Cumulative Trauma Injuries and the Feldenkrais Method®
Information for Medical Professionals

Introduction
The Feldenkrais Method® is an educational form of movement based on scientific principles derived from physics, anatomy and neuro-science, drawing on principles such as the Fechner-Weber law, the law of reciprocal innervation, etc. It can lead to significant improvements for your patients with a range of musculo-skeletal conditions.

Two Modes
The Feldenkrais Method utilizes two main modes of intervention:

• Functional Integration® is the individual hands-on mode. Precise handling, and some verbal instruction, by the Feldenkrais Practitioner is used to facilitate learning of new movement patterns. Changes and possibilities for improved movement are also drawn to the client’s attention. Clients are often given a home program of movement awareness exercises.

• Awareness Through Movement® is the class lesson mode. Clients are verbally guided through movement sequences in an active process directing attention which leads to enhanced flexibility, reduced pain, and restoration of lost mobility. Clients discover they can help themselves recover from their particular difficulties.

In both cases these interventions are described as ‘lessons’. Learning can occur both at the level of the organisation of movement in the nervous system and at a conscious level.

Outcomes for People with Cumulative Trauma Injuries of Feldenkrais Lessons
Based on my own clinical experiences, and those of many of my colleagues, clients frequently report:
• decreased pain – often immediately
• reduction of numbness and tingling; increased sensation in affected parts
• improvement in sleep
• improvements in ability to perform work and daily life activities
• increased awareness of awkward postures and movements that contribute to pain and reduced function
• improvement in breathing
• reduction in perceived levels of stress.

Frequently observable outcomes for clients with cumulative trauma injuries include:
• increased range of motion
• improved posture and organisation for movement
• improved movement patterns in turning, reaching, gait, etc.
• improvement in movements of respiration
• increased temperature in affected parts, suggesting increased circulation
• reduction in excess muscle tonus
• increased work capacity and return to work.

Approaches
The Feldenkrais Method uses a number of approaches to facilitating neuro-muscular re-education.

• Directed attention – through touch and language the attention of the client is drawn to patterns of neurological and musculo-skeletal organisation

• Small movements – the use of small movements, initially, allows for greater differentiation of which muscles are used, of muscular effort and the orientation of body parts in movements.

• Reduction of effort – the use of gentle movements allows for greater awareness of the level of effort necessary for movements and the level of effort actually used. By applying the Fechner-Weber law, with reduced effort there can be greater awareness of the appropriate force and direction for movements.

• Differentiation – with a higher degree of differentiation of the use of self in movement, more efficient use of muscles can be achieved, including: the appropriate use of agonists and antagonists; a reduction in recruitment; the appropriate use of muscles and muscle groups; a reduction of the unnecessary co-contraction of muscle groups across body regions; alterations of habitual muscle tonus/changes to the resting-length of muscles; increase use of large muscle groups to make larger movements rather than the overuse of smaller muscle groups; appropriate directional movement of force through joints, etc.

• Breathing – improved patterns of respiration can contribute reduction in the stress response and enhancement of the relaxation response; changes in the state of the autonomic nervous system can have a moderating effect on nociception and perceived pain.
• Posture – from a Feldenkrais point of view, posture is the readiness for action. More effective organisation of the musculo-skeletal system can reduce wear and damage to tendons and ligaments. More effective skeletal support (for example, in sitting) can reduce passive work in muscles.

• Finding comfort and pain-free movement – finding positions of comfort and pain-free ranges of movement form the basis of new ways of moving, while encouraging patients in pain to begin the process of regaining lost movement and function.

• Functional orientation – the focus in the Feldenkrais Method is on improving function. Patients are encouraged to discover new ways to move and function in work and everyday life. Basic functions such as shifting weight in sitting, reaching, turning, bending are the starting points. Each patient’s functioning is assessed and worked with individually.

• Integration – new or re-learned movements are integrated into whole-body, functional neuro-muscular-skeletal patterns.

Applications with Cumulative Trauma Injuries
Below is a survey of some of the key ways the use of the Feldenkrais Method can assist your patients with ‘repetitive strain/stress/motion’ or ‘cumulative trauma’ injuries or ‘occupational overuse syndrome’.

1. Awareness and Injury
To date, apart from medical treatment for injury, the emphasis in prevention and rehabilitation of cumulative trauma injuries in the workplace has been on:
• work re-organisation and job re-design
• ergonomics and improvements in the physical work environment.

Awareness of habitual movement patterns, and of what causes pain and discomfort, is the missing link in preventing cumulative trauma injury and re-injury. The Feldenkrais Method is particularly suitable to help your patients to develop such an awareness, so they can:
• better use and adjust ergonomic furniture and equipment for their own anatomy, organisation and work tasks
• better detect potentially injurious postures and movement
• better identify when to take breaks or change activities
• effectively utilize self-care tools.
2. Tendon conditions
eg. tendonitis, tenosynovitis
Feldenkrais lessons may reduce strain on tendons and damage as they pass over bones and cartilage through:
• helping patients reduce unnecessary muscle tone, increasing the resting length of muscles, etc.
• more optimal alignment on joints and bones in movement
• altering patterns of use over body regions and in the whole body (eg: improved range of motion in thoracic spine, shoulders and wrists may reduce strain on tendons to the medial and lateral epicondyles of the elbow). In addition:
• more efficient use of muscles and tendons can reduce friction and heat in tissues

3. Neuro-vascular conditions,
   eg. various ‘thoracic outlet syndromes’ (anterior scalene syndrome, clavicocostal syndrome, pectoralis minor syndrome)

• Feldenkrais can assist clients to obtain greater movement in the clavicles, shoulder girdle, upper ribs and upper thoracic spine which may contribute to reduction in compression and impingement of the neuro-vascular bundle.

4. Entrapment neuropathies
eg. carpal tunnel syndrome

• The Feldenkrais Method utilizes non-habitual and novel movements of the fingers and hands and wrists to regain movement, and touch to stimulate sensory awareness in affected parts.

• Thinking of the whole innervation of the wrist and arm, Feldenkrais can contribute to improvements in the organisation of the head and neck (for example assisting your patients to reduce work-induced or habitual twisting and tilting of their neck), which may reduce nerve root compression and somatic referred pain. Improved movement of the clavicle and upper ribs may reduce impingement in the brachial plexus. That is, it may assist in the treatment of the ‘double-crush syndrome’ that has been postulated as a contributing cause of CTS.
5. Sensory Dysfunction
Recent research has suggested that people suffering from cumulative trauma injuries such as tendonitis and focal hand dystonia ('writers cramp') may over time suffer from disturbances to sensory perception of and from their fingers and hands, including sensory changes to the dorsum of the hand (graphesthesia), palmar surfaces (manual form perception) and localization of tactile stimulation. In some cases there were bilateral affects in patients with single sided injuries. This loss of sensory discrimination has implications for motor control, eg. reduced discrimination of sequential movement of the fingers, reduced motor accuracy, etc.

Feldenkrais Method may be particularly useful, with its emphasis on sensory and motor retraining.

In addition to particular tendon, nerve and neuro-vascular conditions, the literature and clinical experience reveal that many people suffering specific cumulative trauma injuries also suffer from more general muscle pain symptoms, low-back pain and disk conditions, eye-strain and work-related stress. These may be associated with working in awkward postures, passive work of the muscles (eg. working in sitting for extended periods), muscle fatigue with insufficient time for rest and recovery, and extended use of VDU equipment.

6. Muscular pain and strains
eg. fibrositis, fibro-neuralgia
Feldenkrais can contribute to reducing muscular strain and pains through:
- more efficient and differentiated use of the self
- improving skeletal support in sitting and standing
- teaching self-care tools, such as movement breaks in the work place
- home programs and Awareness Through Movement lessons encourage more active use of muscles, which may help with improving circulation, (and consequent improved oxygenation of tissues and removal of lactic acid associated with extended use of anaerobic muscles).

7. Low back pain and disk conditions
Feldenkrais lessons can assist patients to:
- develop a more dynamic sitting posture, with both more skeletal support and greater ease or movement in turning, reaching, keyboarding, lifting, carrying, etc.
- help patients improve flexibility along their whole spine to reduce strain on particular disks, ligaments and vertebrae.
8. Eye-strain
Feldenkrais approaches can assist patients to reduce eye-strain through a range of eye lessons that:

- assist in shifting focal length, rotating their eyes, etc.
- differentiate the use of the muscles of the eyes, neck and shoulders.

9. Work-related Stress
The Feldenkrais Method can help patients to:

- identify and alter patterns of muscular contraction associated with stress, eg: TMJ tightness, neck tension, etc.
- utilize mobilized energy through movement
- enhance their relaxation response, eg. through improved respiration.

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References


