

### **The Challenge with Soft Tissue Injuries**

WorkSafeNB has observed that: *Some injured workers with little or no physical impairment have more chronic pain disability than those with greater levels of impairment.* This is not unique to New Brunswick (NB).

For shoulder fractures, median claim duration in NB was 23 weeks compared to expected disability duration (DDG) of 21 weeks in general population. For soft-tissue injuries (STIs), median claim duration was 20 weeks compared to expected DDG of 4-6 weeks. Median claim duration for partial rotator cuff tear (RCT) was 80 weeks compared to 48 weeks for full RCT.

55% of claimants with STI had yellow flags. Non-surgical shoulder STI claimants who proceed to surgery have more yellow flags than claimants who stay in active rehab. Yellow flags are indicative of psychosocial barriers to early return-to-work (RTW) (Kendall, Linton et al. 1997; Waddell, Burton et al. 2003; Gozna 2004; Waddell 2004; Gozna 2005; Gozna 2007; ACOEM (American College of Occupational and Environmental Medicine) 2008 Revision; Kendall, Burton et al. 2009). An audit of shoulder, back and knee surgery suggested that 57% of surgery was for “soft indications” – predominantly to alleviate pain. Median claim duration for firm indications was 55 weeks (68% RTW; 8% open at 2 years for medical treatment) compared to 79 weeks for soft indications (57% RTW; 19% open at 2 years for medical treatment).

Research finds that workers’ compensation (WC) patients prefer surgical over non-surgical treatment (Atlas, Tosteson et al. 2007). However, workers’ compensation patients are four times more likely to have a poor surgical outcome compared to non-WC patients (Harris, Mulford et al. 2005). It would appear that surgeons are operating on conditions in workers’ compensation patients that they would generally not operate on in non-WC patients.

#### **(a) Occupational Disconnect Can Be Harmful to One’s Health**

Worklessness can be harmful to health – higher mortality, greater morbidity (poorer general health, poorer mental health), higher use of medical services, and greater consumption of medications (Talmage and Melhorn 2005; Waddell and Burton 2006; Black 2010).

Increased time off work is associated with an increasing risk of worklessness (Waddell 1987; Alyward and Sawney 2007). If one is off work for 4-6 weeks, one has a 20% probability of long-term disability. By 12 weeks, there is a 55% probability of no RTW within 6 months. By 6 months, there is a 50% probability of no RTW within the next year. If a worker is off work 1-2 years or has lost their job, it is unlikely that they will RTW at all (Waddell 2004). Occupational disconnect can be harmful to one’s health (Gozna 2005).

#### **(b) What is the predominant disabling condition?**

Research shows that from the subacute injury phase onward, psychosocial factors play a greater roll in long-term absence and chronic pain disability than biomedical factors (Hogg-Johnson, Frank et al. 1994; Gatchel, Polatin et al. 1995; Shaw, Pransky et al. 2005; Waddell and Burton 2006; Shaw, Pransky et al. 2007). Research points to pain catastrophizing and fear avoidance as significant psychosocial risk factors for prolonged chronic pain disability (Crombez, Vlaeyen et al. 1999; Vlaeyen and Linton 2000; Severeijns, Vlaeyen et al. 2001; Buer and Linton 2002; Denison, Asenlof et al. 2004;

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Waddell 2004; Boersma and Linton 2005; Swinkels-Meewisse, Roelofs et al. 2006; Jensen, Nielsen et al. 2010). Linton and Boersma developed a screening tool for psychosocial risk factors for prolonged disability – the Örebro Musculoskeletal Pain Questionnaire (ÖMPQ) (Linton and Boersma 2003; Boersma and Linton 2005; Hockings, McAuley et al. 2008). The questionnaire has been validated in the workers' compensation context (Dunstan, Covic et al. 2005; Margison and French 2007).

### *(c) Pain Catastrophizing Predicts*

Greater chronic pain and disability (Turner, Jensen et al. 2000; Buer and Linton 2002; Picavet, Vlaeyen et al. 2002; Turner, Jensen et al. 2002; Shaw, Pransky et al. 2007; Demmelmaier, Lindberg et al. 2008; Campbell and Edwards 2009). Submaximal performance on muscle testing (Verbunt, Seelen et al. 2005). Higher analgesic intake in general (Jacobsen and Butler 1996; Severeijns, Vlaeyen et al. 2004) and opioid specifically (Jensen, Thomsen et al. 2006). Poorer response to radiofrequency and injection treatment (van Wijk, Geurts et al. 2008). Greater activity intolerance (Buer and Linton 2002; Sullivan, Rodgers et al. 2002). Poorer general health (Severeijns, van den Hout et al. 2002; Severeijns, Vlaeyen et al. 2004). Higher health care utilization (Severeijns, Vlaeyen et al. 2004; Jensen, Thomsen et al. 2006).

### *(d) Fear Avoidance Predicts*

Submaximal performance on muscle testing (Verbunt, Seelen et al. 2005). Greater chronic pain and disability (Crombez, Vlaeyen et al. 1999; Buer and Linton 2002; Picavet, Vlaeyen et al. 2002; Denison, Asenlof et al. 2004; Grotle, Vollestad et al. 2004; Boersma and Linton 2005; Cedraschi and Allaz 2005; Coudeyre, Tubach et al. 2007; Jensen, Nielsen et al. 2010). More functional / ADL disability (Buer and Linton 2002; Swinkels-Meewisse, Roelofs et al. 2003; Gheldof, Vinck et al. 2006; Swinkels-Meewisse, Roelofs et al. 2006; Swinkels-Meewisse, Roelofs et al. 2006b). Greater social disability (Swinkels-Meewisse, Roelofs et al. 2003; Gheldof, Vinck et al. 2006; Swinkels-Meewisse, Roelofs et al. 2006; Swinkels-Meewisse, Roelofs et al. 2006b). More prolonged work restrictions / work absence (Cicccone and Just 2001; Fritz, George et al. 2001; Fritz and George 2002; Storheim, Ivar Brox et al. 2005; Lotters, Franche et al. 2006; Turner, Franklin et al. 2006; Shaw, Pransky et al. 2007).

### *(e) WorkSafeNB's Experience*

WorkSafeNB screens claimants for high risk of prolonged disability using a modified version of the ÖMPQ – the Pain and Activity (P&A) Questionnaire. Scores below 99 are associated with a “predominantly biomedical / anatomical” pain generator (low risk). Scores above 139 are associated with a “predominantly psychosocial” pain generator (high risk). Background analysis of claims for WorkSafeNB's 2008-2009 pilot program to manage “high risk” claims showed that high-risk STI claimants off work beyond 26 weeks had more imaging, more opioids, more nerve blocks, and more surgery than low risk STI claimants off work beyond 26 weeks. Since the main difference is a higher portion of psychosocial / yellow flags in the former, biomedical treatment for psychosocial factors is going to be ineffective. If the physician is trapped in the biomedical model, failed biomedical-based treatment leads to more biomedical-based treatment.

WorkSafeNB's experience is that the highest opioid use is in claimants with a predominantly psychosocial pain generator. Research finds that higher opioid use is

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associated with poorer functional outcomes and longer disability duration in persons with musculoskeletal (MSK) injuries (Webster, Verma et al. 2007; Kidner 2009).

WorkSafeNB initiated the High Risk 2008-2009 pilot in an attempt to reduce the harm to injured workers from unnecessary prolonged duration off work. WorkSafeNB screened STI claimants at 4 weeks with the P&A questionnaire. Case management used a biopsychosocial approach in claimants at high risk for prolonged disability to identify what the real issues were. Intervention included use of cognitive-behavioural techniques by case managers and more formal cognitive-behavioural therapy (CBT). 76% of high-risk and 62% of very high-risk claimants were off benefits at 26 weeks compared to 33% for historical controls, thereby avoiding unnecessary medical interventions.

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