Standardizing a return to work protocol for back injuries in the workplace

Brian Clay, M.D.

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Move better. Live better.

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)

Physician's role

Accurately diagnose, develop appropriate treatment plan

Establish restriction, capacity, timeline for return to work

Rely on clinical judgement in determining prognosis, future employability
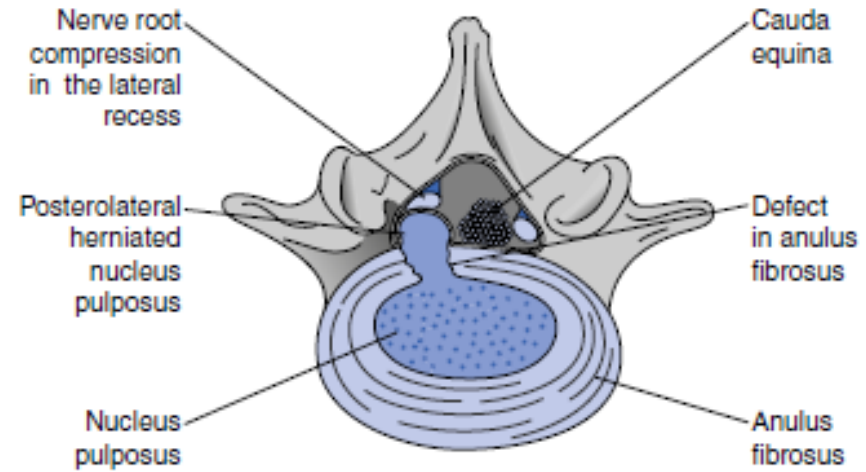
Advocate for the patient

Defining the injury

Mechanical low back pain

Radiculopathy/sciatica

Chronic vs. acute

Urgent surgical referral
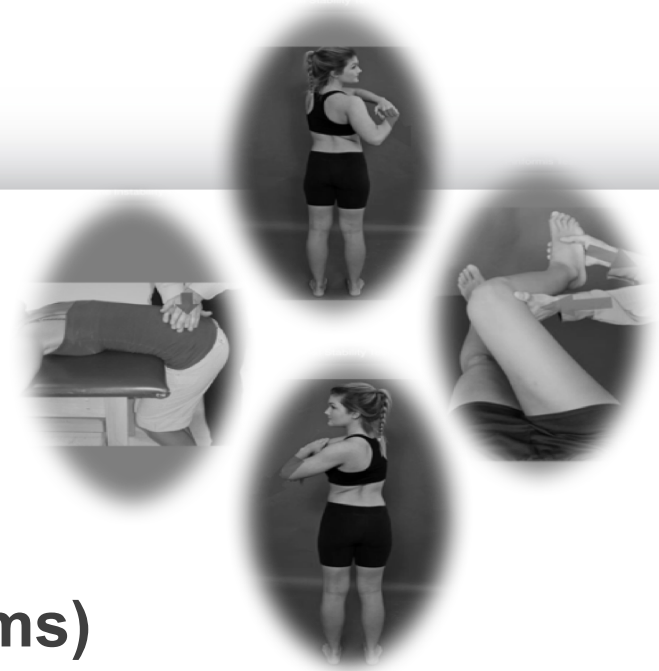
Clinical assessment

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

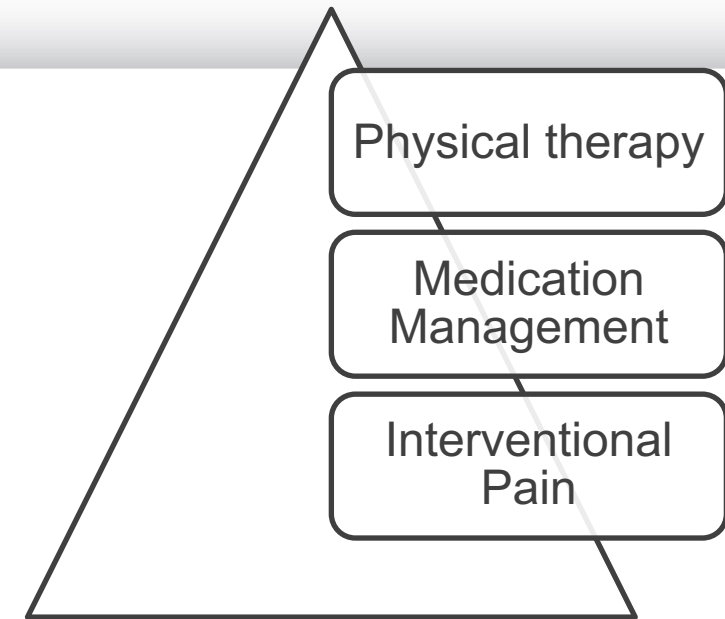**Avoidance of bedrest**

Reassurance

NSAID's, muscle relaxants

Physiotherapy

Complementary alternative medicine?

Refractory symptoms: Injections, Surgery

Physical therapy

Medication Management

Interventional Pain

Return to work

Medical management

Work status

Duration of limitations

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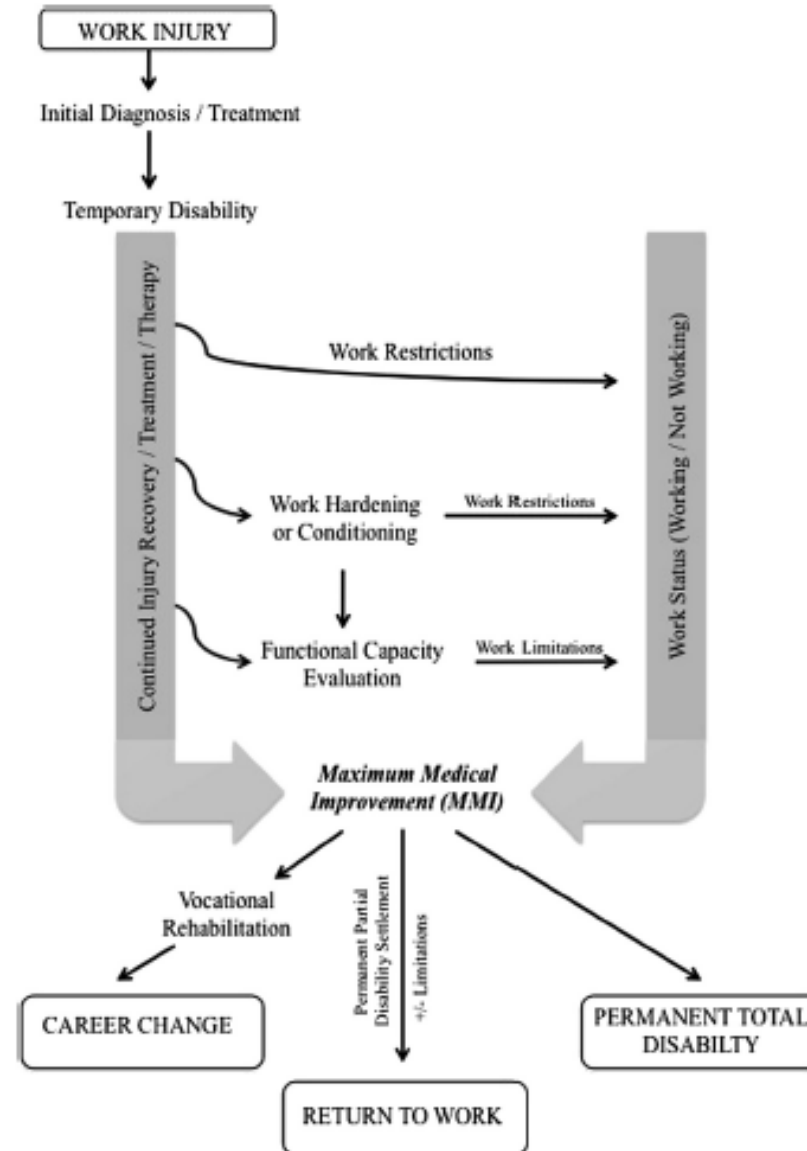
Figure. Outline of the general progression after work injury/condition.

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

Establishing a timeline

Work related back injury

36% of all work 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 tools

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.

Practice model
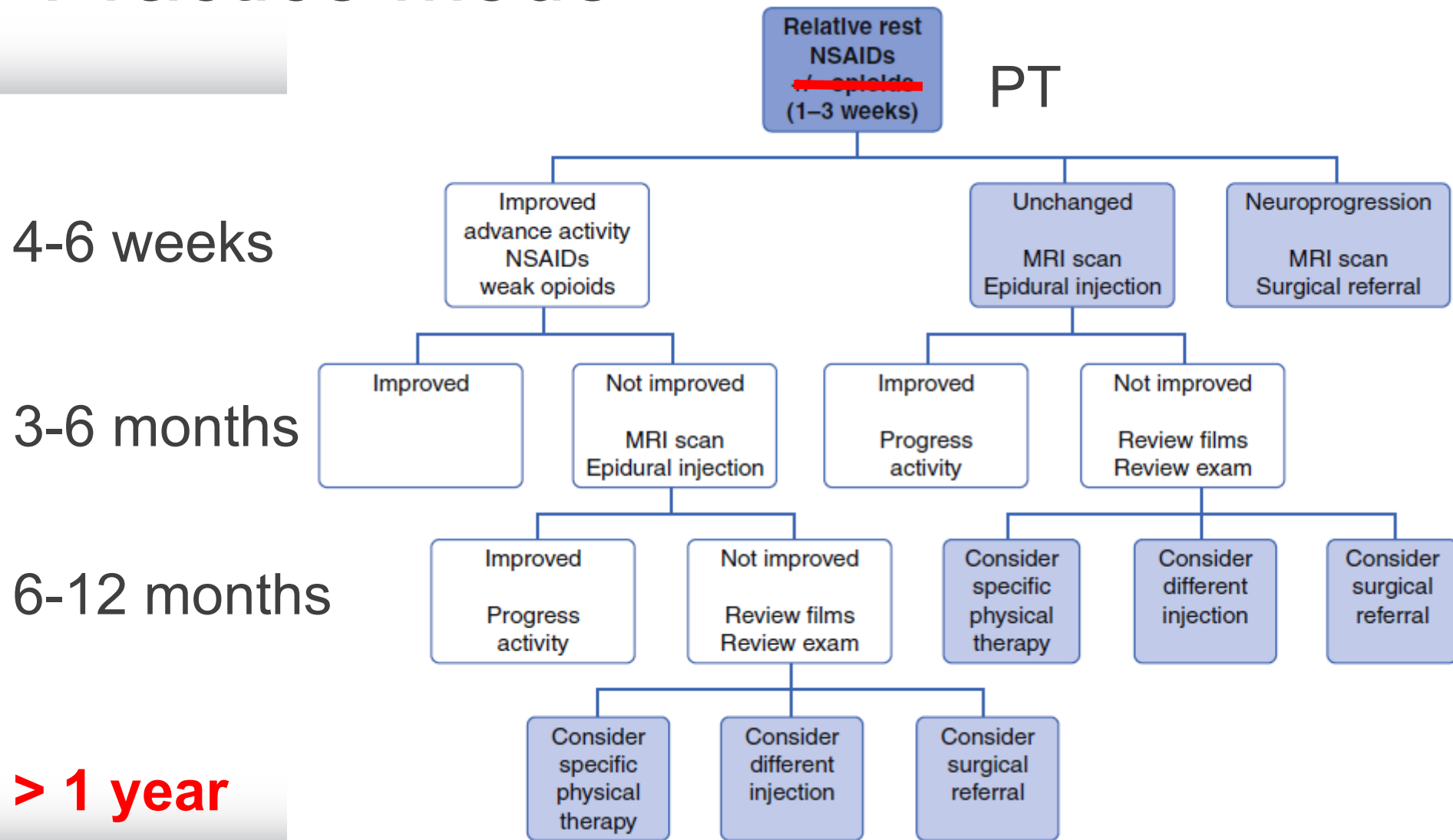
4-6 weeks

3-6 months

6-12 months

> 1 year

Unpredictable course

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

> 12 months of 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

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Risk stratification

- Accommodate treatment
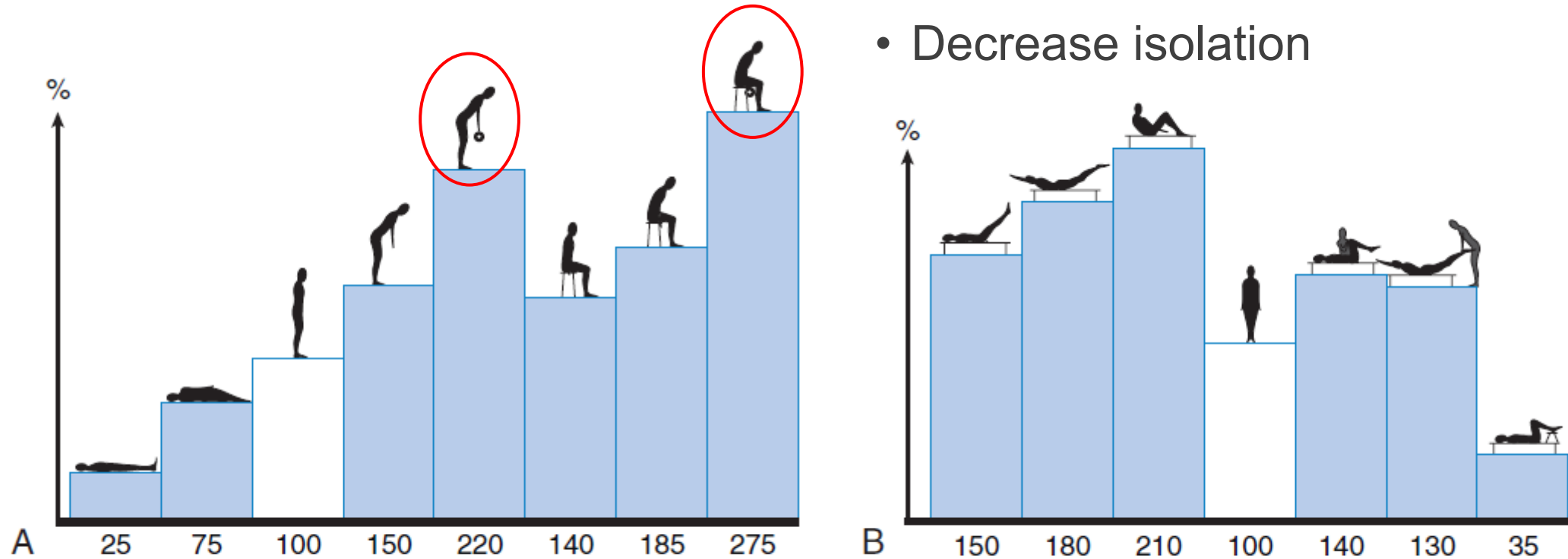- Maintain productivity
- Decrease isolation

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.)

Modified duty recommendations

Check one	LEVEL:	WEIGHT LIFTED	FREQUENCY OF LIFT	WALK/CARRY
	A. sedentary	10 lbs. or less	Infrequent	Limited
	B. Light	20 lbs. or 10 lbs. or less	Infrequent Frequent	2.5 mph (light pace) 10 lbs. or less
	C. Medium (regular duties)	50 lbs. 25 lbs. or less	Infrequent Frequent	3.5 mph (medium pace) 25 lbs. or less

Predicting return to work

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

Fear avoidance belief greatest risk factor for disability

Predicting activity tolerance

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.

Conditioning programs

Work conditioning

Work hardening

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

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

Role for conditioning programs

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

The predictive validity of job-specific functional capacity evaluation on the employment status of patients with nonspecific low back pain.
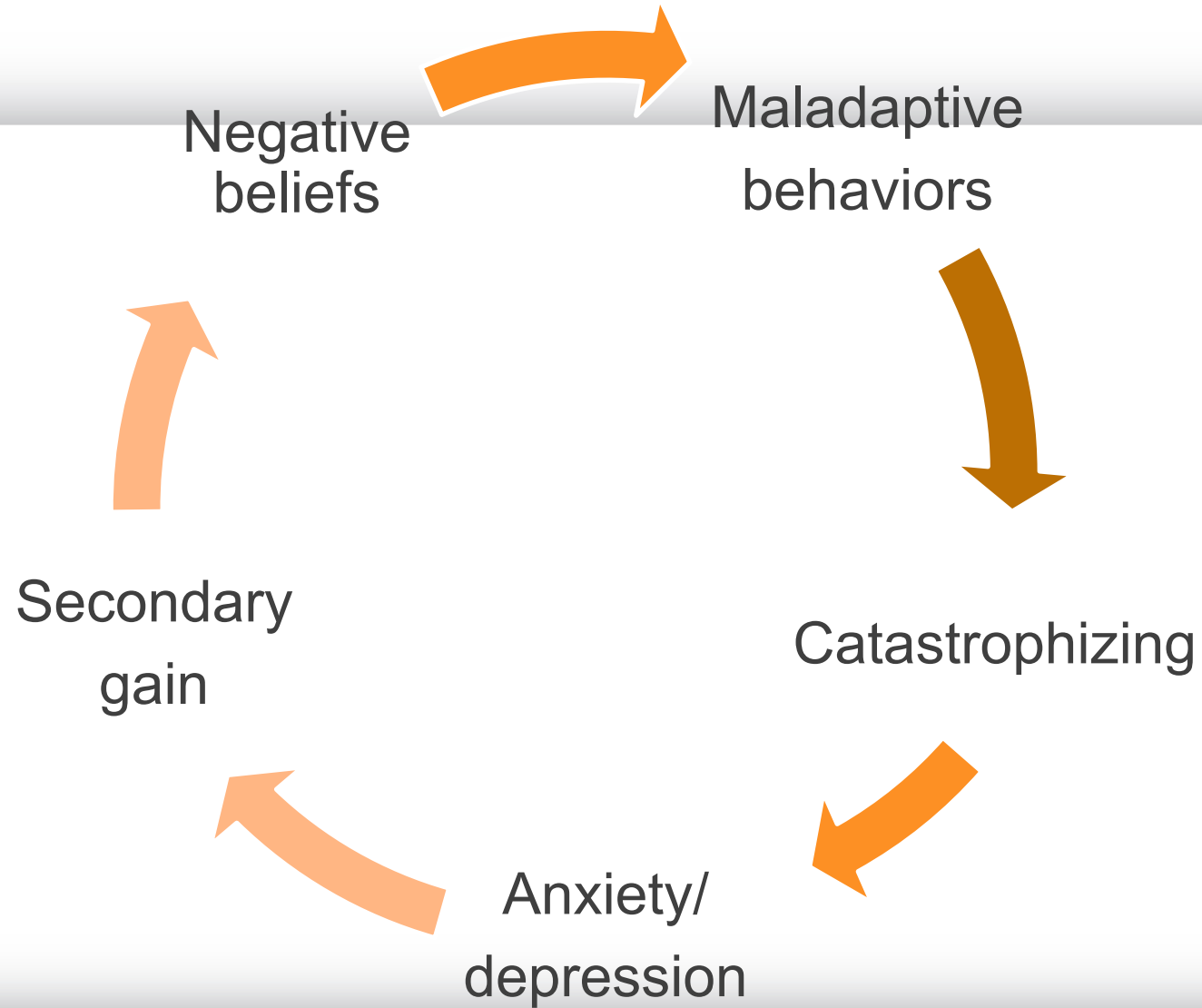
Cheng AS[1], Cheng SW.

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.

Social and psychosocial factors

Negative beliefs → Maladaptive behaviors → Catastrophizing → Anxiety/depression → Secondary gain → Negative beliefs

Fear avoidance behaviors

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

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

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.

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 protocol summary

Optimize medical management

Establish recovery timeline

Initiate return to work plan with appropriate limits

Consider psych eval and CBT for chronic refractory pain

Refer for conditioning, FCE for objectivity

Thank you