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Recent Questions on Stabilization Training and Evidence-Based Care

By Craig Liebenson, DC

Dynamic Chiropractic has a website which gives you the opportunity to follow up any articles with pertinent questions. Some of these questions have brought out very important points which I think clarify some of the chief topics I regularly discuss in my columns. A few of the more valuable dialogues are reproduced here from the website. I hope that all of you will continue to ask me any questions which arise.

Stabilization Training

Question: Since I am going to the sports diplomate program at Northwestern and would eventually like to take the rehab diplomate from LACC, I am always looking for new low-tech ways to help out patients. The one thing that has been emphasized considerably to our patients has been the ability to sustain the neutral spine. I wonder if, when using the words "abdominal hollowing," it would make doctors unfamiliar with this technique teach the patient to suck in and "hollow" their abs instead of bracing and keeping their neutral spine?

Answer: Hollowing is a good term, and I am in favor of it. The key is to draw the navel in when performing abdominal exercises, but not to suck it in by raising the ribs. This would interfere with normal respiration and is a key to training.

Question: I have been trying to find an article on coactivation exercises. Could you steer me in the right direction?

Answer: There are several good sources available for information on coactivation exercises. Key articles and books include:

1. Cholewicki J, McGill SM. Mechanical stability of the in vivo lumbar spine: implications for injury and chronic low back pain. *Clin Biomech* 1996;11(1):1-15.
2. Richardson CA, Jull GA. Muscle control - pain control. What exercises would you prescribe? *Man Ther* 1995;1(1):2-10.
3. Hides JA, Richardson CA, Jull GA. Multifidus muscle recovery is not automatic after resolution of acute, first episode of low back pain. *Spine* 1996;21(23):2763-2769.
4. Cholewicki J, Panjabi MM, Klachatryan A. Stabilizing function of trunk flexo-extensor muscles around a neutral spine posture. *Spine* 1997;19:2207-2212.
5. O'Sullivan P, Twomey L, Allison G, et al. Altered patterns of abdominal muscle activation in patients with chronic low back pain. *Aust J Physio* 1997;43:91-98.
6. Liebenson CS, Hyman J, Gluck N, Murphy D. Spinal stabilization therapy. *Topics in Clinical Chiropractic* 1996;3(3):60-74.
7. Axler CT, McGill SM. Low back loads over a variety of abdominal exercises: searching for the safest abdominal challenge. *Med Sci Sports Exerc* 1997;29:804-810.
8. O'Sullivan P, Twomey L, Allison G. Evaluation of specific stabilizing exercise in the treatment of chronic low back pain with radiologic diagnosis of spondylolysis or spondylolisthesis. *Spine* 1997;24:2959-2967.

9. Pool-Goudzwaard A, Vleeming A, Stoeckart C, Snijders CJ, Mens MA. Insufficient lumbopelvic stability: a clinical, anatomical and biomechanical approach to "aspecific" low back pain. *Man Ther* 1998;3:12-20.
10. McGill S. Low back exercises: evidence for improving exercise regimens. *Phys Ther* 1998;78:754-765.
11. Norris C. *Sports Injuries: Diagnosis and Management*, 2nd edition. London: Butterworth Heinemann, 1978.
12. Richardson, Jull, Hodges. *Therapeutic Exercise for Spinal Stabilization in Lower Back Pain*. Churchill Livingstone, 1999.

Evidence-Based Care

Question: You often quote the natural history of LBP. An FCER tape quotes a study by Van Koff that seems to indicate that the majority of acute cases will be recurrent within the next 12 months. This conflicts with the theory that the minority of cases will wind up chronic. Is there supportive literature in favor of one or the other?

Answer: You raise an interesting point. The literature is quite clear about natural history. The vast majority of acute episodes are not activity limiting or disabling within six weeks.¹⁻³ However, the vast majority tend to have recurrences one year later.^{1,2} These recurrences are usually similar to the first event in that they also tend to resolve within six weeks.³ It is still the case that most of the costs are due to the minority of acute cases which do not resolve in six weeks but become chronic (not recurrent) pain problems.^{3,4} These chronic activity limiting or disabling problems represent the minority of cases (<15%) but represent the majority of the costs (>85%).^{3,4}

The key is to realize that we have acute, acute recurrent and chronic patients. The most important issue is to view the subacute phase as the critical one in which we need to draw a line in the sand and prevent the onset of chronic pain behaviors (physical and psychological deconditioning) before they emerge.³⁻⁵

1. Cherkin DC, Deyo RA, Street JH, Barlow W. Predicting poor outcomes for back pain seen in primary care using patients' own criteria. *Spine* 1996;21:2900-2907.
2. Von Korff M, Deyo RA, Cherkin D, Barlow W. Back pain in primary care: outcomes at one year. *Spine* 1993;18:855-62.
3. Frank JW, Kerr MS, Brooker AS, DeMaio SE, Maetzel A, et al. Disability resulting from occupational low back pain. Part two: what do we know about secondary prevention? *Spine* 1996;21:2918-2929.
4. Waddell G. *The Back Pain Revolution*. Edinburgh: Churchill Livingstone, 1998.
5. Kendall NAS, Linton SJ, Main CJ. *Guide to Assessing Psychosocial Yellow Flags in Acute Low Back Pain: Risk Factors for Long-Term Disability and Work Loss*. Accident Rehabilitation and Compensation Insurance Corporation of New Zealand and the National Health Committee. Wellington, New Zealand, 1997. Available from www.nhc.govt.nz.

Question: I recently read a study that mentioned the fact that 90% of acute LBP patients have recurring pain within the following year. Does this refute the necessity to show your treatment improved outcomes faster than the natural history? Doesn't this demonstrate the need for more effective rehab methods and possible a longer course of treatment (beyond six weeks)?

Answer: That's quite a loaded question! The epidemiological data shows that most low back pain episodes resolve within six or seven weeks, but that they also recur within about a year. These recurrences also resolve within six or seven weeks. The truly chronic group is much smaller - less than 15%. Most of the

costs of LBP arise from the chronic group, not the acute recurrence group. In fact, about 85% of the costs arise from the smaller group. There is also evidence that some common acute management is iatrogenic (i.e., bed rest) or unnecessary (i.e., imaging in those without red flags).

Does this data support longer term care? Certainly not, until it can be shown that such care reduces either the recurrence rates one year later or the percentage of cases which become chronic. Research should look at this question. In particular, evidence is accumulating which shows that many acute patients do quite well with simple advice (reassurance that recovery is likely; that there is no serious disease process involved; and that resuming near normal activity is safe and actually therapeutic even if it hurts somewhat).¹⁻³ So the evidence is starting to show in many cases that less of a physical medicine type of care, not more, is better.

Finally, when is more aggressive conservative care justifiable? I think it is justifiable in those patients who can be identified early on to be at increased risk of chronicity. Research has shown that these individuals can be identified before they are chronic in about 85% of cases.⁴⁻⁶ It is defensible to offer more aggressive care for these patients so long as it is evidence-based: for instance, manipulation and active care coupled with appropriate biopsychosocial advice.

1. Malmivaara A, Hakkinen U, Aro T, et al. The treatment of acute low back pain - bed rest, exercises or ordinary activity? *N Engl J Med* 1995;332:351-5.
2. Waddell G, Feder G, McIntosh A, Lewis M, Hutchinson A. *Low Back Pain Evidence Review*. London: Royal College of General Practitioners, 1996.
3. Waddell G. *The Back Pain Revolution*. Edinburgh: Churchill Livingstone, 1998.
4. Kendall NAS, Linton SJ, Main CJ. *Guide to Assessing Psychosocial Yellow Flags in Acute Low Back Pain: Risk Factors for Long-Term Disability and Work Loss*. Accident Rehabilitation and Compensation Insurance Corporation of New Zealand and the National Health Committee. Wellington, New Zealand, 1997.

5. Linton SJ, Hallden BH. Can we screen for problematic back pain? A screening questionnaire for predicting outcome in acute and subacute back pain. *Clin J Pain* 1998;14:1-7.

 6. Linton SJ, Hallden R. Risk factors and the natural course of acute and recurrent musculoskeletal pain: developing a screening instrument. In: Jensen TS, Turner JA, Wiesenfeld-Hallin Z (eds.) *Proceedings of the Eighth World Congress on Pain, Progress in Pain Research and Management, volume 8*. Seattle: IASP Press, 1997.
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