

Alternative Medicine

Some definitions, evidence & references

For Health Care Benefits Guidelines

By

WorkSafeBC Evidence-Based Practice Group

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WORKING TO MAKE A DIFFERENCE

**Clinical Services
Worker and Employer Services**

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Active Release Techniques®

Definition

The developer of Active Release Techniques® (ART®), P. Michael Leahy, DC, defines ART as “patented, state of the art soft tissue movement based *massage technique*” to treat various musculoskeletal and other conditions that are the result of ‘overused muscle’,⁽¹²⁹⁾ such as arthritis, achilles tendonitis, ankle injuries, back pain, back injuries, bursitis, carpal tunnel syndrome, compartment syndrome, headache, meniscal injuries, thoracic outlet syndrome, scar tissue formation, and various others.⁽¹³⁰⁾

The Evidence

Two case reports^(131,132) (level 5 evidence) were identified from a systematic search in PubMed (January 8, 2008). Spina⁽¹³¹⁾ reported on the application of ART® in treating one patient diagnosed with coxa saltans, while Howitt et al.⁽¹³²⁾ reported on the application of Graston Techniques and ART® in treating one patient diagnosed with trigger thumb.

As such, at present, there is no published evidence on the effectiveness of ART® compared to other massage techniques in treating various disorders. At present, there is anecdotal, level 5 evidence, on the effectiveness of ART® in treating coxa saltans. At present, it is not clear whether there is any evidence on the effectiveness of ART® in treating trigger thumb.

References

129-132

Adventure Therapy

Definition

Adventure Therapy (AT) is perceived as a therapeutic modality combining the presumed therapeutic benefits of adventure experiences and activities with those of more traditional modes of therapy⁽⁸⁵⁾. Ringer⁽⁸⁶⁾ defines AT as a generic term referring to a class of change-oriented, group-based experiential learning processes that occur in the context of a contractual, empowering, and empathic professional relationship. It is generally perceived that AT generally fall into one of four categories i.e. wilderness therapy; adventure based therapy; long term residential camping; and, outdoor behavioural healthcare⁽⁸⁷⁾. A recent adventure therapy seminar in the UK provided evidence of confusion with regard to the definition of AT⁽⁸⁸⁾. To date, there is no set of curricula or a designated professional body to regulate AT professionals⁽⁸⁹⁾

The Evidence

A small case-control (evidence level 4) showed a 31% relapsed rate at 10 months follow-up among AT group (n=13) compared 58% in the control group (n=18) of patients participating in substance abuse treatment.

References

85 – 90

Applied Kinesiology

Definition

Applied Kinesiology (AK) is also called 'touch for health'. AK consists of both the diagnostic method of determining dysfunctional states of the body and related therapeutics. Its' method is based on a combination of physical and biofield methods. It is based on principles of physiology and the meridian system. It uses both the meridian qi and the biofield qi in its diagnostic and treatment methodologies. Neurolymphatic holding points, neurovascular holding points and the biofield external qi are all said to be incorporated in the process. A session starts with various 'muscle testings' that are used to determine the state of qi flow through the meridians. Muscle testings give an indication of the area to be worked on and are a necessary part of the treatment.

The Evidence

To date, there is no evidence for the effectiveness of applied kinesiology.

References

3, 41

Aromatherapy

Definition

Aromatherapy is the therapeutic use of plant essential oils obtained by distillation or expression from leaves, roots, flowers, stems, seeds, wood, resin or fruit. It is delivered through inhalation, topical with or without massage, by suppository or by mouth. It is a part of the discipline of phytotherapy (the use of whole plants or parts of plants for medicinal purposes). Essential oil is defined as 'non-oily, highly fragrant essences extracted from plants by distillation, which evaporate readily'.

The Evidence

Systematic reviews have identified that there is **no** evidence for the effectiveness of aromatherapy in treating various dermatological conditions, or for labour pain management.

Evidence is **inconclusive** for treatment of the common cold, bronchitis, anxiety, alopecia areata, or dementia in the elderly.

There is **minor evidence** for its effectiveness as providing mild relaxation among cancer patients.

References

11, 21-25

Bowen Technique

Definition

Bowen Technique (BT), which was developed by Tom Bowen in Australia, is described as a system of subtle, precise mobilizations called Bowen movement. Bowen moves are applied, using fingers and thumbs, over muscle, tendons, nerves and fascia. A single treatment consists of a series of specific sequences of these moves, called procedures, with frequent pauses to allow time for the body to respond.⁽¹²⁵⁾ It is stated that the goal of BT is to assist the body in restoring structural integrity and optimal function.

A survey in the UK, conducted among alternative medicine practitioners, found that many alternative medicine practitioners believe that BT is beneficial in treating headache/migraine, respiratory problems including asthma, musculoskeletal problems, menstrual problems, skin problems including eczema, neck/shoulder pain and irritable bowel syndrome.⁽¹²⁶⁾ Another survey identified the application of BT in treating children with brain injury.⁽¹²⁷⁾ Long et al.⁽¹²⁶⁾ also pointed out that there was no study to support the effectiveness of BT in treating back pain.

The Evidence

A small case series (N = 20) (evidence level 5) reported in 2 papers,^(125,128) by the same author, presented the application of BT in patients diagnosed with frozen shoulder. Even though the author reported patients' improvement in their pain and range of motion, this study is of low quality. The author did not account for the potential of selection bias, measurement errors, multiple outcomes with multiple measurements, multiple comparisons, and the natural history of the disease itself.

References

125-8

Cranio-Sacral Therapy

Definition

There is no standard definition on this topic in the literature. It can be described as a gentle, hands-on treatment method that focuses on alleviating restrictions to physiological motion of all the bones of the skull, including the face, mouth, vertebral column, sacrum, coccyx and pelvis. Concurrently, the craniosacral therapist focuses as well on normalizing abnormal tensions and stresses in the meningeal membrane, with special attention to the dura mater (outermost membrane) and its fascial connections.

The Evidence

The Evidence-Based Practice Group in collaboration with the BC Office of Health Technology Assessment has conducted a systematic review and found **no** evidence on the effectiveness of cranio-sacral therapy.

For further information readers are referred to the [Cranio-Sacral Therapy research findings](#).

References

3, 13

Dry Needling, or Intra-muscular Stimulation (IMS)

Definition

Dry needling is a technique that uses needles to treat myofascial pain in any body part, including the low back pain⁶. Dry needling involves the insertion of a needle (it can be an acupuncture needle or any other injection needle without injecting any liquid) at the myofascial trigger pain points (not toward meridian points as it is practiced in acupuncture). The needles are removed once the trigger point is inactivated. The activation of the trigger point should be followed by exercises, for example, with the purpose of re-establishing a painless, full range of motion and avoid recurrences. At present, the mechanisms underlying the action of dry needling is still unclear.

IMS, which was developed in 1973, is defined as a total system for the diagnosis and treatment of myofascial pain syndromes (i.e. chronic pain conditions that occur in the musculoskeletal system when there is no obvious injury or inflammation). The treatment involves dry needling of affected areas of the body without injecting any substance. The needle sites can be at the epicenter of taut, tender muscle bands, or they can be near the spine where the nerve root may have become irritated and supersensitive.

The Evidence

A recently published Cochrane review (level 1 evidence) investigating the effectiveness of acupuncture and dry needling for low back pain (dry needling in this review was applied to myofascial pain in the low back region), concluded that there was:

- ✚ limited evidence that dry needling was better than placebo TENS immediately after end of each sessions among chronic low back pain (LBP) patients
- ✚ limited evidence dry needling added to a regimen of physiotherapy, occupational therapy and industrial assessments was better than the regimen of physiotherapy, occupational therapy and industrial assessments alone immediately after end of each sessions, at < 3 months follow-up and at 3-12 months follow-up among chronic LBP patients
- ✚ moderate evidence that there was no difference between one dry needling and one trigger point injection session among sub-acute LBP patients
- ✚ moderate evidence that there was no difference between one dry needling and one cooling spray over trigger point area + acupressure among sub-acute LBP patients

References

98-102

Equestrian Therapy

Definition

Therapeutic riding is the combination of physical therapy and equestrian techniques designed to build strength, coordination, and self-esteem⁽⁸³⁾. It is claimed that equestrian therapy offers a person with a disability an excellent means of physical activity that aids in improving balance, posture, coordination, and the development of a positive attitude and sense of accomplishment⁽⁸⁴⁾. Equestrian therapy has been applied in various physical and mental disorders, including cerebral palsy, autism, stroke, trauma-related injuries, birth defects and mental retardation.

The Evidence

To date, there is no published literature on equestrian therapy or on its efficacy or effectiveness in treating these conditions.

References

83 – 84

Extracorporeal Shockwave Therapy (ESWT)

Definition

ESWT is the application of medical device that is based on the use of shock waves, (i.e. micro second pressure impulses) which delivers sonic pulses from outside of the body, over a specific site (e.g. calcific deposit in a tendon). Continuing with this example, the hypothesis is, that by applying this sonic wave, the calcific tendon is supposedly broken down resulting in a reduction in pain. However, the pathological process of this phenomenon is still unclear despite numerous research undertakings in this area.

The Evidence

Various systematic reviews have been done, on the topic of ESWT for treating lateral epicondylitis, plantar fasciitis, pseudoarthrosis, including one by the Evidence Based Practice Group, Workers' Compensation Board of BC, and **none** of the reviews demonstrate evidence on the effectiveness of ESWT.

Last up-date June 2004

References

15-19, 57

Glucosamine (usually with chondroitin)

Definition

Glucosamine is a natural substance found in the body and is formed by the combination of glucose and glutamine. It is found primarily in cartilage and is the building blocks of the ground substance of the articular cartilage, the proteoglycans. The rationale for the use of glucosamine in osteoarthritis is based largely on in-vitro and animal models of osteoarthritis. For example, glucosamine has been shown to normalize cartilage metabolism, rebuild experimentally damaged cartilage, and demonstrate mild anti-inflammatory properties. Researchers believe that glucosamine inhibits inflammation and stimulates cartilage cell growth, while chondroitin provides cartilage with strength and resilience. Currently, glucosamine and chondroitin are classified as dietary supplements.

The Evidence

There is some Level 1 evidence on the short and long term effectiveness of glucosamine in alleviating osteo-arthritis symptoms, as measured by pain index, the Lequesne index or WOMAC, particularly of the hip or knee joint. There is also some Level 1 evidence on the possible role of glucosamine as a structure-modifying drug for OA as measured by x-ray imaging of the joint space.

The majority of research regarding glucosamine and osteo-arthritis was undertaken on patients with either knee or hip osteo-arthritis. This **limitation** raises questions regarding generalizations of outcomes for osteo-arthritis of other joints such as those in the hand/wrist, shoulder and ankle.

The majority of clinical studies were done with **glucosamine sulphate** and little evidence is available on the efficacy of other forms of glucosamine (e.g. hydrochloride, chlorhydrate salt, hydro iodide, combination with herbs, vitamin A, vitamin E, or minerals including Mg, K, Cu, Zn or Se).

The majority of the primary research on glucosamine **is funded by** manufacturers of the compound.

The longest reported clinical trial on glucosamine and osteo-arthritis occurred over 3 years. Given the nature of osteo-arthritis as a chronic disease process, the information on the long-term toxicity/side effects of glucosamine administration is **still lacking**.

Information on possible drug interaction(s) is still lacking.

The use of combination glucosamine and chondroitin for treatment of osteo-arthritis has become extremely popular. However, there is **no evidence** that this combination is more effective than either supplement alone.

References

30-35, 54

Hellerwork

Definition

Hellerwork is an offshoot of Rolfing. Hellerwork incorporates movement re-education training to bring the body into fuller activity and expression. Hellerworkers seek to realign the body by using intense pressure and stroking to stretch shortened and tightened fascia back into shape. The goal is to make the fascia softer and more flexible, and to restore its natural balance in relation to muscles, tendons, and bones.

Hellerwork includes verbal dialogue and movement exercises that complement the massage component. Through verbal dialogue, Hellerworkers help clients explore attitudes, feelings, and past traumas that may be contributing to their current physical and emotional state. Using movement exercises, clients are taught how to sit, stand, walk, run, bend over, and perform other ordinary actions in a stress-free, efficient way. This threefold approach aims to realign the body and release deeply held tensions, which, it is believed, will help increase energy, flexibility, and overall health and well being.

The Evidence

To this date, there is no published literature on the effectiveness of Hellerwork.

References

3, 39

Herbal Medicine

Definition

There is no standard definition of herbal medicine (HM), but it perhaps can be defined as the application of plants for medicinal purposes. Some experts define HM as 'crude drugs of vegetable origin on which many are potentially toxic'. However, herbal medicine it can be said that herbal medicine is the foundation of modern pharmacology. HM has existed for millenia in many countries (e.g. traditional Chinese medicine, Ayurvedic medicine in India and Kampo medicine in Japan). Various 'modern' drugs are plant in origin, for example aspirin, ergot, curare, strychnine, taxol.

The Evidence

It is inappropriate to provide a general statements on herbal remedies since each remedy has to be evaluated on its own merits. It is not in the scope of this short definition to provide a review on the effectiveness of herbal remedies.

However, it is important to remember that **herbal remedies are still unregulated** and are regarded as dietary supplements. As such there is no standardization and possible adulteration in the preparation processes may occur.

It is also important to remember that **some of these remedies are toxic** and studies have shown the occurrence of interaction between herbs and 'modern' drugs.

References

3, 25, 26, 28, 29

Hydrotherapy

Definition

Hydrotherapy or hydrotherapeutics or sometimes referred to as hydrotherapy⁽⁹¹⁾, i.e. the use of the properties and healing powers of water. The term hydrotherapy generally means a definite theory of cure in which the value of water is above all else and the administration of other medicinal agents is perceived as harmful or unhelpful⁽⁹¹⁾. However, rehabilitation professionals define hydrotherapy as a pool therapy program specifically designed for an individual to improve neuromuscular skeletal function conducted and supervised by appropriately qualified personnel, ideally in a purpose-built hydrotherapy pool⁽⁹⁴⁻⁹⁷⁾.

Thalassotherapy literally means sea therapy. The official definition of thalassotherapy came from the French Sea and Health Federation in 1986. It says 'in a privileged marine location, thalassotherapy is the combined use, under medical supervision, and with a curative and preventive goal, of the benefits of the marine environment which include the marine climate, seawater, mud, sand, seaweed and other substances derived from the sea'⁽⁹¹⁾.

Balneotherapy or spa therapy is defined as the use of baths (hot or cold springs or natural occurring waters) and other natural remedies (including mud) for healing^(91,92,93).

The Evidence

- ✚ There was no evidence on the effectiveness of hydrotherapy for treating chronic low back pain (Evidence Level 1).
- ✚ There was no evidence on the effectiveness of hydrotherapy (alone or as a component of physical therapy program) as part of treatment of ankylosing spondylitis (Evidence Level 1).
- ✚ There was conclusive evidence on the effectiveness of hydrotherapy over land based exercise therapy in the rehabilitation of post reconstructive Anterior Cruciate Ligament surgery (Evidence Level 1).
- ✚ There was no evidence on the effectiveness on the addition of whirlpool sessions in treating grade III-IV pressure ulcer (Evidence Level 1).
- ✚ Evidence on the effectiveness of hydrotherapy in treating fibromyalgia is inconclusive (Evidence Level 1).
- ✚ The application of hydrotherapy also posed some risk to patients. There were reports in the literature regarding legionella infections, burn, folliculitis and hypersensitivity pneumonitis which were related to hydrotherapy (Evidence Level 4).

References

91-97

Magnetic Insole Therapy

Definition

Magnet therapy involves the use of a magnetic device placed on or near the body to relieve pain and facilitate healing. Magnet therapy has been applied on various conditions including arthritis, insomnia, carpal tunnel syndrome and headaches. The theory behind magnet therapy is that the magnetic fields produced by magnets (or by devices that generate electromagnetic current) can penetrate the human body and affect the functioning of individual cells and improve the working of the nervous system and various organs. Precisely how the magnetic fields do this is still unknown.

The Evidence

There is **no** evidence to support on the effectiveness of magnetic shoe insoles in treating plantar heel pain.

The effectiveness of magnetic shoe insoles in treating diabetic peripheral neuropathy is still **inconclusive**.

References

19, 42-44, 55

Naturopathic Medicine

Definition

Naturopathic Medicine (NM) is a unique system of primary health care in that it is not limited to a single modality of healing and cannot be identified with any one therapeutic approach. NM incorporates many complementary medical approaches to treatment. NM is based on an understanding that the human organism contains a powerful healing intelligence called the 'vital force'. Naturopathy supports the vital force by following 6 principles of naturopathic medicine.

In naturopathy, a variety of interventions are used to help mobilize the 'vital force' in patients to bring about cure. These modalities include nutrition, botanical medicine, homoeopathy, mind-body medicine, physical medicine life style counselling, acupuncture, ayurveda.

The Evidence

The Evidence Based Practice Group has not done a systematic review of this topic.

References

3, 11, 27

NeuroKinetics® Health Services (BC) Inc.

Definition

NeuroKinetics® Health Services (BC) Inc., a health services company in Vancouver, claims to provide 'a specialized neurophysiological approach and expertise based on sensory-motor and cognitive dysfunction analysis within the central nervous system resulting from injury, trauma, shock, overexertion or exposure to toxic substances' through the means of 'integration between Western medical neuroscience with Traditional Chinese Medicine and acupuncture along with the principles of neuroplasticity'.⁽¹⁰³⁾

The founder of NeuroKinetics®, Philippe A. Souvestre, is a non practicing medical doctor (graduated from France), a BC registered acupuncturist, and a registered member of the Canadian Association of Rehabilitation Professionals.⁽¹⁰⁴⁾

The Evidence

A systematic search on 5 commercial databases available through OVID® found only 1 article that relates to the NeuroKinetics® method.⁽¹⁰⁵⁾ The article, in the form of an abstract, was presented at the 2001 International Symposium on Concussion in Sport. The abstract was poorly written and did not provide any information to show the effectiveness of the NeuroKinetics® method in treating post concussion syndrome. As such, to date, there is no evidence on the effectiveness of the NeuroKinetics® method in treating various conditions including post concussion syndrome.

NeuroKinetics® Health Services (BC) Inc. should not be confused with Australia's NeuroKinetics⁽¹⁰⁶⁾ or The University of Alberta-affiliated Neurokinetics Inc.⁽¹⁰⁷⁾

Australia's NeuroKinetics claims to provide 'non-judgmental, non-invasive, non-manipulative skeletal alignment through innovative neurological transmission pathways in the Central Nervous System'. The treatment involves lightly touching (with fingertips) pairs of points, purported to be mechano-receptors that are responsive to pressure or activated by physical pressure, located just on or just under the surface of the skin. A systematic review on 5 commercial databases available through OVID® found no articles that relate to Australia's NeuroKinetics. As such, to date, there is no evidence on the effectiveness of this method.

The University of Alberta-affiliated Neurokinetics Inc. is a startup company developing the Bionic Glove®. The Bionic Glove, which is based on Functional Electrical Stimulation, is an electric device that allows a motion-impaired individual to grip an object.⁽¹⁰⁷⁾ The EBPG did not conduct a systematic review on this product.

References

103-107

The OmegaWave Sport Technology System®

Definition

The OmegaWave Sport System claims to evaluate six human body systems, including the autonomic nervous system, "energy" systems, cardiopulmonary systems, detoxification system and hormonal system. These abilities are all performed through analysis on data collected from heart rate variation, 3 lead ECG and EEG (omega wave detection)^(1,2). The producer of the OmegaWave Sport System claims that it is a revolutionary product used to enhance athletic performance and physical fitness quickly, non-stressfully, and non-invasively. In his e-mail to the EBPG⁽³⁾, the company representative claims that the ability of the 'Tension Index', a feature available in this system, correlates with progression and regression of disease. The system also provides quantifiable measures of cumulative stress.

The Evidence

Based on a systematic review undertaken by the EBPG, there is no evidence on the efficacy or effectiveness of OmegaWave Sport Technology System in assisting with the diagnosis of various conditions, including stress of various origins, coronary disease and development of variously reported disease conditions. No data is available to assess the sensitivity, specificity, false positive, false negative, positive or negative predictive value and the likelihood ratio of a positive or a negative test in order to assess the 'systems' potential role as a diagnostic test. There is limited evidence that the OmegaWave Sport Technology System does not provide accurate measurement of VO₂Max in young athletes.

A full systematic review document on the OmegaWave system can be found at:
http://worksafebc.com/health_care_providers/Assets/PDF/omegawave.pdf

References

108-113

Ortho-Bionomy

Definition

Ortho-Bionomy or "the correct application of the laws of life" is an osteopathically-based form of body therapy which is being used to treat chronic stress, injuries and pain or problems associated with postural and structural imbalance. The practitioner uses gentle movements and positions of the body to facilitate the change of stress and pain patterns. A strong focus is placed on the comfort of the individual. No forceful manipulations are used. The practitioner also suggests home exercises for individuals to further facilitate the neuromuscular re-education process begun in the session.

The Evidence

There is no published literature on ortho-bionomy.

Last up-date July 2004

References

45

Ozone Therapy

Definition

Ozone therapy is based on exploiting the chemical properties of ozone (O₃), an unstable allotropic form of oxygen. It has been used to treat various conditions including cancer, peripheral occlusive arterial disease and lumbar disc herniation. Today, there is a lack of published research on this subject.

The Evidence

There is a lack of evidence in the effectiveness of ozone or oxygen-ozone therapy in treating cancer, peripheral occlusive disease and lumbar disc herniation.

References

25, 36-38

Prolotherapy

Definition

Prolotherapy is the rehabilitation of an incompetent structure, such as ligament or tendon, by the induced proliferation of cells. Prolotherapy supposedly induces the proliferation of collagen tissue that make up structure such as ligaments, tendons and joint capsular tissue by the injection of proliferant substance such as extract of corn, glucose, pitcher plant, zinc manganese, extract of cod liver oil together with local anesthetic agents into the involved body area.

The Evidence

There are 12 published papers on Prolotherapy (1966-2004). There exists a lack of evidence or no evidence for the effectiveness of Prolotherapy in treating diseases such as chronic pain, low back pain (level 1 evidence), osteoarthritis and chronic headache.

References

1 - 9, 52-53, 56

Pulsed Signal Therapy

Definition

Pulsed Signal Therapy is a specific form among a class of devices, which use pulsed electromagnetic energy to induce electrical current, which is claimed to promote healing in injured or diseased tissues.

The Evidence

The Evidence-Based Practice Group in collaboration with the BC Office of Health Technology Assessment has conducted a systematic review and found **NO** evidence on the effectiveness of pulsed signal therapy.

For further information readers are referred to the [Pulsed Signal Therapy for Musculoskeletal Conditions](#) research findings.

References

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Qigong

Definition

Qigong is a therapeutic Chinese practice that includes gentle exercises for the breath, body, mind and the voice. It combines repetitions of coordinated physical motions with mental concentration and directive efforts to move the 'qi' (biofield flux, vital energy) in the body. It is also defined as methods used to cultivate, regulate and harness 'qi' for general self preservation and health, healing, self defense, longevity and particularly spiritual development. Currently, there are over 100 methods of Qigong available.

The Evidence

The Evidence Based Practice Group has not done any systematic review on this topic.

References

3, 10-12

Reflexology

Definition

Reflexology is a part of pressure point therapies that uses pressure on specific points to reduce pain and treat various conditions. Reflexology recognizes specific zones on the hand and feet are related to specific organ, glands and body systems. The pressure is applied to a specific zone in order to cure the disease. Reflexology has been tried on various conditions, including relief of pain, release of kidney stones, recovery from stroke, sinusitis, sciatica, menstrual disorder, encopresis and enuresis in children.

The Evidence

The Evidence Based Practice Group has not done any systematic review on this topic.

References

3, 40

Rolfing

Definition

Rolfing, also known as Structural Integration, is another method of body manipulation. Unlike other body manipulation methods, Rolfing focuses on the fascia. Rolfing is based on the premise that physical and emotional stress, as well as gravity, can throw the body out of vertical alignment and cause muscles and fascia to become rigid and inflexible. These problems can then lead to more stress, illness, and a loss of general well-being. Rolfing aims to realign the body by using intense pressure and stroking to stretch shortened and tightened fascia back into shape. The goal is to make the fascia softer and more flexible, and to restore its natural balance in relation to muscles, tendons, and bones. Rolfing practitioners manipulate the fascia rather than the muscles themselves. Pressure from the practitioner's knuckles, knees, elbows, or fingers on this connective tissue is said to release deeply held tension and stress. Rolfing is basically another method of massage therapy.

The Evidence

To this date Rolfing has been applied on various conditions including cerebral palsy in children, anxiety, stress and symptoms of low back pain and whiplash and changes in parasympathetic tone. However, evidence on its effectiveness is still lacking.

References

3

Therapeutic Touch (TT)

Definition

Therapeutic Touch is a method of detecting and balancing nonphysical 'life energy', also called prana or chi. A balanced flow of life energy between the environment and the body is assumed to underlie good health. Imbalances and blockages in the energy field lead to illness and ill-health. Life energy has not been detected with scientific instruments. Practitioners state they sense the energy field after entering a meditative state called 'being centered.' Much publicity recently surrounded a controversial study which found that TT practitioners could not detect human energy fields with statistical reliability.

The Evidence

There is not enough evidence available on TT with regard to reducing anxiety, relieving pain, or promoting healing.

References

46 – 51

Traumeel®

Definition

The manufacturer⁽¹¹⁹⁾ defines Traumeel® as a homeopathic (see previous EBPG reviews on homeopathy (click [here](#) and [here](#)) combination formulation of 12 botanical and 1 mineral substances. These include *Arnica montana* (mountain arnica), *Calendula officinalis* (calendula), *Hamamelis virginiana* (witch hazel), *Millefolium* (milfoil), *Belladonna* (deadly nightshade), *Aconitum napellus* (monkshood), *Chamomilla* (chamomile), *Symphytum officinale* (comfrey), *Bellis perennis* (daisy), *Echinacea angustifolia* (narrow-leafed coneflower), *Echinacea purpurea* (purple coneflower), *Hypericum perforatum* (St John's wort), and *Hepar sulphuris calcareum* (calcium sulfide). Traumeel® is available as drops, tablets, drinkable ampoules, ointment, gel and eardrops⁽¹¹⁹⁾. The indications for Traumeel® include pain conditions (acute and/or chronic pain of various origins), inflammatory conditions as well as brain injury and otitis externa. The concentration of ingredients available in Traumeel® is several times higher than those apparently available in homeopathic preparations. Hence, it is more appropriate to categorize Traumeel® as homotoxicology instead of a homeopathy form of therapy⁽¹²⁰⁾. Homotoxicology is a form of therapy that uses homeopathically based remedies at enhanced concentrations with a view to eliminate toxins from the body⁽¹²⁰⁾. It is strongly influenced by, but not identical with, homeopathy.

The Evidence

A comprehensive search conducted by the Evidence Based Practice Group (EBPG) identified 20 published articles relating to Traumeel®. Five⁽¹²⁰⁻¹²⁴⁾ of these were relevant to this review investigating the effectiveness of Traumeel® in treating various conditions. Two Cochrane systematic reviews did not find any evidence on the effectiveness of Traumeel® in treating chronic asthma⁽¹²³⁾ or preventing oral mucositis for patients with cancer receiving treatment⁽¹²²⁾. One high quality systematic review did not find any evidence on the effectiveness of Traumeel® in treating minor sport injuries, chemotherapy induced stomatitis, sprains or knee hemarthrosis⁽¹²⁰⁾. One low quality case control study stated that it was equivalent to NSAIDs in treating lateral epicondylitis. This study went into further detail stating that Traumeel® was significantly 'superior' in scores relating to pain at rest, joint mobility (extension) and torsional joint mobility compared to NSAIDs in treating epicondylitis⁽¹²¹⁾. **Readers should be aware that these 'superior' differences are very small.** One low quality case (with historical) control⁽¹²⁴⁾ found that autologous conditioned serum was significantly better than Actovegin + Traumeel® in reducing time to recovery from muscle injury. With the above in mind, the EBPG feels it is reasonable to conclude that at present (January 2006), there is no significant evidence demonstrating the effectiveness of Traumeel® in treating various conditions.

References

119 - 124

Watsu

Definition

Watsu, an abbreviation of Water shiatSU was developed in Japan by Harold Dull in 1980^(76,77). It is perceived as 'floating massage' ⁽⁷⁷⁾. In this 'new type of therapeutic bodywork', one float in a large pool of warm water while being massaged. To date Watsu is taught at the School of Shiatsu and Massage at Harbin Hot Springs in California⁽⁷⁸⁾. Registration of Watsu practitioner is also maintained at the same school⁽⁷⁹⁾. It should be noted that it is only registration of practitioner without any binding regulation cited. Watsu, a form of aquatic therapy, maybe a part of Cochrane Review on the effectiveness of aquatic therapy exercise for treating rheumatoid arthritis⁽⁸⁰⁾. This document has remained in protocol format since July 2001.

The Evidence

To date there is level 5 evidence on the effectiveness of Watsu combined with other water based interventions and or physical therapy in treating chronic low back pain (1 patient)⁽⁸¹⁾ and cerebral palsy (6 patients)⁽⁸²⁾.

References

76 – 82

Wobbleboard (a.k.a. ankle disk)

Definition

Wobbleboard is an exercise device being used for proprioceptive balance training, building strength in the muscles, joints and tendons of the lower body and, recently, in an adapted closed kinetic chain exercises in reducing re-dislocation of shoulder joint.

The Evidence

- There was limited evidence to support the effectiveness of wobbleboard in reducing ankle sprain (presumably by increasing balance since increasing balance is one of the major benefit being promoted for wobbleboard) among those with ankle sprain previously (i.e. reinjury). On the other hand, there is strong evidence that ankle support, e.g. in the form semi-rigid orthosis or air casts in preventing ankle sprain during high risk sporting activities.
- The EBPG cannot find any safety data on wobbleboard (e.g. number of falls when using wobbleboard, esp. among those unsupervised, etc)

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Yoga

Definition

Yoga is a traditional Indian culture and way of life which is purported to give the practitioner a "healthy body and a sound mind" and is believed to alleviate stress and induce relaxation. The word yoga is probably derived from the Sanskrit word 'Yug' which means 'controlling the mind'. The word yoga also means to 'unite or connect' and in the higher levels of yoga this refers to the 'union of the individual soul to the universal soul'. Yoga practice may include centering and meditation, breath control, warm ups and stretching, postures, relaxation, affirmation and visualization, and meditation. The commonly performed yogic practices include breathing exercises (pranayama), postures (asanas), devotional sessions and meditation (dhyana). Many branches of yoga have been described such as hatha yoga, karma yoga, bhakti yoga and raja yoga. Transcendental meditation which is widely practiced, employs a single stage meditation during which the individual sits quietly with eyes closed for 20 minutes twice a day and mentally repeats a specifically chosen Sanskrit word or mantra. In sahaja yoga, the individuals sit in a relaxed posture with hands in front, palms upwards. They are asked to direct attention to a picture placed in front with a candle lit before it. Gradually when their thoughts recede, they close their eyes and may direct their attention at the 'sahasrara chakra' or top of his head. The individual sits in meditation for about 10 to 15 minutes. It is believed that sahaja yoga awakens the kundalini (dormant divine energy in our body) and corrects physical, mental and emotional disorders^(58,59).

To date yoga has been employed to treat various disease conditions, including chronic obstructive pulmonary disease, coronary heart disease, asthma, epilepsy, stress reduction, anxiety, panic attacks, improving self esteem, tension headache, migraine, insomnia, diabetes, multiple sclerosis, carpal tunnel syndrome, muscle weakness, myopathy, muscular dystrophy, back or neck pain other pain syndromes and other disease conditions⁽⁵⁸⁻⁷⁵⁾. With the exception of yoga for treating carpal tunnel syndrome (CTS), currently, there is no or not enough evidence on the effectiveness of yoga in treating these various disease conditions.

With regard to yoga in treating CTS, a small (51 participants) RCT was conducted in 1998⁽⁷²⁾ under the assumption that stretching in yoga may relieve compression in the carpal tunnel, better joint posture may decrease nerve compression, blood flow may be improved to the median nerve and to mobilize the median nerve within the carpal canal if it is adherent. The study showed that after 8 weeks of treatment, yoga group had an improvement in pain score Phalen sign, compared to wrist splint group (control). There was no different with regard to Tinel sign, grip strength difference and improvement in nocturnal waking due to pain between the yoga and wrist splint group. The authors concluded that yoga has a short term beneficial effects compared to wrist splint among patients with CTS. However, it should be noted that this is a small study with a rather poor quality. The result of this study has not been duplicated elsewhere.

The Evidence

There is not enough evidence on the effectiveness of yoga in treating chronic obstructive pulmonary disease, coronary heart disease, asthma, epilepsy, stress reduction, anxiety, panic attacks, improving self esteem, tension headache, migraine, insomnia, diabetes, multiple sclerosis, carpal tunnel syndrome, muscle weakness, myopathy, muscular dystrophy, back or neck pain and other pain syndromes.

References

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References

1. Hauser RA. Punishing the pain. *Rehab Management*. Feb/March 1999. 26-30.
2. Britton KR. Is prolotherapy safe and effective for back pain?. *Postgraduate Medicine*. Aug 2000;108(2):37-38
3. Cook AR (ed.) (1999). *Alternative Medicine Source book*. Omnigraphics Inc. USA.
4. Abraham I. Prolotherapy for chronic headache. *Headache*. Apr 1997;37(4):256
5. Reeves KD, Hassanein KM. Long-term effects of dextrose prolotherapy for anterior cruciate ligament laxity. *Altern Ther Health Med*. 2003 May-Jun;9(3):58-62.
6. Tsatsos G, Mandal R. Prolotherapy in the treatment of foot problems. *J Am Podiatr Med Assoc*. 2002 Jun;92(6):366-8.
7. Reeves KD, Hassanein K. Randomized, prospective, placebo-controlled double-blind study of dextrose prolotherapy for osteoarthritic thumb and finger (DIP, PIP, and trapeziometacarpal) joints: evidence of clinical efficacy. *J Altern Complement Med*. 2000 Aug;6(4):311-20.
8. Reeves KD, Hassanein K. Randomized prospective double-blind placebo-controlled study of dextrose prolotherapy for knee osteoarthritis with or without ACL laxity. *Altern Ther Health Med*. 2000 Mar;6(2):68-74, 77-80.
9. Coleman AH. Physician electing to treat by prolotherapy alters the method at his peril. *J Natl Med Assoc*. 1968 Jul;60(4):348.
10. McCaffrey R, Fowler NL. Qigong practice. A pathway to health and healing. *Holistic Nursing Practice*. 2003;17(2):110-116
11. Lee CT and Lei T. Qigong. In Jonas WB and Levin JS (eds.) (2002) *Essentials of complementary and alternative medicine*. Pp. 392-415. Lippincott Williams and Wilkins. Philadelphia
12. Herring MA and Roberts MM. (2002). *Blackwell Complementary and Alternative Medicine. Fast facts for medical practice*. Blackwell Publishing. Massachusetts.
13. Green C, Martin CW, Bassett K, Kazanjian A (1999). A systematic review and critical appraisal of the scientific evidence on craniosacral therapy. BC Office of Health Technology Assessment. UBC. Vancouver.
14. Sibley LM, Martin CW, Green CJ, Bassett K, Kazanjian A (2001). Pulsed signal therapy for musculoskeletal conditions. BC Office of Health Technology Assessment. UBC. Vancouver.
15. Martin CM (2002). Extra corporeal shockwave therapy in workers with lateral epicondylitis. WCB Evidence Based Practice Group. Compensation and Rehabilitation Services Division. WCB of BC.
16. Wild, C., Khene, M., Wanke, St. ESWT: Extracorporeal Shock Wave Therapy - Assessment of an emerging Health Technology. *International Journal of Technology Assessment in Health Care* 2000; 16, 1, 199-209
17. Buchbinder R, Green S, White M et al. Shockwave therapy for lateral elbow pain (Cochrane review). In: *The Cochrane Library, Issue 3, 2003*. Oxford: Update Software.
18. (2000). Australian Safety and Efficacy Register of New Interventional Procedures - Surgical. Interventional procedure overview of Extracorporeal Shock Wave lithotripsy for calcific tendonitis. SERNIP procedure number 148. Australia.
19. Crawford F, Thomson C. Interventions for treating plantar heel pain (Cochrane Review). In: *The Cochrane Library, Issue 3, 2003*. Oxford: Update Software.
20. Ogden JA, Alvarez RG, Marlow M. Shockwave therapy for chronic proximal plantar fasciitis: a meta analysis. *Foot and Ankle International*. April 2002;24(4):301-308
21. Ernst E, Huntley A. Tea tree oil: a systematic review of randomized clinical trials. *Forschende Komplementarmedizin und Klassische Naturheilkunde* 2000; 7(1): 17-20. (abstract in English)

22. Cooke B, Ernst A. Aromatherapy: a systematic review. *British Journal of General Practice*. 2000;50:493-496
23. Smith CA, Collins CT, Cyna AM, Crowther CA. Complementary and alternative therapies for pain management in labour (Cochrane Review). In: *The Cochrane Library, Issue 3, 2003*. Oxford: Update Software.
24. Thorgrimsen L, Spector A, Wiles A, Orrell M. Aroma therapy for dementia (Cochrane Review). In: *The Cochrane Library, Issue3, 2003*. Oxford. Update Software.
25. Ernst E. A primer of complementary and alternative medicine commonly used by cancer patients. *Medical Journal of Australia*. 2001;174:88-92.
26. Ernst E and Pittler MH. Herbal Medicine. *The Medical Clinics of North America. Complementary and Alternative Medicine*. Jan 2002;86(1):149-161
27. Smith MJ, Logan AC. Naturopathy. In Perlman A (ed.). *The Medical Clinics of North America. Complementary and Alternative Medicine*. Jan 2002;86(1):173-184
28. Marcus DM, Grollman AP. Sounding Boards. *Botanical Medicines - the need for new regulations*. *New England Journal of Medicine*. Dec 2002;347(25):2073-2076.
29. Steurer-Stey C, Russi EW and Steurer J. Complementary and alternative medicine in asthma - do they work? A summary and appraisal of published evidence. *Swiss Medical Weekly*. 2002;132:338-344.
30. Towheed TE, Anastassiades TP, Shea B, Houpt J, Welch V, Hochberg MC. Glucosamine therapy for treating osteoarthritis (Cochrane Review). In: *The Cochrane Library, Issue 3, 2003*. Oxford: Update Software.
31. Braham R, Dawson B, Goodman C. The effect of glucosamine supplementation on people experiencing regular knee pain. *British Journal of Sports Medicine*. 2003;37:45-49.
32. National Center for Complementary and Alternative Medicine. NIH Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT). <http://nccam.nih.gov/news/19972000/121100/qa.htm>. accessed August 11, 2003.
33. McAlindon TE, LaValley MP, Gulin JP, Felson DT. Glucosamine and chondroitin for treatment of osteoarthritis. A systematic quality assessment and meta analysis. *JAMA*. March 2000;283(11):1469-1475.
34. Leeb BF, Schweitzer H, Montag K, Smolen JS. A metaanalysis of chondroitin sulfate in the treatment of osteoarthritis. *Journal of rheumatology*. Jan 2000;27:205-211.
35. ..Bandolier. Evidence-based thinking about health care. Glucosamine and arthritis update. March 2001;85(2).
36. Giunta R, Coppola A, Luongo C et al. Ozonized autohemotransfusion improves hemorheological parameters and oxygen delivery to tissues in patients with peripheral occlusive arterial disease. *Annals of Hematology*. Dec 2001;80(12):745-748
37. Verrazzo G, Coppola L, Luongo C et al. Hyperbaric oxygen, oxygen-ozone therapy, and rheologic parameters of blood in patients with peripheral occlusive arterial disease. *Undersea Hyperbaric Medicine*. March 1995;22(1):17-22.
38. Andreula CF, Simonetti L, de Santis F et al. Minimally invasive oxygen-ozone therapy for lumbar disk herniation. *American Journal of Neuroradiology*. May 2003;24:996-1000.
39. Hornung S. An ABC of alternative medicine: Hellerwork. *Health Visit*. Dec 1986;59(12):387-8.
40. Stephenson NL, Dalton JA. Using reflexology for pain management. A review. *Journal of Holistic Nursing*. Jun 2003;21(2):179-191.
41. Gin RH, Green BN. George Goodheart Jr DC and a history of applied kinesiology. *Journal of Manipulative and Physiological Therapeutics*. Jun 1997;20(5):331-337.

42. Ratterman R, Secrest J, Norwood B, Ch'ien AP. Magnet therapy: what's the attraction? *Journal of the American Academy of Nursing Practitioners*. Aug 2002;14(8):347-353.
43. Weintraub MI, Wolfe GI, Barohn RA et al. Stasis magnetic field therapy for symptomatic diabetic neuropathy: a randomized, double blind, placebo controlled trial. *Archives of Physical Medicine and Rehabilitation*. May 2003;84(5):736-746.
44. Caselli MA, Clark N, Lazarus S et al. Evaluation of magnetic foil and PPT insoles in the treatment of heel pain.
45. Definition of orthobionomy. <http://www.ortho-bionomy.org> accessed August 11, 2003
46. Vernon H, McDermaid CS, Hagino C. Systematic review of randomized controlled trials of complementary/alternative therapies in the treatment of tension-type and cervicogenic headache. *Complementary Therapies in Medicine*. 1999;7(3):142-155.
47. Peters R M. The effectiveness of therapeutic touch: a meta-analytic review. *Nursing Science Quarterly*. 1999. 12(1). 52-61.
48. Astin J A, Harkness E, Ernst E. The efficacy of "distant healing": a systematic review of randomized trials. *Annals of Internal Medicine*. 2000. 132(11). 903-910.
49. Winstead-Fry P, Kijek J. An integrative review and meta-analysis of therapeutic touch research. *Alternative Therapies in Health and Medicine*. 1999. 5(6). 58-67.
50. Ireland M, Olson M. Massage therapy and therapeutic touch in children: state of the science. *Alternative Therapies in Health and Medicine*. 2000. 6(5). 54-63.
51. Forbes D A. Strategies for managing behavioural symptomatology associated with dementia of the alzheimer type: a systematic overview. *Canadian Journal of Nursing Research*. 1998. 30(2).67-86.
52. Kohlbeck FJ, Haldeman S. Medication -assisted spinal manipulation. *Spine Journal*. 2002 July-Aug;2(4):288-302.
53. Mooney V. Prolotherapy at the fringe of medical care, or is it the frontier? *Spine Journal* 2003 July-Aug;3(4):253-254.
54. Martin CM. Evidence Based Practice Group. Glucosamine. Review on its effectiveness in treating osteoarthritis. October 2003. The Evidence Based Practice Group, WCB of BC. Internal document.
55. Winemiller MH, Bilow RG, Laskowski ER, Harmsen WS. Effect of magnetic vs. sham-magnetic insoles on plantar heel pain. *JAMA*. 17 Sept, 2003;290(11):1474-1478.
56. Yelland MJ, Glasziou PP, Bogduk N et al. Prolotherapy injections, saline injections, and exercises for chronic low back pain: a randomized trial. *Spine*. 2004;29:9-16.
57. Martin C. Extracorporeal Shock Wave Therapy for treating musculoskeletal conditions. First update. Internal document. The Evidence-Based Practice Group. WCB of BC, June 2004.
58. Leskowitz E. (2003). *Complementary and Alternative Medicine in Rehabilitation. Medical guides to Complementary and Alternative Medicine*. Churchill Livingstone. Missouri.
59. Ramaratnam S, Sridharan K. Yoga for epilepsy (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
60. Kerr D, Gillam E, Ryder J et al. An Eastern art form for a Western disease: Randomised controlled trial of yoga in patients with poorly controlled insulin-treated diabetes. *Practical Diabetes International*. 2002;19(6):164-166.
61. Ray US, Sinha B, Tomer OS et al. Aerobic capacity and perceived exertion after practice of Hatha yogic exercises. *Indian Journal of Medical Research*. Dec 2001;114:215-221.

62. Garfinkel MS, Singhal A, Katz W, Allan DA, Reshetar R, Schumacher HR. Yoga based intervention for carpal tunnel syndrome; a randomized clinical trial. *JAMA* 1998;280:1601-3.
63. Kaliappen L, Kaliappen KV. The efficacy of yoga therapy in the treatment of migraine and tension headaches. *Journal of the Indian Academy of Applied Psychology* 1987;13(2):95-100.
64. Kaliappen L, Kaliappen KV. Efficacy of yoga therapy in the management of headaches. *Journal of Indian Psychology* 1992;10(1-2):41-7.
65. Sethi BB, Trivedi JK, Anand R. A comparative study of relative effectiveness of biofeedback and shavasana (yoga) in tension headache. *Indian Journal of Psychiatry* 1981;23(2):109-14.
66. Volweider FH. A comparison of short-term yoga and buddy-orientated groups with chronic psychiatric patients. PhD-thesis, University of Southern Mississippi 1981.
67. Vedanthan PK, Kesavalu LN, Murthy KC, Duvall K, Hall MJ, Baker S, Nagarathna S. Clinical study of yoga techniques in university students with asthma: a controlled study. *Allergy and Asthma Proceedings* 1998;19(1):3-9.
68. Manocha R, Marks GB, Kenchington P et al. Sahaja yoga in the management of moderate to severe asthma: a randomized controlled trials. *Thorax*. Feb 2002;57(2):110-115.
69. Lacasse Y, Guyatt G H, Goldstein R S. The components of a respiratory rehabilitation program: a systematic overview. *Chest*. 1997. 111(4). 1077-1088.
70. Ernst E. Breathing techniques - adjunctive treatment modalities for asthma: a systematic review. *European Respiratory Journal*. 2000. 15(5). 969-972.
71. Holloway E, Ram FSF. Breathing exercises for asthma (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
72. O'Connor D, Marshall S, Massy-Westropp N. Non-surgical treatment (other than steroid injection) for carpal tunnel syndrome (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
73. Ekeland E, Heian F, Hagen KB, Abbott J, Nordheim L. Exercise to improve self-esteem in children and young people (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
74. Thornley B, Rathbone J, Adams CE, Awad G. Chlorpromazine versus placebo for schizophrenia (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
75. Rees K, Bennett P, West R, Davey Smith G, Ebrahim S. Psychological interventions for coronary heart disease (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
76. ...Starwater. Watsu-nurturing aquatic body work. Downloaded from <http://www.starwaterwatsu.com/> on December 20, 2004.
77. Yavelow A (1999). Finding yourself in warm water: the spiritual possibility of Watsu®. Downloaded from <http://www.waba.edu/watsu/Watsu%20and%20Spirituality.htm> on December 20, 2004.
78. ..WABA. Downloaded from <http://www.waba.edu/#WATSU> on December 20, 2004.
79. ..Requirements for placement on the WABA Registry as a Watsu Practitioner - 2004. Downloaded from <http://www.waba.edu/log/WatsuPractitioner.pdf> on December 20, 2004.
80. Cardoso JR, Athala AN, Cardoso APRG et al. Aquatic therapy exercise for treating rheumatoid arthritis (Protocol). *The Cochrane Database of Systematic Reviews* 2001, Issue 4. Art. No.: CD003684.
81. Vargas LG. The effect of aquatic physical therapy on improving motor function and decreasing pain in a chronic low back pain: a retrospective case report. *Journal of Aquatic Physical Therapy*. Mar 1998;6(1):6-10.

82. Vogtle LK, Morris DM, Denton BG. An aquatic program for adults with cerebral palsy living in group homes. *Physical Therapy Case Reports*. Sept 1998;1(5):250-259.
83. ..The Institute of Equestrian Therapy. Downloaded from <http://www.equestriantherapy.com/> on December 20, 2004.
84. ..Equestrian Therapy. Downloaded from http://jesherry.com/pet/html/equestrian_therapy.html on December 20, 2004.
85. Newes SL. Adventure-Based Therapy: Theory, Characteristics, Ethics, and Research. A paper written to fulfill the comprehensive examination requirement. The Pennsylvania State University. Downloaded from <http://www.wilderdom.com/html/NewesAT3comps.htm> on December 20, 2004.
86. Hans TA. A meta analysis of the effects of adventure programming on locus of control. *Journal of Contemporary Psychotherapy*. 2000;30(1):33-60.
87. Neill J. Adventure therapy - terminology. Downloaded from <http://www.wilderdom.com/adventuretherapy/adventuretherapyterminology.html> on December 20, 2004.
88. Richards K. Adventure therapy: exploring the healing potential of the outdoors. An Update of a UK Seminar. 14-15 December 2002. Downloaded from http://www.brathay.org.uk/academy/adventure_therapy_seminar.pdf on December 20, 2004.
89. Itin CM. Many pathways to becoming an adventure therapist. *Insight*. Summer 1998;6(1):1-5. Downloaded from http://www.geocities.com/ae_tapg/insight-6.1.pdf on December 20, 2004.
90. Bennett LW, Cardone S, Jarczyk J. Effects of a therapeutic camping program on addiction recovery: the Algonquin haymarket relapse prevention program. *Journal of Substance Abuse Treatment*. 1998;15(5):469-474.
91. Beamon S and Falkenbach A. Hydrotherapy for asthma (protocol). In: *The Cochrane Library*, Issue 1, 2004. Chichester, UK: John Wiley and Sons, Ltd.
92. Strauss-Blasche G, Ekmekcioglu C, Vacariu G et al. Contribution of individual spa therapies in the treatment of chronic pain. *Clinical Journal of Pain*. 2002;18:302-309.
93. March LM, Stenmark J. Managing arthritis. Non-pharmacological approaches to managing arthritis. *Medical Journal of Australia*. 19 Nov 2001;175(SUPPL.):S102-S107.
94. ..Australian Physiotherapy Association: Clinical standards for hydrotherapy. *Australian Journal of Physiotherapy*. 1990;36(3):207-210.
95. Brown CA. Occupational therapists' beliefs regarding treatment options for people with chronic pain. *British Journal of Occupational Therapy*. Sept. 2002;65(9):398-404.
96. Goldby LJ and Scott DL. The way forward for hydrotherapy. *British Journal of Rheumatology*. 1993;32(9):771-773.
97. Bender T, Balint PV and Balint GP. A brief history of spa therapy. *Annals of the Rheumatic Diseases*. 2002; 61(10):949-950.
98. Gerwin RD. Classification, epidemiology, and natural history of myofascial pain syndrome. *Current Pain and Headache Reports*. Oct 2001;5(5):412-420.
99. Gunn CC. (1999). *The Gunn approach to the treatment of chronic pain. Intramuscular stimulation for myofascial pain of radiculopathic origin*. 2nd ed. 2nd reprint. Churchill Livingstone. New York.
100. The Institute for the Study and Treatment of Pain. *Intramuscular Simulation*. Downloaded from <http://www.istop.org/ims.html> on April 19, 2005.
101. Gunn CC. *Reprints on Pain, Acupuncture and IMS*. 17th impressions. January 1998.

102. Furlan AD, van Tulder M, Cherkin D et al. Acupuncture and dry-needling for low back pain an updated systematic review within the framework of the Cochrane Collaboration. *Spine*. April 2005;30(8):944-963.
103. About Us. Downloaded from <http://www.neurokinetics.com/> on July 14, 2005.
104. ..Dr. Souvestre's Curriculum Vitae. Downloaded from http://www.neurokinetics.com/index2.php?option=com_content&do_pdf=1&id=49 on July 14, 2005
105. Souvestre PA, Rother RO. From head concussion to functional autonomy and maximized performance. A drugless neurophysiological approach to central sensory-motor and cognitive restoration. *British Journal of Sports Medicine*. 2001;35:376.
106. ..Welcome to the home of NeuroKinetics. Downloaded from <http://www.neurokinetics.com.au/> on July 15, 2005.
107. .. February 11, 1997. Neurokinetics case study. Downloaded from <http://www.ahfmr.ab.ca/download.php/0db67ee7235c56f39bcf6fd433c04012> on July 15, 2005.
108. Zwolle HJ. The bridge between science and athletes. Abstract presented at the European Congress of Sports Medicine, 3rd European Congress of EFSMA, 22nd Limburg Congress of Sports Medicine. 14-16 May 2003, Hasselt, Belgium. Downloaded from http://www.omegawave.org/documents/Sports_Congress.pdf on September 14, 2005.
109. .. OmegaWave Sport Technology System (company websites). Accessed on September 14, 2005. <http://www.omegawavesport.com/>
110. Kendal Yonemoto (OmegaWave representative). E-mail sent to Dr. Craig Martin on September 13, 2005.
111. Rochmis J. Taking athletes to the (VO₂) Max. Downloaded from: <http://www.wired.com/news/technology/0,1282,37595,00.html> on September 14, 2005.
112. Ramirez R. (2003). Evaluation of the validity of a non-exercise technique of estimating VO₂max. Master thesis in Kinesiology. Western Washington University. *Kinesiology Abstract*: October 2003; Vol. 16(2). International Institute for Sport and Human Performance and Kinesiology Publication. University of Oregon. Eugene, Oregon. Downloaded from kinpubs.uoregon.edu/KinAbs16-2.pdf on September 14, 2005.
113. van de Velde D. Monitoring the cardiac function and the athlete's potential with a heart rate variability test. Abstract presented at the European Congress of Sports Medicine, 3rd European Congress of EFSMA, 22nd Limburg Congress of Sports Medicine. 14-16 May 2003, Hasselt, Belgium. Downloaded from http://www.omegawave.org/documents/Sports_Congress.pdf on September 14, 2005.
114. Handoll HHG, Rowe BH, Quinn KM, de Bie R. Interventions for preventing ankle ligament injuries. *The Cochrane Database of Systematic Reviews 2001; Issue 3*.
115. Naughton J, Adams R, Maher C. Upper-body wobbleboard training effects on the post-dislocation shoulder. *Physical Therapy in Sport*. 2005;6:31-37.
116. Na YM, Seong YJ, Lee HJ et al. The effects of ankle disk training in functional ankle instability (abstract). *Medicine and Science in Sports and Exercise*. May 1999.Supplement 31(5):S357.
117. Refshauge KM, Kilbreath SL, Raymond J. Does wobbleboard training improve balance in recurrent ankle inversion sprain? (abstract). *Medicine and Science in Sports and Exercise*. May 2001.Supplement 33(5):S136.
118. Emery CA, Cassidy JD, Klassen TP et al. Effectiveness of a home based balance training program in reducing sports-related injuries among healthy adolescents: a cluster randomized controlled trial. *Canadian Medical Association Journal*. Mar 15 2005;172(6):749-754.

119. Heel Canada Inc. Traumeel® flyer. Downloaded from http://www.heel.ca/pdf/fact/Traumeel_en.pdf in January 30, 2006.
120. Ernst E, Schmidt K. Homotoxicology – a review of randomized clinical trials. *European Journal of Clinical Pharmacology*. June 2004;60:299-306.
121. Birnesser H, Oberbaum M, Klein P, Weiser M. The homeopathic preparation Traumeel S compared with NSAIDS for symptomatic treatment of epicondylitis. *Journal. of Musculoskeletal Research*. 2004;8(2-3):119-128.
122. Clarkson JE, Worthington HV, Eden OB. Interventions for preventing oral mucositis for patients with cancer receiving treatment. *The Cochrane Database of Systematic Reviews* 2003, Issue 3. Art. No.: CD000978.
123. McCarney RW, Linde K, Lasserson TJ. Homeopathy for chronic asthma. *The Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD000353.
124. Wright-Carpenter T, Klein P, Schaferhoff P, Appell HJ et al. Treatment of muscle injuries by local administration of autologous conditioned serum: a pilot study on sportsmen with muscle strains. *International. Journal of Sports Medicine*. Nov 2004;25(8):588-93.
125. Carter B. A pilot study to evaluate the effectiveness of Bowen Technique in the management of clients with frozen shoulder. *Complementary Therapies in Medicine*. 2001;9:208-215.
126. Long L, Huntley A, Ernst E. Which complementary and alternative therapies benefit which conditions? A survey of the opinions of 223 professional organizations. *Complementary Therapies in Medicine*. 2001;9:178-185.
127. Cheshire A, Powell L, Barlow J. Use of complementary and alternative medicine for children with brain injury in the United Kingdom. *Journal of Alternative and Complementary Medicine*. 2007;13(7):703-707.
128. Carter B. Clients' experiences of frozen shoulder and its treatment with Bowen Technique. *Complementary Therapies in Nursing & Midwifery*. 2002;8(4):204-10.
129. ..What is Active Release Techniques? Downloaded on January 8, 2008 from http://www.activerelease.com/what_providers.asp
130. ..What conditions can ART treat? Downloaded on January 8, 2008 from http://www.activerelease.ca/2_ARTOverview.html
131. Spina AA. External coxa saltans (snapping hip) treated with active release techniques®: a case report. *Journal of Canadian Chiropractic Association*. 2007;51(1):23-29.
132. Howitt S, Wong J, Zabukovec S. The conservative treatment of trigger thumb using Graston Techniques and Active Release Techniques®. *Journal of Canadian Chiropractic Association*. 2006;50(4):249-254.

Appendix 1

WorkSafeBC - Evidence-Based Practice Group Levels of Evidence (adapted from 1,2,3,4)

1	Evidence from at least 1 properly randomized controlled trial (RCT) or systematic review of RCTs.
2	Evidence from well-designed controlled trials without randomization or systematic reviews of observational studies.
3	Evidence from well-designed cohort or case-control analytic studies, preferably from more than 1 centre or research group.
4	Evidence from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled
5	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

References

1. Canadian Task Force on the Periodic Health Examination: The periodic health examination. CMAJ. 1979;121:1193-1254.
2. Houston TP, Elster AB, Davis RM et al. The US Preventive Services Task Force Guide to Clinical Preventive Services, Second Edition. AMA Council on Scientific Affairs. American Journal of Preventive Medicine. May 1998;14(4):374-376.
3. Scottish Intercollegiate Guidelines Network (2001). SIGN 50: a guideline developers' handbook. SIGN. Edinburgh.
4. Canadian Task Force on Preventive Health Care. New grades for recommendations from the Canadian Task Force on Preventive Health Care. CMAJ. Aug 5, 2003;169(3):207-208.