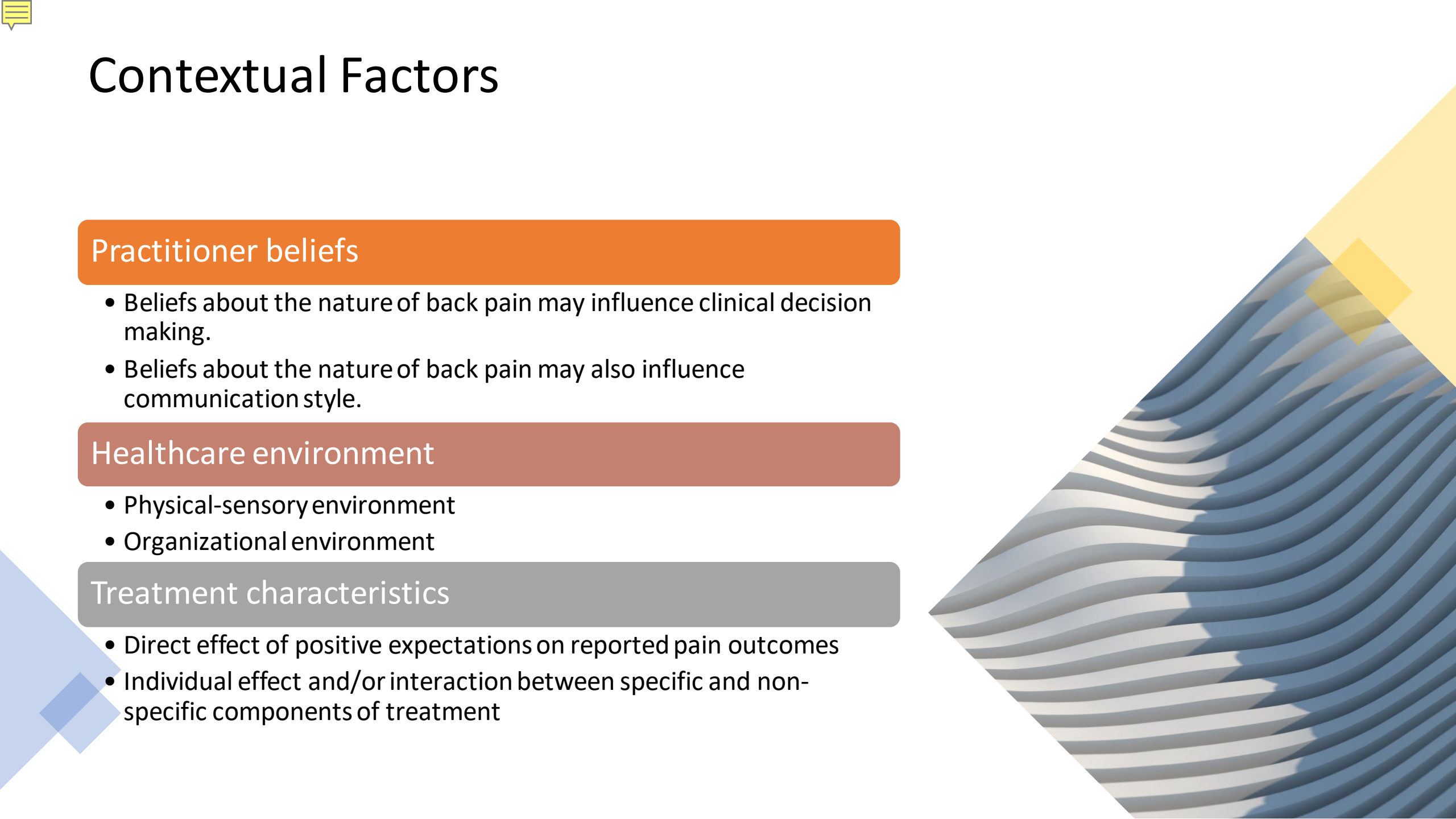
## Practitioner beliefs

- Beliefs about the nature of back pain may influence clinical decision making.
- Beliefs about the nature of back pain may also influence communication style.

## Healthcare environment

- Physical-sensory environment
- Organizational environment

## Treatment characteristics


- Direct effect of positive expectations on reported pain outcomes
  - Individual effect and/or interaction between specific and non-specific components of treatment
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# Results

- Therapeutic alliance and practitioner-rated outcome expectancies demonstrated the largest effect sizes.
- There were no significant interactions with therapy type
  - Physiotherapy, osteopathy, and acupuncture
- Results suggest that enhancing contextual treatment components in practice could improve patient outcomes.
  - Make it a goal to improve patients' LBP perceptions and self-efficacy for coping with pain



# CONTEXT MATTERS

- How can providers address and leverage these contextual factors to improve outcomes?
  - Language, attitudes, environment, and patient/provider perceptions may truly make a difference in outcomes.
  - Opportunity for future studies on contextual factors and their effect on outcomes.
  - More emphasis on contextual factors during education and training?
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# Take home points

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- Chronic lower back pain is common in Older Adults
- Chronic lower back pain is a complex multifactorial condition that is best explained by the biopsychosocial model of pain
- Management of chronic lower back pain should include the following:
  - Use of high value care and avoiding low value care
  - Consideration of the initial use of non-pharmacological treatment
  - Needs to consider the patient's beliefs and expectations