



**SNEHANA AND SWEDANA A BOON FOR RATHKSHOBHA WSR THE WORK  
RELATED MUSCULOSKELETAL DISORDERS (WMSDS) – AN EXPLORATORY  
STUDY**

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**ABSTRACT**

Musculoskeletal disorders include a wide range of inflammatory and degenerative conditions affecting the muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels. This comprises over 100 diseases and syndromes, which are usually progressive and are associated with pain. The term 'disorder' gives an indication of the multifactorial nature of these conditions, which often develop from exposure to more than one risk factor and do not always fit neatly into an 'injury' or 'disease' category. This group includes labels (and colloquial terms) such as 'repetitive strain injuries', 'occupational overuse syndrome', 'back injury', 'osteoarthritis', 'backache', 'sciatica', 'slipped disc', 'carpal tunnel syndrome' and others. Systemic diseases such as gout, systemic lupus erythematosus and diabetes can also affect the musculoskeletal and peripheral nerve tissues but are usually not work-related as so are not considered here. In *Ayurveda Acharya Charaka* explained about the similar group of the disorders which consist of the all range of the musculoskeletal disorders which occurs due to the excessive work load and over straining of the body tissues. These include all kind of the disorders ranging from the simple ache and pain to syndrome such as carpal tunnel syndrome. *Acharya Charaka* explained the term *Rathkshobha* which explains that over and excessive straining. In the context of the *Rathkshobha* he explains about the treatment modalities such as *snehana* and *swedana* to rejuvenate the musculoskeletal system and to prevent these disorders. Thus this exploratory work has been done to check the WMSD by using the *snehana* and *swedana*.

**KEYWORDS:** Ayurveda, RSI, *Snehana*, *Swedana*, Sciatica, WMSD.

**INTRODUCTION**

Musculoskeletal disorders include a wide range of inflammatory and degenerative conditions affecting the muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels. This comprises over 100 diseases and syndromes, which are usually progressive and are associated with pain. The term 'disorder' gives an indication of the multifactorial nature of these conditions, which often develop from exposure to more than one risk factor and do not always fit neatly into an 'injury' or 'disease' category.

This group includes labels (and colloquial terms) such as 'repetitive strain injuries', 'occupational overuse syndrome', 'back injury', 'osteoarthritis', 'backache', 'sciatica', 'slipped disc', 'carpal tunnel syndrome' and others. Systemic diseases such as rheumatoid arthritis, gout, lupus and diabetes can also affect the musculoskeletal and peripheral nerve tissues but are usually not work-related as so are not considered here.

Globally, musculoskeletal conditions are one of the leading causes of morbidity and disability, giving rise to enormous healthcare expenditures and loss of work (WHO 2003), and reducing the quality of life of affected employees and their families. WMSDs exert a substantial economic burden in health care and compensation costs, lost salaries and productivity borne not only by the employers and employees, but also by the community. As the conditions become more serious and impinge on the person's functional capacity, their work performance and productivity are also likely to decrease.

The underlying damage or changes to tissue that cause discomfort or pain and disability may involve the soft tissue structures (muscles, nerves, tendons) and/or the joints or bones (including the ligaments, cartilage, discs) and/or associated connective tissue. WMSDs includes wide range of inflammatory and degenerative conditions and diseases affecting the muscles, tendons, ligaments, joints, peripheral nerves and supporting blood vessels, such as: A muscle, tendon, nerve or joint is stressed and

traumatized on a repeated basis for days, months or years, those body tissues eventually become damaged. This leads to a work related musculoskeletal disorder. Work related musculoskeletal disorders (WMSDs) are sometimes called repetitive strain injuries (RSIs), cumulative trauma disorders and overuse injuries.

- **Myalgias**, i.e. pain and functional impairments of muscles, occurring predominantly in the shoulder-neck region, that occurring occupations with large static work demands;
- Inflammations of tendons and related conditions (e.g. epicondylitis, tendinitis, stenosis, tenosynovitis of the finger and tenosynovitis), especially in the forearm, wrist, elbow and shoulder, evident in occupations involving prolonged periods of repetitive and static work where there is reduced lubrication, high peak loads and cumulative strain;
- **Compromised nerve function** occurring especially in the wrist, forearm or low back (eg carpal tunnel syndrome, sciatica) where there are increased hydrostatic pressure, direct compression, impingement or stretch on nerves;
- **Degenerative disorders (eg osteoarthritis)** occurring in the spine (usually in the neck or lower back), but which may also occur in the hip or knee joints especially in those performing manual handling or heavy physical work (Buckle and David 2000; Punnett and Wegman 2004).

The problems those are reversible in their early stages can become permanently disabling if exposure to the hazard is not reduced or eliminated. On the other hand, there is some evidence that activities such as maintaining physical fitness and flexibility (Dulet *et al.* 2004) may have some protective effect.

In situations where repeated exposure to risk factors results in increasing level of tissue damage and symptom severity, the allocation of a presenting disorder to 'acute injury' or 'chronic condition' can be somewhat arbitrary, especially in the earlier stages.

Some WMSDs exhibit well-defined signs and symptoms (for example, rotator cuff tendinitis, and carpal tunnel syndrome). However, many conditions (such as the myalgia disorders characterized by pain, discomfort, numbness and tingling sensations throughout the neck, shoulders, upper limbs and lower back) are much less well defined.

Further, WMSDs often cannot be diagnosed with respect to a clinical pathology, but they may still result in physical impairment and disability (Buckle and David 2000). The pathology of such MSDs are identical, whether or not they are work-related.

The health effects of musculoskeletal disease range from intermittent pain and discomfort that may or may not seriously affect work life, through to severe debilitation

where pain and loss of functional capacity make even the most basic of daily living activities difficult.

The progression of tissue deterioration is influenced by the extent of ongoing exposure to hazards and associated protective activities.

#### Symptoms of WMSDs may include

- Local or generalized pain, aching or discomfort;
- Loss or hypersensitivity of sensation to touch, heat or pressure;
- Loss of muscle strength, endurance and/or flexibility;
- Loss of ability to perform controlled movements, postural or balance reactions; and/or
- Physical changes to muscle tone or bulk (atrophy, hypertrophy etc), skin color and temperature, inflammation, abnormal alignment of joints, loss of joint range of motion or stability (Punnett and Wegman 2004; Riihimaki 1995).

These symptoms can themselves increase the risk of further injury, since in various ways they reduce both the physical and psychological performance capacity of sufferers. Most obviously, muscle weakness and neural damage will make the performance of manual tasks more physically difficult, and also more dangerous as speed and accuracy of movements deteriorate. Both pain and restrictions to normal ranges of movements tend to cause people to change their actions, often resulting in awkward, unnatural postures, which can themselves cause additional pain. Finally, pain can seriously reduce cognitive performance capacities, resulting in a loss of concentration and reduced capacity to process information, which in time-pressured work is likely to increase stress levels; further, pain itself can be a significant cause of psychological stress.<sup>[2]</sup>

#### When a WMSD develops a person experiences

1. Swelling, as tissues become irritated
2. Pain
3. Stiffness and loss of range of motion of
4. Inability to work and function at home

#### Understanding of the RATHAKSHOBHA with present day scenario

रथक्षोभात्संधिपर्वशैथिल्यहननासाकर्णशिरः

शूलतोदकुक्षिक्षोमाटोपान्त्रकुजनाध्मानहृदयेन्द्रिय-

योपरोधस्फिकपार्श्ववक्षणावृषणकटिपृष्ठवेदनासं-

धिस्कन्धग्रीवादौर्बल्यांगभितापपादशोफप्रस्वापहर्षणादयः। च.

सि. १२/१४(२)

Commentary - रथक्षोभात् सर्वदेहपीडा.

Rathkshobhat means irritation that is constantly because of excessive travelling for longer duration causes

- Sandhiparva shaitilya – loosening of joint.
- Hanu nasa karna shoolatoda- colic and pricking pain in the jaw, nose, ear and head.

- Kukshi kshobha – irritation in the pelvic region.
- Aatopa
- Aantrakujana – gurguling noise in intestines.
- Aadhmana
- Hrudy indriya uprodha – obstruction in the functioning of the heart and sense organs.
- Sphika, parshwa, vanshana, vrushana, kati, prushta vedana – pain in the hips, side of chest, groin, scrotum, back.
- Sandhiskandha greeva dourbalya – weakness of joints, shoulder and neck
- Angaabhitapa – burning sensation in limbs.
- Padashopha – oedema
- praswapharshanaadaya<sup>5</sup>-numbness and tingling sensation in feet.
- अतिचक्रमणातपादजंघोरुजानुवंक्षणश्रोणीपृष्ठशूलसक्थि सादनिस्तोदपिण्डकोद्वेष्टन अंगमर्द स अभिताप सिराधमनिर्हर्षश्वासकासादयः। च.सि. १२/१४(३)

Atichankramanat means pain in feet, calf regions, thigh, knees, groins, upper back and lower back region.

saktisaadnistoda- pricking pain in the legs.

pindikudvestana – cramps in calf region.

aangamarda – malaise

abhitap – burning sensation

siradhamniharsha –

shwasasS

- अत्यासनाद्रथक्षोभजाः

स्फिक्पाशर्ववंक्षणवृषणकटीपृष्ठवेदनादयः। च.सि. १२/१४(४)

### Chikitsa

रथक्षोभातिचक्रमणात्यासनजानांस्नेहस्वेदादिवातहरं कर्मसर्वे

निदानवर्जनं च। च.सि. १२/१५(२)

- Snehana and Swedana provides lubrication essential for pacification of vata dosha.
- Avoid the causative factors.<sup>[6]</sup>

**Scientific mode of action of Snehana and Swedana in prevention of the WMSD<sup>[4]</sup>**

**Simily<sup>[7]</sup>**

शुष्काप्यपि हि काष्ठानि स्नेहस्वेदोपपादनैः।

नमयन्ति यथान्यायं किं पुनर्जीवितो नरान्। च.सु. १४/५

As the dry pieces of wood can be bent easily after anointing them with oil and giving sudation, the body becomes capable of performing all type movements without any difficulty after the proper administration of Swedana.

**Mode of action of Snehana.<sup>[8]</sup>**

स्नेहनंस्नेहविष्यन्दंमार्दवंक्लेदकारकं ॥ च.सु. २२/११

Snehana means oleation therapy, the therapy which produces snighdhata or oiliness in the body.

ehana is a major preparatory procedure to be performed before sodhana. The entire sodhana procedure to depend upon the mobilization of Dosha from the Sakha.

### Benefits of Snehana

स्नेहश्च धातुन्संशुष्कान् पुष्णात्याशु प्रयोजितः ॥ च.चि. २८/८१

बलमग्निबलं पुष्टिं प्राणांश्चाप्यभिवर्धयेत्।

असकृत्तं पुनः स्नेहैः स्वेदैश्चाप्युपपादयेत् ॥ च.चि. २८/८२

तथा स्नेहमृदैः कोष्ठे न तिष्ठन्त्यनिलामयाः।

Snehana and swedana helps in nourishment to dhatus, increases in Agnibala and increases strength of the body.<sup>[9]</sup> By continuous usage of snehana and swedana of the diseases person the koshttha becomes the mrudu and the vata dosha get pacify and no diseases pertaining to vata dosha.

### ABHYANGA<sup>[10]</sup>

अभ्यगो मार्दवकरः कफवातनिरोधनः।

धतुनां पुष्टिजननो मृजावर्णबलप्रदः ॥ सु.चि. २४/३०

Dalhana has explained in detail about the absorption of Sneha used in Abhyanga procedure, accordingly the oil used in Abhyanga can reaches up to the different Dhatus if it is applied for the sufficient time. Hence, it is clear that the drug used in the Abhyanga gets absorbed by the skin.

Dalhana mentioned that veerya of abhyangadravya gets paka by brajakaagni presented in tvacha and gets absorbed through tiryakgamanansiras. Snehana drug reaches to the particular Dhātu it subsites or cures the diseases of that particular Dhātu.

### Benefits of Abhyanga<sup>[11]</sup>

1. Jarahara – Posypone geriatric changes.
2. Shramahara – Reduces the exhaustion.
3. Vatahara – Reduces the vata in body.
4. Drsti – Prasadakara – it does vimalata of drishti.
5. Pustikara – Provides nourishment.
6. Ayushyakara – Provides longevity.
7. Svapanakara – Improves voice.
8. Sutwak – shobhana, nirmalanirvaleekatwam of twacha
9. Klesasahatva – Power to sustain stress.
10. Abhighatsahatva – Power to sustain minor traumas.
11. Kapha Vata Nirodhana
12. Mrijaprada – Gives shudhaprabha
13. Varna prada – Gives gouravadvirna
14. Bala prada – Gives strength to the body.

The oil is used in the form of the Abhyanga – the application of the oil on the body the important form of the snehana karma to body depend on the time duration of the application,

The different kind of the oil explained in the classics is used for the abhyanga.

**Udvardana**

Means rubbing of the body by churna is called as Udvardana.

**Benefits**

उद्वर्तन वातहरं कफमेदोविलापनम्।

स्थिरीकरणमंगानां त्वक् प्रसादकरं परं॥ सु.चि.२४\५१

**Udgharshana**

“Udgharshanam asneha aushadha churnaadibhi gharshanam”

Means rubbing the body with powdered medicine without mixing oil is called as Udgharshana.

**Utsadana**

“Sasneha kalkena Udgharshana Utsadanam”

Means reinforced friction of body with drugs containing Sneha or medicine mixed with oil is called as Utsadana.

**Benefits**

सिरामुख विविक्ततत्त्वं त्वक्स्थस्यागमेश्च तेजसं।

उद्घर्षणोत्सादनाभ्यां जायतेतामसंशयम्॥

उत्सादनाद् भवेत् स्त्रीणां विशेषात् कांतिमत् वपुः॥

सु.चि.२४\५२-५३

**Mardana-Unmardana**

sMardana is applying deep pressure after application of oil in downward direction.

Unmardana is applying deep pressure after application of oil in upward direction.

**Effects of the Abhyanga on the different body tissues<sup>[12]</sup>**

- Increases arterial blood flow.
- Increase venous and lymphatic flow.
- Decreases stagnation of fluid in tissue space.
- Soothes or stimulates the nerves.
- Eliminates waste products of metabolism.
- Break the soft tissue adhesions.
- Reduce swollen tissue.
- Nutritive exchange between blood and cells.
- Increases the growth
- Induce sedation
- Decreases pain
- Helps in contraction of hypotonic muscle
- Decreases excitability of motor neuronal pool in neurologically healthy person.

**Mode of action of Swedana<sup>[8]</sup>**

स्तम्भगौरवशीतघ्नं स्वेदनं स्वेदकारकं। च.सु.२२/११

Sweada is the procedure which relieves stamba, gourava and sheeta of the body and produces sweda.

**Benefits of swedana**

अग्नेर्दिप्ति मार्दवं त्वक्प्रसादं भक्तश्रद्धां स्रोतसां निर्मलत्वम्।

कुर्यात् स्वेदो हन्ति निद्रां सतन्द्रां सन्धीन् स्तब्धांचेष्टयेदाशु युक्तः॥सु.चि.३२/२२

Sandhichesta, – swedana removes the adhesions of ligaments, joint capsule and thus increases flexibility of joint.<sup>[13]</sup>

**ShastikshaliPinda Sweda**

It is a process by which the whole body or a part is made to perspire by the application of certain medicinal puddings externally, in the form of boluses tied up in a cloth bag.

**Benefits**

The effects of the treatment, if properly done, sweda makes the body supple, remove the stiffness of the joints due to vitiated vata-type, cleanse of srotas of the body and improves blood circulation. It improves complexity, increases appetite, improves digestion, and restores relish for food. It also removes sluggishness and excessive sleep. it maintains in a healthy condition from every point of view.

**Indications**

Diseases of the nervous system, spinal cord degeneration, neuropathy, chronic rheumatism, degenerative disorder, muscular dystrophy, muscle wasting etc.

**Patra Pinda Sweda**

This is type of sweda were in the fomentation is done by heated bolus bags containing leaves of medicinal plants.

**Indication**

- Kati shoola,
- Sandhigraha(stiffness of the joints),
- Muscular cramps,
- Aamvata,
- Sandhivata.
- Various postural aches.
- Psychogenic and nonorganic pain at different MSK-Musculoskeletal Levels.

**Parisheka Sweda**

- Pouring of hot kwatha, taila, ghrita, kanji etc.
- Liquids over the body from specific height.
- A special type of parisheka practiced in kerala is known as pizhichil.

**Benefits<sup>[14]</sup>**

सेकः श्रमघ्नोअनिलहभग्नसन्धिप्रसाधकः।

क्षताग्निदग्धाभिहतविघृष्टानां रुजापहः॥ सु.चि.२४/३१

जलसिक्तस्य वर्धन्ते यथा मूलेअकुरास्तरोः

तथा धातुविवृद्धिर्हि स्नेहसिक्तस्य जायते॥सु.चि.२४/३२

It is very efficacious in fracture, contusive wounds, dislocation of the joints, pains and stiffness of the limbs.

**Janubasti:** Janubasti is the procedure that has evolved from shirobasti. Vagbhata has explained four types of application of sneha over the head, included in the classification of moordhini tail which includes shiroabhyanga, shiroseka, shiropichu and shirobasti.<sup>[15]</sup>

Shiro basti is the procedure in which the sneha is retained over the scalp with the help of mashapishti and charmapatta(leather sheet) for a specified period of time. Observing the results of shirobasti, the later physicians developed a similar procedure over janu and named it janubasti. In this way, janubasti evolved from the shirobasti procedure. Today, the same is performed over the kati and greeva regions and named respectively as kati basti and greeva basti.

**Kati basti:** Kati basti is a procedure in which comfortably hot medicated oil is kept over the lumbo sacral area or any adjacent part for a certain period of time with the help of a cap like hollow structure.

Keeping the medicated oil for specific period of time on the affected area may be nourished the nerve, muscles, and joints in the particular region. The heat of the oil also gives passive fomentation. It gives relief from symptoms.

This procedure is unique, in the sense comprising both Snehana and Swedana or it may be put like this Snehayukta Swedana. The Basti which is performed in the Kati Pradesha is called as Kati Basti.

#### Indication

Lumbago of Varied Aetiology.

Lumbo sacral pain – lumbar spondylosis, IVDP etc.

Neuro muscular disorders – Gridhrasi (Sciatica), Katishula.

Acute Low Back Pain & Chronic Low Back Pain due to stress/Work related MSD.

**Greeva Basti:** Greeva basti is a procedure in which hot medicated oil is kept over the cervical region for certain period of time with the help of a cap like hollow structure.

It relieves the congestion in nerve, bones and muscles of neck and shoulder region.

Improves the flexibility and improves the circulation around neck and shoulder region.

#### Indication

- Cervical Spondylosis,
- Frozen shoulder.
- Brachial neuralgia.

### STATISTICAL ANALYSIS CONDUCTED ON PATENTS REPORTED IN PRE AND POST TREATMENT ASSESSMENT

Sr no	Name	B/T							A/T						
		P	T	S	ST	R	C	WT	P	T	S	ST	R	CR	WT
1	Laxminarayana	3	3	1	3	3	0	0	1	0	0	1	0	0	0
2	Vijay kumari	3	3	3	3	3	3	4	1	1	1	1	1	1	2
3	Puttamma	3	3	0	3	3	0	0	1	0	0	1	0	0	0
4	Ajay	3	2	0	3	3	0	0	1	1	0	1	0	0	0
5	Sudha	3	3	1	3	3	0	4	1	0	0	0	0	0	0
6	Gauramma	3	3	3	3	3	3	3	2	2	2	1	1	1	1
7	Savitri	3	3	0	3	3	0	4	2	0	0	1	0	0	1
8	Gokul ram	3	2	0	3	3	0	0	2	1	0	0	1	0	0
9	Anandi	2	3	0	3	3	0	0	1	0	0	1	1	0	0
10	Abdul	3	2	3	2	3	2	3	2	1	1	1	1	0	0
	<b>Mean</b>	<b>2.9</b>	<b>2.7</b>	<b>1.1</b>	<b>2.9</b>	<b>3.0</b>	<b>0.9</b>	<b>1.8</b>	<b>1.4</b>	<b>0.6</b>	<b>0.4</b>	<b>0.8</b>	<b>0.5</b>	<b>0.3</b>	<b>0.4</b>
	<b>Median</b>	<b>3.0</b>	<b>3.0</b>	<b>1.0</b>	<b>3.0</b>	<b>3.0</b>	<b>0.0</b>	<b>3.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	<b>Mode</b>	<b>3.0</b>	<b>3.0</b>	<b>0.0</b>	<b>3.0</b>	<b>3.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
	<b>SD</b>	<b>0.0</b>	<b>0.4</b>	<b>1.3</b>	<b>0.0</b>	<b>0.0</b>	<b>1.5</b>	<b>2.0</b>	<b>0.5</b>	<b>0.8</b>	<b>0.8</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.8</b>

#### Note

#### Abbreviations –

**P – Pain**

**C- Crepitation**

**WT – Walking time.**

**T- Tenderness**

**RM – Restricted movements**

**ST – Stiffness**

**S - Swelling**

**Statistical Analysis -** The above shown chart interpreted suggestive that there is a significant reduction in the sign

and the symptoms; suggestive treatment has great impact on the WMSD. And to make it more established require the RCT – randomized clinical trial on the large group of the patients to make the effectiveness of the treatment.

#### CONCLUSION

There are many causes of WMSD's and to prevent them, the whole work situation must taken into consideration; it is therefore a difficult issue to handle. First, it is important to understand what is going on, to get rid of any biases, to find out the facts. Then, it is necessary to address and evaluate the seriousness of the situation

prevailing in the workplace. If the situation is acceptable, it may be sufficient to simply remain alert and ready to intervene at the slightest sign of deterioration. If, however it becomes obvious that the situation is problematic, either because there are already signs of identified WMSDs or because it is just a matter of time before they appear, action must be taken, and it is at that many feel overwhelmed.

In fact, there are no quick fixes or readymade solutions. This study has been explored for them who want to take action to prevent WMSDs.

We favor this participatory approach to the point of devoting an entire publication to it, because it offers numerous advantages, the main one being to develop a concrete *Ayurveda Panchkarma* approach to help out the globe those who are suffering and at the actual risk of the WMSDs.

Thus this study carried out on the grounds of the situation problem and after considering the need of the hour and society and people of WMSDs.

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