Recognizing & Treating Early Chronic Pain Disorder in the Injured or Ill Worker

Webinar, May 13, 2014
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INTRODUCTION
Speaker introduction

• Medical Director of the Functional & Pain Program at Altum Health for 12 years
• Occupational Medical Consultant to various industries in the Greater Toronto area
• No conflict of interest noted
• Working with injured individuals at various times post injury or illness
Training & Experience

• MD, FCFP, MSc(A), FCBOM

• Occupational Medical Consultant:
  – City of Toronto
  – Baycrest Centre for Geriatrics
  – Canadian Blood Services
  – Kinectrics (Engineering)
  – AMEC NSS (Nuclear Engineering)
  – TevaCanada (generic pharmaceuticals)
• Division of University Health Network in Toronto Canada
• Self funding outside of the Canada Health Act
  – WSIB, motor vehicle insurance claims
  – Veterans Affairs
  – International Medical Projects
  – All “profit” generated is put back into the University Health Network operating budget
• Approximately 150 employees including MD’s, Phd’s, OT’s, PT’s, Kins, CBT’s, admin & support services
• 7 locations in Ontario with Head office at University Health Network, Toronto Western Hospital site
• Houses 8 WSIB specialty programs in addition to providing assessment services, IME’s and international medical programming
• Providing care to the injured client who has been deemed to be complex
• Due to the nature of the injury itself or the interplay of psychosocial factors not easily treated in the community at large
• Established in 1989
WEBINAR OBJECTIVES
Webinar objectives

1. Understand the diagnostic differences between chronic pain & Chronic Pain Disorder (CPD) re: DSM IV
   • Somatic System Disorder (DSM V)
2. Recognize early signs of CPD
3. Appreciate the need for early intervention and on site support to prevent CPD
CHRONIC PAIN

VS

CHRONIC PAIN DISORDER
Chronic Pain vs CPD

**Chronic Pain**
- Pain that persists for longer than the usually healing time
- Usually 6 months
- Function change is minimal
- Sleep is difficult but improves with time
- Occasional use of analgesics
- Coping seems strong
- Working with increasing hours & duties

**CPD**
- Pain that persists for longer than the usually healing time
- Usually 6 months
- Functional change is profound
- Sleep is broken and not restorative
- Use of narcotic analgesic often
- Coping poorly
- Working difficult if at all
Chronic Pain

- Chronic pain is persistent often felt to be peripheral disorder of the damaged tissue
- Responds to heat or ice with a lessening of the sensation
- Does not interrupt the lifestyle or expectation of the individual to a significant degree
- May be after a simple or devastating accident
Chronic Pain Disorder

• New term: Somatic System Disorder with predominant pain (DSM 5)
• Overwhelming change in the sensory system that locks in the pain centrally
• Pain is now triggered by normal touch & normal movement
• Does not indicate continuing tissue damage but rather a change in the messaging centrally
Chronic Pain Disorder

- Illness behaviours follow with catastrophic thinking, fear of movement, fear of re-injury & anger or withdrawal
- Depression often a comorbidity
- Negative coping skills are evident
  - Drug & alcohol use to handle the pain/to promote sleep
  - Poor sleep pattern results
  - Externalizing the problem & the treatment solutions
PAIN THEORIES
THE GATE THEORY
GATE THEORY
Melzack & Wall 1962
SENSORY STIMULUS
PAIN STIMULUS

Small Nerve Fiber Input = Gate Open

- S: Small Nerve Fibers
- L: Large Nerve Fibers
- i: Inhibitory Neuron
- P: Projection Cells
THE NEUROMATRIX
The Neuromatrix

R. Melzack, K.L. Casey, J. Katz 1968
In Action

Chapter 1—A Conceptual Framework for Understanding Pain in the Human

Inputs to Body-Self Neuromatrix from:
- Cognitive-Related Brain Areas: Memories of past experience, attention, meaning, and anxiety
- Sensory Signalling Systems: Cutaneous, visceral, and musculoskeletal inputs
- Emotion-Related Brain Areas: Limbic system and associated homeostatic/stress mechanisms

Outputs to Brain Areas that Produce:
- Pain Perception: Sensory, affective, and cognitive dimensions
- Action Programs: Involuntary and voluntary action patterns
- Stress-Regulation Programs: Cortisol, noradrenaline, and endorphin levels; Immune system activity

Fig. 1.3 Factors that contribute to the patterns of activity generated by the body-self neuromatrix, which is composed of sensory, affective, and cognitive neuromodules. The output patterns from the neuromatrix produce the multiple dimensions of pain experience, as well as concurrent homeostatic and behavioral responses. (From Melzack R: Pain and the neuromatrix in the brain, J Dent Educ 65:1378–1382, 2001.)
Chapter 1—A Conceptual Framework for Understanding Pain in the Human

Fig. 1.3 Factors that contribute to the patterns of activity generated by the body-self neuromatrix, which is composed of sensory, affective, and cognitive neuromodules. The output patterns from the neuromatrix produce the multiple dimensions of pain experience, as well as concurrent homeostatic and behavioral responses. (From Melzack R: Pain and the neuromatrix in the brain, J Dent Educ 65:1378–1382, 2001.)
STIMULATION OF DESCENDING MODULATION

Fig. 1.3 Factors that contribute to the patterns of activity generated by the body-self neuromatrix, which is composed of sensory, affective, and cognitive neuromodules. The output patterns from the neuromatrix produce the multiple dimensions of pain experience, as well as concurrent homeostatic and behavioral responses. (From Melzack R: Pain and the neuromatrix in the brain, J Dent Educ 65:1378–1382, 2001.)
CLINICAL OR REAL WORLD PRESENTATION
Yellow Flags indicate psychosocial barriers

They include:

• Belief that pain and activity are harmful
• ‘Sickness behaviours’ (like extended rest)
• Low or negative moods, social withdrawal
• Treatment that does not fit best practice
• Problems with claim and compensation
• History of back pain, time-off, other claims
• Problems at work, poor job satisfaction
• Heavy work, unsociable hours
• Overprotective family or lack of support
Belief that pain and activity are harmful

• Leads to excessive rest
• Sedentary lifestyle ensues
• Area of injury tightens
• Movement of the limb is limited and pain increases
• Excessive sympathetic/parasympathetic drive
• Allodynia, hyperaesthesia
Sickness behaviours

• Takes on the ‘sick role’ - catastrophizes
• Needs excessive help with day-to-day tasks
• Upper extremity: inability to grasp, lift or use limb, uses splints for wrist
• Lower limb: limits walking, uses cane with odd gait
• Stops engaging in exercise
• Reports pain levels greater than 10/10
Low or negative moods, social withdrawal

- Commonly associated with depression
- Irritability high
- Anxiety and heightened awareness of body
- Feels out of control
- Feels useless
- Antidepressants often used but reported to have little effect
Treatment that does not fit best practice

- May note a history of treatment that is not highly recommended by evidence
- Initial restriction of walking and excessive rest
- Trigger point injections that are prolonged
- High dose narcotics (>200 mg of Morphine Equivalent)
- Encouraged to stop movement with any pain
- Expects the problem to be fixed
Problems with claim and compensation

- Entitlement focused
- Angry with insurance and employer
- Externalizes problem and solution
- Blames employer for injury
- Financially better off to remain at home
- Reports poor claim management
- History of previous extended time off
Problems at work, poor job satisfaction

- Manual work, heavy
- Belief that work is harmful
- Little modification of job tasks available
- Feels workplace does not care
- History of poor attendance prior to injury
- History of interpersonal difficulties at work
- Poor recent job performance appraisal
- Presence of shift work
Overprotective family or lack of support

• Spouse too helpful
• Spouse angry with worker at home and not fielding full income or overtime pay
• No family, living alone
• Spouse fueling negative attitude to the workplace
TREATMENT
Treatment

- Easier in the early stages
- Very complex (and expensive) if left to “get better”
- Is there work to return to?
- Is there modified duty?
What can the treating practitioner do? (in the acute to subacute time)

• Be positive very early post injury stating that this is not a serious problem (wrt strain sprain)
• Recovery is the usual scenario.
• Ask about function rather than pain.
• Keep the individual active and at work doing something as early as possible.
• Acknowledge difficulties but advise to continue functional activity more slowly.
What can the treating practitioner do? continued

• Be alert for the message that being off work is needed until “fixed”.
• Promote self management & self efficacy.
• Be alert for increase in emotional distress vs new symptoms.
• Avoid suggestion of working from home.
• Encourage alternative activities eg swim, cycle vs run or competitive sport in the early stages.
….and finally

- Communicate: extending time off work reduces the likelihood of a successful return to work.
- Suggest to employer modifications to the job
- Suggest different job same employer
- Suggest at work therapist for job coaching as acute pain subsides.
- There is little upside to staying home indefinitely.
Management
(after 6 months)

• Often inadvertent development of CPD
• Inherited from another FD
• Picked up from the emergency department
• Relative of a long time patient
• Manage the treatment from the first visit
• Or simply, you dropped the ball
Six months plus post injury

• High opioids are not indicated, tapering is needed.
• Mood must be stabilized
• Sleep must be analyzed and treated with appropriate pharmaceuticals and non drug treatments
• Cognitive therapy in a team approach optimal
Function & Pain Program

• Interdisciplinary program lasting 30 sessions
• Assessed and treated in an individual approach
• Team consists of a cognitive behavioural therapist, physician, occupational therapist, psychologist and kinesiologist
• Activation with cognitive reframing
RESEARCH
Predicting return to work following treatment of Chronic Pain Disorder

Dr. Howard Hamer, Dr. Rajiv Gandhi, Sandra Wong, Amelie Yak & Dr. Nizar Mahomed
Chronic Pain

- Ontario 2009 – accepted Time-Loss injuries 64,824.

- Chronic pain involves psychological, behavioral and physiological mechanisms.
Biopsychosocial Model

• Leads to a faster RTW and improved quality of life.

• Primary objective - describe the patient level predictors for a successful RTW at 3 months.
Study Sample

- January 2009 - March 2011
  Altum Health CPD program

- 1002 injured workers

- 55% being male at a mean age of 46 years.

- Treatment program:
  30-sessions 6 weeks.
Data and Analysis

• Demographic data
  – Time from injury
  – Comorbidity
  – Work sector

• RTW, our primary outcome, was assessed at 3 months post-discharge

• Descriptive statistics and logistic regression were used to identify those factors predicting a successful RTW
Return-to-work (RTW) rates stratified by time since injury

- < 15 months: 21%
- 15 - 36 months: 12%
- 36+ months: 8%
## Predictors of return-to-work (RTW)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>P-value</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
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<tr>
<td>Female</td>
<td>2.16</td>
<td>1.34 to 3.48</td>
<td>0.002</td>
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<tr>
<td>Age</td>
<td>0.99</td>
<td>0.97 to 1.02</td>
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<tr>
<td><strong>Born in Canada</strong></td>
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<tr>
<td>Yes</td>
<td>1.89</td>
<td>1.15 to 3.09</td>
<td>0.014</td>
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<tr>
<td><strong>Education</strong></td>
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<tr>
<td>Community College or University Graduate</td>
<td>1.03</td>
<td>0.63 to 1.68</td>
<td>0.67</td>
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<td><strong>Physical Demand Level</strong></td>
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<tr>
<td>Sedentary</td>
<td>0.62</td>
<td>0.09 to 3.93</td>
<td>0.59</td>
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<tr>
<td>Light</td>
<td>1.17</td>
<td>0.22 to 6.19</td>
<td>0.87</td>
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<tr>
<td>Medium</td>
<td>1.33</td>
<td>0.27 to 6.69</td>
<td>0.74</td>
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<tr>
<td>Heavy</td>
<td>1.45</td>
<td>0.27 to 7.84</td>
<td>0.66</td>
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<td><strong>Log(Time Since Injury)</strong></td>
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<tr>
<td>-</td>
<td>0.71</td>
<td>0.55 to 0.92</td>
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<td><strong>Intake PCS Score</strong></td>
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<tr>
<td>-</td>
<td>0.99</td>
<td>0.97 to 1.02</td>
<td>0.39</td>
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<tr>
<td>Depression</td>
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<td>Yes</td>
<td>1.25</td>
<td>0.70 to 2.24</td>
<td>0.43</td>
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<tr>
<td><strong>RTW Coordination Services</strong></td>
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<tr>
<td>Yes</td>
<td>3.42</td>
<td>2.08 to 5.63</td>
<td>&lt;0.001</td>
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</table>
Key Findings

- RTW of 14% at 3 months post-treatment discharge.
- Less than 15 months from injury, 21% RTW.
- Key Predictors: Gender, Time Since Injury, Place of Birth, Use of RTW Coordination Services
Recommendations

• Workers compensation boards should strive to refer injured workers as early as possible to achieve more successful RTW.

• Use an interdisciplinary approach that views clients holistically when treating chronic pain populations.
Summary

• Chronic Pain Disorder is a sensory dysfunction
• May be followed by behavioural changes that are noted as illness behaviours
• Recognizing them early is of paramount importance
Summary

• Understand the fear of the worker and deal with it early
• Incorporate an on site therapist early
• This increases the likelihood of successful RTW by almost 3 and a half times
Summary

• Use the New Zealand “yellow flags”
• The reference to this Guideline is on the following slide
• Developed for back pain but....... 
• We have successfully used them for recognition of anyone with CPD
Helpful references

• Hamer H et al. Occupational Medicine, Oxford Journals (London) (March 14, 2013) Predicting return to work following treatment of chronic pain disorder

• www.altumhealth.com

• Handbook of Work Disability, Prevention & Management; Loisel Patrick, Anema Johannes; Springer, 2103
References continued


• New Zealand CPD/ Back Assessment Document
QUESTIONS