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The Secrets of *Marma*: A Critical Interpretation in Ancient Indian Traditions and its Clinical Use in *Marma* Therapy

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Abstract: ***Ayurveda is a science of life that believes in treating the mind, body, and soul to achieve total health, and this ancient wisdom is beautifully mirrored in the unique concept and composition of marma as well. Marma science is a branch of Vedic science. Naturally, it has affected all other sciences found in the Vedas, including yoga, ayurveda, martial arts, the Siddha system of medicine.Therefore, we need to research its past. From Saraswati culture until the eras of Charaka, Sushruta, Ashtang hridaya, and Ashtang sangraha, this knowledge developed. Later, the Buddha religion was responsible for its dissemination in nearby nations like China and Japan.***

Marma are not just physical markers, but also areas where tridosha manifest in their subtle forms Prana, Ojusa (soma), and Tejas (agni). They also comprise three gunas: sattva, raja, tamas (manas contents), and soul or life force (bhutatma).

Marma Chikitsa/ Therapy is the manipulation or stimulation of Marma in the treatment of various ailments.Through various ways of marma stimulation, the Prana (vital energy) present in marmas can be directed to clear blockages (even in distantly related places) and boost energy flow, resulting in a healthy body, mind, and soul.

Keywords: Marma, Prana, Siddha, yoga, ayurveda, martial arts.

I. INTRODUCTION

Today, natural healing is a hot topic that frequently involves the use of pressure points for massage and acupuncture. These pressure spots are referred to as *marmas*, which is term for "vulnerable" or "sensitive zones" in *Ayurveda*. Such points may be explicitly employed in the identification and management of sickness or more generally employed in fostering wellness and long life.All *Ayurvedic* therapies, from straightforward self-care to intricate clinical procedures, depend on the use of *marmas*. They constitute one of the basic tenets of *Ayurvedic* philosophy and practise. *Marma* is an anatomical region where muscles, veins, ligaments, bones, and joints connect.[1] There are 107 *marmas* (vital spots) in total, with eleven in each leg, twenty-six in the trunk (three in the abdomen, nine in the thorax, fourteen in the back), and 37 in the head and neck region.[2,3,4] They are also the locations where not just *tridosha* but also its subtle forms *prana, ojus,* and *tejas* coexist with *sattva, raja,* and *tama*.[5] According to *Vagbhata, marma* is the meeting point of *mamsa, asthi, sira, snayu, dhamni,* and *sandhi*, as well as the location of *prana*.[6]

However, it is also thought that *marma* can be made up of one or more of the above. This is quite similar to the Chinese meridian concept, in which the points appear either on a single meridian line or at the intersections of multiple meridians.[7] According to *Vagbhata, marma* is a location where peculiar pulsations (*visham spandana*) can be felt, as well as tenderness on pressure (*peeditae ruka*).[8] *Marma* are mentioned and referred to in the *Charaka Samhita*, but no specifics are provided.[9,10]] Except for *dhamani, Sushruta* defined *marma* as the collective point of meeting of the aforementioned *dhatus.* He used the term *marma* to refer to both disorders of the vital organ system and topographical cure points, implying that the *marma* in the system should be preserved through stimulating topographical cure points.[11] *Varmam* spots, according to *Siddha*, are locations in the body where subtle *varmam* energy can be found.[12] *Marma* is the spot on the body where energy is blocked.It is the interface between physiology and consciousness, and touching it modifies the biochemistry of the body, allowing profound and alchemical changes to occur in one's make-up. Stimulation of these inner pharmacy channels causes the body to generate precisely what it need, such as hormones and neurochemicals that repair the body, mind, and awareness.

Marma points are specific locations of the body that are linked to various internal organs, *doshas*, and *srotas* via *pranic* pathways. These spots are used during *abhyanga*, coupled with the administration of various types of medicinal and fragrant oils, to stimulate internal organs.[13]

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Marma points are also used in Indian martial arts, such as the *Kalari* lineage of South India, in a similar way as acupuncture sites are used in both Chinese medicine and martial arts. In order to repel attacks, martial arts emphasise how to target these weak spots with power and accuracy. Such vital areas show that the body is not just a physical mass but also a complex energy field with power points that allow us to influence both physiological and psychological processes.

Ayurveda is a life science that believes in treating the mind, body, and spirit to achieve total health. Manipulating or stimulating *marma* points in the treatment of ailments is known as *marma chikitsa*, and it is a natural ability of humans to heal themselves through these points. Through various ways and methods of stimulating *marma*, the *Prana* (vital energy) residing inside it can be directed to remove blockages (even in distantly related places) and boost energy flow, resulting in a state of healthy body, mind, and soul. Pressure applied judiciously to suitable *marma* can restore normal *prana* functioning (in diseased body parts), whereas incorrect manipulation can cause extreme discomfort, incapacity, deformity, and even death.

II. MATERIAL AND METHODS

1) On the basis of textual reference available in ancient text this study has based on the *marma.*

2) Magazines, journals, periodicals. Internet material and research papers

III. MARMA IN SOME ANCIENT INDIAN TRADITIONS

The first allusion is found in the *Rig Veda*, where there is mention of words like *Varman* or *drapi*, which are some form of body *armour* or corselet used to defend the body from enemy weapons. The term *kavacha* or corselet or breast plate for protection is also mentioned in *Atharva-Veda*.[17] Many allusions to *Marma* or *Varma* can be found in the classic epic *Mahabharata*. Because monks were able to defend themselves against weapons thanks to their mastery of *marma*, martial arts became effective and popular for self-defense. In Tamil Nadu it is employed in *Varma-kalai*, in Malayalam it is called *Marma kala*, in *Sinhala* it is called *Maru kala*, and in Telugu it is called *Marma vidyaka* [14]. It is also utilised in Kerala in the form of *Kalaripayattu*. The medical system of *Siddha* refers to *Marma* as *Varma*[15]. It is known as *"Vaidiyamurai"* in the *Siddha* system of medicine when utilised for therapeutic purposes, such as the treatment of various ailments [16]. When used in fighting, it is known as *"Varma adi"* or *"Marma adi,"* which refers to hitting at the important areas with the hand or a blunt object. The nerves, veins, tendons, and bone joints are the main targets of the strikes .

A. The Marma and Siddha System

The *Siddha* philosophy holds that the merger of *Lord Shiva*, who represents matter, and his wife *Parvat*i, who represents energy, is the source of the cosmos as we know it. Shiva is both substance and energy. *Vasi*, which meaning breathing, is the root of the term *Shiva.* According to ancient belief's, *Varma-kalai* was taught to *Parvati* by *Lord Shiva* (who is thought to be the First *Siddha*), who then passed it on to Murugan, her son. The sages Agasthiyar and Boghar were later taught this technique by Murugan, who then passed it on to their people. *Siddha* medicine refers to the *Marma*, or vital point, as *"Varmam,"* which denotes a protective covering or shield (*kavacha*, or bodily armour)[16]. This science is also known as *"Varma-kalai"*. The definition of *"Varmam"* in its original language is "Science of life force"[16].

The 108 *Varmam* points (vital spots) in the *Varma-kalai* are thought to be the origins of both disease and death as well as of long-term health. Based on their effects on the body, the *Varmam* points are divided into two groups .

1. *Thoduvarmam* 96 points,
2. *Paduvarmam* 12 points

- The *Paduvarmam* points are the primary *Varmam* points in the *Varma-kalai* system. They are connected to the *Saram* route, which parallels the *dasanadi* (ten varieties of pulse) and *dasavayu* (ten types of air). As a result, when a *Paduvarmam* point is hurt, it disturbs the homeostasis of many other places along its journey in addition to the site of the trauma .
- Eight *Thoduvarmam* points, each of which is related to a different *Paduvarmam* point, are impacted by the stimulation of the corresponding *Paduvarmam* point. Only a few of the *Thoduvarmam* points may result in disability or death , and none of them are lethal.

B. Marma and Yoga

According to the scriptures, there is a strong link between *Marma* Science and *Yoga*. *Maharshi Patanjali* describes the eight limbs of *Yoga* as *'Ashtanga Yoga'* in the *Patanjal Yoga Sutra* (*Samadhi Pada* 29). *Patanjali Yog Sutra* focuses on the means and stages of achieving ultimate liberation through *Asthanga Yoga's Samadhi*[17] *(unification and consciousness).Asthanga yoga teach* eight progressive *yoga sadhna* steps.

Yogasana practice ensures proper flow of *Prana* through various *Marma* locations.[18] *Marmas* are primary energy centers for *Yogasanas* and *Dhyana* (meditation). *Yogasanas* affect the energy of the limbs, joints, and spine; these are important *Marma* points. *Marmas* are linked to the *Nadis* (subtle nervous system) and *Chakras* (subtle energy centers) of the subtle body; thus, stimulating *Marmas* affects both the physical and subtle bodies (feelings, emotions, and subtle energy currents), as well as ensuring the proper exchange of energy between them, resulting in better health and increased vitality[18]

C. Marma and Shatkarma

Shatkarmas are the six cleansing techniques devised by *Hatha yoga* (*Hatha Pradipika* 2/22) . It is believed that when *Shatkarma* purifies the different body systems, energy (prana) can flow freely through the body.[19] Table lists the effect of *Yogic Shatkarma* practices on *Marma* points, as well as the corresponding therapeutic benefits.

Effect of *Yogic Shatkarma* practices on *Marma* points, and the corresponding therapeutic benefits [*Hatha Pradipika* - H.P.]

S.N.	*Shatkarma*	Affected *Marmas*	Benefits	Reference
1.	*Dhauti*	*Nabhi, Vasti, Kanthagata and Urogata Marmas*	Cough, Asthama, Spleen disorders, Skin disorders, all 20 types of *Kapha* disorders	H.P. 2/ 25
2.	*Basti*	*Guda, Vasti, Nabhi*	*Gulma* (gas pocket in the abdomen), Spleen disorders, Abdominal disorders, Ascites, Disorders of *Vata-Pitta-Kapha*	H.P. 2/28
3.	*Neti*	*Shringataka, Phana, Sthapni*	Disorders of Supraclavicular region, purify *Kapal* region (brain), clear vision	H.P. 2/31
4.	*Trataka*	*Apanga, Avarta, Shringataka, Sthapni*	Eye disorders, Drowziness	H.P. 2/33
5.	*Nauli*	*Nabhi, Vasti*	Digestive disorders and useful for several diseases	H.P. 2/35
6.	*Kapalbhati*	*Shringataka, Sthapni*	*Kapha* disorders, Obesity	H.P. 2/36

D. Marma & Martial Arts

Martial art can be defined as systematized technique of warfare, with proper knowledge of body anantomy and *marma* points. This needs concentration on vital energy points, point of contact, stability as well as agility of the body including the speed, fluency in the fast and rapid movements of the body. In martial *astras, marma* points are classified in various groups –

1) Those which will cause instant death,
2) Those which will cause loss of consciousness and
3) Those which will cause severe pain and numbness with deformity of the part.

References of martial art can be found from *Rig Veda, Dhanurveda, Vishnu Purana* and Mahabharata[20]

E. Marma and Kalaripayattu

One of the oldest *Martial Art* traditions of India, Kalaripayattu, is practised in Kerala. *"Kalari"* in Malayalam literally translates to "practise ground," and *"Payattu"* to "exercise" . The *Kalaripayattu* practitioners use the understanding of *Marma*(sensitive pressure spots of the body) as a technique to promote health[21] .

Regarding its application as a healing method, some practitioners are reputed to use thin bamboo sticks that are applied and held in position on particular body points in order to heal the patients; this antiquated method is known as *"Shalaka Shastra,"* and it may be considered the ancestor of the modern acupuncture .

Regarding the crucial locations [22], Kalaripayattu teachers cite three texts:

1) *Marmmanidanam* (Determining critical locations)
2) *Granthavarimarmma chikitsa* (describes how to recognise and treat injuries to critical spots and prescribes appropriate treatment measures)
3) *Marmmayogam* (this is a *Kalaripayattu* practitioner's manual that includes applications for fighting with empty hands as well as a technique for emergency revivals for the body's sixty-four most crucial locations, known as *Kulabhyasamarmam*).The empty-hand tactics would have been helpful in situations when the practitioner's weapon was either misplaced or destroyed during the fight or if the practitioner was unarmed when being attacked (46).

F. Marma In Ayurveda

There are 107 *marma* in the body according to *Ayurveda* (upper and lower limbs 44, back-14, chest and abdomen-12, *udarvajatrugata*-37). These are classified into several groups based on their physical matrices as well as their unique characteristics. *Sushruta* classifies them as five[23], whereas *Vagabhata* classifies them as six, with *Dhamani marma* included.

1) Tridoshas and Three Main Marma Points

We have already seen that the three main *marmas - shira, hridaya* and *basti* are important sites in the body. Although all organs and structures are related with all *doshas*, it can be said that *basti* is related with *Vata, hridaya* is mainly related with *Pitta* and *Shira* is related with *Kapha*.

2) Marma and Sub doshas[13]

- *Vata* types and *marma*
  a) *Adhipati* and *sthapani marma* are related with *Prana* and *sahasrara chakra*. It controls mind and CNS.
  b) Nila and *manya marma* is related with *Udana*
  c) Hridaya marma is related with *Vyana*
  d) Nabhi marma is related with *Samana*
  e) Basti marma is related with *Apana*
- *Pitta* types and *marma*
  a) *Adhipati* and *Hridaya arma* is related with *Sadhaka* and is responsible for digestion of knowledge
  b) *Nila, Manya* and *Katikataruna marma* are related with *Bhrajaka*
  c) *Nabhi marma* is related with *Pachaka*
  d) *Ranjaka Pitta* as well as Liver.
  e) *Kurcha marma* is related with *Alochaka*
- *Kapha* types and *marma*
  a) *Adhipati marma* is related with *Tarpaka Kapha*
  b) Phana and *Vidhura marma* are related with *Bodhaka*
  c) Hridaya and *Talahridaya Marma* are related with *Avalambaka*
  d) Nabhi marma is related with *Kledaka*
  e) *Janu marma* is related with *Shleshaka Kapha.*

3) Channels and Marmas

a) Pranavaha srotas- Respiratory channel- Lungs and bronchi- *Talahridaya, Kshipra, Hridaya*
b) Annavaha srotas- Digestive channel- *Nabhi, Indrabasti,*
c) Udakavaha srotas- Water metabolism channel- *Apastambha, Urvi*
d) Rasavaha srotas - Plasma and lymph channel- Hridaya,Kshipra, Stanamula, Lohitaksha, Amsaphalaka

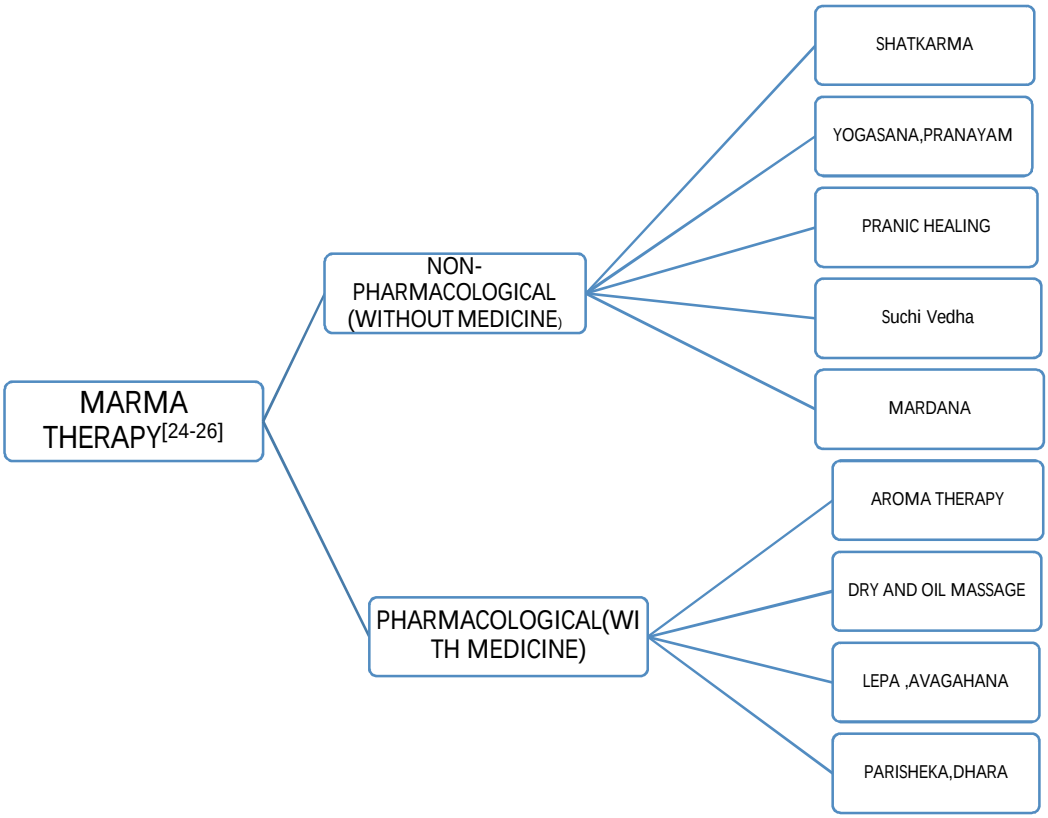
e) Raktavaha srotas- channel for blood - Nabhi, kurpara, Bruhati, Janu
f) Mamsavaha srotas- channel for muscle tissue- Kurchashira, Kakshadhara, Ani and Stanarohit.
g) Medovaha srotas- channel for fatty tissue - Guda, Katikataruna,
h) Asthivaha srotas - channel for bones- Kukundara, Manibandha,
i) Majjavaha srotas - channel for nerve tissue- Adhipati, Sthapani, Apalapa, Apastambha, Shringataka
j) Shukravaha srotas - channel for reproductive tissue- Guda,Vitapa, Gulpha
k) Mutravaha srotas - channel for Urinary system- Guda
l) Purishavaha srotas - channel for excretory system- Guda
m) Sweadvaha srotas- channel for sweat- Nila, Manya and Katikataruna

IV. MARMA THERAPY

Marma points are specific areas on the body, which has relation through Pranic channels to various internal organs, doshas and srotasas. As the technique of massage developed, these points were used to stimulate the internal organs.[24]

1) Therapeuttic areas - at these sites various procedures like massage, acupuncture, applying heat -like moxibustion, applying various ointments and heavy or aromatic oils or applying acu- magnets can be carried out.
2) Lethal areas - when injured due to blows or weapons etc. can produce severe pain, disability or even death.

These points can be used for therapeutic purpose. In Sushruta Samhita, three therapies - Siravyadha, Agnikarma and Ksharakarma, have been discussed.In these treatments certain points have been correlated with certain internal organs.Taking these references into account, Marma therapy has been developed. One can control (stimulation or suppression) internal organs, doshas and channels thorough various Marma points.



A. *Various Methods can be used*[24]

- Abhyanga (Massage - with heavy oils and aromatic oils)
- Lepa -applying herbal pastes, ointments,
- Agnikarma- applying slight heat, near marma points likemoxibustion
- Ksharakarma- applying herbal alkalis near marma points like chemical cautery

- Suchi vedha - (acupuncture)
- Pranic Healing
- Biomagnetic therapy
- TENS Therapy

One should however remember that all these therapies should not be applied to all marma points. Those marma points which have been categorized under Sadyhaprnahara-and Tri-Marma (Shira, Hridaya, and Basti) should be excluded from the treatments like acupuncture, giving heat or applying steam

1) Marma Therapy by Abhyanga, Mardana, Acupressure

Abhyanga or massage is an important tool to treat internal organs through Marma points. But it is recommended to do massage to the whole body by one of the suitable methods mentioned in Samhitas. Some basic styles of massage -

- Snehana - Massage with oil.
- Gharshana - Dry powder massage or massage with silk cloth/ gloves.
- Udvartana - vigorous rubbing of herbal powders or herbal pastes.
- Chavitti - Chavitti means feet. The masseur using his feet to do the massage.
- Pizichil - In this type the masseur takes warm oil in a pan, soaks a piece of cloth in it and squeezes it over the body.
- Kizhi - means poultice. This is a massage with poultice.

Selection of one of the above style can be done according to season, condition of the individual and constitution. Then follow the specific marma massage.

2) Marma Therapy by herbal paste

Treatment by applying herbal paste is called the Lepa Chikitsa. It is very useful to reduce swelling and pain if applied over proper marma area. They also give strength and stability to bones and joints by applying to specific area. There are three types of Lepa according to the thickness of the herbal paste.

- Pralepa - Thin paste
- Pradeha - Thick paste
- Aalepa - Medium paste

3) Marma Therapy by Agnikarma

This therapy cannot be applied to all marma points. Sadyhapranahara marma-those when injured cause sudden death - like Marma on head - Adhipati, Hridaya, Nabhi and Basti - should preferably be excluded from this application of heat.

- Instruments of Agnikarma

For application of heat, Sushruta has advised using various types of Shalaka - thin probe type instruments - cautery instruments - made up from gold, silver, copper, iron or alloys of two or three metals. Herbs such as piper longum, jambu seeds, jaggery and animal products such as fat, teeth, honey and wax are also used for agnikarma

- Agnikarma on specific marma points - This treatment is indicated for the following marma points-

a) Kurchashira- on sole for growth of excess bone, vatakantaka (calcenial spur).
b) Kurcha -on sole - Hepatic coma- Right kurcha Splenomegaly - growth of spleen - Left Kurcha
c) Katikataruna - For sciatica pain For joint pain in knee - Janu.

For all types of joint pains one should select the tender most point on the Joint nearest to the marma site.

4) Marma Therapy by Kshara karma (alkalies)

Qualities & functions of Kshara - These are prepared from different herbs which are dominant in fire element. Thus it has penetrating action. It is white in color and acts on all three doshas. It has cleansing, cauterising and detoxifying effect. Medium quality Kshara is recommended for therapy. That means it should not be too strong or too weak.

- Assessment of quality of Kshara - Apply kshara to the tip of the castor leaf & count the numbers from 1 to 100. If there is burning effect over the tip of the leaf, then the kshara is best for the therapy. If this effect appears before counting 100, then it is strong. Similarly if the action is delayed after counting 100 then it is called as mild.

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5) Marma Therapy by blood letting (Rakta mokshan)

Basti is an important therapy of Ayurvedic Medicine. Similarly blood letting at specific points and veins is most effective treatment of Ayurvedic surgery and marma therapy.

6) Marma and Pranic Healing

Pranic Healing entails passing energy from the healer to the client and is performed by placing one's hands above the specific area of the body (or, in this case, the marma point) that is the objective of the healing. *Marma* points are part of the *Majja dhatu*, or neurological system, which is governed by *prana* in *Ayurvedic* words. *Pranic* healing can help to promote greater healing in the physical, mental, and emotional bodies by assisting in the harmonious interaction of *prana vayu* (the flow of cellular intelligence), *sadhaka pitta* (present especially in the grey matter of the brain), and *tarpaka kapha* (the white matter covering the brain).

MARMA (SEATS OF *PRANA)*

Bio-electric powers reside in *Marma [havya vaha(+)&Kavya vaha*(-)[24,27]

In Healthy Body	In Diseased Person
Prana is particularly related to vata that effect nervous and emotional stability → by stimulating the marma → flow of prana can be modulated &balance occurs between bio-electric powers → resulting in better controls over sensory and motor organs → and provide better control over mind-body system	Imbalance of Havya vaha and kavya vaha bio-electric powers results in occurencisease and weaknesse of → through proper marma stimulation → flow of prana can be modulated through seven major chakra,which remove blockage → improve flow of subtle energt(create balance between bio-electric powers) → Connect with the subtle and causal powers of nature and human body → serve as therapeutic procedure working through modulation of prana flow

7) Marma therapy by Biomagnetics

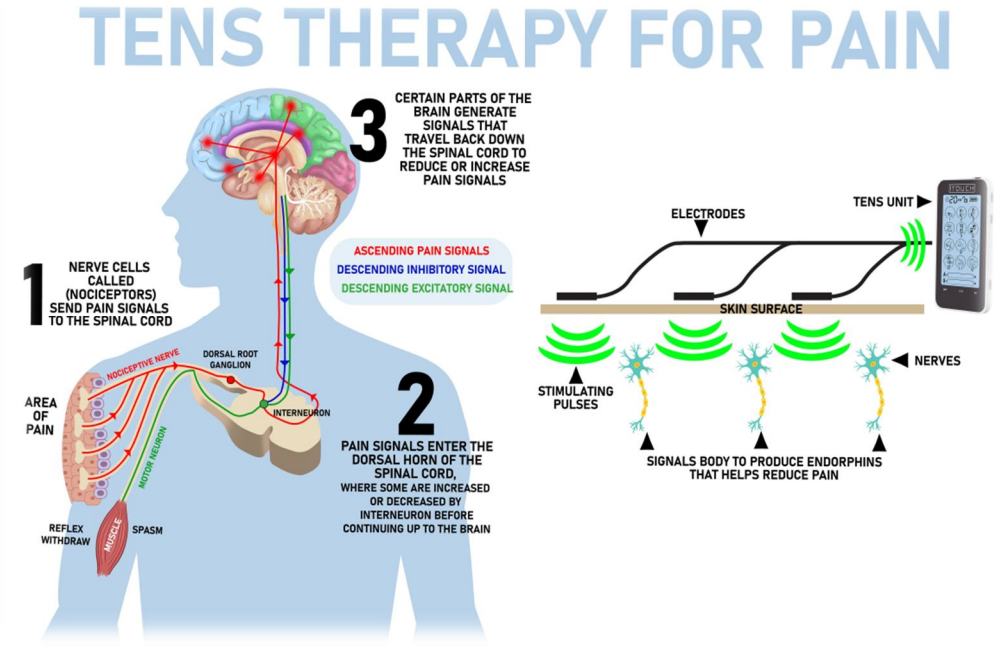
Electro-magnetism is an important force found in the nature. This can be compared with Prana in Yoga, Vata in Ayurveda, Qi in Traditional Chinese Medicine and the bioelectrical energy of the brain and the nervous system. The diseased cells lose their magnetic equilibrium and this can be set right with the use of proper magnets. Dr. Albert Roy Davis has done lot of research on the energy related with south and north poles of the magnets. He showed that the electrons coming from the South pole moved clockwise and that coming from North pole move anti-clockwise.

- Use of acu-magnets

These are very small magnets and can be applied directly to the skin on the tender point over the marma area for relieving pain. North magnet pole should be applied on these pointsThis therapy is very safe and is without any side-effects.

8) Marma and TENS Therapy

T.E.N.S. stands for “Trans-Cutaneous Electrical Nerve Stimulation”.It is used in physiotherapy and traditional chinese medicine for pain management The electrical impulses can reduce the pain signals going to the spinal cord and brain, which may help relieve pain and relax muscles. They may also stimulate the production of endorphins, which are the body's natural painkillers.



TENS, by strict definition, is any procedure that stimulates underlying nerves by conducting electrical currents across the intact surface of the skin. The term is used by medical professionals to describe currents produced by a "standard TENS device". This consists of a portable, battery-operated stimulating device that produces pulsed electrical currents that are delivered through the skin by electrode pads fastened to the skin's surface. The pulse amplitude (mA), frequency (pulses per second - pps), width or duration (s), and pattern of the currents can all be changed by the user. There are numerous TENS-like products on the market, but there is scant evidence to support their efficacy(3). The main techniques are:

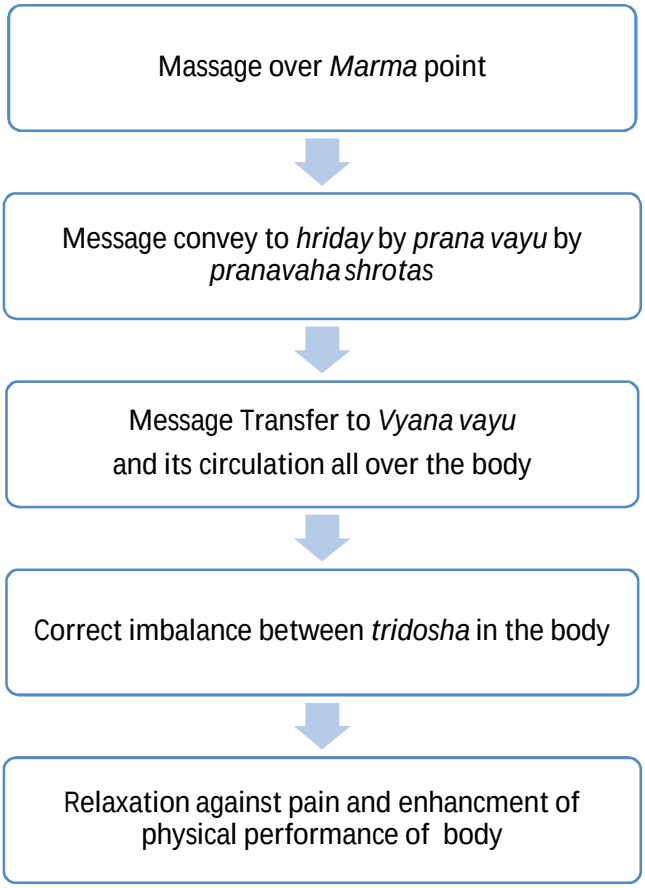
Techniques	Physiological Intention	Clinical Technique
Conventional TENS	To selectively activate large diameter non-noxious afferents to elicit segmental analgesia	Low-intensity / high-frequency TENS at site of pain to produce “strong but comfortable TENS paraesthesia”. Administer whenever in pain
Intense TENS	to produce extrasegmental analgesia and peripheral nerve blockage by activating small diameter noxious afferents	"Maximum tolerable (painful) TENS paraesthesia" is produced by applying high-intensity, high-frequency TENS to nerves originating from a painful site. A few minutes at a time, administer
Acupuncture-like TENS	To produce muscle twitches to activate small diameter motor afferents to elicit extrasegmental analgesia	"Strong but comfortable muscle contractions" are created by applying high-intensity, low-frequency TENS to muscles, acupuncture points, or trigger points. Continually administer for 15 to 30 minutes.

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V. *MARMA* THERAPY AS A NONPHARMACOLOGICAL INTERVENTION IN PAIN MANAGEMENT

"Hastamevam Pradhanatamam yantram" (the human hand is the most potent and significant tool), according to Acharya Susrutha, has been stated. The most common body parts employed in Marma therapy are the elbow, knuckles, fingertips, and thumbs, which deliver a very gentle stimulation to the body's Marma points. This aids in clearing obstructions from the crucial point and offers physical-psychological recreation and potency.

A series of events are stimulated when gentle pressure is applied to Marma points located on the skin.



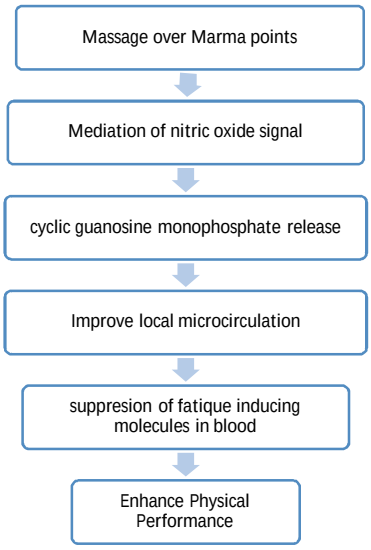
Series of events occurring during *Marma Chikitsa*[28]

Marma points serve as the interface between physiology and consciousness.[29] *Marma* therapy, which involves very gentle stimulation of body locations, is used. It clears blockages in the *Marma* points, bringing physical and mental relaxation, as well as the body's energy pathways, known as Srotas. *Marma* points, when lightly touched on the skin, can set off a series positive events.[30] *Marma* therapy is *Ayurvedic* energy healing that uses 107 points or "doors" to the body and awareness. Each step provides for access to the "*chakras*" - the vibrating energy centers along the spine - from the "subtle" body, removing blocked energy and promoting pranic flow. *Marma* points, which are regarded "doors" or "entry points" to our body's internal pathways, when lightly touched on the skin, can trigger a series positive events.[30]

A. Pathogenesis of Pain

Pain is the body's first protective reflex manifested physically. The intensity threshold for sensory nerve endings is over stimulated, which results in pain. The stimulation of peripheral receptors (Nociceptor), which is deduced as pain inside the higher brain centers, results in the production of the nerve impulses. Such types of nervous activity may result from a variety of physical phenomena, such as pressure, squeezing, tension, tearing, punching, and temperature changes, as well as chemical effects, such as pH changes, which affect the concentration of histamine-like substances, bradykinin, serotonin, and other polypeptide compounds.[31]

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Probable mode of action in purview of Modern Medicine[32]

Marma therapy uses the subtle and dynamic inner transport system of the body-spirit organization, as well as the circulatory system, to open the energy outlets in the body known as *Srotas*.[33] This light stimulation also modifies the physiological response by increasing endorphin and serotonin transmission to the brain and specific organs via nerves, *Srotas* (channels), and important sites.
As a result, this light stimulation on the *Marma* causes a tingling sensation and the activation of pathways with multifactorial effects such as beneficial influences on the chemical environment of nearby *Marma's*, facilitation of tissue repair processes, decreased fatigue, and improved microcirculation around the *Marma*.[34] As a result, *Marma* treatment can be defined as therapy with multidimensional impacts, i.e., physical, mental, and social.

B. Quantum theory-based pain management[35]

The therapeutic application of revolutionary cellular signaling energy and combined quantum modalities currently makes a significant contribution to the reduction of pain.
We presume that the process of life is molecular. Life is a quantum process because molecular processes run according to the quantum theory. Humans engage with all the other quantum fields in their environment because they have more than 50 trillion quantum living cells.
The word "quantum" is derived from the Latin word "quantus," which meaning "how much." Quantum is referred to as "Quanta" in plural. The quantum is the smallest quantity of any physical entity that engages in an interaction.
We can also think of the ability to maintain a steady-state through a flow of chemical and bioelectrical energy as a requirement for life. This steady-state situation sustains electrochemical imbalance across biomembranes, converts and amplifies tiny signals into discernible actions, summons energy at command, and initiates a very quick and effective energy transformation

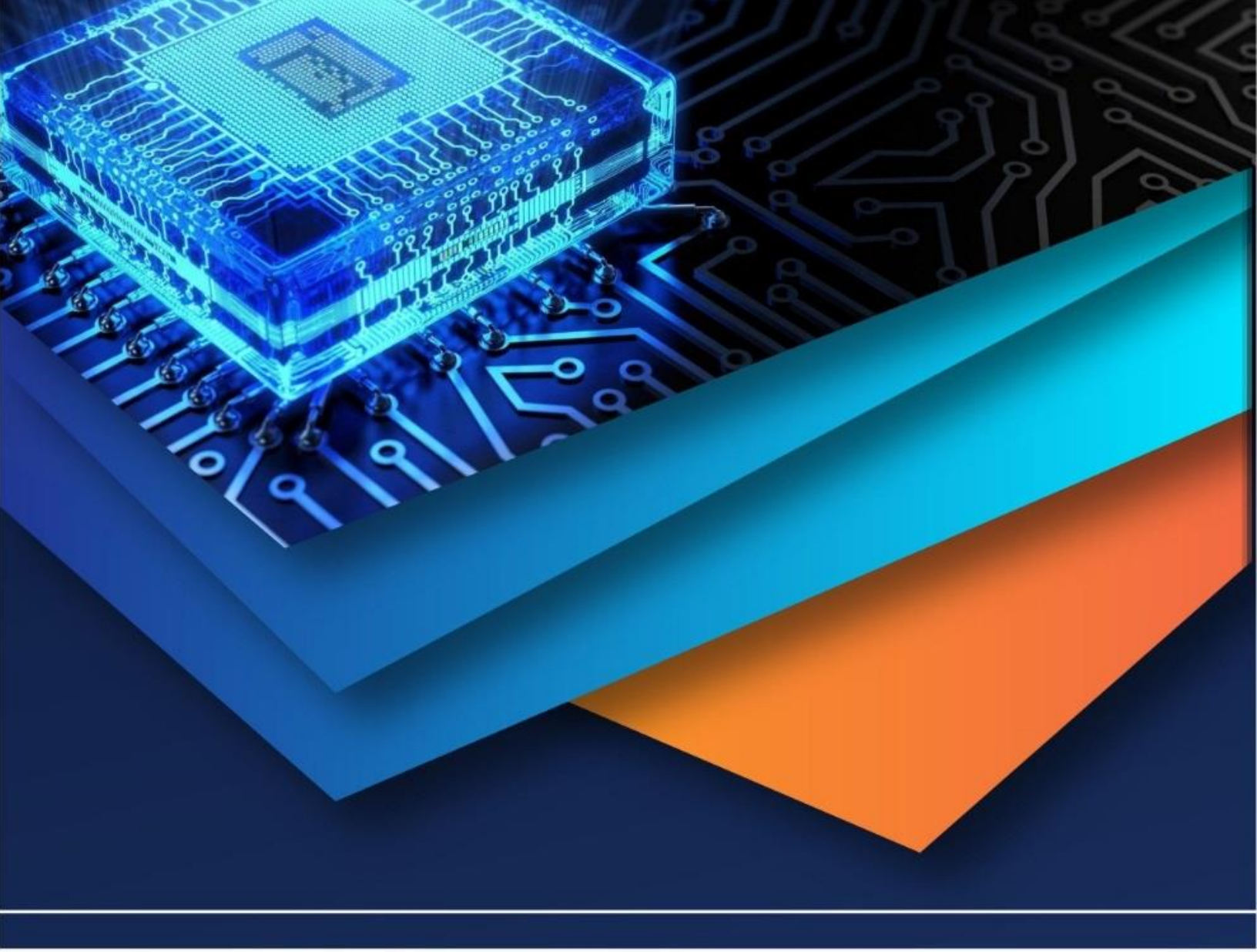
VI. CONCLUSION

The present article explored the foundational elements of the Science of *Marma* with regards to its use in *Yoga* and other ancient Indian traditions and foundational elements of the Science of Marma with regards to its use as a therapeutic procedure (*Marma* Therapy)
The science of vital spots (*Marmas*) is recognized to be an intrinsic aspect of various old Indian traditions, including the *Kalari* martial art tradition of Kerala and the *Varma-kalai* of Tamil Nadu. This science has been employed as a martial art for self-defense and inflicting pain on opponents, as well as a therapeutic tool for healing. *Marma* is referred to as '*Varma*' in the *Siddha* system of medicine, which frequently employs the technique of stimulating these key points for the treatment of various diseases. According to the conceptual basis of their healing use in various traditions, stimulating the vital points is claimed to correct the flow of *Prana* in the body, resulting in the associated healing effect.

It has been discovered that numerous ancient Indian traditions, as well as several recent studies, have adopted the practice of activating the *Marmas* for medicinal purposes. Various ways have been used to stimulate and influence the *Marmas*.
Several mechanisms for *Marma* Therapy's mode of action have been proposed in the literature.
As a result, it is possible to infer that *Marma* Science, an exceedingly ancient branch of knowledge, shows tremendous promise for usage as an efficient therapeutic process.

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