

2012

## Chronic Lower Back Pain: A Maladaptive Perceptions Model

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This conference paper was originally published as:

Wand, B. M. (2012). Chronic Lower Back Pain: A Maladaptive Perceptions Model. *NOI 2012 Neurodynamics and the Neuromatrix Conference*.

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## **Chronic Lower Back Pain: A Maladaptive Perceptions Model**

**Benedict M Wand** - Invited speaker.

NOI 2012 Neurodynamics and the Neuromatrix Conference, *Adelaide, Australia, April 26<sup>th</sup> – 28<sup>th</sup> 2012*

High quality evidence suggests that current approaches to the management of CLBP show only limited effectiveness; one explanation of this finding is that current models of management are misdirected or incomplete. This talk proposes a model of CLBP underpinned by data on the psychological contributors to the LBP experience and recent evidence of neuroplastic changes in the brains of people with CLBP (see below). The model suggests that maladaptive cognitive perception about the nature of the back problem and future consequences drive behaviours that might bring about maladaptive neuroplastic changes. These central nervous system changes may enhance sensitivity, influence normal attentional processing and potentially create a state of maladaptive self perception of the back, in terms of how the back feels to the individual, the control they feel they have over their back and the meaning of sensory information from the back. Maladaptive cognitive perception and maladaptive self perception are potentially mutually reinforcing and contribute to the maintenance of the CLBP experience. Identification of these issues in the clinical setting and the implications of this model to the rehabilitation of people with CLBP will also be discussed.

## EPISODE OF LOW BACK PAIN

### Likely To Be Enhanced By

- High pain intensity
- Negative affect
- Somatisation
- Pathoanatomical Dx

### Maladaptive Perception Of The Problem

- Uncontrollable
- Irreversible
- Unlikely to resolve
- Fragile
- Vulnerable
- Indicative of a serious structural problem

## HIGH PERCEIVED NEED FOR PROTECTION

Increased threat value  
attached to noxious  
information

Adoption of movement strategies that  
limit spinal movement, increase rigidity,  
and decrease flexibility and variability of  
motor responses

Excessive attention /  
hypervigilance to noxious  
information  
  
Decreased focus on other  
sensory inputs

## CHANGES IN CORTICAL AND SUBCORTICAL AREAS THAT SUBSERVE NOCICEPTION, ATTENTION AND SENSORIMOTOR CONTROL OF THE BACK

### Enhanced Nociceptive Efficiency

- Diversified threat perception
- Hyperalgesia
- Allodynia
- Spontaneous pain

### Disturbed Perception Of The Back

- Loss of sensorimotor precision
  - Difficulty delineating the outline  
and size of the back
  - Loss of sensory acuity
  - Loss of proprioceptive acuity
  - Loss of control
  - Disownership, neglect
  - Foreignness and peculiarity
  - Lack of visual information to  
correct this
- Altered motor control  
Altered homeostatic control  
Enhanced perceived vulnerability

### Failure Of Attentional Processes

- Distraction ineffective
- Difficulty with dual task  
performance
- Problems with working  
memory
- Cognitive dysfunction

## FURTHER REINFORCEMENT OF MALADAPTIVE PERCEPTION OF THE PROBLEM