

## FELDENKRAIS RESEARCH

This is the current list of published research studies into The Feldenkrais Method. It does not include the very many (and valuable) case studies and articles etc also available (except for one or two). It has been adapted from one at

<http://www.achievingexcellence.com>

updated and re-organised by Victoria Worsley for the Feldenkrais Guild UK.

All are listed in the IFF research list which is sortable by title, year, type or author

Please send any omissions or corrections to Victoria

Scroll down to Links at the bottom for where to find further Information on research and on the debate around research too!

## CHRONIC PAIN

Patients who had been experiencing chronic pain participated in a six week Awareness Through Movement® (ATM) course. Results included significant increase in mobility accompanied by significant decrease in pain both immediately following the course, and in a one-year follow-up. Patients also reported less depression and anxiety, and an improved ability to relax.

The last study listed here compares treatment effects of Body Awareness Therapy, Feldenkrais, and conventional individual treatment with respect to changes in psychological distress, pain, and self-image in patients with non-specific musculoskeletal disorders in a group of 78 patients. The patients were measured three times during the study period: before the interventions, after six months, and after one year. The results showed significant positive changes over time in all three treatment groups with regard to reduced psychological distress, pain, and improved negative self-image. There were few significant differences among the groups but effect-size analysis indicated that the group treatments using Body Awareness Therapy and Feldenkrais might be more effective than conventional treatment.

Bearman, D. and Shafarman, S. The Feldenkrais Method® in the Treatment Awareness Through Movement of Chronic Pain: A Study of Efficacy and Cost Effectiveness. *American Journal of Pain Management*, 1999; 9:22-27.

Phipps, A. & Lopez, Ron. A functional Outcome Study on the Use of Movement Re-Education in Chronic Pain Management. Submitted in partial fulfillment of the requirements for the degree of Master of Physical Therapy, Forest Grove, Oregon. May, 1997.

Malmgren-Olsson, Eva-Britt Armelius, Bengt-Ake Armelius, Kerstin, A comparative outcome study of body awareness therapy, feldenkrais, and conventional physiotherapy for patients with non-specific musculoskeletal disorders: changes in psychological symptoms, pain, and self-image. Authors: Source: *Physiotherapy Theory & Practice*; Apr 2001, Vol. 17 Issue

## FIBROMYALGIA

Patients with Fibromyalgia moved more easily, efficiently, and with less effort after learning to reorganize the biomechanics of their movements during 15 weeks of Feldenkrais sessions and classes. In both immediately following, and six months after completion of the class, some improvements in balance, posture and gait were reported. Also reported: reduced pain, increased sleep, and reduction in fatigue.

Dean, J. R., Yuen, S. A. & Barrows, SA. 'Effects of a Feldenkrais Awareness Through Movement Sequence on Fibromyalgia Patients'. *FMOonline*, vol. 7, no. 9 (National Fibromyalgia Assoc Journal)

Kendall, S. A. Ekselius, L. Gerdle, B., Soren, B., Bengtsson, A. Feldenkrais intervention in fibromyalgia patients: a pilot study. *J. Musculoskeletal Pain*. 9(4):25-35, 2001.

## **LOW BACK PAIN**

In one study four Feldenkrais sessions, 76% of participants with chronic low back pain improved to normal activity. All had tried a variety of other therapies without success and all had experienced discomfort, restriction and stiffness prior to these sessions.

In the second, just one 30 minute ATM lesson reduced low back pain (but not state anxiety level compared to a control group who listened to a narrative for 30 minutes

Lake, Bernard. Photoanalysis of Standing Posture in Controls and Low Back Pain: Effects of Kinesthetic Processing (Feldenkrais Method) in Posture and Gait: Control Mechanisms VII. eds. M Woollocott and F Horak, U of Oregon Press, 1992, pp 400- 403.

Smith, A.L., Kolt, G.S., & McConville, J.C. (2001). The effects of the Feldenkrais Method on pain and anxiety in people experiencing chronic low back pain. *New Zealand Journal of Physiotherapy*, 20(1), 6-14

## **NECK & SHOULDER PAIN**

Thirty normal female employees took part in a neck and shoulder pain study, participating in six weeks of Feldenkrais Awareness Through Movement classes. Results included increased range of motion in a neck flexion task, significant positive changes in the neck-shoulders-index, as well as decreases in complaints from neck and shoulders.

Lundblad, I., Elert, J., Gerdle, B. Randomized controlled trial of physiotherapy and Feldenkrais interventions in female workers with neck-shoulder complaints. *J. Occupat Rehab* 9(3): 179-94, 1999.

Ruth, S., Kegerreis, S. Facilitating Cervical Flexion Using a Feldenkrais Method: Awareness Through Movement. *J Sports Phys Ther.*16(1): 25-29, 1992

## **ARTHRITIS**

A subject with Rheumatoid Arthritis participated in several Feldenkrais Awareness Through Movement sessions. As a result, the patient learned to rise from a chair without assistance from the upper extremities, and to use less kinetic energy. Walking speed increased and there was a 30% decrease in pain intensity. Findings: Awareness Through Movement lessons improve functional movements in spite of long term disability.

Twenty-one subjects with Rheumatoid Arthritis were tested after a series of Awareness Through Movement lessons. The results: significant change in both the muscle activity and the perceived effort of the task (using electromyographic equipment during trunk flexion.) Two years post-treatment, a large percentage of subjects had increased function, continued to maintain higher levels of function, continued to use the skills they learned and felt that the Feldenkrais helped them with their pain problem.

Narula, M., Jackson, O., Kulig, K. The Effects of Six Week of Feldenkrais Method on Selected Functional Parameters in a Subject with Rheumatoid Arthritis. *Physical Therapy* 72: (suppl.) S86,1992.

Narula, M. Effect of Six Weeks of Awareness Through Movement Lessons on Selected Functional Movements Parameters in Individuals with Rheumatoid Arthritis (A Pilot Study Using Single Subject Case Study Design). Thesis submitted in partial fulfillment of the requirements for the degree of Masters of Science in Exercise Science, Oakland University, Rochester, MI: 1993.

## **INJURY**

Feldenkrais Awareness Through Movement and Functional Integration® have been shown to help patients avoid developing protective, maladaptive patterns to an injury. In other words, Feldenkrais can be instrumental in helping patients form beneficial and adaptive patterns during recovery integrating total body movement into the recovery process.

Chinn, J., Trujillo, D., Kegerreis, S., Worrell, T. Effect of a Feldenkrais Intervention on Symptomatic Subjects Performing a Functional Reach. *Isokinetics and Exercise Science*.1994, 4(4): 131-136.

## **SENIOR MOVEMENT**

A group of 31 older adults was studied using a prospective, repeated measures control group design. The SF-36 was used to assess health status — quality of life. Video motion analysis was used to collect data on walking and on a floor-to-stand transfer movement. Coordination of the transfer movement improved significantly in the Feldenkrais group. Vitality and mental health scores also improved significantly in this group. Feldenkrais has been shown to be an effective method for improving coordination, mobility, economy of movement and quality of life in older adults.

James Stephens, Christopher Pendergast, Beth Ann Roller, Robert Scott Weiskittel. Learning to Improve Mobility and Quality of Life in a Well Elderly Population: The Benefits of Awareness Through Movement. *IFF Academy Feldenkrais Research Journal*.

Please also see the Balance section below for further studies involving seniors.

## **BALANCE**

A study with older women demonstrated improvement in the Burg Balance Scale as well as improved walking speed, movement time, and quicker correction of balance. Participants also reported greater confidence and strength.

In 'Feldenkrais Method Balance Classes Improve Balance in Older Adults: A Controlled Trial' a series of classes (the 'Getting Grounded Gracefully' series), were conducted with two classes per week for 10 weeks. The main outcome measures were Activities-Specific Balance Confidence (ABC) questionnaire, Four Square Step Test (FSST), self- selected gait speed (using GAITRite™ instrumented gait mat). At re-testing, the Intervention group showed significant improvement on all of the measures. The Control group improved significantly on one measure. Compared to the Control group, the Intervention group made a significant improvement in their ABC score, gait speed and FSST time suggesting that Feldenkrais Method balance classes improve mobility and balance in older adults.

Most recently a study 'Effects of Feldenkrais Exercises on Balance, Mobility, Confidence, and Gait Performance in Community-Dwelling Adults Age 65 and Older' found positive results on all counts and recommends a further study into cognitive effects.

Hall, S.E., Criddle, A., Ring, A., Bladen, C., Tapper, J., Yin, R., Cosgrove, A., Hu, Yu-Li. Study of the effects of various forms of exercise on balance in older women. Unpublished Manuscript Healthway Starter Grant, File #7672, Dept of Rehabilitation, Sir Charles Gardner Hospital, Nedlands, Western Australia, 1999.

Karol A. Connors<sup>1,2</sup>, Mary P. Galea<sup>1,3</sup> and Catherine M. Said<sup>1,3</sup>

<sup>1</sup>Rehabilitation Sciences Research Centre, School of Physiotherapy, University of Melbourne, Parkville,<sup>2</sup>Calvary Health Care Bethlehem, Caulfield South and <sup>3</sup>Austin Health, Heidelberg, Victoria, Australia

eCAM Advance Access published online on June 24, 2009

Ullmann, G., Williams, H. G., Hussey, J., Durstine, J. L., & McClenaghan, B. A. (2010) 'Effects of Feldenkrais Exercises on Balance, Mobility, Confidence, and Gait Performance in Community-Dwelling Adults Age 65 and Older'

J Altern Complement Med, Volume 16, Issue 1, p.97-105 (2010)

## **FLEXIBILITY**

Studies identified increased flexibility through the use of Awareness Through Movement classes. In a study of neck flexion in normal subjects, a significant increase in the amount of flexion after a single one-hour class was shown, as well as significant positive changes in muscular activity in the trunk. A third study found a change in forward flexion further to a unilateral Feldenkrais lesson of imaging a soft bristle brush passing over one half of the body and in which no movement occurred.

A recent randomised control group study with 33 subjects measured the effectiveness of Awareness through Movement' to lengthen hamstrings using the Active Knee Extension test. The ATM group gained significantly more hamstring muscle length (+7.04°) compared with the control group (+1.15°). The results suggest that muscle length can be increased through a process of active movement that does not involve stretching. Further research is needed to investigate this finding

Ruth, S., Kegerreis, S. Facilitating Cervical Flexion Using Feldenkrais Method: Awareness Through Movement. JOSPT Vol 16 No 1: July 1992.

Brown, E., Kegerreis. Electromyographic Activity of Trunk Musculature During a Feldenkrais Awareness Through Movement Lesson. Isokinetics and Exercise Science Vol 1 No 4, 1991.

Dunn, P.A., & Rogers, D.K. (2000). Feldenkrais sensory imagery and forward reach. Perceptual and Motor Skills, 91, 755-757

James Stephens, Joshua Davidson, Joseph DeRosa, Michael Kriz and Nicole Saltzman Lengthening the Hamstring Muscles Without Stretching Using "Awareness Through Movement" PHYS THER Vol. 86, No. 12, December 2006, pp. 1641-1650

## **STROKE, SPINAL CORD, CNS/BRAIN INJURY**

Prior to and following a 6-week Feldenkrais® program, stroke patients who had chronic neurological deficits were evaluated using the Berg Balance Scale, improving an average of 11%. They also improved, on average, 55.2% in the Dynamic Gait Index, and 35% in the Stroke Impact Recovery Scale. Findings demonstrate that gains in functional mobility are possible for individuals with chronic stroke using Feldenkrais movement therapy.

Effects of Feldenkrais® Awareness Through Movement® on Balance in Adults With Chronic Neurological Deficits Following Stroke: A Preliminary Study Glenna Batson, PT, MA.

'A Heuristic Investigation of the Process of Motor learning using the Feldenkrais Method in Physical Rehabilitation of two Young Women with Traumatic Brain Injury by Reuven D Offir

## **MULTIPLE SCLEROSIS**

In one study, steadiness and comfort with daily movements, self-esteem and overall quality of life improved in patients with Multiple Sclerosis who used Feldenkrais bodywork and/or participated in Awareness Through Movement sessions.

In the second study Four women with multiple sclerosis who were ambulatory and worked full-time participated in 10 Awareness Through Movement classes over 10 weeks and were assessed before and after according to a number of recognised scales. Outcomes show that two broad

areas of improvement were ease and steadiness of daily movements, and sense of well-being. These Outcomes suggest that Awareness Through Movement is beneficial for some people with multiple sclerosis, although in different ways for each person.

In another study, a group of patients with Multiple Sclerosis participated in an Awareness Through Movement group. The results demonstrated significantly improved mCTSIB scores and improved balance confidence compared to controls. There was a marked improvement in all other measures in the Awareness Through Movement group compared to controls. Results: This type of motor learning intervention can be effective in improving a variety of physical and psychological parameters related to balance and postural control in patients with MS.

Bost, H., Burges, S., Russell, R., Ruttinger, H. and Schlafke, U. Feldstudie zur wiiksamkeit der Feldenkrais-Method bei MS – Betroffenen. Deutche Multiple Sklerose Gesellschaft. Saarbrucken, German, 1994.

Stephens, J., Call, S., Evans, K., Glass, M., Gould, C., & Lowe, J. (1999). Responses to ten Feldenkrais awareness through movement lessons by four women with multiple sclerosis: improved quality of life. *Physical Therapy Case Reports*, 2(2), 58-69.

Stephens, J., DuShuttle, D., Hatcher, C., Shmunes, J., Slaninka, C. Use of Awareness Through Movement improves balance and balance confidence in people with multiple sclerosis: a randomized controlled study. *Neurology Report* 25(2):39-49, 2001.

### **PARKINSON'S**

This study demonstrates that the disabilities of Parkinson's Disease can be lessened with early Feldenkrais intervention as gains are made in musculoskeletal flexibility, alignment, and functional movement. Early intervention is important and can delay the need for pharmacological intervention, which, because of long-term use, is associated with potentially unwanted and toxic side effects. The study illustrates improvements in balance, gait, and functional movement made by an individual who was not yet receiving medication for Parkinson's disease. A second case study illustrates improvements of balance, gait, and functional movement made by an individual who was already receiving medication for the disease. These case studies illustrate the dramatic improvements that Feldenkrais intervention can achieve in the patient with Parkinson's disease.

Shenkman, M., Donovan, J., Tsubota, J., Kluss, M., Stebbins, P., Butler, R. Management of Individuals with Parkinson's Disease: Rationale and Case Studies. *Physical Therapy* 69: 944-955, 1989.

Wendell, L. L. Some effects of the Feldenkrais Method on Parkinson's symptoms and function. Unpublished case study by L. L. Wendell client and Marilyn Johnson, Feldenkrais Practitioner. June 2000.

### **ANXIETY, DEPRESSION AND MOOD**

Early research suggests that participation in a single Awareness Through Movement session may reduce anxiety levels, with increased effects after six to eight sessions. A study involving 147 female general curriculum and physical education teachers enrolled in a one-year enrichment program at a physical education college revealed improved mood after Feldenkrais. Feldenkrais seems to ease depression and anxiety and improve self-esteem in multiple sclerosis patients.

Kerr, G. A., Kotynia, F., Kolt, G. Feldenkrais Awareness Through Movement and state anxiety. *J Bodywork Mov Ther* 2002;6(2):102-107.

Kolt, G. S., McConville, J.C. The effects of Feldenkrais Awareness Through Movement program on state anxiety. *J Bodywork Mov Ther* 2000;4(3):216-220.

Netz, Y., Lidor, R. Mood Alterations in mindful versus aerobic exercise modes. J Psychol 2003;137(5):405-419.

### **EATING DISORDERS**

Preliminary research suggests that, in patients with eating disorders, Awareness Through Movement sessions improved self-confidence and increased contentment with regard to problematic zones of their body. Patients experienced increased sense of contentment in regard to their health, accompanied by decreased sense of helplessness.

Laumer, U., Bauer, M., Fichter, M., Milz, H. (in German. Title translation: Therapeutic effects of the Feldenkrais Method Awareness Through Movement in Patients with Eating Disorders). Psychother. Psychosom Med Psychol 1997, May; 47(5):170-80.

### **LINKS and FURTHER RESOURCES**

The main source for research is the IFF website

Including:

The most comprehensive list of feldenkrais research and articles sortable in different ways

The new Research Journal including great articles on how to do a case study (and lots of examples) science for beginners, the debate around research models and what its for (see especially Jim Stephens and Carl Ginsberg for differing views)

See also Jill Wigmore-Welsh's list of articles

Professional Feldenkrais Practitioners can keep up with new research and interesting articles by logging onto Feldeforum(run by Ralph Strauch – a yahoo forum for practitioners) or

Anyone can become a member of the Feldenkrais Method of Somatic Education group page on Facebook where interesting pieces are often brought to the community's attention.