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A COMPREHENSIVE REVIEW OF SENILE ANATOMICAL AND STRUCTURAL CHANGES IN AYURVEDA

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ABSTRACT

The global elderly population is shifting rapidly; by 2050, 60% of the world's population will be seniors, with India projected to host 34 crore individuals over the age of 60³. Ayurveda identifies three cornerstone factors in the aging process: diet, sleep, and celibacy⁴. As the body enters the degenerative phase, changes occur in the *doshas*, *dhatus*, *malas*, *agni*, and *ojas*⁵. This study explores these transformations through the lens of *Jara Chikitsa*, the Ayurvedic branch dedicated to geriatric care and prevention⁶.

1. INTRODUCTION TO SENILITY

Ageing is characterized by the progressive accumulation of molecular defects and oxidative damage from reactive oxygen species. In Ayurveda, this is viewed as a period where the *dhatus* (tissues) and *indriyas* (senses) undergo natural degeneration⁸.

- **Core Cause:** Ayurveda emphasizes *agni* (metabolic fire) as a primary factor in disease and aging⁹.
- **Physical Manifestations:** The process involves *shithila* (weakness/laxity) of tissues, loss of muscle tone, and mental decline¹⁰.

2. Musculoskeletal and Integumentary Changes

Skin (Twak)

The skin is the most visible indicator of age, thinning as collagen and subcutaneous fat decrease¹¹.

- **Vata Skin:** Naturally dry and thin; it is the most prone to early wrinkle development¹².
- **Pitta Skin:** Fair and photosensitive; it accumulates the most sun damage over time.
- **Kapha Skin:** Thick and oily; while it resists wrinkles longer, it is prone to accumulating *ama* (toxins)¹⁴.
- **Structural Integrity**
- **Mamsadhara Kala:** This innermost layer provides stability; in old age, these fascial sheaths may become inflamed or stiff.
- **Sleshmadara Kala:** This can be compared to the synovial membrane¹⁶. As *kapha* (synovial fluid) decreases, joints lose their "greased" gliding ability, leading to crepitus and stiffness¹⁷¹⁷¹⁷.
- **Fractures (Bhagna):** Osteoporosis increases fracture risks, which are classified as *krcchasadhy* (difficult to treat) in the elderly¹⁸.

3. Cardiovascular System (*Hrid Roga*)

Aging significantly impacts the heart and vessels, often reducing cardiac output by up to 50% by age 80¹⁹. In Ayurveda, the heart (*Hrdaya*) is the seat of *Sadhaka Pitta*, *Avalambaka Kapha*, and *Vyana Vayu*²⁰.

Clinical Correlates

- **Ischemic Heart Disease:** Often compared to *Vataja hrcchula* due to similar patterns of pain and inflammation²¹.
- **Symptoms:** Common signs of heart morbidity include *ruja* (pain), *swasa* (cough/breathlessness), and *murcha* (syncope)²².

4. The Biological Timeline of Ageing

Ayurveda defines aging (*jara*) as the process of "wearing out"²³. The transition through life stages involves a shift in dominant energies and tissue quality.

Phase	Dominant Dosha	Dhatu Status	Agni Status	Ojas (Immunity)
Young	Kapha	High (+++)	Moderate (++)	High (+++)
Adult	Pitta	Moderate (++)	High (+++)	Moderate (++)
Old Age	Vata	Low (+)	Low (+)	Low (+)

- **Longevity and Prakruthi:** A person's constitution affects their lifespan. For instance, *Nabhasa prakruthi* is associated with long life, while *Vataja prakruthi* is often associated with a shorter lifespan³⁶³⁶³⁶³⁶.

5. CONCLUSION

Healthy aging requires maintaining harmony with nature and following the *Trayopastambha* (three pillars: diet, sleep, and lifestyle). While degeneration is inevitable, Ayurvedic therapies and "vayasthapana" (anti-aging) practices help maintain vitality and retard the aging process.

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