

**Geriatrics and Ayurveda: A review****Kadam Krishna Namdeo<sup>1</sup>, Jadhav Viraj Vilas<sup>2</sup>**

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**\* Corresponding author : 09820343872; E-mail: drkvjadhav@gmail.com****Abstract:**

The World population of the elderly is increasing significantly and by the year 2050, adults older than 65 years will comprise 1/5<sup>th</sup> of the global population. In India 3.8% of the population are older than 65 years of the age. According to an estimate the likely number of people in India by 2016 will be around 113 million. Approximately 1 in 10,000 persons in developed countries lives beyond 100 yrs. Present day statistics indicate that under ideal socio-economic conditions mean age of death is not far from 85 yrs. Women have life-span about 5yrs longer than men and about 5 times as

many women as men reach 100 yrs. Three factors that affect the life-span are: Heredity, Diet and Ionizing Radiation. Changes with age are universal, intrinsic, progressive and deleterious. All cells engage in four basic major activities-Production of energy needed for vital cell processes, synthesis of proteins, both structural and enzymatic, maintenance of chemical and osmotic homeostasis, reproduction or replication. Ayurveda has a focused branch of medicine called Rasayana (Rejuvenation) which exclusively deals with the problems related to ageing and methods to counter the same. Geriatrics or *Jara Chikitsa* or *Rasayana* in

Ayurveda is a method to control/slow down/arrest the ageing process in the human being during the degenerative phase in one's life. For present article author has collected many references regarding how to enhance concept of Geriatrics through principles of Ayurveda with respect to disorders in *Jaraavastha* and *Rasayana* therapy.

**Keywords:** Geriatrics, *Ayurveda*, *Rasayana*, Aging, Rejuvenation

## INTRODUCTION:

The Biologists define ageing as “the sum total of all changes that occur in a living organism with the passage of time and lead to a decreasing ability to survive stress, functional impairment and death”. If the functional capacity at the age of 30 is taken as 100% (*Sampoornata in Ayurveda*) then there is a measurable decline at 60 years:

1. Nerve conduction velocity - 15%
2. Resting metabolic rate - 20%
3. Cell water - 25%
4. Cardiac output - 30%
5. Glomerular rate - 40%

6. Vital capacity of lungs - 50%
7. Renal plasma flow - 70%
8. Maximum voluntary ventilation - 80%

It is estimated that on an average 30 brain cells die every minute. The urge to live, the fear of death, the desire for youth, the distaste for old age and the quest of rejuvenation have always interested mankind from antiquity to modern times. The subject is connected with longevity (as distinct from senility) since those who are naturally long-lived are thought not merely to live long but to retain their vigour as well. According to the Hindu mythology, there has been a progressive decline in human lifespan from

1. Krutayug - 400 years
2. Tretayug - 300 years
3. Dwaparyug - 200 years
4. Kaliyug - 100 year

A person who takes suitable diet and practices self control lives full span of 100 years or 36000 nights, without illness. Ayurveda divides human life into:

1. Balyavstha which extends upto age 16 years.

2. Tarunyavastha, which extends from age 16 to 60 years.

3. Vriddhavastha, "wherein after 60 to 70 yrs the body elements, sense organs, strength, energy, manhood, velour, memory, understanding, speech and discrimination begin to decay.

Signs and symptoms of ageing are the strength and energy of man dwindle day by day, the organs and virility becomes weak, the hair turns silvery white and begins to fall off and the parched skin looks shrivelled. The skin sags down and becomes flabby; the respiration becomes laboured and painful etc. Rasayana therapy is a specialized branch of clinical medicine in Ayurved aimed at preventing effects of ageing. It attains longevity, improved harmony and intelligence, freedom from disorders, youthful vigor, and excess of luster, complexion and voice, optimum strength of physique and senses, command over language, respectability and brilliance. The leading cause of mortality among aged people comprises respiratory problems, heart diseases, cancer and stroke. Significant causes of morbidity among this group is chronic inflammatory and degenerative conditions such as Arthritis, Diabetes, Osteoporosis, Alzheimer's disease, Depression, Psychiatric disorders,

Parkinson's disease and age related urinary problems.

The purpose of the present article is to enlighten the basic concept of JaraChikitsa and Rasayana therapy with respect to Geriatrics. With this one can be able to identify the stage of Geriatrics in one's life. And further will be able to control/slow down/arrest the process of ageing during the degenerative phase in one's life.

## **MATERIALS AND METHODS**

The article is based on a review of Ayurvedic texts. Materials related to concept of Geriatrics and related disorders, Rasayana therapy and other relevant topics have been collected. The main Ayurvedic texts used in this study are Samhita grantha. For modern concept of Geriatrics, referred textbook of modern medicine, searched various websites and reports to collect the information on the relevant topics.

## **Demographic trends**

The World population of the elderly is increasing and by the year 2050 adults older than 65 years will comprise 1/5<sup>th</sup> of the global population. In India 3.8% of the population are older than 65 years of the age. According to an estimate the likely

number of people in India by 2016 will be around 113 million.

### Observed and Forecasted Percentages of the Elderly (65+years)

Countries/Regions	Year1950	Year 2000	Year 2050
<b>World</b>	5.0	6.9	19.3
<b>Africa</b>	3.2	3.3	6.9
<b>Latin America</b>	3.7	5.4	16.9
<b>China</b>	4.5	6.9	22.7
<b>India</b>	3.3	5.0	14.8
<b>Japan</b>	4.9	17.2	36.4
<b>Europe</b>	8.2	14.7	29.2
<b>USA</b>	8.3	14.7	29.2
Year	Population growth rate	Growth rate of elderly (above 60 yrs)	
<b>1961-1971</b>	2.17	3.23	
<b>1971-1981</b>	2.83	2.71	
<b>1981-1991</b>	2.55	3.39	
<b>1991-2001</b>	2.02	2.89	

Source: United Nations, 2009

### Health Scenario in Geriatrics

#### Morbidity:

1. Injuries:3-5% fractures, 5-10% are soft tissue injuries.
2. Long lies:40-50% unable to get up.
3. Quality of life:fear of falling.

#### Mortality:

1. Sixth leading cause of death in elderly.
2. 70% of all deaths due to falloccurring in 12% of the population age 65 years and older.

#### Musculoskeletal Disorders

- Musculoskeletal disorders predominate in the older adults and are major cause for chronic disability and

health care utilization in the geriatric age group.

- Disorders of Musculoskeletal system impairs
- 1. Mobility,
- 2. Interfering with activities of daily living and
- 3. Functions.

#### **Common musculoskeletal disorders found in geriatric age group are:**

1. Osteoarthritis(Sandhivata),
2. Rheumatoid arthritis(Amavata)
3. Spondylosis(Manya-Prishthagata Vata)
4. Osteoporosis(Asthi soushrya)
5. Back pain (Katishoola), etc.
6. Fragility fractures have doubled in the last decade. 40% of all women over 50 yrs will an osteoporotic fracture.
7. The number of the hip fractures will rise from about 1.7 million in 1990 to 6.3 million in 2050.

#### **Formulations commonly used in musculoskeletal disorders**

1. Rasnasaptak kwatha
2. Vayugutika
3. Sinhanadguggulu
4. Guggulutiktakaghrita
5. Vishagarbhataila

6. AswagandhaChurna
7. Maharasnadi Kwatha
8. YograjaGuggulu
9. Dashmoola Kwatha
10. VaiswanaraCurna

#### **Plants used in musculoskeletal disorders**

1. *Zingiberofficinale*(Sunthi)
2. *Tinosporacordofolia* (Guduchi)
3. *Pluchealanceolata* (Rasna)
4. *Sidacordifolia* (Bala)
5. *Alpiniagalanga* (Kulanjan)
6. *Ricinuscommunis* (Eranda)
7. *Terminilia chebula* (Hirada)
8. *Semicarpusancardium* (Bhallatak)
9. *Boerhaeviadiiffusa* (Punarnava)
10. *Commiphoramukul*(Guggulu)

These ten plants are frequently used in formulations as well as in clinical practice.

#### **Medicated oils for massage in musculoskeletal disorders:**

1. Dhanwantartaila
2. Kshirabalataila
3. Mahamashaditaila
4. Mahanarayanataila
5. Narayanataila
6. Nirgundi Rasnaditaila
7. Panchsnehataila

## 8. Pindataila

### Different procedures

Common procedures, practiced in Ayurveda for the management of these disorders are-

1. Snehana(oleation)
2. Swedana(sudation) – ValukaSwedana, NadiSwedana and PatrapindaPottaliSwedana
3. Vasti(medicated enema)
4. Kativasti
5. Januvasti

### Preventive measures

1. Rasayana (rejuvenation)
2. Panchkarma (biocleansing)
3. Dietary regimen
4. Lifestyle practices
5. Use of Rasayana drugs and Panchkarma procedures can prevent the physiological changes in bones and joints occurring due to ageing.
6. Inclusion of Dietary regimen and lifestyle practices also prevents musculoskeletal disorders.

### Evidence Based Research

#### 1. Sunthi and Guggulu in Rheumatoid arthritis-

Sunthi + Guggulu in equal parts

Dose – 2 gm TDS with Valukasweda (dry fomentation)

Course – 6 weeks

Studied on– 497 patients

Result – very good result was found in 67% patients.

#### 2. In Rheumatoid Arthritis

Mahayogaraja Guggulu (1 gm) + Vaishwanara churna (3 gm) twice daily  
SinhanadaGuggulu (0.5 gm) at bedtime

Studied – 518 patients

Result – 60% patients had shown improvement

#### 3. In Rheumatoid Arthritis

Aswagandhachurna – twice daily

Eranda taila – 15 ml at bedtime

Along with Valukasweda

Course – 6 weeks

Result – 57% of the patients have shown improvement.

#### 4. Guggulu in Osteoarthritis

Concentrated extract of Guggulu in capsule form (500 mg) thrice daily

Studied in 30 male and female patients each

Result – Significant improvement in both subjective and objective parameters and no side effect was seen during the trial.

### Triad of musculoskeletal disorders

#### 1. Yograj Guggulu a herbo-mineral formulation with Guggulu as

major ingredient is the most commonly used in all musculoskeletal disorders.

2. Disease activity controlled in more than 50% of cases with Yograj Guggulu.

3. Ginger is one of the major ingredients in more than 75% formulations.

4. In Japanese studies a compound derived from its rhizomes has been shown inhibit prostaglandin synthesis even better than indomethasin.

5. Eranda has been emphasized as most important therapeutic agent in musculoskeletal disorders.

6. Recent study at AIIMS shows that Eranda oil in non-purgative dose could control disease activity of more than 40% of cases of Rheumatoid Arthritis.

### **Rasayana therapy in immuno compressive disease**

In the immuno compressive disease like AIDS, there is decrease of Saptadhatu leading to decrease in Ojas. Due to asar(without key part/ faulty)Saptadhatu production, there is decrease in immunity power, which is nothing but Ojas -vikruti. The drug which improves sarayukt Dhatu production, in turns causes Ojas vrudhhi (increase) are Rasayana dravyas. Also in allergic disease, the immunity power is

decreased. Here also there is great role of Rasayana dravyas.

### **Single Rasayana drugs for some specific Disease conditions**

1. Diseases of eye: Jyotishmati (*Celatruspauniculata*), Triphala (Three myrobalans), Shatavari (*Asparagus racemosus*), Yashtimadhu

(*Glycyrrhizaglabra*), and Amalaki (*Emblica officinalis*)

2. Diseases of Heart: Shaliparni (*Desmodiumgangaticum*), Arjuna (*Terminalia arjuna*), Guggulu (*Commiphoramukul*), Pushkarmula (*Inularacemosa*).

3. Skin diseases: Bhallataka (*Semecarpusanacardium*), Vidanga (*Embeliaribes*) and Bakuchi (*Psoraliacoryfolia*).

4. Rasayana for overall Health: Guduchi (*Tinosporacordifolia*), Amalaki (*Emblica officianalis*), Ashwagandha (*Withaniasomnifera*), Cow's milk and Takra.

5. Asthma: Shirisha (*Albezialebbeck*), Agastya (*Sesbaniagrandiflora*), Haridra (*Curcuma longa*), Haritaki (*Terminelia chebula*).

6. Arthritis: Rasona (*Allium sativum*), Sallaki (*Bosweliaserrata*), Guggulu (*Commiphoramukul*),

Ashwagandha (*Withaniasomnifera*) and Sunthi (*Zinziberofficinale*).

7. Neuropathies: Rasona (*Allium sativum*), Guggulu (*Commiphoramukul*), Bala (*Sidacordofolia*), Ashwagandha (*Withaniasomnifera*).

8. Diabetes: Shilajitu (Black bitumen), Amalaki (*Emblica officinalis*), Haridra (*Curcuma longa*), Tejpatra (*Cinnamomumtamala*), Methika (*Trigonellafoenumgraecum*).

9. Lipid disorders: Guggulu (*Commiphoramukul*), Haritaki (*Terminilia chebula*), Pushkaramoola (*Inularacemosa*), Vacha (*Acoruscalamus*).

10. Hypertension: Rasona (*Allium sativum*), Sarpagandha (*Rauwolfiaserpentina*), Aswagandha (*Withaniasomnifera*), Jatamansi (*Nardostachysjatamansi*).

11. Brain and Memory Disorders: Brahmi (*Becopamonnieri*), Mandookaparni (*Centelaasiatica*), Jyotishmati (*Celastruspauniculata*), Kapikachhu (*Mucunapruriatus*), Tagara (*Valerianawallichii*).

## DISCUSSION

The Rasayana are primarily of promotive value and are essentially meant to rejuvenate the body and mind to impart

longevity against ageing and immunity against disease.

“yatjaravyaaiQanaaSanama\ td\ rasayanama\ ”È

“ idGa-maayau:

smaRitMmaoQaamaaraogyaMt\$NaMva ya: È

Pa`BaavaNa-svaroaodaya-M

doohind`yabalaMprma\ ÈÈ

vaai@siQdMp`NaitMkaintMlaBatonarsa ayanaat\ È

laaBaaopayaaoh

SastanaaMrsaaidnaaMrsaayanama\ ” ÈÈ

## A) As per scope of Use:

1. AjastrikaRasayana(Help Nutrition)

Example -Shatavari(*Asparagus racemosus*), Dugdha (Milk of cow), Ghrita

2. KamyaRasayana (promotor of normal health)

Pranakamya(Help to promote vigor,vitality, promoter of life vitality and longevity)

Medhakamya (Promotor of Intellect)

Srikamya (Promotor of complexion and luster)

Example - Shankhapushpi for Medha

3. Naimittika Rasayana ( Promoter of specific vitality in specific disease )

Example -Shilajeeta for Prameha,  
Tuvaraka for Kushtha

### **B) As per method of Use:**

1. VatatapikaRasayana ( Outdoor regimen )
2. KutipravesikRasayana ( Indoor regimen)

### **C) As per contents of Rasayana:**

1. Aushadha Rasayana (Drug Rasayana) e.g. Guggulu, Bhallataka, Guduchi
2. AjastrikaRasayana (Dietary Rasayana) e.g. Ghrita, Dugdha
3. Achararasayana (Conduct rasayana ) e.g. Sadacharaetc.

### **D) According to Satmya**

1. Rutusatmya -Adana kala -Sheetaviryadi and laghurasayana likeAmalaki  
-Visargakala -Ushanaveerya and guru rasayanas like Bhallataka
2. Desha satmya – Sadharana – Simple Rasayana drug of modest effect  
- Jangal -Snigdhoshna i.e. warm and fatty Rasayana  
-Aanup – Rukshoshna i.e. warm and coarse dry Rasayana

**Rasayana drugs for specific dhatu or tissues promotive aspect**

Rasa (plasma) – Khajura, Draksha,Kashmari  
Rakta (blood) – Lauha,Amalaki, Bhringaraja, Palandu  
Mansa (muscles) –Bala, Nagabala, Ashwagandha, Shalaparni  
Meda (adipose tissue) – Guggulu, Shilajitu,Amruta, Haritaki  
Ashti (bone) –Laksha, Vanshalochana,Shukti, Shanka  
Majja (bone marrow) – Lauha, Vasa, Majja  
Shukra (reproductive tissue) - Atmagupta, Shatavari  
Dehaprakruti (body constitution)  
Vata prakruti – Bala, Nagabala, Ghrita  
Pitta prakruti – Amalaki, Shatavari  
Kapha prkruti – Bhallataka, Guggulu, Pippali, Vacha  
Manasaprakruti (mental constitution) - Ashwagandha, Shankhapushpi

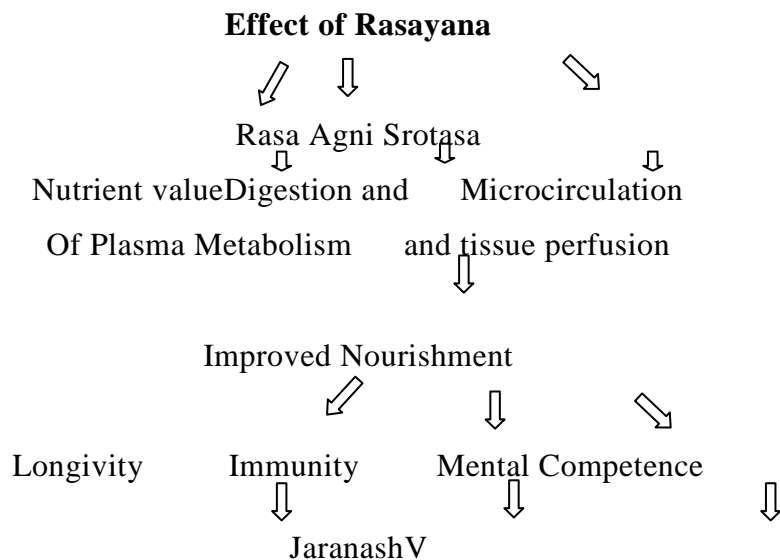
**Rasayana According to Different Age groups as described by Acharya  
Sharangdhara-**

<b>Decade of age in Year</b>	<b>Desired effect</b>	<b>Suitable Rasayna drug</b>
1-10	Balya (strength)	Vacha, Suvarna
11-20	Vrudhi ( growth)	Ashwagandha, Bala
21-30	Chavi ( beauty )	Amalakilauha
31-40	Medha ( intellect )	Shankapushpi, Jyotishmati
41-50	Tvaka ( skin health )	Bhringaraja, Bakuchi
51-60	Drushti ( vision )	Saptamritalauha, Jyotishmati
61-70	Shukra (sex)	Atmagupta, Ashwagandha
71-80	Vikrama ( physical strength )	Ashwagandha, Shatavari
81-90	Budhhi ( wisdom)	Rasayana therapy may not be effective
91-100	Karmendriya (locomotor activity )	

## CONCLUSION

Ayurveda has provided considerable emphases on the presentation of ageing process and Rasayana therapy. It provides an ample opportunity to improve the quality of life among the aged. Rasayana helps in formation of shrestha (Predominant) Rasadi Dhatu. Rasayana dravyas are rich

in antioxidants which removes free radical from body. Free radicals in body produces progressive damage to body tissue and play important role in developing many disease like cardiovascular disease, neurogenerative disorders etc. Rasayana revitalizes and rejuvenates functional dynamics of body systems. It promotes good quality body tissues. Hence as an anti oxidant activity, the Rasayana karma must be taken into account.



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**Cite this article:**

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AYURLINE: INTERNATIONAL JOURNAL OF RESEARCH IN INDIAN MEDICINE 2014; 1(1) : 22-34