

A Multidisciplinary Exploration of The Mind-Rasa Dhatu Axis in Cardiovascular Health A Multidisciplinary Study of Psycho -Cardiology

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Abstract

Mental health and cardiovascular functions are intensely interrelated, which can establish a key axis in both Ayurveda and modern scientific contexts. Cardiovascular diseases are the leading cause of death globally. In 2024, the World Health Organization (WHO) estimated that cardiovascular diseases caused 17.9 million deaths, accounting for 32% of all global fatalities. Additionally, the World Health Organization (WHO) reported that anxiety disorders, with a global prevalence of 32.9%, are significant risk factors for cardiovascular diseases. Ayurveda has emphasized on mental and physical well-being which is described under the umbrella term "Swasthya" (health). *Sattva* (harmony), *Raja* (activity), and *Tamas* (ignorance) are the three properties of mind which influences emotional stability, stress response, and autonomic regulation, all of which directly influence health of cardiovascular system. Ayurveda highlights *Rasa Dhatu* as the primary circulatory Tissue, which provides nourishment to body as well as mind. So, *Rasa Dhatu* is closely linked to mental well-being as well. Cardio-vascular system i.e. heart and blood vessels are root organs of channel (*Srotas*) of *Rasa Dhatu* and heart itself is a seat of mind, so balanced or deranged state of mind and *Rasa Dhatu* significantly influences health of cardio vascular system. This review determines the complex connection between the mind and *Rasa Dhatu* and heart by integrating insights from Ayurveda, neurophysiology, psycho- cardiology. A holistic approach that combines Ayurveda wisdom with modern physiology offers new perspectives on cardiovascular health management for academic, clinical and research purposes.

Keywords: mind - *Rasa Dhatu* axis, stress, cardiovascular health, neurophysiology and psycho-cardiology.

Introduction

The connection between the mind and heart has been broadly studied in both Ayurveda and modern medicine. Ayurveda has explained the role of *Sattva*, *Rajas* and *Tamas* in maintaining emotions, mental and cardiovascular health. Disturbances in these mental qualities may lead to stress and anxiety.⁽¹⁾ According to World Health Organization (WHO), stress can be defined as a state of worry or mental tension caused by a difficult situation. Stress free life is important for physiological and psychological wellbeing.⁽²⁾ Stress and anxiety have become widespread components of modern life, affecting millions worldwide. Stress is the body response to any demand or challenge, often referred to as a "stressor". It is complex biological and psychological process that helps organisms to survive. Scientist, "Hans Selye" first introduced the term "stress" into the health psychology language in 1926. According to "Selye" stress expressed in this term as state of anxiety, fear, worry or agitation. Richard Lazarus has classified stress - **Eustress** (positive stress) and **Distress** (negative stress). When stress becomes chronic, it becomes distress which leads to anxiety.⁽³⁾ Anxiety is described as an excessive and repetitive thought process, where the mind becomes focused on potential problems continuously. If mind is exposed to anxiety for longer period

or for longer duration then it manifests in the form of insomnia, disturbed sleep, indigestion, exertional fatigue, intolerance of speech, loss of appetite, palpitation, hypertension, dyspnoea, tachycardia, anorexia, xerostomia.^(4, 5, 6)

In Ayurveda, Stress and anxiety are termed as "*Chinta*" which literally means overthinking! Overthinking often leads to anxiety and stress generating imbalance among *Tridoshas*, influencing digestion and metabolism of the first bodily tissue *Rasa Dhatu*.⁽⁷⁾

Discussion

Rasa Dhatu is responsible for circulation and nourishment (*Preenanam*), leading to imbalances that contribute to hypertension, atherosclerosis, and stress induced cardiac dysfunction. *Rasa Dhatu* is deeply influenced by mental states as it nourishes both body and mind.^(8, 9, 10) *Tridoshas* along with *Rajas* and *Tamas* play a major role in psychosomatic such as overthinking, rage, fear, grief, greed, inappropriate dietary habits, restraint of urges – all these lead to vitiation of *Vata*, *Pitta Dosha* as well as *Manovaha Srotas*.⁽¹¹⁾

All the negative emotions provokes *Rajas Guna* significantly imbalances *Vata* and *Pitta* and *Kapha Doshas*

leading to anxiety which in turn imbalances *Tridoshas* manifesting - indigestion - which causes derangement in the physiological properties of *Rasa Dhatu* adversely affecting roots of Channel of *Rasa Dhatu*, eventually affecting channels of *Rasavaha Srotasa* (channels that carry nourishment) - Heart and Blood vessels leading to stress^(12,13) induced hypertension, arrhythmias while excess *Tamas Guna* imbalances *Kapha dosha* leading to atherosclerosis, dyslipidaemia, arterial plaque formation.

Modern medicine validates this mind - *Rasa Dhatu* axis link by establishing link among psychological stressors, emotional instability, and anxiety leading to cardiovascular disease through neurohormonal, autonomic, and inflammatory pathways. Overthinking leading to Anxiety is associated with increased *Rajas*, has a profound impact on cardiovascular function. Chronic stress and emotional instability contribute to Hyper activation of the sympathetic nervous system, due to high adrenaline release leads to increased heart rate causing cardiac arrhythmias and increased cardiac workload, Vasoconstriction causing increase in blood pressure and decreased flow to vital organs, increased cardiac contractility leads to cardiac hypertrophy and decreased cardiac function, increased platelet aggregation leads to thrombosis and acute coronary event. The second long term effect of anxiety is deranged Hypothalamic-Pituitary-Adrenal (HPA) axis, resulting in raised cortisol levels which triggers systemic inflammation. Cortisol is a steroid hormone that plays a crucial role in the body's response to stress. Chronically elevated cortisol levels have effect on cardiovascular system such as increased blood pressure. Neuro- hormonal derangement due to chronic stressors increases the risk of atherosclerosis and heart disease.^(14,15) Hyper activation of HPA axis due to anxiety reduces vagal tone, imbalances *Dosha* (bio energies), *Dhatu* (seven tissues), *Mala* (waste products) impacting digestion, absorption, metabolism of *Rasa Dhatu* and eventually health of its roots-heart and Blood Vessels.

A combined approach of integrating Ayurveda principles with modern medical interventions can plan effective strategies for cardiovascular health maintenance.

Practicing meditation, pranayama and yoga can significantly enhance vagal tone, which regulates emotional state and improves overall wellbeing calmness.^(16,17) The vagus nerve is a parasympathetic nerve which regulates heart rate, digestion and mood. By engaging in yoga and meditation and by adapting healthy diet and lifestyle, individuals may experience increased in parasympathetic activity by reducing sympathetic tone.^(18,19) This results in balancing of *Tridosha* and *Triguna* which facilitates digestion and metabolism of all *Dhatu* specially *Rasa Dhatu* by maintaining harmony within

mind - *Rasa Dhatu* - cardiovascular axis and this balance can also be interlaced with the release of neurotransmitters like serotonin and dopamine, associated with happiness and relaxation.⁽²⁰⁾

Conclusion

This approach highlights the strong connection between the mind - *Rasa Dhatu*- Cardiovascular system. These three elements work together to affect heart health, either when they are in balance or out of balance.

It's important to balance the *Tridosha* and *Triguna* to reduce anxiety. This helps to improve digestion and metabolism of *Rasa dhatu*, which in turn supports heart health. Practices like meditation, yoga and maintaining a healthy lifestyle can lower stress hormones like cortisol, blood pressure, and heart rate, leading to better overall cardiovascular function.

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