

How to Prevent Back Pain Related Disability

In a recent edition of The Back Letter the authors questioned what factors are most important in the prevention of back pain related disability and which of these are easily modifiable.

The authors quoted research from the Institute of Work and Health in Toronto who had performed a recent systematic review to identify potential prognostic and predictive factors. They then asked a panel of international experts to consider both questions (See Guzman et al 2007).

The panel of experts were asked to rank 35 prognostic or predictive factors of back pain related disability with only 12 lasting three rounds of ranking. The factors with the highest impact by the order of rank were care provider reassurance; expectation of recovery; decreased fears; increased knowledge; appropriate medical care; disability management; increased self-management; case management and provision of temporary duties.

The experts were then asked to rank these factors in terms of their modifiability. Only care provider reassurance and disability management were in the top 6 of both lists.

The authors noted that widespread disagreement about the nature of back pain related disability remains prominent amongst world experts. They concluded that this lack of agreement was on full display in this consensus process.

There was only strong consensus with 2 factors:

1. That care provider reassurance has a high impact on occupational participation and
2. That back supports have a low impact on occupational participation.

The authors noted that despite this there is no guarantee that building consensus among clinicians and researchers etc will produce effective prevention programs, concluding that the "back pain related disability epidemic still rages".

References: Guzman J et al., Key factors in back disability prevention: A consensus panel on their impact and modifiability. *Spine* 2007; 32:807-15
Is There Consensus on Preventing Disability and Work Absence? The Back Letter 2007; 22 (4) 38

Trunk Muscle Activity in Healthy Subjects during Bridging Stabilization Exercises

Rehabilitation of low back pain (LBP) often involves the utilization of bridging exercises to enhance lumbopelvic stabilization. Stevens et al (2006) believe that the primary purpose of incorporating these exercises in a rehabilitation program is to help retrain muscle coordination patterns, in which optimal ratios between **local segmental** (rectus abdominal) **stabilization** and **global torque** (external and internal obliques) **producing muscle activity** are assumed to be essential. They note however that a description of such ratios is lacking.

Stevens et al conducted a study to investigate both relative muscle activity levels and ratios of local to global muscle activity during bridging exercises.

Thirty subjects were used (15 male, 15 female) with a mean age of 19.6 years old. They were individually tested performing three bridging exercises consisting of single bridging, ball bridge and unilateral bridging. Results showed that during each exercise the ratio of the internal obliques (IO) to the rectus abdominis (RA) was very high due to minimal relative activity of the RA.

Overall the ratio of IO to external oblique (EO) activity was about 1. However when performing the unilateral bridging exercise the ipsilateral IO/EO activity ratio was 2.79. The relative muscle activity and the ratio of the back muscles demonstrated similar activity levels and thus producing a ratio of about 1. These ratios are consistent with previous research.

Stevens et al acknowledge that the relative muscle activity and the ratio of obliques alter depending on the task and the demand and need for stability.

These findings of the relative muscle activity and the ratios of back muscles support the notion that during bridging exercises, back muscles contribute in a similar way to control the spine position and movement in a healthy population.

In a clinical setting with individuals who are suffering from prolonged or chronic low back pain, the correct recruitment of these muscles and consequently the utilization to stabilize correctly is limited. It is therefore essential during the initial stages of rehabilitation for an episode of low back pain, that the retraining of stabilization muscles is incorporated via exercises such as bridging, but also incorporated into activities of daily living.

References: Veerle K Stevens et al., Trunk Muscle activity in healthy subjects during bridging stabilization exercises. *BMC Musculoskeletal Disorders* 2006; 7:75

New Systematic Review of Surgical Interventions for Lumbar Disc Prolapse

The role of surgery in the treatment of disc prolapse remains a topic of debate.

An article in The Back Letter recently summarized "Surgical interventions for lumbar disc prolapse", the new Cochrane Collaboration review by Alastair Gibson, MD, and Gordon Waddell, MD (see Gibson and Waddell, 2007).

The review is an upgrade of the 2000 Cochrane Collaboration review (see Gibson et al., 2000). The new review found a total of 39 relevant randomised controlled trials and 2 quasi-randomised trials, including 16 randomised trials that were published since the first edition. Gibson and Waddell note that many of the randomized trials have methodological weaknesses and must be interpreted cautiously.

According to Gibson and Waddell, "epidemiological and clinical studies show that most lumbar disc prolapses resolve naturally with conservative management and the passage of time".

Gibson and Waddell could not find a definitive answer in the medical literature as to whether discectomy produces better short and long term results than continuing conservative care for the minority of patients whose recovery is unacceptably slow. Randomised trials to date "give suggestive rather than conclusive results".

There is considerable evidence that surgical decompression provides effective clinical relief for carefully selected patients. According to Gibson and Waddell, "it provides faster relief from the acute attack of sciatica, although any positive or negative effects on the long term natural history of the underlying disc disease are unclear". There is a lack of sound scientific evidence regarding the optimal timing of disc surgery.

The authors note that only microdiscectomy has been shown to have broadly comparable results to standard open discectomy.

While this version of the Cochrane Collaboration review did not include coverage of the recent SPORT (Spine Patient Outcomes Research Trial - Weinstein JN et al) on the treatment of lumbar disc herniations, The Back Letter article considered that the main conclusions should not change substantially.

References:
Gibson JNA and Waddell G, Surgical interventions for lumbar disc prolapse, Cochrane Library, John Wiley & Sons Ltd., 2007; (71): CD001350.
Gibson JNA et al., Surgery for the lumbar disc prolapse, The Cochrane Library, John Wiley & Sons Ltd., 2000; (3): CD001350
Weinstein JN et al., Surgical vs. non-operative treatment for lumbar disc herniation, The Spine Outcomes Research Trial (SPORT): A randomized trial. *JAMA*, 2006; 296:2441-50
The Cochrane Collaboration on Disc Surgery : New Systematic Review of Treatment Options The Back Letter 2007; 22 (2) 15

Conference Calendar

PPL Education Services P/L

Contact: Sally Lane-Brittain

Ph: 02 6628 2901 or email
sally@ppleducation.com.au

Website: www.ppleducation.com.au

Advanced Cognitive Behaviour Therapy (CBT): Effective Treatment for Complex or Resistant Clients

Date: 22 August 2007 (9.00am – 4.30pm) -
Workshop - Venue: Holiday Inn (Brisbane)

Understanding and Effectively Responding to Clients with Borderline, Antisocial and Narcissistic Personality Disorders

Date: 14 August 2007 (9.00am – 5.00pm) -
Workshop - Venue: Holiday Inn (Brisbane)

Conducting Effective Workplace Investigations: Minimising the Risk of Bullying, Harassment and Stress Claims

Date: 21 August 2007 (9.00am – 4.30pm) -
Workshop - Venue: VIBE Hotel (North Sydney)
Date: 23 August 2007 (9.00am – 4.30pm) -
Workshop - Venue: Rendezvous Hotel
(Melbourne)

Managing Occupational Stress through the Development of Emotional Intelligence

Date: 6 September 2007(9.00am – 5.00pm)
- Workshop - Venue: Rendezvous Hotel
(Melbourne)

Date: 13 September 2007 (9.00am – 5.00pm) -
Workshop - Venue: VIBE Hotel (North Sydney)

Research Update

Shared and Independent Associations of Psychosocial Factors on Work Status Among Men With Subacute Low Back Pain. Shaw, WS; Means Christensen, A; Slater, MA; Patterson, TL; Webster, JS; Atkinson, JH. *Clinical Journal of Pain* (ISSN: 0749-8047); Volume 23, No. 5, pp. 409-416; 2007 LIPPINCOTT WILLIAMS & WILKINS

Are Pain Intensity and Pain Related Fear Related to Functional Capacity Evaluation Performances of Patients with Chronic Low Back Pain?

Reneman, MF; SchiphortsPreuper, HR; Kleen, M; Geertzen, JH; Dijkstra, PU. *Journal of Occupational Rehabilitation* (ISSN: 1053-0487); Volume 17, No. 2, pp. 247-258; 2007

A systematic review of the relation between physical capacity and future low back and neck/shoulder pain.

HambergvanReenen, HH; Ariens, GA; Blatter, BM; vanMechelen, W; Bongers, PM. *Pain* (ISSN: 0304-3959); Volume 130, No. 1-2, pp. 93-107; 2007

ISSLS Prize Winner: Does Minor Trauma Cause Serious Low Back Illness?

Carragee, E; Alamin, T; Cheng, I; Franklin, T; Hurwitz, E. *Spine* (ISSN: 0362-2436); Volume 31, No. 25, pp. 2942-2949; 2006

Predictors of Pain and Function in Persons With Spinal Stenosis, Low Back Pain, and No Back Pain. Haig, AJ; Tong, HC; Yamakawa, KSJ; Parres, C; Quint, DJ; Chiodo, A; Miner, JA; Phalke, VC; Hoff, JT; Geisser, ME. *Spine* (ISSN: 0362-2436); Volume 31, No. 25, pp. 2950-2957; 2006

MMPI Disability Profile: The Least Known, Most Useful Screen for Psychopathology in Chronic Occupational Spinal Disorders. Gatchel, RJ; Mayer, TG; Eddington, A. *Spine* (ISSN: 0362-2436); Volume 31, No. 25, pp. 2973-2978; 2006

ISSLS Prize Winner: Is Obesity Overrated as a "Risk Factor" for Poor Outcomes in Chronic Occupational Spinal Disorders? Mayer, T; Aceska, A; Gatchel, RJ. *Spine* (ISSN: 0362-2436); Volume 31, No. 25, pp. 2967-2972; 2006

Predictors of Pain and Function in Persons With Spinal Stenosis, Low Back Pain, and No Back Pain. Haig, AJ; Tong, HC; Yamakawa, KSJ; Parres, C; Quint, DJ; Chiodo, A; Miner, JA; Phalke, VC; Hoff, JT; Geisser, ME. *Spine* (ISSN: 0362-2436); Volume 31, No. 25, pp. 2950-2957; 2006

Classification systems for low back pain: a review of the methodology for development and validation. Ford, Jon; Story, Ian; O'Sullivan, Peter; McMeeken, Joan. *Physical Therapy Reviews* (ISSN: 1083-3196); Volume 12, No. 1, pp. 33-42(10); March 2007 Maney Publishing

Prognostic factors in first-time care seekers due to acute low back pain.

Grotle, M; Brox, JI; Glomsrd, B; Lnn, JH; Vilestad, NK. *European Journal of Pain* (ISSN: 1090-3801); Volume 11, No. 3, pp. 290-298; 2007. Elsevier Science B.V., Amsterdam

Pain-related fear in low back pain: A prospective study in the general population. Leeuw, M; Houben, RM;

Severeijns, R; Picavet, HS; Schouten, EG; Vlaeyen, JW. *European Journal of Pain* (ISSN: 1090-3801); Volume 11, No. 3, pp. 256-266; 2007. Elsevier Science B.V., Amsterdam

The Fear-Avoidance Model of Musculoskeletal Pain: Current State of Scientific Evidence. Leeuw, Maaik; Goossens, Marielle; Linton, Steven; Crombez, Geert; Boersma, Katja; Vlaeyen, Johan. *Journal of Behavioral Medicine* (ISSN: 0160-7715); Volume 30, No. 1, pp. 77-94(18);

Multidisciplinary Rehabilitation for Subacute Low Back Pain: Graded Activity or Workplace Intervention or

Both?: A Randomized Controlled Trial.

Anema, JR; Steenstra, IA; Bongers, PM; deVet, HCW; Knol, DL; Loisel, P; vanMechelen, W. *Spine* (ISSN: 0362-2436); Volume 32, No. 3, pp. 291-298; 2007. February 2007

Gregory Terrace Rehabilitation
would like to welcome
two new members to our team:

Anna Pozzi
Registered Nurse

Beth Sheehan
Exercise Physiologist

Future Newsletters / Invitations
will be available
for distribution by email.
If you would like this
to happen please email
relle@gregorytcerehab.com.au

Date for your Diary
Wednesday 14 November 2007
@ 6 PM

Pinot by the Pool
Wine Tasting hosted by Bill Ryan

Our Guest Speaker will be
Stephen Boyd
Physiotherapist

"Rehabilitation after Spinal Surgery"

SUITE 4 CENTENARY POOLSIDE
400 GREGORY TERRACE
SPRING HILL Q 4000

Phone:
07 3831 5538

Fax:
07 3831 5527

Web Site:
www.gregorytcerehab.com.au

EARLY INTERVENTION REHABILITATION
PROGRAMMES PTY LTD ACN 075 813 928
TRADING AS GREGORY TERRACE REHABILITATION