The Benefits of Early Intervention and Integrated Care Delivery in Occupational Medicine

Michele Thompson, P.T.
Regional Therapy Director
Dr. Joy Hamilton
Regional Medical Director

Effective Management of Work-Related Musculoskeletal Disorders

- The goal of effective management of workrelated musculoskeletal disorders (WRMSDs):
- Prevent worker disability
- Improve worker morale and satisfaction
- Reduce healthcare costs



Effective Management of Work-Related Musculoskeletal Disorders

Employers have begun to search for more effective preventative services and healthcare delivery models to combat the effects of work-related MSDs:



Effective MSD Management

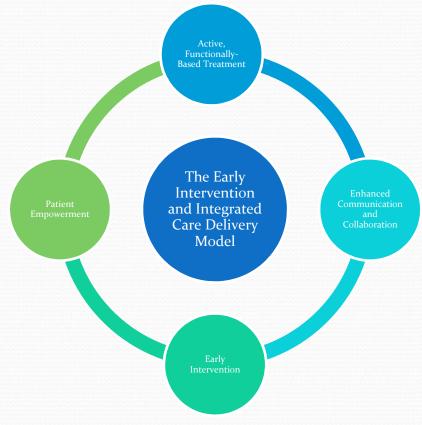
Effective

- Early physical and occupational therapy
- Active interventions that empower the worker to control his or her recovery²⁴
- Early return to regular or modified activity
- Patient education that focuses on reducing the fear of activity
- Enhanced communication and collaboration between healthcare practitioners

Ineffective

- Bed rest
- Opioids and other strong pain killers
- Passive treatments that focus solely on pain reduction instead of improving function
- Excessive use of imaging in cases without traumatic injuries
- Steroid use for chronic injuries

The Early Intervention and Integrated Care Model



Active, Functionally-Based Interventions

- Evidence supports using interventions that require the worker to participate in strengthening, conditioning, and neuromuscular activities that encourage functional recovery¹⁴
- While passive interventions like electrical modalities can be useful early in the course of care to facilitate active participation in therapy, they are not, in and of themselves, preferred components of rehabilitation^{30-31,33}



Benefits of Early Therapy

Improved outcomes **Reduced Case Costs Shorter Case Durations** Reduced Lost Time from Work **Decreased Litigation**

Reduced Imaging Reduced Injections Less Therapy Visits per Case Improved Quality of Life Measures Fewer Specialist Visits

Evidence

What does the evidence tell us about the Early Intervention and Integrated Care Delivery Model?

Conclusion

- Early referral to therapy, active, functionally-based intervention, patient empowerment, and enhanced communication between providers comprise the Early Intervention and Integrated Care Delivery Model
- By utilizing therapy to treat MSDs early in the course of care, outcomes, costs, and patient satisfaction can be improved more effectively than with a 'wait and see' approach.
- Active, functionally-based intervention can reduce deconditioning and fear-avoidance behavior in the injured worker
- Collaboration between the medical and therapy personnel is key to optimizing early referral to therapy

- 1. Bureau of Labor Standards: incidence and costs of MSD. http://www.bls.gov/news.release/osh2.nro.htm. Accessed February 6, 2013.
- 2. Hebert L. The Injured Worker. APTA Current Concepts Module. 2013 https://www.orthopt.org/store.php?USER_LEVEL=4&type=2
- 3. Centers for Disease Control and Prevention Website 2013
- 4. Katz JN. Lumbar disc disorders and low-back pain: socioeconomic factors and consequences [review]. *J Bone Joint Surg Am*. 2006;88(suppl 2): 21-24.
- 5. Bureau of Labor Statistics http://www.bls.gov/news.release/pdf/osh2.pdf
- 6. Kromer, T. O., de Bie, R. A., & Bastiaenen, C. H. (2014). Effectiveness of physiotherapy and costs in patients with clinical signs of shoulder impingement syndrome: One-year follow-up of a randomized controlled trial. *Journal of rehabilitation medicine*, 46(10), 1029-1036.
- 7. Deyle, Gail D., et al. "Physical therapy treatment effectiveness for osteoarthritis of the knee: a randomized comparison of supervised clinical exercise and manual therapy procedures versus a home exercise program." *Physical therapy* 85.12 (2005): 1301-1317.
- 8. van Middelkoop, Marienke, et al. "A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain." *European Spine Journal* 20.1 (2011): 19-39.

- 9. van Middelkoop, Marienke, et al. "Exercise therapy for chronic nonspecific low-back pain." Best Practice & Research Clinical Rheumatology 24.2 (2010): 193-204.
- 10. Cleland, Joshua A., et al. "Comparison of the effectiveness of three manual physical therapy techniques in a subgroup of patients with low back pain who satisfy a clinical prediction rule: a randomized clinical trial." *Spine* 34.25 (2009): 2720-2729.
- van der Wees, Philip J., et al. "Effectiveness of exercise therapy and manual mobilisation in acute ankle sprain and functional instability: A systematic review." *Australian Journal of Physiotherapy* 52.1 (2006): 27-37.
- 12. Keane GP, Saal JA: The sports medicine approach to occupational low back pain, In Rehabilitation Medicine-Adding Life to Years [Special Issue]. Western Journal of Medicine (1991) May; 154:525-527 Accessed from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1002819/
- 13. Fritz, J.M., George, S. Z., Identifying Psychosocial Variables in Patients With Acute Work-Related Low Back Pain: The Importance of Fear-Avoidance Beliefs. *PHYS THER*. 2002; 82:973-983.)
- 14. Wand B., et al. Early Intervention for the Management of Acute Low Back Pain: A Single-Blind Randomized Controlled Trial of Biopsychosocial Education, Manual Therapy, and Exercise. Spine 2004; 29: 2350-2356. Accessed from: http://journals.lww.com/spinejournal/Abstract/2004/11010/Early_Intervention_for_the_Management_of_Acute_Low.3.aspx
- 15. Saal, JA., Saal JS. "Nonoperative treatment of herniated lumbar intervertebral disc with radiculopathy: an outcome study." Spine 14.4 (1989): 431-437. Accessed from: http://www.ncbi.nlm.nih.gov/pubmed/2718047

- 16. Hides, J. A., Jull, G. A., & Richardson, C. A. (2001). Long-term effects of specific stabilizing exercises for first-episode low back pain. *Spine*, 26(11), e243-e248.
- 17. Keane, G. P., and J. A. Saal. "The sports medicine approach to occupational low back pain." Western Journal of Medicine 154.5 (1991): 525. Accessed from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1002819/
- 18. Zigenfus, Gary C., et al. "Effectiveness of early physical therapy in the treatment of acute low back musculoskeletal disorders." *Journal of Occupational and Environmental Medicine* 42.1 (2000): 35. http://journals.lww.com/joem/Abstract/2000/01000/Effectiveness of Early Physical Therapy in the.10.aspx
- 19. Vowles, K. E., & Gross, R. T. (2003). Work-related beliefs about injury and physical capability for work in individuals with chronic pain. *Pain*, 101(3), 291-298.
- 20. Ciccone, D. S., & Just, N. (2001). Pain expectancy and work disability in patients with acute and chronic pain: a test of the fear avoidance hypothesis. *The Journal of Pain*, 2(3), 181-194.
- 21. Hall, A. M., Ferreira, P. H., Maher, C. G., Latimer, J., & Ferreira, M. L. (2010). The influence of the therapist-patient relationship on treatment outcome in physical rehabilitation: a systematic review. Physical therapy.
- 22. Ferreira, P. H., Ferreira, M. L., Maher, C. G., Refshauge, K. M., Latimer, J., & Adams, R. D. (2013). The therapeutic alliance between clinicians and patients predicts outcome in chronic low back pain. Physical therapy, 93(4), 470-478.

- 23. Fuentes, J., Armijo-Olivo, S., Funabashi, M., Miciak, M., Dick, B., Warren, S., ... & Gross, D. P. (2014). Enhanced therapeutic alliance modulates pain intensity and muscle pain sensitivity in patients with chronic low back pain: an experimental controlled study. *Physical therapy*, 94(4), 477-489.
- 24. Hill, J. C., & Fritz, J. M. (2011). Psychosocial influences on low back pain, disability, and response to treatment. *Physical therapy*, *91*(5), 712-721.
- 25. Macedo, L. G., Smeets, R. J., Maher, C. G., Latimer, J., & McAuley, J. H. (2010). Graded activity and graded exposure for persistent nonspecific low back pain: a systematic review. *Physical Therapy*.
- 26. Vlaeyen, J. W., de Jong, J., Geilen, M., Heuts, P. H., & van Breukelen, G. (2001). Graded exposure in vivo in the treatment of pain-related fear: a replicated single-case experimental design in four patients with chronic low back pain. *Behaviour research and therapy*, 39(2), 151-166.
- 27. Linton, S. J., Overmeer, T., Janson, M., Vlaeyen, J. W., & De Jong, J. R. (2002). Graded in vivo exposure treatment for fear-avoidant pain patients with functional disability: A case study. *Cognitive Behaviour Therapy*, 31(2), 49-58.
- 28. Linz, D. H., Shepherd, C. D., Ford, L. F., Ringley, L. L., Klekamp, J., & Duncan, J. M. (2002). Effectiveness of occupational medicine center-based physical therapy. *Journal of occupational and environmental medicine*, 44(1), 48-53.
- 29. Baldwin ML & Butler RJ. (2006). Upper Extremity Disorders in the Workplace: Costs and Outcomes Beyond the First Return to Work. Journal of Occupational Rehabilitation. 16: 303-323.

- 30. Kankaanpää, M., Taimela, S., Airaksinen, O., & Hänninen, O. (1999). The Efficacy of Active Rehabilitation in Chronic Low Back Pain: Effect on Pain Intensity, Self-Experienced Disability, and Lumbar Fatigability. *Spine*, 24(10), 1034-1042
- 31. Ogilvie-Harris, D. J., & Gilbart, M. (1995). Treatment modalities for soft tissue injuries of the ankle: a critical review. *Clinical Journal of Sport Medicine*, 5(3), 175-186.
- 32. Eiff, M. P., Smith, A. T., & Smith, G. E. (1994). Early mobilization versus immobilization in the treatment of lateral ankle sprains. *The American journal of sports medicine*, 22(1), 83-88.
- 33. Stasinopoulos, D., & Stasinopoulos, I. (2004). Comparison of effects of exercise programme, pulsed ultrasound and transverse friction in the treatment of chronic patellar tendinopathy. *Clinical rehabilitation*, 18(4), 347-352.
- 34. Fritz J., et al. Primary care referral of patients with low back pain to physical therapy: impact on future healthcare utilization and costs. *Spine* May 18, 2012
- 35. Fuhrmans V. A Novel Plan Helps Hospital Wean Itself off Pricey Tests. *The Wall Street Journal*. January 12, 2007
- 36. Jones, M; Amendola, A. (2007) Acute Treatment of Inversion Ankle Sprains: Immobilization versus Functional Treatment. Clin Ortho & Relat Res. 455. 169-172
- 37. Gellhorn A., et al. Management Patterns in Acute Low Back Pain. Spine. 2012; 37:775-782.
- 38. Linz, D. H., Shepherd, C. D., Ford, L. F., Ringley, L. L., Klekamp, J., & Duncan, J. M. (2002). Effectiveness of occupational medicine center-based physical therapy. *Journal of occupational and environmental medicine*, 44(1), 48-53.