

Unique modality of stress management- Shirodhara: A review

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Abstract

Stress is a primitive aspect of the human experience, one that everyone encounters at different points in their lives. It is an inherent part of how our bodies react to changes and challenges. When faced with stressors, your body triggers physical and mental responses to manage these demands. According to classical Ayurveda, stress (*Chinta*) and excessive worry (*Atichintan*) can disrupt the functioning of *Rasavaha srotas*, channels in the body responsible for transporting vital fluids. This disruption can potentially lead to a range of health issues. Scientific literature, research papers, systematic reviews, and meta-analyses were reviewed to collect relevant data on the physiological and psychological effects of *Shirodhara* in stress management. *Shirodhara* is a traditional Ayurvedic therapy where a steady stream of warm, medicated oil or other soothing liquids is dripped onto the forehead. This treatment induces profound relaxation and helps restore a harmonious balance between the mind and body. As an essential aspect of Ayurvedic healing, *Shirodhara* offers significant benefits for the nervous, immune, physical, and psychological systems. It calms the mind and has a therapeutic effect on the brain, making it particularly effective in reducing stress and addressing various stress-related conditions. *Shirodhara* is a therapeutic practice that revitalizes the nervous system, releases emotional tension, opens subtle energy channels, and induces a sense of bliss throughout the mind and body.

Key words: *Chinta*, endocrine system, *Shirodhara*, stress

INTRODUCTION

In contemporary life, stress has become an inescapable and often unwelcome reality. Biologically, stress is identified as any factor that presents a genuine or perceived threat, which could potentially harm an organism.^[1]

The hormones and chemicals released by the body in response to stress can significantly impact both physical and mental health, leading to symptoms such as rapid heartbeat, high blood pressure, anxiety, irritability, and sweating. While these hormonal responses are crucial for managing short-term stress, their continual activation due to chronic or repeated stress can contribute to a variety of health issues. These may include ongoing anxiety, hypertension, cardiovascular problems, endocrine imbalances, and potentially even cancer.^[2] According to classical Ayurveda, *Chinta* (stress) and *Atichintan* (overthinking) are causes of *Rasavaha srotodushiti*, which can lead to various diseases.^[3]

Daily life presents a multitude of challenges stemming from diverse occupational, environmental, and social factors. The stress that arises from these challenges, often fueled by frustration and anxiety, can adversely affect our physical health, social interactions, mental state, and spiritual well-being.

Panchakarma therapy offers a range of benefits, including enhancing the body's natural healing processes and improving mental health.^[4] Among its various methods, *Shirodhara* is particularly beneficial for addressing mental health issues.^[5] This unique, non-invasive Ayurvedic treatment is effective

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for managing conditions such as insomnia, anxiety, stress, headaches, and hypertension, and in some cases, may even surpass other treatments in efficacy.^[6]

Shirodhara is a renowned Ayurvedic therapy that involves gently pouring a continuous stream of medicated oil or other soothing liquids onto the forehead, specifically targeting the “third eye” area. This technique can also be described as a form of head irrigation, where various customized oils or liquids are used, tailored to address the patient’s specific conditions, ailments, and seasonal needs.

INDICATIONS OF SHIRODHARA

- Neurological conditions: Headaches, convulsive disorders, hypertension, and stress
- Psychological disorders: Anxiety disorders, mental exhaustion, irritability, insomnia, phobias, depression, and attention deficit hyperactivity disorder.
- Psychosomatic conditions: Irritable bowel syndrome.

CONTRA-INDICATIONS OF SHIRODHARA

- Rhinitis (recurrent or allergic), fever (pyrexia), presence of an open wound on the head, peripheral arterial disease, inflamed scalp, and *Ajeerna*. *Kaphaja vikara*: *Shirodhara* may exacerbate *Kapha dosha*, potentially complicating the treatment of these conditions.

DIFFERENT CLASSIFICATIONS OF SHIRODHARA

- *Tailadhara*: In this approach, warm herbal oil is continuously poured onto the forehead
- *Dugdhadhara*: This technique involves the steady application of warm, herb-infused milk
- *Dhanyamladhara*: A fermented liquid made from cereals and pulses, rich in probiotics and enzymes, is used in this method
- *Kashayadhara*: This method utilizes a decoction of herbal extracts poured steadily onto the forehead
- *Jaladhara*: Instead of oils or herbal mixtures, this technique involves pouring water
- *Takradhara*: This approach uses buttermilk infused with herbs, rather than oil, for the therapy.

MATERIALS AND EQUIPMENT

- *Shirodhara* device - 1
- *Dhara* table - 1
- Gauze- 1
- Cotton earplugs-2
- A soft pillow covered with rexine- 1

- Vessels -3
- Soft towels-2
- Suitable oils/liquids for *Shirodhara* - 2.5 L.

MAN POWER

- Ayurvedic physician: 1
- Attendant: 2.

MODE OF ADMINISTRATION/PROCEDURE

- *Poorvakarma*-pre-operative procedure
- *Pradhanakarma*- procedure of *Shirodhara*
- *Paschatakarma*- post-operative procedure.

POORVAKARMA-PRE-OPERATIVE PROCEDURE

- *Abhyanga* should be applied to the face, neck, shoulders, and chest; although a full-body *Abhyanga* can also be done
- A gauze bandage should be wrapped around the patient’s head, positioned just above the eyebrows
- After closing the eyes, place cotton pads over the eyelids and secure them with the bandage. Earplugs should be inserted to complete the preparation.

PRADHANAKARMA- PROCEDURE OF SHIRODHARA

- Preparation: The patient should lie comfortably on their back on a treatment table, with a soft pillow under their neck. Position the *Shirodhara* apparatus near the patient’s head and cover their eyes with cotton and gauze to protect them from the oil.
- *Shirodhara* setup: Adjust the *Shirodhara* device to ensure a continuous, gentle flow of warm oil or other soothing liquids from a height of about 4 *Anguls* (~7–8 cm).^[7] Insert a serrated coconut shell into the apparatus to maintain steady oil or other soothing liquids flow. Heat the oil or other soothing liquids to approximately 38–40°C (100–104°F) and pour it into the *Dharapatra* of the *Shirodhara* device.
- Treatment execution: Ensure the oil or other soothing liquids flows smoothly across the entire forehead by gently swaying the *Dharapatra* back and forth for a steady stream [Figures 1 and 2]. Simultaneously, use your other hand to provide a soothing massage to enhance relaxation. Periodically collect excess oil from the treatment table, reheat it, and pour it back into the *Dharapatra* to maintain an uninterrupted flow.

PASCHATAKARMA- POST-OPERATIVE PROCEDURE

- Gentle cleansing: Remove the gauze and earplugs used during *Shirodhara*. Then, gently wipe the head with a soft towel
- Application of *Rasnadi choorna*: Apply *Rasnadi choorna*, an herbal powder, to the head for its therapeutic benefits
- Hot water bath (if prescribed): If recommended by the *Panchakarma* physician, take a hot water bath at least 1 h after *Shirodhara*
- Lukewarm head bath: For routine cleanliness, wash the head with lukewarm water.

INTERVAL FOR CHANGING THE OIL/ LIQUIDS^[8]

- Milk: Use daily
- *Dhanyamladhara*: Apply every 3 days
- Oil: Use for 3 days. On the 7th day, mix both the first and second oils together for the *Shirodhara*.

PRECAUTIONS

- During the *Shirodhara* session, it is essential to ensure that the oil or other soothing liquids does not come into contact with the eyes. Patients should remain awake and attentive throughout the procedure
- The oil or other soothing liquids should be maintained at the correct height, viscosity, and flow rate to ensure effectiveness. To minimize hair interference, consider shaving the patient's head if necessary
- In addition, closely monitor the flow and temperature of the medicated liquid throughout the entire session to ensure optimal results.

Duration

The treatment may be administered for 7, 14, or 21 days, depending on the severity of the condition.

Dietary Regimen

Follow a light diet, ideally consisting of semisolids and liquids.

DISCUSSION-PROBABLE MODE OF ACTION OF SHRIDHARA

A substance at a certain height has potential energy, given by the formula ($P.E. = mgh$), where (m) is mass, (g) is the acceleration due to gravity, and (h) in height. According to the law of conservation of energy, this potential energy

transforms into kinetic energy as the substance falls, so ($P.E. = K.E.$), or ($mgh = 1/2 mv^2$).^[9]

The potential energy of a substance depends on its mass and height. If height is constant, potential energy is directly proportional to mass; thus, greater mass results in greater potential energy. Similarly, a larger mass increases momentum when the substance moves, with momentum given by ($P = mv$).

When a substance is poured from a height onto the forehead, potential energy converts into kinetic energy, creating momentum. This momentum affects voltage levels and nerve impulse generation. If momentum is low, the energy may be absorbed by the skull, which may explain why *Shirodhara* is administered for 45 min to 1 h, allowing sufficient time for optimal energy transfer and nerve stimulation.

IMPACT OF PRESSURE AND TEMPERATURE IN SHIRODHARA THERAPY

The steady stream of warm liquid applied to the forehead during *Shirodhara* can cause mild vasodilation, enhancing circulation, and regulating the brain's blood supply. This continuous application of pressure and vibration may stimulate the thalamus and basal forebrain, helping to normalize serotonin and catecholamine levels.

The pressure and vibrations, amplified by the hollow sinus in the frontal bone, are transmitted through the cerebrospinal fluid. This pressure also affects nerve impulse conduction, where prolonged pressure can disrupt impulse transmission, leading to localized relaxation.

In *Shirodhara*, the sustained pressure from the medicated liquid promotes mental tranquillity and reduces stress by modulating nerve stimulation. Stimulation of the autonomic nervous system's nerve endings triggers the release of acetylcholine, which, activated by the vibrations, helps lower blood pressure and central nervous system activity, inducing calm.



Figure 1: Automatic *Shirodhara* device



Figure 2: Manual *Shirodhara* device

In addition, the continuous dripping of the medicated liquid increases brain wave activity while decreasing cortisol and adrenaline levels, contributing to the anti-stress effects of *Shirodhara* and enhancing overall relaxation and mental well-being.

IMPACT ON THE ENDOCRINE AND LIMBIC SYSTEMS (EMOTIONAL AND BEHAVIOURAL REGULATION)

The effect of *Shirodhara* on hormone secretion can be understood by examining its impact on the hypothalamus, the central regulator of endocrine function. The hypothalamus contains neurons that secrete regulatory hormones and is influenced by monoaminergic neurotransmitter neurons from the midbrain. These neurotransmitter neurons release dopamine, noradrenaline, and serotonin.^[10]

The midbrain nuclei are regulated by the visceral brain, which responds to stress and emotional disturbances. The limbic system, in conjunction with the hypothalamus, governs emotions such as rage, aggression, pain, pleasure, and sexual arousal.

Therefore, it is plausible that *Shirodhara* may influence the hypothalamus, potentially leading to reductions in various psychological and physiological disorders.

THE SOOTHING EFFECT OF SHIRODHARA

Continuous pouring of oil or other soothing liquids onto the forehead for an extended period creates a calming effect and

facilitates better sleep. When performed while the individual is relaxed and comfortable, this process enhances the soothing effect, acting as a sedative that calms the brain and promotes restful sleep. The medicated oil or other soothing liquids can be absorbed through the skin, reaching the brain's cortex, thereby improving overall relaxation and sleep quality.

CONCLUSION

From the discussion, it can be inferred that *Shirodhara* functions according to the principles of energy conservation. This therapy is designed to purify and rejuvenate the body, addressing both toxins and mental fatigue. It also helps to reduce stress and counteract negative impacts on the central nervous system.

REFERENCES

1. Arora D, Kumar M, Dubey SD, Baapat SK. Stress - Management: Leads from Ayurveda. *Anc Sci Life* 2003;23:8-15.
2. Sharma S. Stress management. *J Ayurveda* 2022;16:1-3.
3. Sastri K, Acharya YT, Sharma PV. *CharakaSamhita, Chakrapanidatta. Vimansthana. Ch. 5, Ver. 13. Varanasi: Chaukhamba Sanskrit Sansthana; 2006*
4. Sastri K, Acharya YT, Sharma PV. *CharakaSamhita, Chakrapanidatta. Sutrasthana. Ch. 16, Ver. 16-17. Varanasi: Chaukhamba Sanskrit Sansthana; 2006.*
5. Rajan S, Shamkuwar MK, Tanwar AK. Impact of *Shirodhara* on biological markers of stress: A case study. *J Ayurveda Integr Med* 2021;12:178-81.
6. Vinjamury SP, Vinjamury M, der Martirosian C, Miller J. Ayurvedic therapy (*Shirodhara*) for insomnia: A case series. *Glob Adv Health Med* 2014;3:75-80.
7. Brahamashri T, Sharma N, editors. *VaidyaManorama. Dharakalpa 18. Varanasi: Chaukhamba Orientalia; 1913. p. 11.*
8. Panditray TB. Translators. Vaidya Mahendrapal Singh Arya, Shaharsyogam, Hindi-translation Sanskrit Anuvad. Chapter Dharakalpa 13/15. New Delhi: CCRAS Publication; 2011. p. 523-4.
9. Divya K, Tripathi JS, Tiwari SK. An appraisal of the mechanism of action of *shirodhara*. *Ann Ayurvedic Med* 2013;2:114-7.
10. Shahid Z, Asuka E, Singh G. Physiology, Hypothalamus. National Center for Biotechnology Information; 2023. Available from: <https://www.ncbi.nlm.nih.gov/books/nbk535380>

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