

A REVIEW ON CONCEPT OF MASSAGE IN AYURVEDA AND MODERN**Hiremath Jyoti¹, Kumar Ashwani², Kumar Gaurav³, Sharma Om Prakash⁴**¹M.D.(Ayu) Swasthvritta evum Yoga, Lecturer, Deptt. of Swasthvritta, Govt.

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Ayurvedic system of medicine approaches in a particular way to prevent and promote a healthy life by following certain methods and therapies in day today activities which could be consider as a part of a health promotion among the fast moving people of the 21st century. In Ayurveda the application of oils and massage is given a great importance according to the pressure applied, the techniques adopted, the materials used etc. They are named under different types. Those are abhyanga, udvartana, samvāhanam etc. and the effect varies as vatahara, kaphahara, preetinidrakara respectively. So according to the need of the situation the procedure can be manipulated.

According to modern concept massage is used for relaxation, lymphatic drainage etc. and accordingly they use different techniques like effleurage, pressure massage, percussions, petrissage etc. The latest studies on massage has shown that it improves sleep, reduce anxiety and depression, temporarily reduce blood pressure and heart rate and it relieves pain too. It works by activating the parasympathetic nervous system which stimulate the release of endorphin and serotonin (pain reliever and mood elevator) and by increasing the flow of lymph. Massage prevents fibrosis or scar tissue and increases the flow of lymph.

Key Words: Massage, *Abhyanga*, *Samvahanam*

INTRODUCTION

In the classics of ayurveda there are different types of Massages mentioned according to the need and method. Abhyanga word is derived from the Sanskrit root Anga meaning movement and the prefix abhi meaning different against or contrary. Thus abhyanga denotes a mas-

sage involving motion in different direction. Specifically, abhyanga includes strokes both in same direction and in opposite direction to the direction of the body hairs.

¹According to Vagbhata a person with a view to preserving and promoting his

positive health and preventing and curing his diseases should use abhyanga every day. Abhyanga retards ageing, overcomes fatigue and annihilates effects of aggravated vata. It improves clarity of vision, nourishes the body. It promotes longevity, good sleep, good skin and a sturdy physique. Regular massage should be performed over whole body including head ears and soles.

Udvardana:

²Udvardana is another type of massage explained in the classics. The word Udvardana means massaging upwards. Its effects are explained as disintegrates Kapha, dissolves away fat, and make the body strong and improve the quality of skin.

³Powder massage done without adding any unctuous (sneha) material is known as Udgharshana.

⁴Utsadana is type of massage done with the paste of herbal medicines which is prepared by adding the unctuous (sneha) material.

Samvahanam:

⁵Samvahanam is the next type of massage it is mentioned as ‘Sukha sparsha mardanam’ that means mild gentle massage. It is explained as a gentle massage that enhances affection, sleep and virility. It alleviates vata and kapha. It takes away tiredness and it improves the quality of mamsa, twak, and raktha and also induces pleasure.

CONCEPT OF MODERN MASSAGE

Etymology

In Arabic word ‘massa’ means "to touch, feel or handle". In Latin ‘massa’ means "mass, dough". An older etymology may

even have been the Hebrew ‘me-sakj’ "to anoint with oil". Initially there was a dispute regarding the origin of this word. Few authors claimed it derived from the Arab word-Mass (to touch) others said it was from the Greek word-Massein (to knead)-The Hebrew word-Mashesh (to touch, to feel, to grasp).The Arabic and Greek origin proposed by Savery in 1785 and Piory in 1819 respectively and has been considered more authentic due to widespread use of massage in East and ancient Rome.

Definitions: No uniform definition seems to exist for massage.

Acc. to Murrel - Massage is the scientific mode of curing certain forms of disease by systemic manipulations.

Acc to Hoffa - Massage refers to all mechanical procedure that can cure illness.

Acc to Graham - massage signifies a group of procedures which are usually done with hand on the external tissue of the body in a variety of ways either with a curative ,palliative or hygienic point of view.

These are some of the definitions given by some leading persons in the field of massage. And it can be simply defined as “Massage is the practice of soft tissue manipulation with physical, functional and in some cases psychological purposes and goals”.

CLASSIFICATION OF MASSAGE

Basis of classification of massage

According to the nature of character of technique classical/manual massage technique are classified into following 4 basic groups. Each group has more than one subgroup

(I) Technique of massage acc .to character (II)Depth of Tissue Approached

- | | | | |
|---|------------|---|---------------|
| 1 | Stroking | 1 | light massage |
| 2 | Pressure | 2 | deep massage |
| 3 | Percussion | | |
| 4 | Vibration | | |

(III) Part of body massage

1. General massage
2. Local massage

(IV) Means of application of pressure

- 1 Manual massage
- 2 Mechanical massage

(I) Massage classification on the basis of character of technique

1. Stroking manipulation

1. Superficial stroking
2. Deep stroking or Effleurage

2. Pressure manipulation

Kneading

1. Palmar kneading
2. Digital kneading
3. Ironing

Petrissage

- 1 Picking up
- 2 Wringing
- 3 Skin rolling

Friction

- 1 Circular friction
- 2 Transverse friction

3. Percussion/ Tapotement manipulation

- | | | |
|-------------|------------|---------------------------|
| 1. Clapping | 4 Beating | 6 Tending |
| 2. Hacking | 5 Pounding | 7 Contact heel percussion |
| 3. Tapping | | |

4. Vibratory manipulation

1. Vibration
2. Shaking

1. Stroking manipulation

The technique of this group consists of linear movements of relaxed hand along the whole length of segment known as 'Strokes', which usually cover one aspect of the entire segment of the body at a time. An even pressure is applied throughout the strokes, which are repeated in rhythmical way. According to the amount and direction of applied pressure, it is divided into two.

Superficial stroking : It is the rhythmic-linear movement of hand over the skin in either direction, i.e. proximal to distal or vice versa, without any pressure.

Effleurage: It is the linear movement of hand, over the external surface of body in

the direction of venous and lymphatic drainage, with moderate pressure.

2. Pressure Manipulation

In the group of technique, the hand of the therapist and skin of the patient move together as one and fairly deep localized pressure is applied to the body. The techniques are directed towards the deeper tissue. The aim is to achieve the maximal mechanical movement of different fibers with the application of that maximum pressure, which a patient /subject can tolerate comfortably.

Depending upon the type and direction of applied pressure it can be divided into following three major subgroups.

- Kneading

- Petrissage
- Friction

Kneading: In this group of technique, the tissues are pressed down on to the underlying- firm-structure and intermittent pressure is applied in circular direction, parallel to the long axis on bone. The applied pressure increases and decreases in a gradual manner but the contact of the therapist's hand with the patient body is never interrupted. Different technique of this group is:

Digital kneading: Pressure is applied with the fingers (finger kneading) or thumb (thumb kneading)

Palmar kneading: Pressure is applied with the palm.

Reinforced kneading/ironing: Both the hands, placed over one other, are used to apply pressure. The lower hand, which is in contact with the patient's skin receives reinforcement from the other hand.

Petrissage: In this category of massage the tissues are grasped and lifted away from the underlying structures and intermittent pressure is applied to the tissue in the direction that is perpendicular to the long axis of bone. Different techniques of this group are:

- I. Picking up: Tissues are lifted away from underlying structures, squeezed and then released using one or both the hands.
- II. Wringing: Using both the hands, tissues are lifted away from the underlying structures, squeezed, twisted and then released.

III. Skin rolling: The skin and fascia are lifted up with both the hands and moved over the subcutaneous tissues by keeping a roll of lifted tissue continuously ahead of the moving thumb.

Friction: In this group of technique the tissues are subjected to small range of to and fro movement performed with constant deep pressure of the finger or thumb. Different techniques of this group are:

Circular friction: Direction of movement is circular.

Transverse friction: to and fro movement is performed across the length of structure. It is also called cross-fiber massage.

Vibratory manipulation

In this technique, the mechanical energy is transmitted to the body by the vibrations of the distal part of upper limb, i.e. hand and /or fingers, which are in constant contact with the subjects skin.

Percussion/Tapotement manipulation

In this group of technique a succession of soft gentle blows are applied over the body, which produce a characteristic sound. The striking hands are not in constant contact with the skin and strike the body part at regular interval. This results in the application of an intermittent touch and pressure to the body during these manipulations.

The different parts of hand are used to strike the subject's skin and accordingly the techniques are named:

<i>Technique</i>	<i>Administered with</i>
Clapping	Cupped palm
Hacking	Ulnar border of the 5th, 4th and 3th digits.

Beating	Anterior aspect of the clenched fist
Tapping	Pulp of the fingers
Pounding	Medial aspect of the clenched fist

(II) On the basis of depth of tissue approached

Depending upon the depth of tissue approached during manipulations, massage techniques can be classified as:

Light massage techniques: the forces applied during the massage are light, so that the effect of massage techniques to the superficial tissue only. e.g. stroking, tapping etc.

Deep massage techniques: the forces applied during the massage are moderate to deep so that the effect of massage reaches to the deeper tissues like muscle. e.g. friction, kneading

(III) On the basis of region massage

Massage can also be classified as below, according to the region to which it is given.

General massage

Massage applied to the entire body is usually termed as general massage. However, massage administered to a large body segment like the back, lower limb, etc. can also be included in this category.

Local massage

When massage is administered in a particular area of the body segment it is termed as local massage. This is used in the treatment of the local pathological conditions. For example, massage of wrist in tenosynovitis, friction to lateral ligament of ankle following sprain, etc. can be considered as local massage.

(IV) On the basis of means of administration of technique

On this basis the massage can be classi-

fied in to the following two categories.

Manual massage

The word “manual” refers to the ‘lying on’ of hand over the subject’s body. The massage administered with the hand or other body part of the therapist is called manual massage. e.g. technique of classical massage, connective tissue massage, trigger point massage, acupuncture massage, etc.

Mechanical Massage

When the mechanical device based on the principals of massage, administer the mechanical energy to the patient’s body, in order to manipulate soft tissue it may be termed as mechanical massage. e.g. vibrator, compression devices, pneumatic massage, etc.

PHYSIOLOGICAL EFFECTS OF MASSAGE

The physiological effects of massage can be discussed under the following headings:

1. Effects of massage on the circulatory system

(a) On the Venous and the Lymphatic Flow

Massage aids in the mechanical emptying of the veins and the lymphatic. It facilitates the forward movement of the venous blood and the lymph and thereby reduces the chance of stagnation of the blood and the lymph in the tissue space. The flow of the venous and the lymphatic channels from the extremities mainly depends on the activity of the smooth muscles, present in the walls of the vessels.

The contraction of these small muscles in conjunction with the valves present in the vessels acts as a strong pumping mechanism, which keeps the tissue space clear from the free fluid.

The contraction of the skeletal muscle compresses the blood vessels and exerts a pressure on the fluid present inside. This increase in intra vascular pressure stimulates the contraction of the smooth muscle present in the wall of the vessels. Contraction of smooth muscles further increases the pressure inside the vessels. When this pressure increases beyond the threshold, the valves open up and the fluid moves on to next segment. When the muscles relax, the segment is refilled by the fluid from the distal segments. This way the venous and the lymphatic fluids are allowed to move only in one direction. The mechanical action of massage resembles with that of normal muscular contraction. The different techniques of massage alternately compress and release the soft tissue. This facilitates the venous and lymphatic flow. The effleurage kneading and petrissage squeeze the veins and the lymphatic vessels and force the venous blood and the lymph towards the heart causing and increased drainage of the blood and lymph from the massaged part/segment.

In case of fluid stagnation due to mechanical factors the flow of venous and lymphatic fluid is obstructed. Massage facilitates the drainage and reduces the stagnation of fluids and also speeds up the removal of waste products. According to Paikov⁷ the body contains 1200-1500 ml of lymph moving at the speed of 4

mm/sec and massage increases the speed eight folds.

(b)On blood cells

Few studies are available on the effect of massage on the blood cells. Wood and Becker quoted Mitchell to state that RBC count increases after massage both in health and in anemia. Schneider and Havens¹⁰ also reported an increase in red blood cells and hemoglobin count following abdominal massage. This increase in RBC and hemoglobin count may increase the oxygen carrying capacity of blood.

Increase in the platelets count after massage has been reported in an animal model¹¹. Smith et al¹² has demonstrated an increase in the neutrophil count following 30 minutes of massage performed 2 hours after intense exercise.

Hilbert et al.¹³ also did not observe any change in the neutrophil count following 20 minutes of massage. Though of late a number of studies have reported alteration in the leukocyte counts following massage in patients afflicted with AIDS and cancer.¹⁴

Smith et al¹² have postulated that increase in neutrophil count may have the potential to retard the inflammatory changes associated with strenuous exercises which may be of some use in the management of delayed onset muscle soreness.

2. Effect of massage on exchange of metabolites

Massage promotes rapid disposal of waste products and the replenishment of the nutritive elements. Massage also increases the movement of liquids and gases in the body¹. The increased arterial

blood flow following massage brings more oxygen and nutritive elements and also causes more rapid oxygenation of the blood. Massage speeds up the lymphatic and venous flow, which promotes rapid disposal of the waste products of metabolism.

3. Effect of massage on metabolism

Cuthbertson¹⁵ in a review article summarized the various studies and reported an increase in the output of urine, increase rate of excretion of nitrogen, inorganic phosphorus and sodium chloride following massage.

4. Effect on nervous system.

Sensory system

Massage has a sedative effect on the central nervous system which can be easily demonstrated if applied monotonously with slow rhythm.¹⁶ Kaada and Tersteinbo¹⁷ have reported a moderate mean increase of 10 percent and endorphin level lasting for about one hour with a maximum effect after 5 minutes after termination of connective tissue massage in 12 volunteers. They linked the release of beta-endorphin with the pain relief feeling of warmth and well-being associated with massage.

Motor System

According to Kuprian¹⁸ the physiological effects of classical massage lies primarily in its ability to exert regulatory influences on the muscle tone. It is generally agreed that massage can elicit facilitating and inhibiting responses in neuromuscular excitability^{6,9}. This seemingly paradoxical claims may be attributable to the difference in the rate of application and the degree of pressure applied during various massage manoeuvres.^{19, 20}

Facilitatory Effects of Massage on Motor System : It is said that massage can reflex increase the muscle tone by stimulation of the skin receptor or stretch of the muscle spindle⁶. Superficial stroking tapping hacking etc. are commonly used for this purpose.

Inhibitory Effects of Massage on Motor System : Massage techniques can also reduce the tone of muscle. It has been claimed that petrissage or massage in which muscles are kneaded can exert an inhibitory effect on motoneuron²². It is said that effleurage capable of producing both stimulating and relaxing effects.^{6,9}

On Autonomic System

Several authors have hypothesized that massage has definite reflex effect and it can influence the functioning of visceral organ modulating the autonomic nervous system through peripheral sensory stimulation.^{6,21,28,24} Connective tissue massage improves the blood supply of target organ by balancing the sympathetic and parasympathetic component of autonomic nervous system.²⁵

5. Effect on the soft tissue.

Massage has significant effect on certain properties of the soft tissues like elasticity, plasticity and mobility. The fibrin formed within the chronic endured structures following chronic or sub acute inflammation can effectively be stretched and mobilized during pressure manipulations. This way massage maintains and restores the mobility of soft tissues as well as prevents adhesion formation, joint stiffness, contracture etc.

6. Effect on the respiratory system

Percussion and vibration techniques of massage assist the removal of secretion

from the larger airways, though their effect on the smaller airway is controversial²⁶. Increased secretion clearance after chest physiotherapy both in adult and in pediatric group can be the result of percussion and vibration, loosening and advancing secretions from the airways more centrally. After the removal of secretion gas exchange becomes more efficient. An increase in PaO₂ have been frequently reported after respiratory massage in patients suffering from chronic obstructive pulmonary disease²⁷ postoperative and post traumatic patients^{28,29} and in neonatal patients suffering with respiratory distress³⁰.

7. Effect on the skin

Massage in general improves the nutritive status of skin. Following massage the temperature of skin rises. Massage facilitates the movement of skin over the subcutaneous structures. As a result skin becomes soften. The dead cells are removed by the constant contact of the hand over the skin. The sweat glands, hair follicles and the sebaceous glands thus become free from obstruction and can function more effectively⁶. Massage by activating the sweat glands increases perspiration so that the heat dissipation is increased. It also facilitates the sebaceous secretions from exocrine glands of skin and thus, improves the lubrication and appearance of skin.

8. Effect on adipose tissue

Massage was found responsible for activation of lipolysis. The release of catecholamine by the tissue nerve ending was particularly stressed as the cause. This was confirmed when activation of lipolysis was depressed by beta blockers⁸.

9. Immunological effects of massage

Ironson et al,³¹ reported significant increases in natural killer (NK) cell number and function with HIV positive and HIV negative men following massage. Similar finding on the normal subjects undergoing a stressful situation has also been reported by Zeitlin et al., who examined the immunological effects of massage therapy as a stress-reduction intervention in a sample of nine medically healthy subjects.

CONCLUSION

Abyanga is one of the procedures to be practiced routinely in the system of once living. Different type of massage explained in ayurveda and modern helps man to prevent the common health hazards. These will helps to lead healthy life. Massage has been used for centuries for both therapeutic and preventing purposes. Massage may also stimulate the release of endorphins and reducing level of certain stress hormones. Massage heals damaged muscle, stimulate circulation, clear waste product vai lymphatic system, boost immune system, reduce pain and tension and induce a calming effect. Abyanga, udvartana, samvahana nourishes dhatus, pacifies the doshas, relives fatigue, provide stamina pleasure and perfect sleep, nourishes all parts of the body. So everyone should do different massage technique explained in modern and ayurveda.

REFERENCE

1. Astanga Hridaya by Dr.T Sreekumar ,publication- Harisree Hospital 2011 Sutra sthana I chapter no.2, verse

- no.9 page no69
2. Astanga Hridaya by Dr.T Sreekumar ,publication- Harisree Hospital 2011 Sutra sthana I chapter no.2, verse no.16 page no71
 3. SuShruta Samhita by Dr. Anant RamSharma Vol II Chukhambha Surbharati Prakashana Varanasi 2004 Chikitsa Sthana Chapter 24, vrese no 53 page no360
 4. SuShruta Samhita by Dr. Anant RamSharma Vol II Chukhambha Surbharati Prakashana Varanasi 2004 Chikitsa Sthana Chapter 24, vrese no 53 page no360
 5. SuShruta Samhita by Dr. Anant RamSharma Vol II Chukhambha Surbharati Prakashana Varanasi 2004 Chikitsa Sthana Chapter 24, vrese no 83 page no364
 6. Hollis M: Massage for Therapists. Oxford England: Blackwell Scientific Publications, 1987.
 7. Paikov VB: Means of restoration in the training of speed skaters. Soviet Sports Review, 1985;20:7-12.
 8. Wakim KG: Physiologic effects of massage. In: Basmajian JV (Ed), Manipulation, Traction and Massage Baltimore: Williams and Wilkins, 1985;3.
 9. Wood EC, Becker PD: Beard's massage. Philadelphia: WB Saunders, 1981;3.
 10. Schneider EC and Havens LC: Changes in the blood flow after muscular activity and during training. Am J Physiol, 1915;36:259.
 11. Lucia SP and Rickard JF: Effects of massage on blood platelet production. Proc Soc Exper Biol Med, 1933;31:87. As quoted in wood and Baker's Beard's massage.
 12. Smith LL, Keating MN, Holbert D, Spratt DJ, McCammon R, Smith SS, Israel RG: The effects of athletic massage on delayed onset muscle soreness, creatine kinase, and neutrophil count: A preliminary report. J Orthop Sports Phys Ther, 1994;19(2):93-99.
 13. Hilbert JE, Sforzo GA, Swensen T. The effects of massage on delayed onset muscle soreness. Br J Sports Med, 2003;37(1):72-75.
 14. Hernandez-Reif M, Field T, Ironson G, Beatler J, Vera Y, Hurley J, Fletcher MA, Schanberg S, Kuhn C, Fracer M,Natural killer cells and lymphocytes increase in woman with breast cancer following massage therapy. Int Neurosci, 2005;115(4):495-510.
 15. Cuthberston DP Effect of massage on metabolism: A survey, Glasgow Med J, 1933;2:200-213.
 16. Knapp ME: Massage. In Kohke FJ, Lehman JF (Eds), Krusen's handbook of physical medicine and Rehabilitation, Philadelphia: WB Saunders, 1990;4.
 17. Kaada B, Torsteinbo O: Increase of plasma B-endorphins in connective tissue massage. General Pharmacology, 1989;20(4): 487-89.
 18. Kuprian W: Massage In: Kuprian W (Ed), Physical Therapy for sports, Philadelphia: WB saunders, 1981;7-51.
 19. Sullivan SJ, Seguin S, Seaborn D, Goldberg J: Reduction of H-reflex amplitude during the application of

- effleurage to the triceps surae in neurological healthy subjects. *Physiotherapy theory and practice*, 1992;9:25-31.
20. Sullivan SJ, William LRT, Seaborne DE, Morelli M: Effects of massage on alpha motoneuron excitability. *Physical Therapy*, 1991;71:555-60.
21. Lehn C, Prentice WE: *Massage In: Prentice WE (Ed), Therapeutic Modalities in sports medicine*, St. Louis: Mosby-Year Book Inc, 1994;9(6):570-74.
22. Tappan FM: *Healing Massage Techniques A study of eastern and western methods*. Reston: Va Reston publishing company Inc, 1978.
23. Ebner M: *Connective tissue Massage In: Huntington, NY, Robert E (Eds), Theory and therapeutic application*. Krieger Publishing Co., Inc, 1975;2.
24. Mennell JB: *Physical Treatment*. Philadelphia: Blakiston Co, 1945;5.
25. Thompson A, Skinner A, Piercy J: *Tidy's Physiotherapy*, Oxford: Butterworth-Heinemann Ltd, 1991;12.
26. Imle PC: *Percussion and vibration*. In: Mackenzie CF, Imle PC Ciesla M (Eds), *Chest Physiotherapy in the Intensive Care Unit*, Baltimore: Williams and Wilkins, 1989;134-52.
27. Baleman JRM, Newman SP, Daunt KM, Pavia D, Clarke SW: Regional lung clearance of excessive bronchial secretion during chest physiotherapy in patients with stable chronic airways obstruction. *Lancet*, 1979;1:294-97.
28. Ciesla ND, Klemic N, Imle PC: Chest physical therapy to the patients with multiple trauma: Two case studies. *Physical therapy*, 1981;61:202-05.
29. McKechnzie A Wilson F, Watson N, Scott D: Anxiety states: A Preliminary report on the value of connective tissue massage. *Journal of Psychosomatic Research*, 1983;27(2):125-29.
30. Finer NN, Moriarley RR, Boyd J, Phillips Stewart AR, Ulan O: Post estuation atelectasis: A retrospective review and a prospective controlled study. *J Pediatr*, 1979;94:110-13.
31. Ironson G, Field T, Scafidi F, Hashimoto M, Kumar M, Kumar A, Price A, Goncalves A, Burman I, Teteman C, Patarca R, Fletcher M. Massage therapy is associated with enhancement of the immune system's cytotoxic capacity. *Int J Neurosci*, 1996; 84: 205-17.

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