

Scandinavian Soft Tissue and Joint Mobilization Therapy



Page | 1

Definition

Scandinavian soft tissue and joint mobilization therapy is based upon the Swedish system of evidence based naprapathic manual medicine, therapeutic passive exercise, and the American Manual Medicine Association manual medicine procedures and protocols. Scandinavian soft tissue and joint mobilization therapy is simply referred to as Scandinavian Mobilization Therapy or SMT and it is an evidence based system of manual medicine and passive exercise that focuses on gentle and progressive physical forces directed at somatic connective tissues such as muscles, tendons, fascia and ligaments, the mobilization of joints, and the joint complex which includes the soft and hard tissue structures of joints and the vascular and nervous system components of the joint complex.

Scandinavian soft tissue and joint mobilization therapy is a treatment system used to manage soft tissue musculoskeletal dysfunction, disease, and disorders. This system of therapy has been developed, systematized, and organized by Gregory T. Lawton, D.N., D.C., D.Ac., a licensed naprapath, chiropractor, and acupuncturist. Dr. Lawton has worked in the field of manual therapy and mobilization techniques, procedures, and treatment protocols since the 1970's.

SMT is indicated when clinical and therapeutic goals include; increasing range of motion at the joint, strengthening connective tissues and connective tissue attachments at the joint complex, the reduction of joint inflammation and tissue edema, increasing nutrition to the articular surfaces of the joint, pain control via the counterirritant theory, stimulation of mechanoreceptors that inhibit pain signal transmission to the brain, endorphin release in the spinal cord and brain, and finally the stimulation of higher centers of the brain that are responsible for global control over the central and peripheral nervous systems, as well as, the humoral system.

SMT has discarded the antiquated theories and techniques of non evidence based systems of massage and manipulative therapy and only retains evidence based practices that have demonstrated efficacy in the treatment of soft tissue and musculoskeletal dysfunction, disease, and disorders through passive exercise and mobilization.

SMT is strongly identified with the basic and well established physical forces of physical biomechanics including connective tissue compression and friction, as well as, joint traction/distraction, torque, shearing, tension/strain, translation (gliding), and oscillation. SMT incorporates gentle passive biomechanical movements to the peripheral and vertebral connective tissues and joint complex with special attention to the role of ligaments in the physiology and kinetics of somatic joints.

Mobilization and the physics of mobilization employed in the movement of connective tissues, a joint, and the joint complex are simply movements that mimic the normal movement that occurs in the soft tissues and joints. While the majority of massage therapy techniques are composed of compressive forces applied to muscles and connective tissues most of the physical forces used in SMT and directed at somatic joints and the joint complex (once again traction/distraction, torque, shearing, tension/strain, translation, and oscillation) result in joint motions described as slide or glide. Some sources refer to slide or glide in a joint as “joint play”. SMT directs itself towards the duplication of natural joint movement in a therapeutic manner and for a corrective and restorative purpose. Although the physical and biomechanical techniques used by the mobilization therapist might be categorized as primarily affecting a joint or the joints connective tissues, most techniques have combined effects. For example, a gliding technique will affect the articular surface of the joint and shearing forces will stress connective tissue structures attached to the joint.

SMT mobilizations are classified as therapeutically controlled physical forces involving the physical forces of traction/distraction, torque, shearing, tension/strain, translation (gliding), and oscillation and are delivered to somatic structures (soft tissue and joints) with a gentle, slow, repetitive, and often oscillatory force.

SMT is not a form of massage or spinal manipulative therapy and SMT does not employ high force or high velocity manipulation of joints.

Purpose

The purpose of SMT is to provide corrective and restorative movement to soft tissue and joint structures that have lost normal function due to injury or disease. Healthy joints must exhibit normal range of motion, not demonstrate the signs of inflammation, and be pain free. The gentle mobilizations and passive movements of SMT are focused on the restoration of normal joint function, range of motion, the elimination of inflammation, as well as, reducing and/or normalizing edema and pain. From this viewpoint SMT is both a form of mobilization therapy and passive therapeutic exercise.

Precautions

SMT should not be provided under the following circumstances:

- Without a medical evaluation and referral.
- To the spine or a joint if there is **severe spinal or joint disease**.
- Active or exacerbated inflammatory arthritis.
- To an area with a tumor or malignancy.
- Any undiagnosed lesion.
- Active infection in the area to be treated.
- Metabolic bone diseases such as Paget’s disease or tuberculosis.

- Where there is significant edema and swelling that may mask an underlying condition or problem and that hampers assessment.
- Directly to an area of fracture or instability.
- Hyper mobility indicative of tendon or ligament damage.
- Where there is significant joint irritability and spasm indicative of nerve inflammation, entrapment, and/or neural compression.
- Joint ankylosis (frozen).
- Where there is bleeding in an area or a joint.
- Where there is risk or evidence of vascular disease, a clot, or thrombosis.
- Never with extension and rotation to the cervical region.
- Never when there is a risk of interference with the flow of blood within the neck arteries or the vertebral artery.
- Never when there is concern regarding internal injuries to abdominal or thoracic structures and organs.
- Where there is a loose body (congenital abnormality or fracture) in the joint.
- Directly to an articulation with a total joint replacement.

Complications

The following are possible, but rare, complications of manipulations, not necessarily mobilizations. These kinds of complications are once again rare and occur more often as a result of high force and high velocity manipulations like those seen in either osteopathic manipulation or chiropractic adjustments.

- Soft tissue or skin bruising or contusion
- Connective tissue tearing:
 - Ligamentous tearing
 - Muscle or tendon injury
- Fracture
- Dislocation
- Joint capsule tearing
- Nerve damage or paraesthesia
- Increased spasm
- Increased pain

Description

SMT has adopted the standard terminology of medicine, biomechanics, and pain management. For example, the techniques used in SMT are named after the biomechanical physical forces that are applied to the spinal or peripheral articulations of the body including traction/distraction, torque, shearing, tension/strain, translation (gliding), and oscillation.

SMT has adopted standard medical and orthopedic grading systems in order to grade joint dysfunction, injury, pain, and soft tissue stiffness and tension, as well as, the degree of force passively directed towards a joint and the frequency of oscillations into the joint.

Page | 4



Soft Tissue Injury to a Joint/Joint Complex – Sprain/Strain

Sprain – (Palpation to assess joint range of motion and stability)

Grade I (mild sprain)

Involves some stretching or minor tearing of a ligament.

Grade II (moderate sprain)

Ligament that is partially torn but still intact.

Grade III (severe sprain)

Ligament is completely torn, resulting in joint instability.

Strain - (Palpation to assess joint range of motion and stability)

Grade I (mild strain)

Involves some stretching or minor tearing of a muscle/tendon.

Grade II (moderate strain)

Muscle/tendon that is partially torn but still intact.

Grade III (severe strain)

Muscle/tendon is completely torn, resulting in joint instability and disuse.

Grading Sensitivity or Pain – (Hyperesthesia upon direct palpation)

When attempting to quantify the patients subjective report of pain a general pain scale will be helpful:

Page | 5

- 0-1 No pain
- 2-3 Mild pain
- 4-5 Discomforting - moderate pain
- 6-7 Distressing - severe pain
- 8-9 Intense - very severe pain
- 10 Unbearable pain"

Source: Mayo Clinic Chronic Pain

The therapist may also choose to use the *McGill Pain Questionnaire*. Here is a description of the test.

“The McGill Pain Questionnaire consists primarily of 3 major classes of word descriptors--sensory, affective and evaluative--that are used by patients to specify subjective pain experience. It also contains an intensity scale and other items to determine the properties of pain experience. The questionnaire was designed to provide quantitative measures of clinical pain that can be treated statistically. This paper describes the procedures for administration of the questionnaire and the various measures that can be derived from it. The 3 major measures are: (1) the pain rating index, based on two types of numerical values that can be assigned to each word descriptor, (2) the number of words chosen; and (3) the present pain intensity based on a 1-5 intensity scale. Correlation coefficients among these measures, based on data obtained with 297 patients suffering several kinds of pain, are presented. In addition, an experimental study which utilized the questionnaire is analyzed in order to describe the nature of the information that is obtained. The data, taken together, indicate that the McGill Pain Questionnaire provides quantitative information that can be treated statistically, and is sufficiently sensitive to detect differences among different methods to relieve pain.”

Source: Medpub.gov., U.S. National Library of Medicine, National Institutes of Health

Criticisms of the McGill Pain Questionnaire refer to its length and complexity. When it comes to assessing patient subjective pain simpler is probably better than complex. Let the patient explain their pain in their own words and write down their description in the case notes.

Grade 0

No soreness or pain in area.

Grade I

Localized and well defined soreness.

Grade II

Area subjectively experienced and reported as painful, but the pain is localized.

Grade III

Area subjectively experienced and reported as painful and the pain is localized and refers outward from the area of palpation.

Grade IV

Area subjectively experienced and reported as painful but the area is too painful to tolerate direct palpation.

Grade V

Numbness or paraesthesia in area. (May also be a counter-indication to direct treatment)

Grading Tissue Motion, Stiffness, or Tension – (Upon direct palpation)

Whenever possible joint motion, stiffness, or tension should be compared from the affected or restricted joint to the opposite (hopefully) normal joint. In the case of vertebral joints joint motion, stiffness, or tension should be compared to a series of vertebral joints above and below the specific vertebra or by comparing vertebra within an area or region of the spine.

Grade 0 – Normal

Normal tissue stiffness and tension.

Grade I – Unstable

(Refer to Soft Tissue Injury to a Joint/Joint Complex – Sprain/Strain)

Grade II - Minimum

Tissue stiffness or tension is sub normal and the joint may be hyper mobile.

Grade III - Medium

Increased stiffness and tension from normal, but the joint is mobile.

Grade IV – Maximum

Significantly increased stiffness and tension, and the joint is fixated.

Grade V – Frozen/Ankylosed

There is no movement in the joint.

Grading Joint Mobilization

Whenever possible perform joint mobilization with the joint placed in a neutral postural position and with an attempt made to decrease eccentric contraction in muscles and postural tension from adjacent connective tissue structures. Do not attempt to mobilize joints that due to improper patient positioning, are closed or locked into an active position and are therefore resistant to passive therapeutic movement.

Grade I

A gentle passive movement of a joint, involving joint physics through a limited range of movement, at approximately 15 to 25 percent of the available joint play range or range of motion.

Grade II

A controlled passive movement of a joint, involving joint physics through a limited range of joint movement, at approximately 25 to 50 percent of the available joint play range or range of motion.

Grade III

A controlled passive movement of a joint, involving joint physics through a limited range of joint movement, at approximately 50 percent of the available joint play range or range of motion to the point just before the end of joint play.

Types of mobilizations -

Dynamic tension mobilizations involve repetitive oscillations of the joint for up to two minutes.

A **static mobilization** involves a passive stretch or “hold” from several seconds to several minutes in duration.

A Grade I mobilization is primarily used to decrease pain and tissue edema.

A Grade II and III mobilization is used to decrease pain, tissue edema, and to restore range of motion to a joint.

Grading Dynamic Tension Mobilizations

Page | 8 **Grade I**

Slow rhythmic oscillations to an area with Grade I joint mobilization (gentle passive movement).

Grade II

Slow rhythmic oscillations primarily to the levels of Grade II and Grade III dynamic tension.

Grade III

Slow oscillations from the middle of the available joint play range to the end of available joint play range.

Grade IV

Medium oscillations from the middle of the available joint play range to just before the end of available joint play range.

Grade V

Fast oscillations from the middle of the available joint play range to just before the end of available joint play range.

Patient Care

The SMT therapist needs to remain aware of the patient's pain and comfort at all times. SMT treatments are provided to the patient's level of comfort. The therapist should always use good technique and correctly address the area being treated. The therapist should not treat into pain or into an area that results in referred pain. There is a difference between the patient's subjective experience with the clinical effects of an SMT treatment, and the guarding and push back that results from provoking patient pain and discomfort. Patients should be fully educated and informed regarding your procedures and have signed an informed consent and release form.

Therapeutic Exercise

SMT therapists commonly treat patients with chronic pain and/or chronic intractable pain conditions. SMT therapists should initiate treatment through the use of gentle passive techniques at lower levels of force and percentages of range of motion and gradually over a sequence of

several treatments increase the intensity of the treatments in accordance with patient acceptance and improvement on levels of pain, inflammation and range of motion.

As the patient's condition improves the SMT therapist can add an additional therapeutic exercise regime to the treatment program.

Patient Outcomes and Clinical Responses

SMT mobilizations, when correctly and systematically applied, reduce pain and inflammation, reduce edema, and restore or improve the range of motion. When this occurs we term this a positive clinical response. There are two main requirements for providing evidenced based care:

1. Physician evaluation and diagnosis leading to medical justification for patient care.
2. Demonstrated and measurable ongoing and progressive improvement in the patient's condition as reported by the therapist and verified by the referring physician.

The SMT Therapists Professional Role

The SMT therapists must view themselves and be viewed by the medical profession as team players within a medical health care system and as allied health care providers. It is important that the SMT therapist seek medical evaluation, diagnosis and referral. It is equally important that SMT therapists closely monitor their patients for any adverse responses to care or changes in the patient's condition and seek immediate medical assistance for their patients whenever indicated.

Resources:

Manual Mobilization of the Joints: Vol I The Extremities (6th Edition) by Freddy M. Kaltenborn

- Publisher: Orthopedic Physical Therapy Products (<http://ebook30.com>)
- Number Of Pages: 315
- Publication Date: 2002-06-01
- ISBN-10 / ASIN: 8270540439
- ISBN-13 / EAN: 9788270540433

Description:

This classic Kaltenborn text focuses on basic evaluation and mobilization with an emphasis on biomechanical principles. Each assessment and treatment technique is clearly illustrated showing patient positioning, stabilization of the patient and the therapist's hand placement. Basic techniques and advanced mobilization progressions are shown.

Orthopaedic Physical Therapy (3rd Edition) by Robert A. Donatelli

- Publisher: Churchill Livingstone
- Number of Pages: 656 pages

- Publication Date: 2001-03-16
- ISBN: 0443079935
- PDF (Scan OCREd with Bookmarks) (<http://ebook30.com>)

Description:

Page | 10

This comprehensive textbook of musculoskeletal rehabilitation features discussion of both conservative and post-surgical rehabilitation. *Orthopaedic Physical Therapy*, 3rd Edition offers thorough coverage of the evaluation and treatment of the musculoskeletal system, organized by body region. A wealth of illustrations enhances the text and help users grasp various techniques. This outstanding tool focuses on the variety of different manual therapy techniques available, including mobilization, soft tissue mobilization, and neural mobilization. Discussions of the Cyriax, Maitland, and McKenzie techniques are also featured.

Orthopedic Manual Therapy: An Evidence-Based Approach by Chad Cook

- Publisher: Prentice Hall; 1 Edition (Amazon.com)
- Date of Publication: August 18, 2006
- Number of Pages: 624
- ISBN-10: 0131717669
- ISBN-13: 978-0131717664

Description:

Orthopedic Manual Therapy is an evidence based textbook designed to provide examination, treatment and reassessment measures for orthopedic clinicians. The textbook examines current manual therapy approaches, literature associated with examination and treatment techniques involving manual therapy, and evidence regarding diagnostic accuracy of clinical special tests. Each procedure is presented in a step-by-step method with a visual aide or photograph for ease of reproduction.

Functional Soft Tissue Examination and Treatment by Manual Methods, 3rd Edition, by Warren I. Hammer

- Publisher: Jones & Bartlett Publishers; 3 edition
- Date of Publication: December 26, 2006
- Number of Pages: 775 pages
- ISBN-10: 0763752878
- ISBN-13: 978-0763752873

Description

This third edition of this very successful book includes chapters written by experts in the methods of manual treatment and provides step-by-step instructions on how to examine your patient using a logical sequence of passive, contractile, and special tests, and how to relate findings to biomechanical problems and lesions. Included are hundreds of diagrams, photographs, illustrations, and summary charts.