

Acute Musculoskeletal Protocol: Reducing Pain

Introduction

Acute pain (present for less than 3 months) can be medically managed through appropriate assessment, patient monitoring, and various integrative modalities, as outlined below.

Assessment

For musculoskeletal pain, history and physical exam, including:

1. Pain history: elements include the site, onset, distribution, quality, duration, temporal factors, intensity, aggravating and relieving factors, impact on daily living, associated symptoms, previous similar symptoms, and current and previous treatments.¹
2. Physical functioning and quality of life.
3. Emotional functioning:
 - a. Pain is now widely recognized to be a multi-factorial experience and should be understood as part of a biopsychosocial perspective. (See Distress and Risk Assessment Method [DRAM] intake below.)
4. Patient ratings of improvement or worsening of the pain.²
5. Define the involved structure using the following algorithm³:
 - a. Watch for referred pain patterns from deep spinal structures.
 - b. Use all necessary clinical skills and imaging.
 - c. Specify location of pain.
 - d. Define clinical process triggering the pain.
 - e. Name the problem: inflammation, degeneration, strain, sprain, etc.
 - f. Look for red flag clues for serious illness and yellow flag clues for psychosocial issues.
 - g. Develop a working diagnosis and management plan in conjunction with the patient.

General Recommendations

1. Monitor progress of patients using:
 - a. McGill Pain Questionnaire : <https://bit.ly/39BFsYh>
 - b. Oswestry Low Back Pain Disability Questionnaire: <https://bit.ly/3eWkm2Z>
 - c. Pittsburgh Sleep Quality Index (PSQI): <https://bit.ly/3hrlCQO>
 Sleep has been shown to influence both acute and chronic pain perception.⁴
 - d. Hamilton Depression Rating Scale: <https://bit.ly/39oBTEB>
 Depression has been shown to influence the transition from acute to chronic pain.⁵
 - e. DRAM: <https://rb.gy/klgi7f>

Specific Treatment Plan

Acute Pain	Mild	Moderate	Severe
Sprain/strain	<ul style="list-style-type: none"> • RICE • Dolor Ease™: 1 capsule BID <i>OR</i> Theracurmin® Pro-60: 1 capsule QD 	<ul style="list-style-type: none"> • RICE • Exercise-based rehabilitation and early mobilization associated with improved outcomes⁶ • Dolor Ease: 2 capsules BID <i>OR</i> Theracurmin 2X: 1 capsule QD • PEA: 1 capsule TID⁷ 	May require the use of prescription medications as part of the integrated protocol
Contusion	<ul style="list-style-type: none"> • RICE • Dolor Ease: 1 capsule BID <i>OR</i> Theracurmin Pro-60: 1 capsule QD 	<ul style="list-style-type: none"> • RICE • Dolor Ease: 2 capsules BID <i>OR</i> Theracurmin 2X: 1 capsule QD 	May require the use of prescription medications as part of the integrated protocol

<p>Myalgia</p>	<ul style="list-style-type: none"> • RICE • Dolor Ease: 1 capsule BID OR Theracurmin Pro-60: 1 capsule QD⁸ • Magnesium Bisglycinate: 200 mg BID with food^{9,10} 	<ul style="list-style-type: none"> • RICE • Dolor Ease: 2 capsules BID OR Theracurmin 2X: 1 capsule QD • Ubiquinol CoQ10 200 mg: 1 softgel QD^{11,12} • Mito AMP®: 2 capsules BID^{13,14} • Magnesium Bisglycinate: 200 mg BID with food^{9,10} • OptiMega-3®: 1 softgel BID with meals^{15,16} 	<p>May require the use of prescription medications as part of the integrated protocol</p>
<p>Arthralgia</p>	<ul style="list-style-type: none"> • RICE • Dolor Ease: 1 capsule BID OR Theracurmin Pro-60: 1 capsule QD • PEA: 1 capsule TID⁷ • NEM®: 1 capsule QD¹⁷ 	<ul style="list-style-type: none"> • RICE • Dolor Ease: 2 capsules BID OR Theracurmin 2X: 1 capsule QD • PEA: 1 capsule TID⁷ • NEM: 1 capsule QD¹⁷ • OptiMega-3: 1 softgel BID with meals¹⁸ 	<p>May require the use of prescription medications as part of the integrated protocol</p>

QD: daily; BID: two times per day; TID: three times per day; RICE: Rest, Ice, Compression, Elevation; PEA: Palmitoylethanolamide; NEM: natural eggshell membrane

Re-Assessment

Repeat clinical and laboratory measurements as indicated. Confirm progress with treatment or re-assess barriers to improvement, including possible red/yellow flags that did not present earlier.

REFERENCES:

1. Australian Acute Musculoskeletal Pain Guidelines Group. (2003). Evidence-based management of acute musculoskeletal pain. Retrieved from <http://cdha.nshealth.ca/system/files/sites/122/documents/based-management-acute-musculoskeletal-pain.pdf>
2. Salaffi, F., Ciapetti, A., & Carotti, M. (2012). Pain assessment strategies in patients with musculoskeletal conditions. *Reumatismo*, 64(4), 216-29.
3. Littlejohn, G.O. (2005). Musculoskeletal pain. *J R Coll Physicians Edinb*, 35, 340-4.
4. Lewandowski Holley, A., Rabbitts, J., Zhou, C., et al. (2017). Temporal daily associations among sleep and pain in treatment-seeking youth with acute musculoskeletal pain. *J Behav Med*, 40(4), 675-81.
5. Holley, A.L., Wilson, A.C., & Palermo, T.M. (2017). Predictors of the transition from acute to persistent musculoskeletal pain in children and adolescents: A prospective study. *Pain*, 158(5), 794-801.
6. Bleakley, C.M., Taylor, J.B., Dischiavi, S.L., et al. (2019). Rehabilitation exercises reduce reinjury post ankle sprain, but the content and parameters of an optimal exercise program have yet to be established: A systematic review and meta-analysis. *Arch Phys Med Rehabil*, 100(7), 1367-75.
7. Artukoglu, B.B., Beyer, C., Zuloff-Shani, A., et al. (2017). Efficacy of palmitoylethanolamide for pain: A meta-analysis. *Pain Physician*, 20(5), 353-62.
8. Nicol, L.M., Rowlands, D.S., Fazakerly, R., et al. (2015). Curcumin supplementation likely attenuates delayed onset muscle soreness (DOMS). *Eur J Appl Physiol*, 115(8), 1769-77.
9. Abbott, L.G., & Rude, R.K. (1993). Clinical manifestations of magnesium deficiency. *Miner Electrolyte Metab*, 19(4-5), 314-22.
10. Steward, C.J., Zhou, Y., Keane, G., et al. (2019). One week of magnesium supplementation lowers IL-6, muscle soreness and increases post-exercise blood glucose in response to downhill running. *Eur J Appl Physiol*, 119(11-12), 2617-27.
11. Diaz-Castro, J., Guisado, R., Kajarabille, N., et al. (2012). Coenzyme Q(10) supplementation ameliorates inflammatory signaling and oxidative stress associated with strenuous exercise. *Eur J Nutr*, 51(7), 791-9.
12. Sarmiento, A., Diaz-Castro, J., Pulido-Moran, M., et al. (2016). Short-term ubiquinol supplementation reduces oxidative stress associated with strenuous exercise in healthy adults: A randomized trial. *Biofactors*, 42(6), 612-22.
13. Giamberardino, M.A., Dragani, L., Valente, R., et al. (1996). Effects of prolonged L-carnitine administration on delayed muscle pain and CK release after eccentric effort. *Int J Sports Med*, 17(5), 320-4.
14. Memeo, A., & Loiero, M. (2008). Thioctic acid and acetyl-L-carnitine in the treatment of sciatic pain caused by a herniated disc: A randomized, double-blind, comparative study. *Clin Drug Investig*, 28(8), 495-500.
15. Jakeman, J.R., Lambrick, D.M., Wooley, B., et al. (2017). Effect of an acute dose of omega-3 fish oil following exercise-induced muscle damage. *Eur J Appl Physiol*, 117(3), 575-82.
16. Tsuchiya, Y., Yanagimoto, K., Ueda, H., et al. (2019). Supplementation of eicosapentaenoic acid-rich fish oil attenuates muscle stiffness after eccentric contractions of human elbow flexors. *J Int Soc Sports Nutr*, 16(1), 19.
17. Ruff, K.J., Morrison, D., Duncan, S.A., et al. (2018). Beneficial effects of natural eggshell membrane versus placebo in exercise-induced joint pain, stiffness, and cartilage turnover in healthy, postmenopausal women. *Clin Interv Aging*, 13, 285-95.
18. Hill, C.L., March, L.M., Aitken, D., et al. (2016). Fish oil in knee osteoarthritis: A randomised clinical trial of low dose versus high dose. *Ann Rheum Dis*, 75(1), 23-9.