

## Information sources and further reading

WCPT would like to express its sincere thanks to the following physical therapists for their input and assistance in the production of the materials for World Physical Therapy Day 2019: Felipe Reis ([@felipereisifrj](#)), Lisa Carlesso ([@LisaCarlesso](#)), Peter O'Sullivan ([@PeteOSullivanPT](#)) and Jo Nijs ([@PaininMotion](#))

### Infographic 1: What is chronic pain?

#### Chronic pain is a significant global health burden

*In terms of years lived with disability (YLDs), low back pain, headache disorders, and dietary iron deficiency were the leading Level 3 causes of YLD counts in 1990, whereas low back pain, headache disorders, and depressive disorders were the leading causes in 2017 for both sexes combined.*

[Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017](#)

Global Health Metrics | Volume 392, ISSUE 10159, P1789-1858, November 10, 2018

#### Across the globe low back pain causes more disability than any other condition

[The global burden of low back pain: estimates from the Global Burden of Disease 2010 study](#)

Damian Hoy, Lyn March, Peter Brooks, Fiona Blyth, Anthony Woolf, Christopher Bain, Gail Williams, Emma Smith, Theo Vos, Jan Barendregt, Chris Murray, Roy Burstein, Rachelle Buchbinder. *BMJ: Annals of the Rheumatic Diseases*, Volume 73, Issue 6

[The Lancet Series on low back pain](#)

**Facts about pain: Acute pain alarms us about potential tissue damage and typically comes on suddenly as a result of a specific incident such as surgery, childbirth, a fracture, or trauma.**

**Chronic pain serves no biologic purpose as it is not related to the threat of tissue damage. Chronic pain can be considered a disease state and can persist for months or years.**

[Beyond Opioids: How Physical Therapy Can Transform Pain Management to Improve Health](#) p6.

An American Physical Therapy Association White Paper, June 1, 2018

#### Definitions of chronic pain

<https://www.csp.org.uk/conditions/chronic-pain>

<https://www.csp.org.uk/publications/physiotherapy-works-chronic-pain>

<https://www.nhsinform.scot/illnesses-and-conditions/brain-nerves-and-spinal-cord/chronic-pain>

**Physiotherapy helps people with long term (chronic) pain develop the skills they need to manage their condition, increase their activity and improve their quality of life.**

[Being active with chronic pain](#). Chartered Society of Physiotherapy

#### Exercise therapy is included in all guidelines for the treatment of chronic pain

Marienkevan Middelkoop, Sidney M. Rubinstein, Arianne P. Verhagen, Raymond W. Ostelo, Bart W. Koes, Maurits W. van Tulder. [Exercise therapy for chronic nonspecific low-back pain](#). *Best Practice & Research Clinical Rheumatology*, Volume 24, Issue 2, April 2010, Pages 193-204

- Chimenti RL, Frey-Law LA, Sluka KA. [A mechanism-based approach to physical therapist management of pain.](#) *Phys Ther.* 2018;
- Macedo LG, Smeets RJ, Maher CG, Latimer J, McAuley JH. [Graded activity and graded exposure for persistent nonspecific low back pain: a systematic review.](#) *Phys Ther.* 2010;90:860–879.
- Booth J, Moseley GL, Schiltenswolf M, Cashin A, Davies M, Hübscher M. [Exercise for chronic musculoskeletal pain: a biopsychosocial approach.](#) *Musculoskeletal Care.* 2017;15:413–421.
- Jordan, J. L., Holden, H. A., Mason, E. E. J., & Foster, N. E. (2010). [Interventions to improve adherence to exercise for chronic musculoskeletal pain in adults \(review\).](#) *Cochrane Collaboration*, 1, 1–62.
- Geneen L, Smith B, Clarke C, Martin D, Colvin LA, Moore RA. [Physical activity and exercise for chronic pain in adults: An overview of Cochrane reviews.](#) *Cochrane Database Syst Rev.* 2014;
- Hayden JA, van Tulder MW, Malmivaara A, Koes BW. [Exercise therapy for treatment of non-specific low back pain.](#) *Cochrane database Syst Rev.* 2005;
- Chimenti RL, Frey-Law LA, Sluka KA. [A mechanism-based approach to physical therapist management of pain.](#) *Phys Ther.* 2018;
- Sluka KA, O'Donnell JM, Danielson J, Rasmussen LA. [Regular physical activity prevents development of chronic pain and activation of central neurons.](#) *J Appl Physiol (1985).* 2013;114:725– 733.
- Grace P, Strand K, Galer E, et al. [Prior voluntary wheel running is protective for neuropathic-like pain.](#) *J Pain.* 2016;17(4 suppl):S90.
- O'Connor, S. R., Tully, M. A., Ryan, B., Bleakley, C. M., Baxter, G. D., Bradley, J. M. McDonough, S. M. (2015). [Walking exercise for chronic musculoskeletal pain: Systematic review and meta-analysis.](#) *Archives of Physical Medicine and Rehabilitation.* 96(4), 724–734.e3.
- Booth J, Moseley GL, Schiltenswolf M, Cashin A, Davies M, Hübscher M. [Exercise for chronic musculoskeletal pain: a biopsychosocial approach.](#) *Musculoskeletal Care.* 2017;15:413–421.

## Infographic 2: Chronic pain – the myths

The following resources were used in the production of this infographic:

<http://www.lowbackpaincommunication.com/>

<https://www.csp.org.uk/conditions/back-pain/back-pain-myth-busters>

[https://www.physio-pedia.com/Exercise\\_and\\_Activity\\_in\\_Pain\\_Management](https://www.physio-pedia.com/Exercise_and_Activity_in_Pain_Management)

**Although an X-ray, CT or MRI scan may occasionally be helpful, findings such as disc degeneration, arthritis, disc bulges and fissures are common in the pain free population and are not necessarily the reason for your pain.**

Brinjikii W, Diehn, FE, Jarvik, JG, Carr CM, Kallmes DF, Murad MH, Luetmer PH (2015) [MRI findings of disc degeneration are more prevalent in adults with low back pain than in asymptomatic controls: A systematic review and meta-analysis.](#) *AJNR AM J Neuroradiol*, 36(12): 2394 – 9. doi: 10.3174/ajnr.A449

Berg L, Hellum C, Gjertsen Ø, Neckelmann G, Johnsen LG, Storheim K, Brox JI, Eide GE, Espeland A (2013) [Do more MRI findings imply worse disability or more intense low back pain? A cross-sectional study of candidates for lumbar disc prosthesis.](#) doi: 10.1007/s00256-013-1700-x

Darlow B, Dean S, Perry M, Mathieson F, Baxter GD, Dowell A. [Easy to harm, hard to heal: patient views about the back.](#) *Spine* 2015; 40:842e50.

Bunzli S, Smith A, Watkins R, Schutze R, O'Sullivan P. [What do people who score highly on the Tampa Scale of Kinesiophobia really believe? A mixed methods investigation in people with chronic non specific low back pain.](#) *Clin J Pain* 2015; 31:621e32.

Geisser M, Roth R. [Knowledge of and agreement with chronic pain diagnosis: relation to affective distress, pain beliefs and coping, pain intensity and disability.](#) *J Occup Rehabil.* 1998;8:73–88

Bunzli S, Watkins R, Smith A, Schutze R, O'Sullivan P. [Lives on hold: a qualitative synthesis exploring the experience of chronic low-back pain.](#) *Clin J Pain* 2013;29:907e16.

Teraguchi et al, (2013) [Prevalence and distribution of intervertebral disc degeneration over the entire spine in a population-based cohort: the Wakayama Spine Study.](#)

Videman et al, (2003) [Associations Between Back Pain History and Lumbar MRI Findings](#)

Cheung et al, (2009) [Prevalence and Pattern of Lumbar Magnetic Resonance Imaging Changes in a Population Study of One Thousand Forty-Three Individuals.](#)

Endcan et al, (2011) [Potential of MRI findings to refine case definition for mechanical low back pain in epidemiological studies: a systematic review.](#)

Brinjikji et al, (2015) [MRI Findings of Disc Degeneration are More Prevalent in Adults with Low Back Pain than in Asymptomatic Controls: A Systematic Review and Meta-Analysis](#)

Webster et al, (2010) [Relationship of early magnetic resonance imaging for work-related acute low back pain with disability and medical utilization outcomes.](#)

**The level of pain experienced is often a poor measure of injury or tissue damage. Even if an activity is painful, it is not an accurate sign of doing harm. A physical therapist can help develop a programme for you to move safely.**

Belavy DL, Quittner MJ, Ridgers N, Ling Y, Connell D, Rantalainen T (2017) [Running exercise strengthens the intervertebral disc.](#) *Sci Rep*, 7:45975. doi: 10.1038/srep45975

Campbell A, Kemp-Smith K, O'Sullivan P, Straker L (2016) [Abdominal bracing increases ground reaction forces and reduces knee and hip flexion during landing.](#) *J Orthop Sports Phys Ther*, 46(4): 286-292. doi:10.2519/jospt.2016.5774

Smith BE, Hendrick P, Smith TO, et al [Should exercises be painful in the management of chronic musculoskeletal pain? A systematic review and meta-analysis.](#) *Br J Sports Med* (2017) doi: 10.1136/bjsports-2016-097383

Shiri et al (2013) [The role of obesity and physical activity in non-specific and radiating low back pain: The Young Finns study;](#) *Seminars In Arthritis and Rheumatism* June 2013, vol.42(6):640-650

Taylor et al (2014) [Incidence and risk factors for first-time incident low back pain: a systematic review and meta-analysis;](#) *The Spine Journal* October 2014, Vol.14(10):2299-2319

Manchikanti et al (2014) [Epidemiology of Low Back Pain In Adults.](#) *Neuromodulation: Technology at the Neural Interface*, Vol.17: 3–10.

George et al. (2012) [Predictors of Occurrence and Severity of First Time Low Back Pain Episodes: Findings from a Military Inception Cohort.](#) *PLoS ONE* 7(2): e30597

Wilkens et al (2013) [Prognostic Factors of Prolonged Disability in Patients with Low Back Pain and Lumbar Degeneration in Primary Care: A Cohort Study.](#) *Spine*. Jan 1;38(1):65-74

Campbell et al (2013) [Prognostic Indicators of Low Back Pain in Primary Care: Five-Year Prospective Study.](#) *The Journal of Pain*. August 2013. Vol.14(8):873-883

**It may be painful to bend and lift with back pain, but developing the mobility and strength to bend and lift is important. Many types of exercise, including weight training, can bring great benefits.**

O'Sullivan PB, Caneiro JP, O'Keefe M, Smith A, Dankaerts W, Fersum K, O'Sullivan K (2018) [Cognitive functional therapy: An integrated behavioural approach for the targeted management of disabling low back pain.](#) *Phys Ther*, 98(5): 408-423. doi: 10.1093/ptj/pzy022

Balagu, F. et al., 2012. [Non-specific low back pain.](#) *The Lancet*, 379(9814),

Pincus, T. et al., 2002. [A systematic review of psychological factors as predictors of chronicity/disability in prospective cohorts of low back pain](#). *Spine* (Phila Pa 1976), 27(5), pp.E109–2

O'Sullivan and Lin (2014) [Acute low back pain: Beyond drug therapies](#); *Pain Management Today*, Volume 1, Number 1.

Steele et al (2015) [A Review of the Clinical Value of Isolated Lumbar Extension Resistance Training for Chronic Low Back Pain](#); *American Academy of Physical Medicine and Rehabilitation* Volume 7, Issue 2, Pages 169–187.

Searle et al (2015) [Exercise interventions for the treatment of chronic low back pain: a systematic review and meta-analysis of randomised controlled trials](#); *Clinical Rehabilitation* 2015, Vol. 29(12) 1155 –1167.

Bjorn et al (2015) [Individualized Low-Load Motor Control Exercises and Education Versus a High-Load Lifting Exercise and Education to Improve Activity, Pain Intensity, and Physical Performance in Patients With Low Back Pain: A Randomized Controlled Trial](#); *Journal of Orthopaedic & Sports Physical Therapy*, Volume:45 Issue:2 Pages:77-85.

Pieber et al (2014) [Long-term effects of an outpatient rehabilitation program in patients with chronic recurrent low back pain](#); *Eur Spine J* 23:779–785.

Vincent et al (2014) [Resistance Exercise, Disability, and Pain Catastrophizing in Obese Adults with Back Pain](#); *Med Sci Sports Exerc.* 46(9): 1693–170.

Smith et al (2014) [An update of stabilisation exercises for low back pain: a systematic review with meta-analysis](#). *BMC Musculoskeletal Disorders* 15:416 DOI: 10.1186/1471-2474-15-4160

**Returning to movement and work is better for recovery and preventing recurrence than bed rest. Immobility and bed rest for more than two days have never been shown to be beneficial.**

Waddell, G., 1993. [Simple low back pain: rest or active exercise?](#) *Annals of the rheumatic diseases*, 52(5), p.317.

Wynne-Jones, G. et al., 2014. [Absence from work and return to work in people with back pain: a systematic review and meta-analysis](#). *Occupational and environmental medicine*, 71(6), pp.448–56.

Gloth MJ & Matesi AM. [Physical therapy and exercise in pain management](#). *Clinics in Geriatric Medicine*. 2001. 17(3): 525-535.

**Solutions that focus on opioids for managing pain at best mask people's physical problems and delay or impede recovery and at worst may prove to be dangerous and even deadly.**

Bigal ME (2018) [Opioids vs nonopioids for chronic back, hip or knee pain](#). *JAMA*, 320(5); 507. Doi:10.1001/jama.2018.6949.

Juurink DN (2017) [Rethinking "doing well" on chronic opioid therapy](#). *CMAJ*, 189(39): E1222-E1223. doi: 10.1503/cmaj170628

[Beyond Opioids: How Physical Therapy Can Transform Pain Management to Improve Health](#). An American Physical Therapy Association White Paper, June 1, 2018

**Surgery and interventional procedures have a very limited role, if any, in the management of low back pain. Only about 1-5% of low back pain is caused by serious disease or injury.**

Nadine E Foster, Johannes R Anema, Dan Cherkin, Roger Chou, Steven P Cohen, Douglas P Gross, et al. [Prevention and treatment of low back pain: evidence, challenges, and promising directions](#). *The Lancet Series*, Low back pain | Volume 391, ISSUE 10137, P2368-2383, June 09, 2018

Maher C, Underwood M, Buchbinder R (2017) [Non-specific low back pain](#). *The Lancet*, 389(10070): 736-747. doi: 10.1016/S0140-6736(16)30970-9

**People who catastrophise about the meaning of pain become trapped in a vicious cycle of avoidance behaviour, pain and disability. A physical therapist can help interpret pain and use exercise to break the cycle and reduce pain.**

Samantha Bunzli, PT, PhD, Anne Smith, PT, PhD, Robert Schütze, MPsych (Clinical), Ivan Lin, PT, PhD, Peter O'Sullivan, PT, PhD. [Making Sense of Low Back Pain and Pain-Related Fear](#). *Journal of Orthopaedic & Sports Physical Therapy*, 2017 Volume:47 Issue:9 Pages:628–636 DOI: 10.2519/jospt.2017.7434

Picavet, H.S.J., Vlaeyen, J.W.S. & Schouten, J.S.A.G., 2002. [Pain catastrophizing and kinesiophobia: Predictors of chronic low back pain](#). *American Journal of Epidemiology*, 156(11), pp.1028–1034.

Swinkels-Meewisse, I.E.J. et al., 2006. [Acute low back pain: Pain-related fear and pain catastrophizing influence physical performance and perceived disability](#). *Pain*, 120(1-2), pp.36–43

O'Sullivan PB, Caneiro JP, O'Keefe M, Smith A, Dankaerts W, Fersum K, O'Sullivan K (2018) [Cognitive functional therapy: An integrated behavioural approach for the targeted management of disabling low back pain](#). *Phys Ther*, 98(5): 408-423. doi: 10.1093/ptj/pzy022

O'Keefe M, O'Sullivan PB, O'Sullivan K [Education can 'change the world': Can clinical education change the trajectory of individuals with back pain?](#) *Br J Sports Med*, Published Online First: 08 February 2019. doi: 10.1136/bjsports-2018-100190

### **Infographic 3: Taking control of pain**

**Physical therapists work with people to help them take control of their pain using several tools including pain education, coping strategies, problem solving, pacing activities, sleep hygiene and relaxation.**

Chimenti RL, Frey-Law LA, Sluka KA. [A mechanism-based approach to physical therapist management of pain](#). *Phys Ther*. 2018;

Van Oosterwijck J, Meeus M, Paul L, et al. [Pain physiology education improves health status and endogenous pain inhibition in fibromyalgia: a double-blind randomized controlled trial](#). *Clin J Pain*. 2013;29:873–882.

Archer KR, Motzny N, Abraham CM, et al. [Cognitive-behavioral-based physio- cal therapy to improve surgical spine outcomes: a case series](#). *Phys Ther*. 2013;93:1130–1139.

**People with negative beliefs about their pain report higher levels of pain intensity and disability.**

Urquhart DM, Bell RJ, Cicuttini FM, Cui J, Forbes A, Davis SR. [Negative beliefs about low back pain are associated with high pain intensity and high level disability in community-based women](#). *BMC Musculoskelet Disord*. 2008;

Dahl J, Wilson KG, Nilsson A. [Acceptance and commitment therapy and the treatment of persons at risk for long-term disability resulting from stress and pain symptoms: A preliminary randomized trial](#). *Behav Ther*. 2004;

**People with positive beliefs of pain have attitudes that positively influence a prognosis.**

Wertli MM, Held U, Lis A, Campello M, Weiser S. [Both positive and negative beliefs are important in patients with spine pain: findings from the Occupational and Industrial Orthopaedic Center registry](#). *Spine J*. 2018;

Veehof MM, Oskam MJ, Schreurs KMG, Bohlmeijer ET. [Acceptance-based interventions for the treatment of chronic pain: A systematic review and meta-analysis](#). *Pain*. 2011;

Benedetti F, Thoen W, Blanchard C, Vighetti S, Arduino C. [Pain as a reward: Changing the meaning of pain from negative to positive co-activates opioid and cannabinoid systems](#). *Pain*. 2013;

Risdon A, Eccleston C, Crombez G, McCracken L. [How can we learn to live with pain? A Q-methodological analysis of the diverse understandings of acceptance of chronic pain.](#) *Soc Sci Med.* 2003;

**People with musculoskeletal pain often view their body as being a fragile or vulnerable structure which is easy to (re)injure.**

Darlow B, Dean S, Perry M, Mathieson F, Baxter GD, Dowell A. [Easy to harm, hard to heal: patient views about the back.](#) *Spine* 2015;40:842e50.

Stenberg G, Fjellman-Wiklund A, Ahlgren C. [‘I am afraid to make the damage worse - fear of engaging in physical activity among patients with neck or back pain - a gender perspective.](#) *Scand J Caring Sci* 2014;28:146e54.

Bunzli S, Smith A, Watkins R, Schutze R, O’Sullivan P. [What do people who score highly on the Tampa Scale of Kinesiophobia really believe? A mixed methods investigation in people with chronic non specific low back pain.](#) *Clin J Pain* 2015;31:621e32.

**People who attribute their pain to a structural cause are more likely to have higher levels of disability and poor recovery expectations.**

Darlow B, Dean S, Perry M, Mathieson F, Baxter GD, Dowell A. [Easy to harm, hard to heal: patient views about the back.](#) *Spine* 2015;40:842e50.

Bunzli S, Smith A, Watkins R, Schutze R, O’Sullivan P. [What do people who score highly on the Tampa Scale of Kinesiophobia really believe? A mixed methods investigation in people with chronic non specific low back pain.](#) *Clin J Pain* 2015;31:621e32.

Geisser M, Roth R. [Knowledge of and agreement with chronic pain diagnosis: relation to affective distress, pain beliefs and coping, pain intensity and disability.](#) *J Occup Rehabil.* 1998;8:73–88

Bunzli S, Watkins R, Smith A, Schutze R, O’Sullivan P. [Lives on hold: a qualitative synthesis exploring the experience of chronic low-back pain.](#) *Clin J Pain* 2013;29:907e16.

**Physical therapists will help you understand how pain is a built-in alarm system that with chronic pain is often too easily triggered.**

**They will help you reduce the fear attached to pain and explore long-term strategies to build confidence through engaging in avoided activities that are threatening or painful to regain control.**

Meeus JNM, Meeus M, Cagnie B, Roussel NA, Dolphens M, Van Oosterwijck J, et al. [A Modern Neuroscience Approach to Chronic Spinal Pain: Combining Pain Neuroscience Education With Cognition-Targeted Motor Control Training.](#) *Phys Ther.* 2014;94(5):730–8.

Gema BP, Enrique LG, Tomás GI, Virginia JP, Daniel PM. [Pain Neurophysiology Education and Therapeutic Exercise for Patients With Chronic Low Back Pain: A Single-Blind Randomized Controlled Trial.](#) *Arch Phys Med Rehabil.* 2017;

Watson JA, Ryan CG, Cooper L, Ellington D, Whittle R, Lavender M, et al. [Pain Neuroscience Education for Adults With Chronic Musculoskeletal Pain: A Mixed-Methods Systematic Review and Meta-Analysis.](#) *Journal of Pain.* 2019.

Wood L, Hendrick PA. [A systematic review and meta-analysis of pain neuroscience education for chronic low back pain: Short-and long-term outcomes of pain and disability.](#) *Eur J Pain.* 2019;23(2):234–49.

## Poster 1: Chronic pain

### Across the globe low back pain causes more disability than any other condition

[The global burden of low back pain: estimates from the Global Burden of Disease 2010 study](#)

Damian Hoy, Lyn March, Peter Brooks, Fiona Blyth, Anthony Woolf, Christopher Bain, Gail Williams, Emma Smith, Theo Vos, Jan Barendregt, Chris Murray, Roy Burstein, Rachele Buchbinder. *BMJ: Annals of the Rheumatic Diseases*, Volume 73, Issue 6

[The Lancet Series on low back pain](#)

### Only about 1-5% of low back pain is caused by serious disease or injury.

Maher C, Underwood M, Buchbinder R (2017) [Non-specific low back pain](#). *The Lancet*, 389(10070): 736-747. doi: 10.1016/S0140-6736(16)30970-9

### Developing the mobility and strength to bend and lift is important - many types of exercise, including weight training, can bring great benefits.

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Bjorn et al (2015) [Individualized Low-Load Motor Control Exercises and Education Versus a High-Load Lifting Exercise and Education to Improve Activity, Pain Intensity, and Physical Performance in Patients With Low Back Pain: A Randomized Controlled Trial](#); *Journal of Orthopaedic & Sports Physical Therapy*, Volume:45 Issue:2 Pages:77-85.

Pieber et al (2014) [Long-term effects of an outpatient rehabilitation program in patients with chronic recurrent low back pain](#); *Eur Spine J* 23:779–785.

Vincent et al (2014) [Resistance Exercise, Disability, and Pain Catastrophizing in Obese Adults with Back Pain](#); *Med Sci Sports Exerc*. 46(9): 1693–170.

Smith et al (2014) [An update of stabilisation exercises for low back pain: a systematic review with meta-analysis](#). *BMC Musculoskeletal Disorders* 15:416 DOI: 10.1186/1471-2474-15-4160

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[Beyond Opioids: How Physical Therapy Can Transform Pain Management to Improve Health](#) p6.

An American Physical Therapy Association White Paper, June 1, 2018

## **Poster 2: Chronic pain and exercise; and Flyer: Taking control of chronic pain**

**The following articles demonstrate the role of physical activity and physical therapy in chronic pain**

**Regular exercise programmes can have beneficial effects for people with chronic pain.**

Chimenti RL, Frey-Law LA, Sluka KA. [A mechanism-based approach to physical therapist management of pain.](#) *Phys Ther.* 2018;

Sluka KA, O'Donnell JM, Danielson J, Rasmussen LA. [Regular physical activity prevents development of chronic pain and activation of central neurons.](#) *J Appl Physiol (1985).* 2013;114:725– 733.

Grace P, Strand K, Galer E, et al. [Prior voluntary wheel running is protective for neuropathic-like pain.](#) *J Pain.* 2016;17(4 suppl):S90.

O'Connor, S. R., Tully, M. A., Ryan, B., Bleakley, C. M., Baxter, G. D., Bradley, J. M. McDonough, S. M. (2015). [Walking exercise for chronic musculoskeletal pain: Systematic review and meta-analysis.](#) *Archives of Physical Medicine and Rehabilitation,* 96(4), 724–734.e3. <https://doi.org/10.1016/j.apmr.2014.12.003>

Booth J, Moseley GL, Schiltenswolf M, Cashin A, Davies M, Hübscher M. [Exercise for chronic musculoskeletal pain: a biopsychosocial approach.](#) *Musculoskeletal Care.* 2017;15:413–421.

**Physical therapists should encourage physical activity in chronic pain conditions.**

Booth J, Moseley GL, Schiltenswolf M, Cashin A, Davies M, Hübscher M. [Exercise for chronic musculoskeletal pain: a biopsychosocial approach.](#) *Musculoskeletal Care.* 2017;15:413–421.

Chimenti RL, Frey-Law LA, Sluka KA. [A mechanism-based approach to physical therapist management of pain.](#) *Phys Ther.* 2018;

Daenen L, Varkey E, Kellmann M, Nijs J. [Exercise, not to exercise, or how to exercise in patients with chronic pain? Applying science to practice.](#) *Clin J Pain.* 2015;

Nijs J, Meeus M, Cagnie B, Roussel NA, Dolphens M, Van Oosterwijck J, et al. [A Modern Neuroscience Approach to Chronic Spinal Pain: Combining Pain Neuroscience Education With Cognition-Targeted Motor Control Training.](#) *Phys Ther.* 2014;

Nijs J, Roussel N, Paul van Wilgen C, Köke A, Smeets R. [Thinking beyond muscles and joints: Therapists' and patients' attitudes and beliefs regarding chronic musculoskeletal pain are key to applying effective treatment.](#) *Man Ther.* 2013;

**Physical therapists have unique skills to evaluate patient-specific movement dysfunction in chronic pain conditions.**

Chimenti RL, Frey-Law LA, Sluka KA. [A mechanism-based approach to physical therapist management of pain.](#) *Phys Ther.* 2018



### Postcard: Chronic pain and the opioid crisis

**Prescribing opioids for chronic pain conditions has been associated with a significant increase in opioid-related deaths, a high risk of dependency and addiction, and other side effects associated with long-term opioid use.**

[The Coalition for Safe and Effective Pain Management \(CSEPM\): Reducing the Role of Opioids in Pain Management, Final Report June 2019](#), p4

Deyo R, Von Korff M, Duhkoop D. [Opioids for low back pain](#). *BMJ*. 2015;350(jan05 10):g6380-g6380. doi:10.1136/bmj.g6380.

**An estimated 27 million people suffered from opioid use disorders in 2016.**

**The number of opioid overdoses has increased in recent years, in part due to the increased use of opioids in the management of chronic non-cancer pain.**

**In the United States of America alone in 2016, there were an estimated 63,632 deaths due to drug overdose, a 21% increase from previous years. This was largely due to a rise in deaths associated with prescription opioids.**

[https://www.who.int/substance\\_abuse/information-sheet/en/](https://www.who.int/substance_abuse/information-sheet/en/)

**Information on side 2 was taken from the paper below:**

[Beyond Opioids: How Physical Therapy Can Transform Pain Management to Improve Health](#). An American Physical Therapy Association White Paper, June 1, 2018

### Additional resources

<https://www.knowpain.co.uk/>

<https://noijam.com/>

<https://www.painscience.com/>

<https://bodyinmind.org/>

<http://www.iasp-pain.org/>