

**PREMATURE AGEING AND ITS MANAGEMENT: AN AYURVEDIC PERSPECTIVE**Vandna Sharma<sup>1\*</sup> and Prashant Shinde<sup>2</sup><sup>1</sup>M D (Kayachikitsa), Technical Assistant to Editor, Rashtriya Ayurveda Vidyapeeth, New Delhi.<sup>2</sup>Research officer (Ayu), Regional Ayurveda Research Institute for Nutritional Disorder, Mandi, H.P.**ABSTRACT**

Ayurveda is a science of life. Ageing (*Jara*) is an irreversible and inevitable phenomenon. It is an important phase of life so much so that *Acharya Vagbhata* devoted a separate branch given to its name. *Jara* before its prescribed time (sixty years), is called as *Akalaja Jara* (premature ageing). This type of *Jara* is '*Aparirakshana Krita*' which means that it occurs before the proper age due to improper care of personal hygiene (*Swasthavritta*) or not following ideal routine. Thus symptoms of ageing manifest before a certain age due to rapidity in the ageing process. If neglected, this creates a difference in chronological age with biological age. In the present era of globalization and modernization, polluted air, water and soil, stressful and sedentary lifestyle, overuse of processed foods, lack of mental peace etc. are the factors leading to the rapidity in ageing. There are various theories related to premature ageing indicating a multi factorial phenomenon. The present article aims to understand the phenomenon of premature ageing in *ayurveda* and take holistic approach for its management i.e. non-pharmacological and pharmacological including lifestyle modifications in the form of dietary management, stress management and most importantly *rasayana* therapy to have a disease and disability free life with high physical and cognitive functions. To study the concept of premature ageing in *Ayurveda* and modern sciences. To provide holistic approach towards its management. To fulfill aims and objectives there is an attempt to review the relevant literature available in *Ayurveda*, allied literature, previous research works done, various medical text books and journals on the subject. Also, from the recent advances there is an attempt of concept building between *Ayurveda* and Modern science. Apart from usage of various single and polyherbal formulations, healthy diet (*ahararasayana*) and following moral code of conduct (*sadvritta and achararasayana*) are also very important in delaying the ageing process. *Yoga* and meditation have also proven highly beneficial in restoring healthy body, mind and spirit. In this way it can be concluded that *ayurveda* along with *yoga* and meditation have the potential to maintain longevity along with quality of life restoring youthfulness and vitality.

**KEYWORDS:** Premature ageing, *Ayurveda*, *Rasayana*, *Akalaja Jara*.**INTRODUCTION**

Aging is the accumulation of changes responsible for sequential alterations that accompany advancing age and associated progressive increase in the chance of disease and death. Human being is a mixture of four different ages: Chronological (actualage), Biological and Psychological & Social. While the first age is unalterable, the other three depends upon the individual and how they influence them. The biological age is given by the state of our body.

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How you look sometimes is an indicator of your biological age. Nowadays, as stressors are increasing in all the field of life, ageing starts very early. Some symptoms of ageing are also seen in 3rd to 4th decades of life. Unfortunately, conventional medical care has focused more on the disease medications and surgical interventions and less on reversing or steadying the accelerated ageing process, which is potentially more effective over long term. If premature ageing can be arrested and normal function restored, then people will not only live longer but will also have a disease and disability free life with high physical and cognitive functions<sup>[1]</sup>.

*Ayurveda*, has always given due importance to prevention than cure which is also reflected by the principle “*Swasthasya Swasthya Rakshanam*”<sup>[2]</sup>. So our *Acharyas* has given more importance to healthy lifestyle than medication itself. The very first chapter of *Charaka Samhita* naming ‘*Dirgham Jivitiyam Adhyaya*’, indicates the desire to live long from the very beginning. For this purpose, *Acharya Charaka* has given ‘*Swasthya Chatuska*’ in early chapters of *Sutrasthana* and described different ways to away from early ageing. Also, before mentioning the treatment for various disorders in *Chikitsa sthana*, *Acharya Charaka* has mentioned *Rasayana Adhyaya* which reflects measures to restore youthfulness.

### **Aims and Objectives:**

1. To study the concept of premature ageing in *Ayurveda* and modern sciences.
2. To provide holistic approach towards its management.

### **MATERIALS AND METHODS**

To fulfill aims and objectives there is an attempt to review the relevant literature available in *Ayurveda*, allied literature, previous research works done, various medical text books and journals on the subject. Also, from the recent advances there is an attempt of concept building between *Ayurveda* and Modern science

### **Theories of Ageing – Modern Concept:**

There are various theories related to premature ageing indicating a multifactorial phenomenon. Some of the theories are as follows:

1. **Free radical theory of ageing:** It is one of the most acceptable theories of ageing. It was proposed by D. Harman in 1950s. Several modifications have been postulated afterwards. It states that organisms age because cells accumulate free radical damage over time. Free radical is an atom / molecule having single unpaired electron in outer shell and thus highly reactive. Free radical can damage DNA in genes by oxidizing DNA nucleic acid bases, oxidation of lipids, thus damaging cell membranes. Chain reaction caused by free

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radicals can lead to cross linking of atomic structures, if involving DNA; the DNA can also become cross linked.

2. **Waste accumulation Theory:** The cellular garbage of oxidation products which include various toxins when gets accumulated to a certain level, can interfere with the normal cell function ultimately leading to death of cells.
3. **DNA damage theory:** when damage to DNA is done repeatedly and carried over in new cells, the DNA becomes less efficient. This may also be due to free radical induced DNA damage or due to irradiation.
4. **Cross linkage theory:** With advancing age our proteins, DNA and other structural molecules develop cross links to one another. These links or bonds decrease the mobility or elasticity of proteins and other molecules inhibiting the activity of enzymes. Cross linkages ultimately lead to severe nutrient / oxygen deficiency and impaired waste accumulation. Cross linking of skin protein collagen responsible for wrinkles on skin, premature cataract formation etc.
5. **Stress Theory:** This theory states that body and cell tolerate a certain amount of stress. Constant level of stress affects the rate of cell division / hormone level and many other functions.

There are several other theories proposed names of which are as follows:

6. **Hay flick limit theory**
7. **Death hormone theory**
8. **Thymic stimulation theory**
9. **Error and repairs theory**
10. **Gene mutation theory**

#### **Ayurvedic concept of premature ageing:**

Ageing (*Jaraawastha*) is a natural, irreversible and evitable phenomenon of life. *Acharya Charaka* has mentioned *Jara* among the *Swabhavika Rogas* which means they are naturally occurring diseases with time. According to *Ayurveda mahakosha* – the substance which continuously trims down is known as *Jara*<sup>[3]</sup>.

*Acharya Sushruta* has divided *Jara* into two types – *Kalaja* & *Akalaja*. *Aklaja Jara* said to happen when symptoms of ageing manifests before a certain age due to various etiological factors leading to rapidity in ageing process. This is due to *Aparirak shana Krita* which means

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this occurs due to not taking care of proper care of personal hygiene (*Sadvritta*) and *Shodhana* (biopurificatory measures).

### **Signs and Symptoms of premature ageing:**

Ageing leads to premature physical development (senility), faltering memory (dementia), loss of libido, baldness, grey hair, premature atrophy of subcutaneous fat, presbyopia, early cataract, reduction in immunity, gradual loss of hearing (part. for higher frequencies), early osteoporosis. Some major disorders which are part and parcel of old age comes early such as arthritis, dementia, Alzheimer disease, heart disease, cerebrovascular disease, DM type II, neurodegenerative disorders<sup>[4,5]</sup>.

The special physical, physiological and psychological changes in relation to ageing process have also been described in *ayurvedic* literature. In *Sushruta Samhita* several physical and mental symptoms have been described as a consequence of ageing process. It includes *Dhatu Kshaya* (degeneration of tissues), *Indriya Kshaya* (deterioration of sense organs), *Bala Kshaya* (loss of physical strength and body immunity), *Veerya Kshaya* (decreased sexual power), *Utsaha Kshaya* (loss of vigour), *Vali* (wrinkles), *Palitya* (greying of hair), *Khalitya* (baldness), *Kasa* and *Shwasa* (cold, cough and asthma) and *Klishta* (inability to perform mental and physical work). *Sushruta* has further mentioned that ageing is responsible for deterioration of *dhatu*s resulting in emaciation.

Further decade wise decline of various biological functions have been mentioned following ageing process. *Vagbhatta* and *Sharangdhara* have described the characteristic feature of decade wise changes both in psychic and somatic changes brought about by ageing process.

### **Etiological Factors of Ageing Related to Dietary Habits:**

Dietary Habits are the root causes of all the disease especially of premature ageing, so some of the factors related to it is screened out from different *Ayurvedic* texts is given below.

1. *Lavana* (salt), *Amla* (sour), *Katu* (spicy) *rasa pradhana*
2. *Kshara* (alkali)
3. *ShushkaShaka&Mamsa* (dry vegetable & Meat)
4. *Pistanna*
5. *Viruddha Anna* (Incompatible Diet)
6. *Asatmya Anna* (Unfavourable Diet)
7. *Ruksha Anna* (Dry Cereal)
8. *Abhishyandi Anna*
9. *Klinna& Guru Anna* (Heavy Diet)

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10. *Puti&Paryushita Anna* (Polluted &Stale Diet)

11. *Vishamashana*(Improper Eating Habits)

12. *Adhyashana* (Over Eating)

### ***Ama and reactive oxygen species:***

With the advancing age, there is predominance of *vatadosha*. Due to excessive indulgence of activities in early age which increase *vata dosha* ultimately leading to increase in the *ruksha, laghu, sheeta, kharaguna*. Since *vata* is associated with the catabolic processes in the body, bringing signs and symptoms of tissue decay. This leads to dryness, wrinkling of skin, baldness, early osteoporosis, loss of subcutaneous fat, loss of elasticity of muscles etc. Due to this dryness digestion at micro and macro level also gets hampered resulting into indigestion and formation of *ama dosha* i.e. toxic metabolites. These metabolites get accumulated in different body parts (similar to waste accumulation theory) and as the bodily tissues are deprived of proper nutrients resulting into weakness. This along with the toxic nature of metabolites gives rise to many diseases. The *ama dosha* blocks the micro channels remains stagnant, accumulated in many sites giving rise to vitiation of *vata* which may be considered as oxidation resulting by reactive oxygen species – ROS a main cause of more destructive changes in many tissues.

### **Factors that can delay premature ageing process:**

The process of *Jara* (declining condition) cannot be avoided by anyone. But, *akalaja jara* is a phase when preventive care should be taken to delay ageing and to prevent old age related diseases with *Rasayana* and various other measures. In *Ayurveda* there is a unique description of lifestyle in preventive, promotive as well as curative aspects of ageing. Various measures are described as follows:

1. **Rasayanatherapy** –*Acharya Sushruta* described *rasayana* as *vayasthapana* (arrest the ageing process), *ayushkara* (prolongs the life span), *medha* (enhances intellect and memory), restores youth and luster and thus improving the immunological status of individual. The term *rasayana* bears a wide coverage on drug, diet and discipline with specific objectives for catering target tissue system for maintenance of homeostasis. It is achieved by  
*Achararasayana* (behavioural modalities),  
*Ahararasayana* (dietetic modalities),  
*Dravyarasayana* (drug based modalities).

(A). *Achararasayana* – *Acharya Charaka* emphasises on certain code of social and moral conduct which helps in remaining healthy physical, social and spiritual. Some of the description are as follows: *Anayasa* – avoids over strain, *Akrodhi*- free from anger, *Priyavadi*- sweet spoken, *Japa para* – devoted in repetition of holy chants, *Asankeernam* - devoid of narrow mindedness, *Nivruttamadyamaithunath* – abstaining from alcohol and sexual desires, *Anahankrutam* – free from egoism, *Shouchaparam* –maintaining cleanliness, *Jitatmanam*– having self-control etc.

(B). *Ahararasayana*- We are what we eat. Our food plays an important role in our life. If we eat right according to our *prakriti* then there is no need for the medicine. Milk, *Ghrita*, Water, *Mamsa* are specifically considered as *rasayanas*.

(C). *Dravyarasayana*– Some of drugs which acts as a *rasayana*for various systems of body are described below:

- General stamina and vigour – *bala, kashmari, varahietc*
- Immune system – *amlaki, bhallataka, guduchietc*.
- Respiratory system – *vardhamanapippalirasayanaetc*
- Gastrointestinal system – *haritaki, amlakietc*
- Urinary System – *shilajatu, guggulu, gokshur, punarnavaetc*
- Musculoskeletal system - *ashwagandha, shallaki, nirgundi, rasnaetc*
- Intellect and memory enhancers – *bramhi, vacha, shankhpushpi, mandukaparnietc*
- Skin and hair – *bhringaraj, kushtha, manjistha, sariva, haridraetc*
- Female rejuvenators – *shatavarietc*
- Male rejuvenators–*musli, kapikacchu, ashwagandhaetc*

Table. 1 Decade wise *rasayana*recommended for different age groups:

Age Group (in yrs.)	Loss	Recommended <i>Rasayana</i>
1-10	<i>Baalya</i> (Corpulence)	<i>Vacha , Kashmari</i>
11-20	<i>Vridhhi</i> (Growth)	<i>Ashvagandha, Bala, Kashmari</i>
21-30	<i>Chhavi</i> (lusture)	<i>Amlaki</i>
31-40	<i>Medha</i> (intellect)	<i>Shankhpushpi</i>
41-50	<i>Twaka</i> (skin lusture)	<i>Somraji, Bhringraj</i>
51-60	<i>Drishti</i> (vision)	<i>Triphala, Jyotishmati</i>
61-70	<i>Shukra</i> (Virility)	<i>KapikacchuAshwangandha</i>
71-80	<i>Vikrama</i> (physical strength)	<i>Rasayan</i> not effective
81-90	<i>Buddhi</i> (wisdom)	<i>Rasayan</i> not effective
91-100	<i>Karmendriya</i> (locomotor activity)	<i>Rasayan</i> not effective

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2. **Dietary therapies** – In *Ayurveda*, there is detail description related of Dietary Habits to remain healthy as well as for disease condition. *Ayurveda* has described *pathyaaahara* at every step in diseased as well as healthy condition. As per modern medicine, certain foods with a rich level of antioxidants (vitamin A, C, E, selenium, zinc, beta-carotene) counteracts the free radical damages. To remain healthy, one has to drink enough water so that body will not dehydrate. Water helps the metabolism of the cells to eliminate toxins and brings in nutrients.
  3. **Caloric restriction**<sup>[6]</sup>–It is defined by at least a 30 percent decrease in calorie consumption from the normal diet with a balanced amount of protein, fat, vitamins, and minerals. Caloric restriction was found to increase the health span of many animal models by delaying onset of age related and delaying normal age related decline. Caloric restricted individuals look younger, and by objective physiological standards of ageing actually are younger<sup>[7]</sup>. This theories established now is known in *Ayurveda* since ages. *Ayurveda* always emphasised that meal taken at one time is beneficial (*ek kala bhojana sukhparinam karanam*).
  4. *Acharya Charakain sutra sthana* has described that daily use of **abhyanga** helps to keep skin healthy and delay ageing.
  5. *Charaka* also said that **nasya** at proper time prevents diseases of eyes, nose and ears. There will be no grey hair/ hair fall. Veins ligaments skull bones joints and ligaments and tendons are nourished by *nasya* and voice become sweet and loud. In this way ageing symptoms can be delayed and prevented for the disease.
  6. *Acharaya charaka* says **Vyayama regular exercise**) nourishes the body, gives good complexion, proportionate body parts, enhance the *agni*, takes away laziness, provides lightness, purifies the body, enhances tolerance power to tiredness, heat & cold. It gives lightness to the body, ability to work, stability, increased endurance power, alleviation of *dosha*. In this way it can understood that it will be helpful for the delaying in the process of *Jara*. Modern research also says that oxygenation occurs during exercise which in turn helps skin regenerate collagen. In addition it lowers chronic inflammation throughout the body and aids wt. loss. All of which keep us young. Exercise is also critical for maintaining muscle mass and helping to maintain healthy level of body fat and this plays a major role in preserving immune function and metabolic health<sup>[8]</sup>.
  7. **Stress management**<sup>[9]</sup>-*Yoga* has been shown to reverse the ageing process by reducing the oxidative stress which breaks down the elasticity in the skin. A regular yogic practice
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plays an important role in balancing stress hormone cortisol in the brain<sup>[10]</sup>. *Yogasana* gives elasticity to the muscles, tones tendons and ligaments, reduces fat and slows weight gain, calms your mind thus promoting spiritual peace also. Some of the prescribed *yogasana* are- *Matsyasana, Ardhamatsyendrasana, Sukhasana, Simhasana, Halasana, Sarvangasana, Padhastasna etc.*

8. If the person cannot follow their **prescribed daily regimen and seasonal regimen**, *doshas* get accumulated in the body which needs to be evacuated timely. If it is not evacuated than it produces diseases. But if it will be done at proper time, it nourishes the body very well and reduces early ageing process and ensures long life.

## CONCLUSION

*Ayurveda* signifies the science of longevity. But, this long life is of no use if it is full of physical and mental ailments. The disease preventive and health promotive approach of *ayurveda* takes into consideration whole body, mind and spirit. Clinical application of *rasayana* therapy has the potential to enhance general body immunity as well as prevention of many systemic disorders. Apart from usage of various single and polyherbal formulations, healthy diet (*ahararasayana*) and following moral code of conduct (*sadvritta and achararasayana*) are also very important in delaying the ageing process. *Yoga* and meditation have also proven highly beneficial in restoring healthy body, mind and spirit. In this way it can be concluded that *ayurveda* along with *yoga* and meditation have the potential to maintain longevity along with quality of life restoring youthfulness and vitality.

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