Return to work protocol after low back injury

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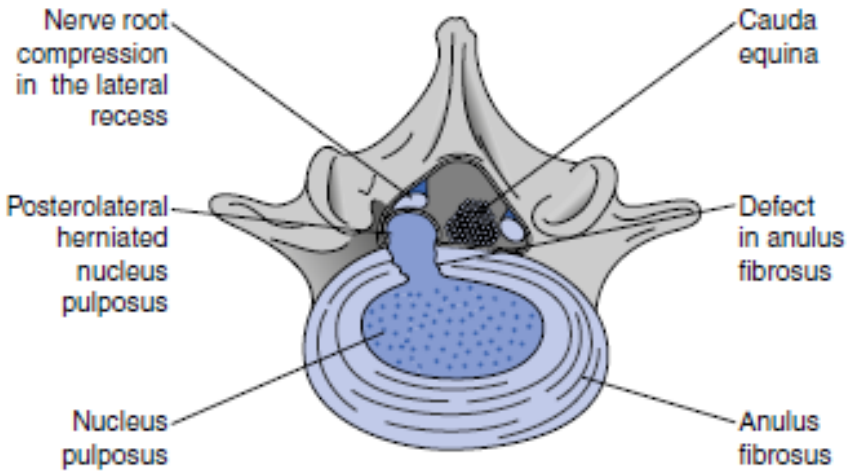
Protection for workers

- No fault system
- Unhindered access to necessary medical care
- Income protection
- Tort immunity for employers

Coverage under workers' compensation
What does workers' compensation cover after injury/illness
Necessary medical care
Temporary disability benefits (partial wage replacement)
Permanent partial or total disability (impairment)
Vocational rehabilitation
Survivor benefits (if death because of work-related causes)

Defining the injury

- Mechanical low back pain
- Radiculopathy/sciatica
- Chronic vs. acute
- Urgent surgical referral



Clinical assessment

- Comprehensive history
- Strength, reflexes, sensation
- Palpation, posture, ROM
- Identify neurologic sequelae (radicular symptoms)
- Assess function (gait/balance)

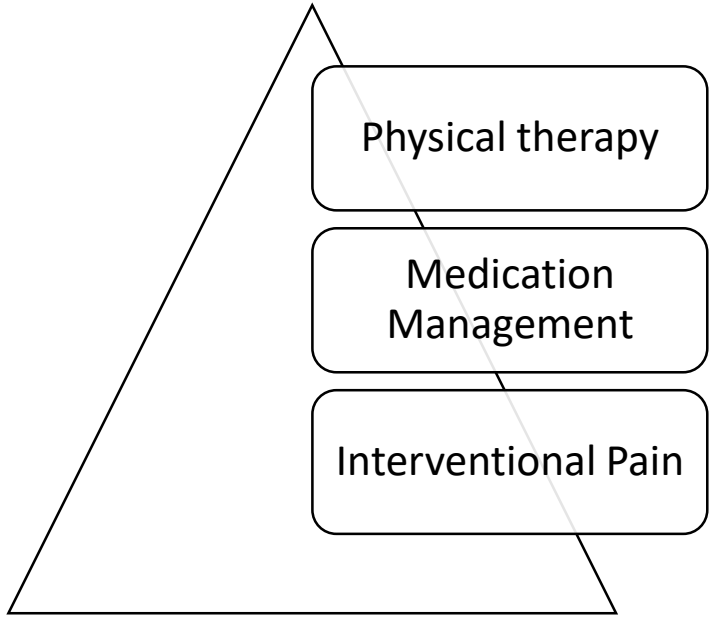
Diagnostic work-up

- Radiographic imaging
- CT/Magnetic resonance imaging (symptoms > 1 month)
- Electrodiagnostic testing
- Laboratory testing

Treatment plan

- Avoidance of bedrest
- Reassurance
- NSAID’s, muscle relaxants
- Physiotherapy
- Complementary alternative medicine?

Refractory symptoms: Injections, Surgery



Return to work

- Medical management
- Work status
- Duration of limitations
- Long term prognosis

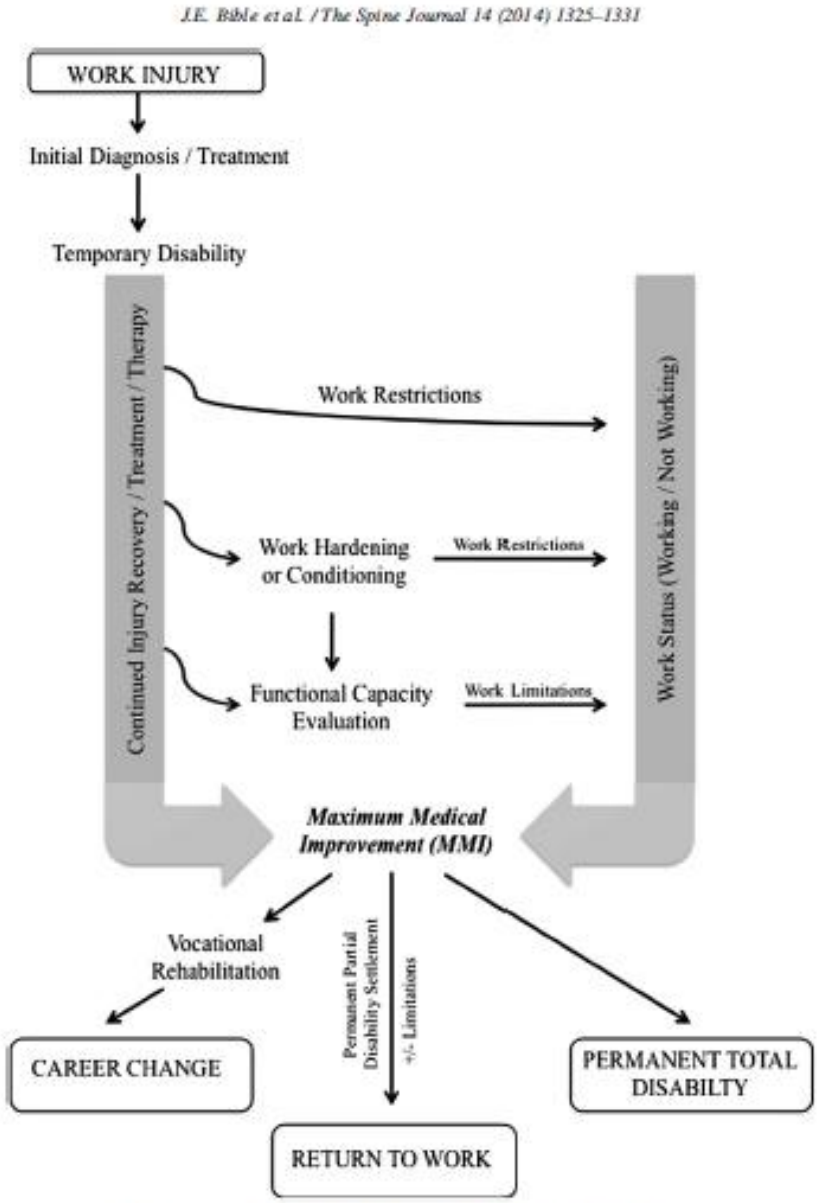


Figure. Outline of the general progression after work injury/condition.

Keys to standardizing a protocol

1. Establish Recovery Timeline
2. Implement appropriate risk stratification (i.e. work restrictions)
3. Incorporate conditioning programs, functional assessments
4. Address social and psychological factors

Work related back injury

- 36% of all work related injury diagnoses
- Median time off of work is 7 days
- 90% of all cases resolve by 6 weeks*
- 10% develop chronic LBP and disability
- 66-84% risk of recurrence within 1 year

Clinical prediction rules

Clin J Pain. 2018 Aug;34(8):748-754. doi: 10.1097/AJP.0000000000000591.

Lack of Prognostic Model Validation in Low Back Pain Prediction Studies: A Systematic Review.

McIntosh G[1], Steenstra I[2], Hogg-Johnson S[3,4,5], Carter T[1], Hall H[1].

RESULTS: None of the 21 studies provided validation for the predictors that they documented (neither internal or external validation). On the basis of the study designs and lack of validation, only 2 studies used the correct terminology for describing associations/relationships between independent and dependent variables.

DISCUSSION: Unless researchers and clinicians consider sophisticated and rigorous methods of statistical/external validity for prediction/prognostic findings they will make incorrect assumptions and draw invalid conclusions regarding treatment effects and outcomes. Without proper validation methods, studies that claim to present prediction models actually describe only traits or characteristics of the studied sample.

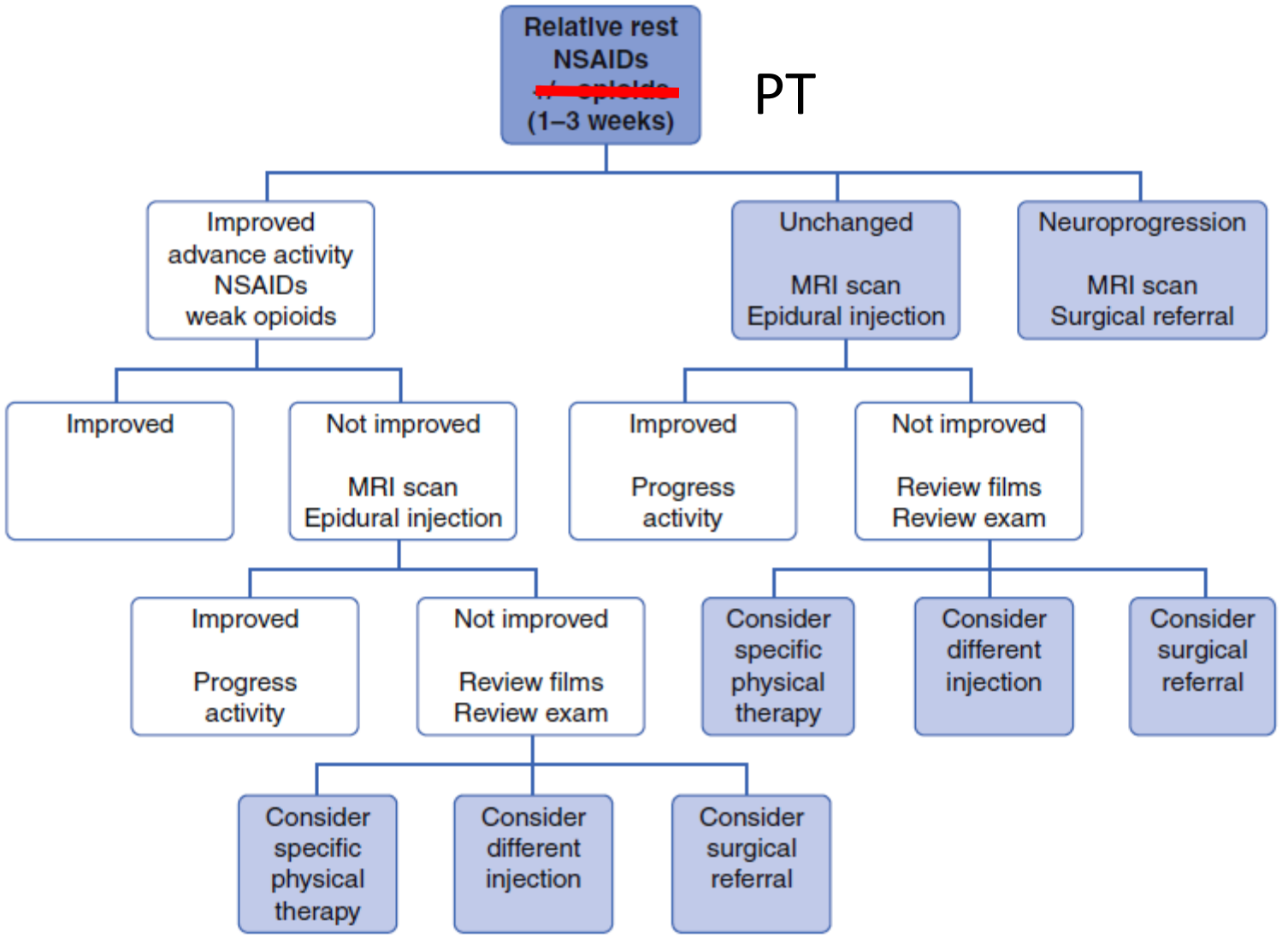
ACOP guidelines

4-6 weeks

3-6 months

6-12 months

> 1 year



Early Reassurance

J Occup Environ Med. 2001 Jun;43(6):515-25.

Doctor proactive communication, return-to-work recommendation, and duration of disability after a workers' compensation low back injury.

Dasinger LK[1], Krause N, Thompson PJ, Brand RJ, Rudolph L.

Author information

Abstract

Although doctors are increasingly evaluated on the basis of return-to-work (RTW) outcomes, the effect of doctor-patient communication about the workplace and RTW after an occupational injury has received little research attention. The effect of patient-reported doctor communication on duration of disability was examined retrospectively in a 3-year cohort of 325 claimants with a lost-time low back injury. Although doctor proactive communication was associated with a greater likelihood of RTW during the acute phase (< 30 days of disability), this effect disappeared when injury and workload characteristics were taken into account. A positive RTW recommendation was associated with about a 60% higher RTW rate during the subacute/chronic phase (> 30 days of disability) only. Prospective studies are needed to confirm this effect. The impact of physician communication on RTW is largely confounded by injury and workplace factors.

Early initiation of physiotherapy

J Orthop Sports Phys Ther. 2016 Feb;46(2):56-70. doi: 10.2519/jospt.2016.6138. Epub 2016 Jan 11.

Timing of Physical Therapy Initiation for Nonsurgical Management of Musculoskeletal Disorders and Effects on Patient Outcomes: A Systematic Review.

Ojha HA, Wyrsta NJ, Davenport TE, Egan WE, Gellhorn AC.

CONCLUSION: Although there were consistent results across studies favoring early physical therapy for decreased cost and medical utilization, quality was limited. Preliminary evidence suggests that early physical therapy may decrease cost without compromising outcomes. The primary limitation of the current research on this topic is in study design. Additional high-quality research involving prospective randomized designs and economic impact analyses is required to further investigate the outcomes associated with early initiation of physical therapy.

LEVEL OF EVIDENCE: Therapy, level 1a.

Unpredictable course

Neuromodulation. 2014 Oct;17 Suppl 2:3-10. doi: 10.1111/ner.12018.

Epidemiology of low back pain in adults.

Manchikanti L[1], Singh V, Falco FJ, Benyamin RM, Hirsch JA.

CONCLUSION: Although it has been alleged that low back pain resolves in approximately 80% to 90% of patients in about six weeks, irrespective of the administration or type of treatment, with only 5% to 10% of patients developing persistent back pain, this concept has been frequently questioned as the condition tends to relapse and most patients experience multiple episodes years after the initial attack.

Maximal medical improvement

- Chronic persistent symptoms
- Failure to improve despite further treatment
- Increased risk for disability
- Determination of impairment
- Determination of disability

Impairment

- Abnormality in physiologic structure or function
- Relates exclusively to medical diagnosis
- e.g. lumbar disc herniation

Disability

- May vary between individuals with similar impairments
- Non-medical factors +/- impairment
- Relates to functional ability
- e.g. inability to lift >20lbs. due to lumbar disc herniation

Predicting return to work

J Rehabil Med. 2005 Nov;37(6):365-71.

Predictors of return to work in patients sick listed for sub-acute low back pain: a 12-month follow-up study.

Storheim K[1], Brox JI, Holm I, Bø K.

CONCLUSION: The predictors identified in the present study may reflect personal risk factors in a patient who gets acute low back pain. On the other hand, they may support that fear of pain and injury may be more disabling than pain itself, and that deconditioning is a result of altered behaviour reflecting attitudes towards low back pain in society, and information and advice given in primary healthcare.

- 78.5% return to full-time at 12 weeks
- Pain and dysfunction typically not related to absenteeism
- Fear avoidance belief greatest risk factor for disability

- Accommodate treatment
- Maintain productivity
- Decrease isolation

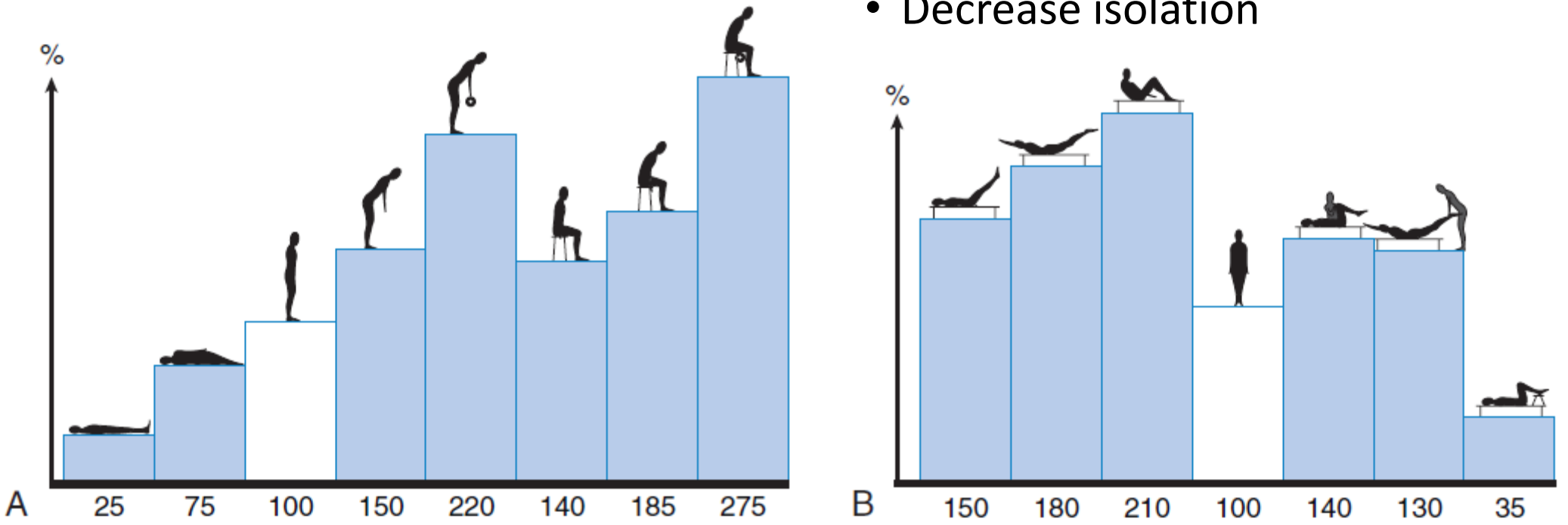


FIGURE 40-9 **A,** Relative change in pressure (or load) in the third lumbar disk in various positions in living subjects. **B,** Relative change in pressure (or load) in the third lumbar disk during various muscle-strengthening exercises in living subjects. Neutral erect posture is considered 100% in these figures; other positions and activities are calculated in relationship to this. (Modified from Nachemson AL, Waddell G, Norlund AI: Epidemiology of neck and low back pain. In Nachemson AL, Johnsson B, editors: *Neck and back pain: The scientific evidence of causes, diagnosis, and treatment,* Philadelphia, 2000, Lippincott Williams & Wilkins.)

Physical Demand	Occasionally	Frequently	Constantly
Sedentary duty	Lift or carry up to 10 lb	Negligible	Negligible
	Sit 6-8 hr	—	—
	Stand or walk 0-2 hr	—	—
Light duty	Lift or carry up to 20 lb	Up to 10 lb	Negligible
	Stand 4-8 hr	—	—
	Walk 0-4 hr	—	—
Medium duty	Lift or carry up to 50 lb	Up to 20 lb	Up to 10 lb
	Stand or walk 8 hr	—	—
Heavy duty	Lift or carry up to 100 lb	Up to 50 lb	Up to 20 lb
	Stand or walk 8 hr	—	—
Very heavy duty	Lift or carry over 100 lb	Over 50 lb	Over 20 lb
	Stand or walk 8 hr	—	—

Predicting activity tolerance

Arch Phys Med Rehabil. 2004 May;85(5):837-9.

Sitting and standing tolerance in patients with chronic back pain: comparison between physician prediction and covert observation.

Brokaw JP[1], Walker WC, Cifu DX, Gardner M.

RESULTS: Most (124/154, 80.5%) subjects stood for 30 minutes or more and most (124/154, 80.5%) sat for 60 minutes or more. Overall, physicians underpredicted the ability to sit 60 minutes or more and to stand 30 minutes or more. Physician prediction showed poor correlation to covert observation for sitting tolerance (kappa=-.061, P=.221) and standing tolerance (kappa=-.021, P=.727).

Table 2: Physician Prediction Compared With Covert Observation

	Correct Predictions (patients performed as predicted) (n)	Overestimations (patients performed worse than physician prediction) (n)	Underestimations (patients performed better than physician prediction) (n)	κ Value (strength of agreement)	*P* Value
Sitting tolerance	82	48	24	–.061	.221
Standing tolerance	93	38	23	–.021	.727

NOTE. Perfect correlation would demonstrate a κ value of 1; actual κ values approximated 0, showing virtually no correlation between physician prediction and covert observation.

Work conditioning

- Failed response to treatment and absenteeism
- +/- MMI
- Daily job task simulation program
- Controlled environment, 2-4 hrs., 3-5 x week

Work hardening

- Multidisciplinary approach
- On site implementation
- 8hrs., M-F
- Generally fixed duration

Role for conditioning programs

Cochrane Database Syst Rev. 2010 Jan 20;(1):CD001822. doi: 10.1002/14651858.CD001822.pub2.

Physical conditioning programs for improving work outcomes in workers with back pain.

Schaafsma F[1], Schonstein E, Whelan KM, Ulvestad E, Kenny DT, Verbeek JH.

AUTHORS' CONCLUSIONS: The effectiveness of physical conditioning programs in reducing sick leave when compared to usual care or than other exercises in workers with back pain remains uncertain. In workers with acute back pain, these programs probably have no effect on sick leave, but there may be a positive effect on sick leave for workers with subacute and chronic back pain. Workplace involvement might improve the outcome. Better understanding of the mechanism behind physical conditioning programs and return-to-work is needed to be able to develop more effective interventions.

Functional capacity evaluation

- Quantified physical ability test done by PT/OT
- Measures strength, flexibility, endurance
- Assist in defining work limitations
- Requires cooperation, subject to confounding
- Tolerance vs. ability

FCE validity

J Occup Environ Med. 2010 Jul;52(7):719-24. doi: 10.1097/JOM.0b013e3181e48d47.

The predictive validity of job-specific functional capacity evaluation on the employment status of patients with nonspecific low back pain.

Cheng AS[1], Cheng SW.

RESULTS: The correct prediction of employment status from an FCE pass rating was 79.8%; fail rating because of not meeting all the criteria of FCE tasks was 61.7%; and fail rating because of failing all FCE tasks was 68.4%.

CONCLUSIONS: Job-specific FCE shows a high level of predictive validity that could be used to evaluate the employment status of patients with nonspecific chronic LBP.

Independent Medical Evaluation

- Secondary evaluation of a complex medical case
- Causation, MMI, prognosis
- Assist with case closure

Daubert Standard

Inter-rater reliability between providers

Int J Occup Environ Health. 2004 Jan-Mar;10(1):1-12.

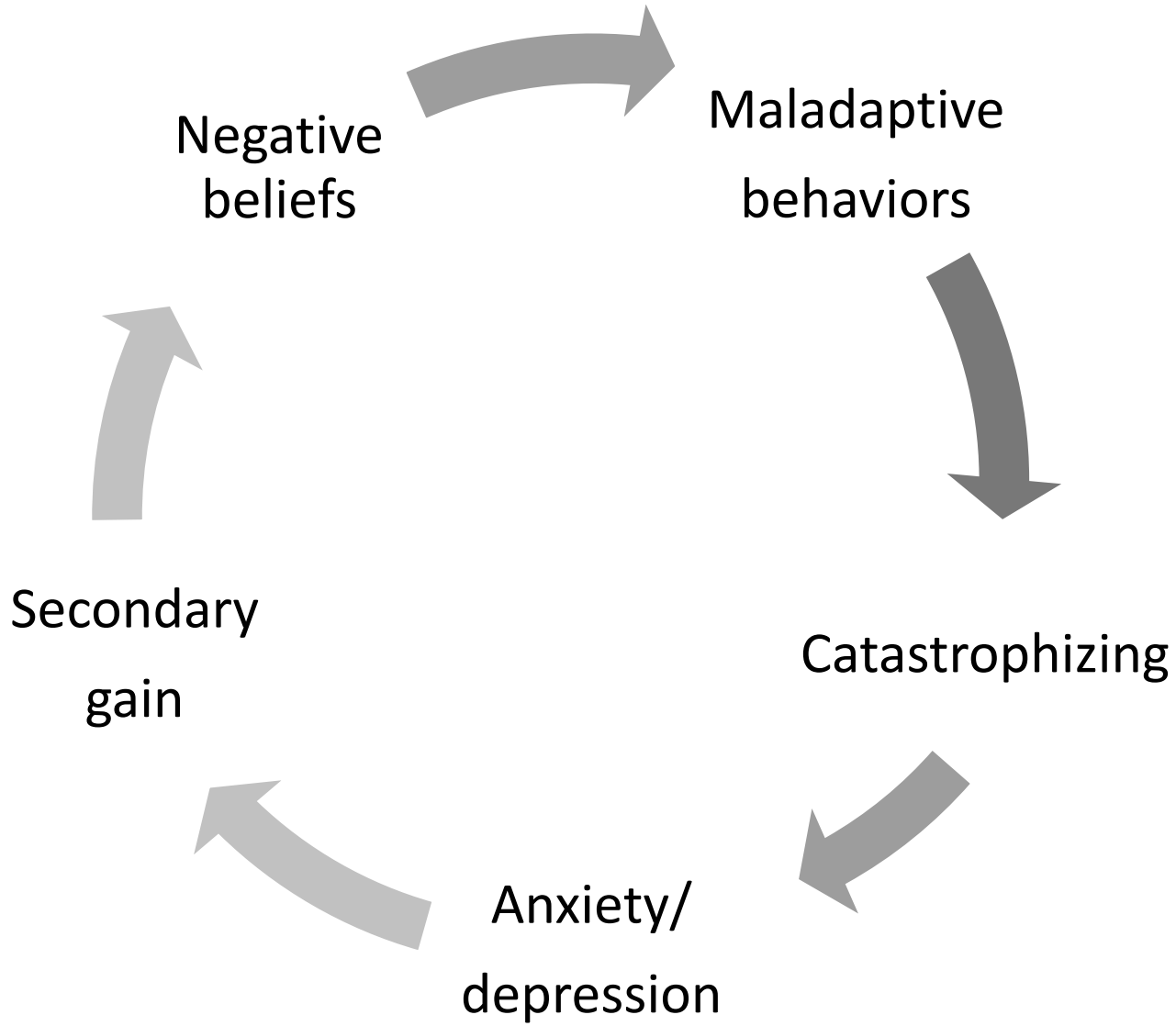
Medical evaluation of work-related illness: evaluations by a treating occupational medicine specialist and by independent medical examiners compared.

Lax MB[1], Manetti FA, Klein RA.

Author information

Abstract

Treating physicians' and independent medical examiners' (IMEs') opinions were compared to identify differences of opinion and to develop a basis for understanding the differences. Twenty-three patients of an occupational health center (OHC) who had been examined by an IME were studied. OHC and IME opinions regarding diagnosis, work-relatedness, treatment recommendations, and disability assessment were categorized by degree of agreement. There was agreement on all four issues for only one patient. Opinions were most divergent with regard to disability assessment and least divergent with regard to diagnosis. Disagreement was unidirectional: the IMEs made fewer diagnoses, deemed fewer illnesses work-related, made fewer treatment recommendations, and assessed lower levels of disability than the OHC examiners. The results suggest that differences in opinion between the OHC and IMEs are due to differences in perspective, rather than skill or training.


Maladaptive behaviors
Catastrophizing
Anxiety/ depression
Secondary gain
Negative beliefs

Fear avoidance behaviors

Pain Med. 2001 Dec;2(4):259-66.

Fear-avoidance behavior and anticipation of pain in patients with chronic low back pain: a randomized controlled study.

Pfingsten M[1], Leibing E, Harter W, Kröner-Herwig B, Hempel D, Kronshage U, Hildebrandt J.

- Control group: “movement will not influence your back pain”
- Experiment group: “movement may lead to an short duration increase of your low back pain”

CONCLUSIONS: Results confirm that pain anticipation and fear-avoidance beliefs significantly influence the behavior of patients with low back pain in that they motivate avoidance behavior. Therapists must be aware of the powerful effects of cognitive processes, which can give rise to fear of pain and, consequently, avoidance behavior.

Secondary gain

- Difficult to assess on exam
- Inherent bias for medical practitioners and employers
- More prevalent in chronic vs. acute pain
- Strong correlation with job dissatisfaction
- Low income, low socioeconomic status

Waddell signs

1. Tenderness: superficial skin, non-anatomic deep structures
2. Simulation: axial load provokes LBP
3. Distraction: SLR seated and supine
4. Regional: give-way weakness, non-dermatomal sensory loss
5. Over-reaction: disproportionate pain behavior

3/5 positive = suspect non-organic pain

Reliability of WS

Pain Med. 2003 Jun;4(2):141-81.

A structured evidence-based review on the meaning of nonorganic physical signs: Waddell signs.

Fishbain DA[1], Cole B, Cutler RB, Lewis J, Rosomoff HL, Rosomoff RS.

CONCLUSIONS: Based on the above results, the following conclusions were made: 1) WSs do not correlate with psychological distress; 2) WSs do not discriminate organic from nonorganic problems; 3) WSs may represent an organic phenomenon; 4) WSs are associated with poorer treatment outcome; 5) WSs are associated with greater pain levels; 6) WSs are not associated with secondary gain; and 7) As a group, WS studies demonstrate some methodological problems.

Cognitive behavioral therapy

Eur J Pain. 2013 Jul;17(6):916-28. doi: 10.1002/j.1532-2149.2012.00252.x. Epub 2012 Dec 4.

Efficacy of classification-based cognitive functional therapy in patients with non-specific chronic low back pain: a randomized controlled trial.

Vibe Fersum K[1], O'Sullivan P, Skouen JS, Smith A, Kvåle A.

- Small % of referrals
- Patient centered program
- Better efficacy for chronic low back pain

CONCLUSIONS: The classification-based cognitive functional therapy produced superior outcomes for non-specific chronic low back pain compared with traditional manual therapy and exercise.

Proposed algorithm

- Optimize medical management
- Establish recovery timeline
- Initiate return to work plan with appropriate limits
- Consider psych eval and CBT for chronic refractory pain
- Consider IME when appropriate
- Refer for conditioning, FCE for objectivity

Thank you

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