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PROCEEDING OF INTERNATIONAL CONFERENCE

on 19 & 20 November 2021

Theme- Geriatric Diseases-Care and Cure
to Celebrate



jointly organized by

Gujrat Board of Ayurvedic &
Unani System of Medicine &
Parul University

वाङ्महोत्सव-2021

Organized by : Department of Swasthvrutta,
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**PROCEEDING OF INTERNATIONAL CONFERENCE
THEME-GERIATRIC DISEASES-CARE AND CURE
DIRGHAYU-2021**

ORGANIZED By: DEPARTMENT OF SWASTHVRUTTA

PARUL INSTITUTE OF AYUREVED, PARUL UNIVERSITY



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FOREWORD

I feel honoured to be requested to write the foreword for this excellent work as special add on by the efforts from the Department of Swasthavritta on conducting Pre-International conference Dirghayu 2021 under Azadika Amrut Mahotsav on 18/10/2021 presiding eminent guests speakers.

I am indeed happy to write a foreword to the book which is combined efforts from the department of Swasthavritta. It has taken a herculean task to compile this book after referring voluminous literature of past and present with reference to Geriatric practice: cure and care by the scholars. This is a genuine work compiling original references by the authors from Ayurveda and contemporary sciences. The resources provide comprehensive knowledge about the subject prepared in accordance with the diseases, drugs involved and its etiopathogenesis. Ayurvedic system of medicine has been practiced in the country and globally from time immemorial and has stood the test of many adversities over centuries.

This book of proceedings from the Department of Swasthavritta will be a timely contribution to students, practitioners, scholars and researchers of ayurvedic medicine. The purpose of this book will be served by the progressive discussions and constructive feedbacks from the readers. I am sure the readers will be benefited immensely by this book. I wish the department to get more such opportunities to convert such intricate subject into an interesting and readable one.

Prof. Dr. Hemant D. Toshikhane

M.S. Ph.D. (Ayurved)

Assessor, NABH

Dean, Faculty of Ayurved,

Principal, Parul Institute of Ayurved,

Parul University

REPORT

Gujarat Board of Ayurvedic and Unani System of Medicine and Department of Swasthavritta & Yoga of Parul Institute of Ayurved, Parul University jointly organized Dirghayu 2021, Preconference webinar on 18th October, 2021 in connection with the International conference on Geriatric care and cure. The webinar was arranged on Google platform and along with the webinar, presentation competitions were also held. The event was inaugurated by -Dr. Hemant Toshikhane, Dean, Faculty of Ayurved. The first lecture on 'Dietary shifts for the aged' was delivered by Dr. Kavitha M B, Associate Professor, Dept of Swasthavritta and Yoga, SDM Ayurved Hospital, Hassan and the second session on 'Naturopathic management of common geriatric disorders' was delivered by Dr. Cijith Sreedhar, Chief Medical Officer, Prakriti Shakti-clinic of natural medicine, Idukki, Kerala. The session was moderated by Dr. Aparna Bagul, HOD, Dept of Swasthavritta, Parul Institute of Ayurved. And it was very helpful for students to understand the details of the topic, clinical as well as practical aspects. More than 100 Students of 1st, 2nd, 3rd and 4th Year BAMS, Interns, PG and PhD Scholars and even scholars from other institutes also attended and got benefited. Overall, the event was well organized and appreciated by all.

Links to connect the session:

Video call link:

<https://meet.google.com/hgh-wuei-ujg>

<http://www.facebook.com/parulinstituteofayurveda/live/>

<http://www.youtube.com/user/drhemant/videos/>

Resource person: Professional profile



Professional Profile:

Dr M. B. Kavita, MD (Ayu), Ph.D. is a teacher and practitioner of Ayurveda having a research attitude specialized in Swasthavritta and yoga with experience of 19 years. Currently holding a post of Associate Professor in department of Swasthavritta and Yoga at prestigious Sri Dharmasthala Manjunatheshwara (SDM) College of Ayurveda and Hospital, Hassan, India, she is well known for her skills in therapeutic diet and lifestyle advises. She has published 30 scientific articles in various national & international peer reviewed journals. She has delivered lectures as invited resource person on various occasions at many academic and non-academic institutions. Also, she is recognized PG & Ph.D. guide at Rajiv Gandhi University of Health Sciences (RGUHS) Karnataka, Bangalore.

She is specialized in diet and lifestyle advises specially in non-communicable health conditions like obesity, diabetes, arthritis, PCOS and dyslipidemia. She is also known for her research and statistical skills among student population. She has over 50 episodes of health talks aired in radio and is known for her community education specifically for women and adolescent health. She has the credit of authoring a book "Tatwa-Eat and live" a basic guide regarding therapeutic diet to common public.

Resource person: Professional profile



Dr.CijithSreedhar

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Dr. Cijith Sreedhar, Bachelor of Naturopathy and Yogic Science, from M. G. R. University, Tamilnadu, and a Yoga and Naturopathy graduate from JSSINYS, Coimbatore; is an expert in holistic healing and Lifestyle modification. He strongly believes in the motto, practice what you preach, that we are solely responsible for our health, that healing lies in our hands; and that no medicine can do it for us. He is specialised in Holistic Diagnosis and Natural healing of the Body and Mind. With more than 14 years of experience in Holistic healing, he deems that, as a doctor, his duty is to teach his patients on how the body heals itself, when exposed to a conducive environment. Being an Internationally Certified NLP practitioner, Dr. Cijith is of the opinion that, one's thoughts and values make a Man; and thus, incorporates Mind Modification modalities as a powerful tool in healing. Dr Cijith presently works as the Chief Medical Officer at Prakriti Shakti - Clinic of Natural Medicine by CGH Earth, and has been in this role since 3 years.

EDUCATION & CREDENTIALS

Degree | BNYS -
Bachelor of Naturopathy and Yogic Science | Dr. M. G. R. Medical University, Tamilnadu | 2007
Certified International NLP Practitioner

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DIETARY SHIFTS FOR THE AGED

Dr. M. B. Kavita, Associate Professor, Department of Swasthavritta, S.D.M. College of Ayurveda & Hospital, Hassan, Karnataka State

INTRODUCTION:

“Getting old is inevitable but being old is your choice”. - Cheryl Ilov It can also be said as “Aging is natural but healthy aging is habitual”.

Diet and lifestyle during our childhood and youth mostly decides how we age; quality of life will be better in aged when their diet and lifestyle are good. Old age (Vardhakya) is a period of living being where there will be depletion of body tissues (Dhatu kshaya).

Classification of Age:

As per Charakacharya (Ca.Vi. 8/122), age is classified as

- Baala: 0-16 yrs
- Vivardhamana: 16 – 30 yrs
- Madhya: 30 -60 yrs
- Jeerna / vridhha: > 60 yrs

A first attempt to internationally define age was made by the World Health Organization (WHO) & United Nations. They declared that “old age” is denoted by the age of 60–65 years in the developed world. Further the old age is classified by a few researchers. While Forman et al. classified old age as young old, middle old and very old.

- Young old: 60–69 years
- Middle old: 70–79 years
- Very old: 80 + years

Zizza et al classified old age as young old, middle old and oldest old.

- Young olds: 65–74 years
- Middle olds: 75–84 years
- Oldest olds: 85+ years

PHYSIOLOGY OF OLD AGE:

हीमभानधात्वित्रिमफरीमनौरुषनयाक्रभग्रहणधायण-स्भयणिचनविानंभ्रश्मभानधातुगुणं

िामुधातुप्रामंक्रभेणजीणयभुच्चतेआषशतभ|(Ca.Vi. 8/122)

It is clearly understood that the quantity and functionality of dhatu deteriorates as you age. One can understand this in terms of changes in GI system. Depletion in dhatu causes depletion in physical attributes like strength, immunity, enthusiasm, vigour and valour. Also mental faculties like grasping, understanding and remembering abilities, their verbal expression, analytical applications are weakened. This age sees gradual increase in Vata dosha as tendency to deplete dhatus is natural to this age.

वामाभोऽनशनंचचरतारूंाल्नप्रमभताशनभ।िातातनौबमंशोकोरूंनानंप्रजागय्॥कपशोणगत
शुक्राणांभरानांचाततितनभ।कारोबोन्नघातश्चातव्मंमहेति॥ (च.स. १७/७६-७७)

Dhatukshaya occurs by excessive indulgence in exercise, fasting, stress, foods causing dryness of body fluids, reduced quantity of food, consuming single flavour, exposure to breeze or intensive sunrays, fear, grief, loss of sleep, expulsion of Kapha dosha, blood and Shukra dhatu, metabolic wastes (mala), specific time factor (Adana kala or Vardhakya), affliction of evil spirits. It is understood that dhatukshaya occurs by default in old age.

Changes in GI System:

The mouth: Age-related shrinkage of the maxillary and mandibular bones and reduction in bone calcium content cause a slow erosion of the tooth sockets, leading to gum recession and an increased risk of root decay leading to chewing difficulty. Due to this the elderly person eats less and turns malnourished. They may also choose highly refined, easy-to-chew foods and consume less dietary fibre which may alter their bowel function.

Swallowing: The muscular contractions that initiate swallowing slow down, increasing pharyngeal transit time. This may lead to swallowing difficulties which can increase the risk of choking & a feeling that food is stuck in the throat.

The oesophagus: In general, the motor function of the GI tract is relatively well preserved in healthy older people. In the very old, impaired oesophageal motility is common. Oesophageal peristalsis weakens with age & peristalsis may no longer be triggered by each swallow. Both upper and lower oesophageal sphincters lose tension; the lower one in particular undergoes a reduction in pressure, resulting in problems such as dysphagia, reflux and heartburn. The gag reflex is absent in some of older people.

The stomach: It is considered as reservoir of food. With age, it cannot accommodate as much food, primarily because its wall loses elasticity. Acid hypo-secretion occurs in 10-

20% of older people versus <1% of younger subjects. This can compromise the bioavailability of certain drugs, including vitamin B12, and lead to disorders such as chronic atrophic gastritis. Age-related reduction occurs in mucus-producing goblet cells & Gastric bicarbonate (HCO_3^-) secretion that results in reduced secretion of protective mucus and therefore a weakened mucosal barrier leading to gastritis, ulcer etc. Gastric emptying slows down with age. Food remains in the stomach for longer leading to prolonging satiation & reducing appetite.

The small intestine: Age-related reduction in villus height has shown impact on nutrient uptake does not seem to be clinically significant. The production of the enzyme lactase decreases with age, making older people more prone to lactose intolerance. Peyer's patches, also known as gut's immune defense system, gradually reduce in number & lymphoid follicles are gradually lost. This results in an uncontrolled growth of resident micro-flora leading to bloating, pain & decreased absorption of nutrients such as calcium, folic acid and iron.

The large intestine: Atrophy of the mucosa and muscle layers of the colon affects peristalsis. Slowing down of colonic transit caused by a decline in propulsive activity of the colon associated with a reduction in neurotransmitters and neuroreceptors causes a delay in colonic transit of waste, leading to constipation. The walls of the colon sag, prompting the formation of diverticuli. Straining to eliminate faecal matter may put additional pressure on weakened blood vessel walls, giving rise to haemorrhoids. The rate of cell division declines in the digestive epithelium, which cannot repair and replace itself as well as it needs to. Age is the key risk factor for colorectal cancer. Recent studies showed that ageing inducing change in the DNA of epithelial intestinal cells of the colon (DNA methylation) is believed to play a significant part in the development of colorectal cancers.

The accessory organs: The pancreas, which generates four major digestive enzymes, decreases in weight and some of its tissues undergo fibrosis. Its exocrine function is impaired. The liver shrinks with age and blood flow to it decreases, its functional capacity also decreases. Protein metabolism, ability to detoxify many substances, as well as the production and flow of bile are also reduced. Bile becomes thicker and its salt content diminishes, resulting in higher plasma concentrations of cholesterol, particularly in women. Drugs are no longer inactivated quickly by the liver and are therefore more likely to cause dose-related side-effects.

Other influencing factors: Psychological factors like loneliness, depression, economic changes like low income or a small pension, lack of cooking skills, suspicion of new foods also lead to poor eating and malnourishment.

THE IMPACT OF CHANGES IN OLD AGE:

Increased Vata dosha alters the status of agni (metabolic ability). The normal functions of Agni are normality of lifespan, colour, strength and immunity, health, enthusiasm, nourishment, aura, ability to face the challenges, maintenance of other agni like dhatvagni and bhutagni.

आमुणोफरंस्िास्मभुवसाहोनचमौप्रबा। ओजस्तेजोऽग्निम्राणाश्चोक्तादहोत्सहेतुका॥

शारतेऽग्नौमिमत्, मुक्तेचचयंजीवमनाभम्। योगीस्माद्विकृते, (Ca.Ci.15/3)

Jatharagni, when associated with vata dosha, leads to Vishamagni which is commonly seen in aged. This leads to shift in metabolism of macronutrients.

Altered protein metabolism: Sarcopenia, a degenerative loss of active skeletal muscle mass accompanied by the replacement of muscle fibres with fat or even connective tissue, is a common change in aged irrespective of their body size. Since body fat tissue shows no significant metabolic activity, this shift reduces the basal metabolic rate and finally the total energy requirements of older people. Decrease in vitality, strength, immune-activity and mobility are further physiological sequel of these changes. Many inflammatory cytokines, such as tumour necrosis factor, interleukin-6 and C-reactive protein originate from this adipose tissue which accelerates muscle catabolism. This also causes redistribution of fat tissue from peripheral to visceral, which in turn leads to cardiovascular disease, diabetes, impaired glucose tolerance and high amounts of inflammatory cytokines. Negative energy intake mainly affects those above 75 years, leading to malnutrition and loss of weight. This may cause undesirable effects due to catabolic metabolism leading to loss of muscle or organ or bone mass and functions added with symptoms of malnutrition.

Altered carbohydrate metabolism: Normally, ingestion of simple carbohydrates causes rise in plasma glucose levels inducing release of insulin which is responsible for the uptake of glucose in muscles, liver and adipose tissue. Insulin sensitivity of tissues decreases with advanced age leading to hyperinsulinaemia, hyperglycaemia, and in many cases, even to diabetes mellitus type 2. These dysfunctions and shifts are accompanied by a decreased metabolic function of the whole metabolism (especially mitochondria) leading to reduced overall activity.

Altered fat metabolism: Both poor physical activity and sarcopenia lead to increased body fat. This in turn causes release of high amounts of free fatty acids from adipose tissue. There is reduced capacity of respiring tissues like muscles to oxidise free fatty acids at rest leading to reduced glucose uptake, increased VLDL & Triglyceride production and poor insulin clearance. Further it increases amount of non-oxidised free fatty acids. Ageing

affects the stimulation, release and activity of hormones those are relevant to fat metabolism with a serious negative impact on the rate of lipolysis, as well as whole body composition. It is also related to reduced insulin release from pancreatic tissue. Insulin plays a fundamental role in inhibiting and regulating the generation of free fatty acids from adipocytes.

Absorption of macronutrients: Protein absorption is not impaired, even if it is slower in comparison to younger persons. Carbohydrates are fermented in the colon due to deficiency of hydrochloric acid in the stomach, instead of being digested and absorbed in the jejunum that might lead to flatulence, diarrhoea, obstipation and abdominal cramps. Fat absorption is not greatly restricted by physiological changes in the gastrointestinal tract, although some enzymes (e.g. lipases) are less active with advancing age.

MANAGEMENT OF THE CHANGES IN OLD AGE:

Swabhavoparamavada describes that there is always a cause for production. But once produced destruction is inevitable. It will happen naturally one day. Chakrapani clarifies that you can't stop the changes in the organs or systems of the life that is getting destructed, but you can always try to reduce or prevent the impact of these changes. A duty of vaidya is to prevent the impact of old age by modifying the food and lifestyle of elderly. Dietary and lifestyle manipulation plays pivotal role in management

Management of Macronutrients:

Protein: Prevention of protein deficiency can be done by consuming protein-rich foods with a high-nutrient density. Such diet helps the synthesis of muscle tissues and counteracts the proliferation of adipocytes. A further approach to prevent drastic structural alterations depends also on the physical activity level of the individual leading to the adaptation of food energy values. Generally, it is postulated that caloric ingestion should be reduced by 10% between the ages 50-75 years with an additional 10–15% after 75 years. Exact intake recommendations of proteins for the elderly are still not available. Scientists believe that the recommendation for adults (0.8 g high-quality protein/kilogram body weight/day) is inadequate to maintain lean body mass in healthy elderly individuals. Older people are advised to consume 1–1.5 g protein (especially from animal sources)/Kg body weight/day.

Carbohydrates: Management in carbohydrate intake is done to prevent insulin resistance or impaired glucose tolerance. Elderly people should minimise intake of simple carbohydrates and consume foods with low glycemic indexes such as fibre-rich, poorly sweetened nourishment. A combination of them with high levels of exercise is suggested.

Fat: About 30% of the daily energy should derive from total fat, <10% from saturated fat &

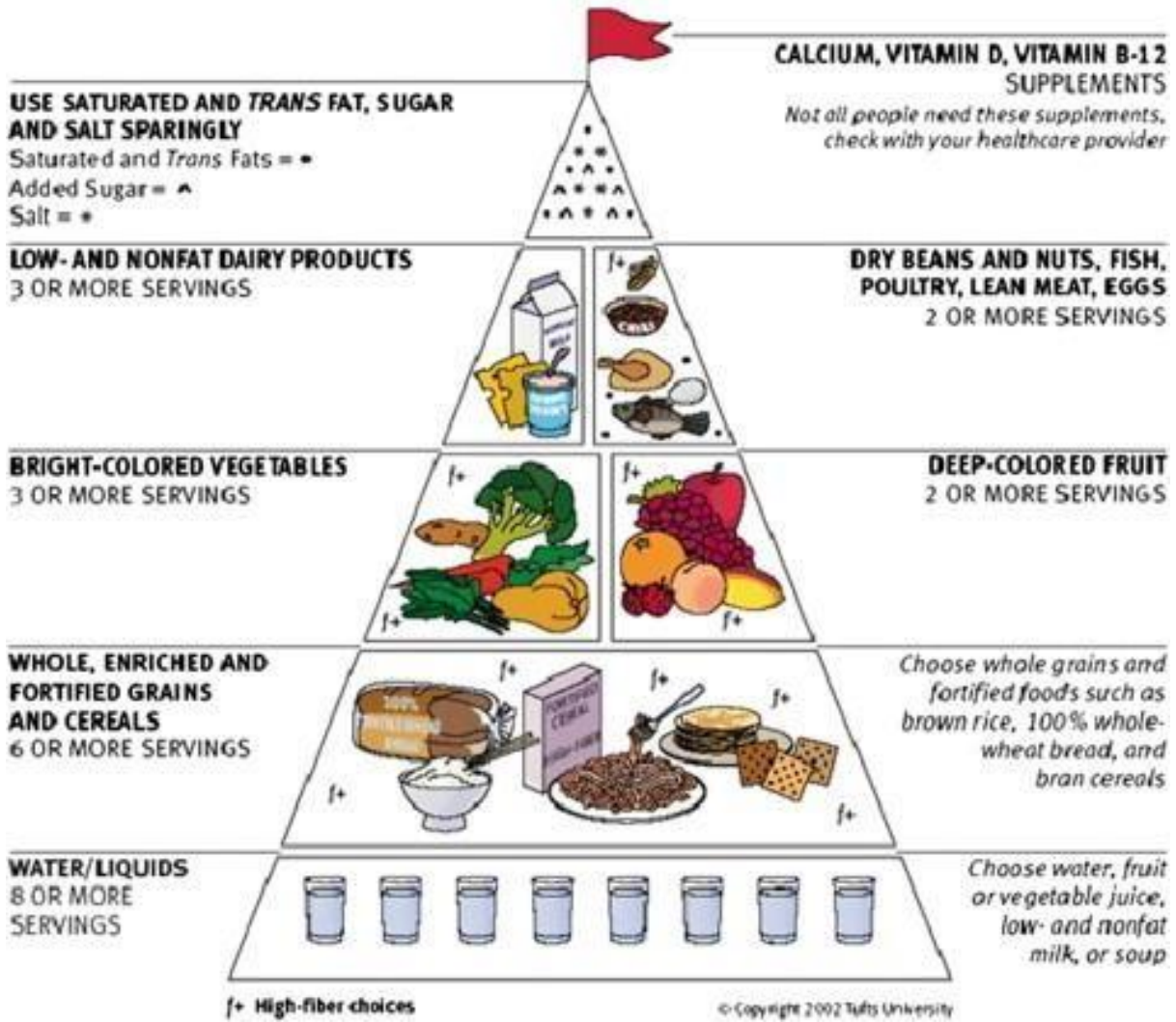
<300 mg/day dietary cholesterol. Fat should not be completely removed from the diet as it serves important functions in the human body as a carrier of vitamins and aromas, contributes to satiety, provides energy and act as energy reserve; conjugated linoleic acids improve body composition essential fatty acids are precursors of hormones & mediators.

What could be advised to fulfill these needs?

Dhanyavarga: The cereals and pulses belong to this group. They provide majorly carbohydrates and proteins. The above food pyramid for elderly describes within the bread, cereal, rice and pasta group or others that make bulk of elderly food, choices should be primarily among those that are whole-grain, enriched or preferably fortified. In addition to products made with enriched flours and whole grains, breakfast-type cereals that are fortified should be consciously chosen. Cereal grains are to be fortified with folic acid. Folate fortification lowers blood homocysteine levels and potential reduction in risk of homocysteine-related cardiovascular disease.

The cereals from Shalivarga (rice varieties) are beneficial as they are sweetish in taste and post digestion effect, nourish the tissues, wholesome and easy for digestion.

स्िादन्नाकयसात्स्रग्धािष्ृमान्मारघिो (A.S.Su.7/2)



Among the Kudhanya prefer Priyangu (Setariaitalica – Foxtail millet) as it nourishes by providing energy and heals by providing protein. The quantity should be based on agni as it is naturally difficult for digestion.

बग्नसरधानकृतत्रवप्रमङ्गुफहंणीगुरु | (A.S.Su.7/9)

Also Madhulika (Ellucina coracana-African millet or finger millet) can be opted as it has all the required qualities like singdhaguna, rejuvenating effect and especially it is anabolic in effect.

But again care to be taken as they are difficult for digestion

शीतीमायविशषेणत्स्रग्धािष्ृमाभधमूरका | (A.S.Su.7/9)

Other millets can be considered if the health condition demands as they dry up body moisture and fat also scrape out fat below the skin and in the vessels.

Pulses from shimbi group though are considerably vatacara, such effect can be reduced by processing like cooking, addition of fat etc. They can be used in preparation of Soups which is a good food in elderly. Mudga (Greengram) is preferred as it is easy to digest and assimilate by elderly. Other pulses can be administered based on the need and in combination with cereal groups to give a complete profile of proteins.

Mamsavarga (egg and meat): The meat of animals from arid places (jangalamamsa) is preferred as they are laghu and vishada. Looking into the qualities the meat of partridge (Tittiramamsa) is best as it improves all conditions of old age like improves power of grasping, judgement and memory; improves metabolism, provides strength and immunity, aids digestion and pacifies vata.

भेधात्प्रफरशुकृत्

ग्राही िर्ण्मोऽतनरोक्तसत्रननातह्ययभधरिनूनविचारयवित्स्त्रगधोष्णागुरूफंहण॥

(A.S.Su.7/75)

The other meat which is quite commonly available is mutton (ajamamsa). It is not difficult for digestion; not too fatty, nor abhishyandi, does not vitiate any dosha and corrects all dhatus quantitatively and qualitatively.

नाततशीतगुरुत्स्रग्धंभासंभाजभदोषरभशयीयधातसाभारमादनमबष्मत्रदफहणभ॥ (A.S.Su.7/92)

Eggs are preferred when agni is normal as with yolk they are comparatively heavy for digestion as mentioned in Ayurveda. Emphasis should be placed on variety, with individual choices made according to preference, availability, ease of preparation, chewability and cost affordability. Lean cuts of meat should be chosen. Fish represents a good selection, since it provides high-quality protein and (n-3) fatty acids. Fish in the diet may lower the risk of developing CVD when eaten on at least a weekly basis. Fish, when substituted for meat, help to minimize saturated fat and cholesterol intake.

Vegetables (Shakavarga): There are five types of vegetables viz., leafy, flowers, fruits, stems/stalks, roots and tubers and those produced from excess moisture as in mushroom.

नत्रनुष्पंपरंनारंकरदंसंस्िेदजंतथा | शाकंषड्विधभुद्धिष्टंगुरुंविद्वाद्मथोवतयभ॥ (B.P.Ni.)

They can be consumed with preparations from dhanyavarga. Within the vegetable group,

choices should be among those which are deeply colored. Dark green, orange or yellow fresh, frozen or canned vegetables contribute vitamin C, folic acid, vitamin A and a substantial amount of dietary fiber. Cruciferous vegetables, including beets, kale, cabbage

and broccoli, also contribute antioxidant phytochemicals such as indoles, flavones and isothiocyanates.

Fruits (Phalavarga): Among fruits, those having madhura or madhuramla rasa are to be preferred as they act as brimhana and vatahara. Fruits have beneficial effect on liver. Fruits those are commonly preferred are raisins, pomegranate, Indian gooseberry, dates, almond etc. they are to be chosen wisely also based on calorie need. Within the fruit group, choices of fresh, canned or dried products should be yellow, orange or red in color.

For fruits and vegetables, emphasis should be placed on consuming the whole food, rather than a reliance on juice, in order to supply adequate fiber intake. Fiber is contained in the foods of four of the building blocks of the Food Guide Pyramid (grains, fruits, vegetables, meat–legumes groups). Fruits and vegetables are important dietary components in the elderly, primarily for prevention of constipation, diverticulosis and diverticulitis. Diets high in fiber are associated with lower cholesterol levels, as well as a lower incidence of cardiovascular disease and cancer. Milk & milk products (Gorasavarga): Within the milk, yogurt and cheese group, emphasis should be placed on low-fat dairy products. They concentrated sources of protein, calcium, vitamin D (milk only) and riboflavin. The amount of new muscle protein depends on the quantity and quality of ingested amino acids. Whey and caseins from milk is rich in essential amino acids and are thus high-quality sources. Several studies even showed that a high quality of ingested proteins elevates lean body mass and improves strength and physical function in elderly persons. The cow's milk has all the qualities to counter the effects of changes in oldage. It is also considered as rejuvenator.

दग्धसुभधयुंत्स्रग्धिं तावन्नवतहयंसयम् । सद्मशुककयंशीतंसाव्मंसियशयीरयणाम् ॥

जीनिंफंहणफलंभेध्मं जाकयन्नयम् । स्थाननभामुष्मंसत्रधकारययसामनम् ॥ (B.P.Ni.)

Butter from cow's milk is an important and useful milk product for elderly as described in Ayurveda. It is aphrodisiac, provides with normal colour, strength, immunity and metabolism. It is also beneficial in illnesses of old age like anaemia, piles, dry cough, facial paralysis.

Among the animal fat ghee is one beneficial for reducing vata. It is also a rejuvenator when consumed in right way and amount and useful in management of issues in related to vata and pitta in elderly.

यसामनंस्िादुचुष्मंिन्नदीन्नम् । अन्नामबष्मत्रदकारवमोजस्तेजोरािर्ण्मफुविकृत् ॥

स्ियस्भतृतकयंभेध्मभामुष्मंफरकृद्गुरु ॥ (B.P.Ni.)

Vegetable oils (Tailavarga): Ayurveda admisnisters sesame oil (Tilataila) as best for consumption. It is said to be strengthening and produces stability, aphrodisiac, pacifies both

vata and kapha, improves appetite, boosts brain functions, produces lightness on body and good for eye functions. Most fat in the diet of older people should be in the form of liquid oils or foods prepared with them. Using a variety of these oils should provide an adequate intake of essential fatty acids.

Food choices emphasized in the elderly are:

- Whole grain foods rather than those made with refined flour.
- Brown rice instead of white rice
- Whole fruits rather than juice
- Legumes instead of meat at least twice a week
- Cooked vegetables, fresh salad
- High-fiber cereal for breakfast

Most elderly can eat all of these foods if properly prepared: cooked, grated and chopped.

Fluids: The fluid needs are greatly influenced by amount of physical activity, the medications, renal function and ambient temperature. They are important as aging causes compromised homeostatic mechanisms like decreased thirst sensation. In addition, lack of fluid can be a major contributory factor in constipation. A healthy elderly must drink about two liters of fluid per day. Alcohol, coffee and tea can't be considered contributing to fluid intake due to their diuretic effect.

Ahara yogi (Spice herbs): Ginger, long pepper, pepper, asafoetida, Basil, onion, garlic, clove etc fall into this category. Older people should be encouraged to use herbs or mild spices in their dishes, rather than salt, if they need to add flavour. They are aromatic, aid digestion and help to improve metabolism.

The dietary pattern and manners (Aharavidhivadhana):

Ushnam: Aged people must consume foods when they are still warm also the drinks (not very hot not very cold). Hot foods make food moist and soft. The saliva and gastric juices secreted would be enough to digest food well. Proper digestion occurs when core temperature is maintained well. Warm foods soothe the system and muscles including the minuscule muscles that support the blood vessels relax which help to improve metabolism, if not digestion. The ideal core temperature for gastric emptying is being on the warm side (~43°C), but not hot. Also enzyme activity is at its greatest at around core body temperature (~37°C) or slightly higher (~42°C), depending on the enzyme. The body adjusts temperature of food by quick or slow action of chewing.

Snigdham: Foods of elderly must added with right amount of edible healthy fat. Addition of fat enhances flavor. Fat in right amount slows down the digestion of carbohydrates and also creates a sense of fullness.

Laghu: The food should be qualitatively and quantitatively be easy to digest. Such foods when consumed do not cause heaviness of body or organs as in gruel and soup.

Pakam (cooked): A well cooked food causes sterilization of microbial pests. There is liberation of certain nutrients freed by cellular degradation. It also causes tenderization. The flavor and aroma enhance through caramelization. Flavor and aroma also enhance when cooked food is served warm. Nutritional profile of some vegetables may deteriorate in few aspects although often enhanced in other respects following application of heat.

Veeryaaviruddham (don't do combination of contradicts): Foods of opposite potency should never be consumed together e.g., milk with most fruits or milk shakes. Food combining advocates eating "fast-digesting food" with "slow-digesting food" will lead to a "traffic jam in digestive system that in turn disturbs digestion.

Matravat (Right amount): Right amount of food in totality and of each food component depending on status of agni. Consuming such amount helps in easy and proper digestion of all nutrients. Studies have noticed decreased quantity of enzymes after consumption of large meals or large amounts of fat. The gastric emptying time of various food categories shows fruits, vegetables, egg and small fishes have least time when compared to grains followed by dairy products and meat. Meat stays very long in stomach.

Jeerne (only after digestion of previous meal occurs): An elderly should consume food when previous meal is well digested and you feel hungry. According to a study by David Gal at the University of Illinois-Chicago, when people eat while not hungry, they experience sharper sugar spikes than when eating the same number of calories while hungry— person with higher sugar spikes will usually experience more health problems.

Personal hygiene: All elderly must take bath or wash face, hands and feet thoroughly. They are highlighted in aharavidhi in terms like Suchi, snatah, dhautapadakaranana. Such care minimizes the risk of contamination of food entering the gut.

Natidrutam/nativilambitam (neither too fast nor too slow): Both types of speed disturb the process of digestion. Many researches on speed of eating have concluded that high speed of eating is a risk for obesity (central/peripheral), and diabetes. The time required to digest the food depends upon mood of consumer too. The digestive enzymes in the stomach are released in higher quantities if consumer likes the food/place of eating /the accessories, /in a state of contentment and happiness. The production of gastric juices is curbed in case of fear, or depression. The time required to digest the food depends upon your mood too. The digestive enzymes in the stomach are released in higher quantities if you like the food, or you are in a state of contentment and happiness.

CONCLUSION:

Aging cannot be prevented but one must always take care that ill effect of changes in old age should not cause illicit effects on health of elderly. This calls for a sincere effort in manipulating their dietary and lifestyle habits.

“It's not how old you are; it's how you are old”.

NATUROPATHIC MANAGEMENT OF COMMON GERIATRIC DISORDERS

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Introduction:

Ageing creates an inability to adapt and self-manage. They will not have the capacity to back to normal- by self. There will be an accumulation of unrepaired damage and an imbalance in the degeneration & regeneration process. Reduced functional reserve, reduced healing capacity and stress resistance and physical and cognitive decline are other problems faced during the geriatric period.

Physical Aging means -

Changes in body composition: Deposition of Visceral fat & loss of muscle-the most apparent and unavoidable effects of aging.

Energy production and utilization imbalance: peak oxygen consumption declines which can be manifested as fatigue

Homeostatic dys-regulation: inability and adapt and self-manage

Neurodegeneration: mainly characterized by the progressive loss of structure or function of neurons and finally leads to neuronal death

Pathophysiology of Aging

- Chronic low grade Inflammation
- Increased ROS
- Protein Misfolding
- Mitochondrial dysfunction

Inflamm-aging'

Prolonged inflammation lead to the accumulation of damage that eventually becomes manifest as pathology.

This state of chronic inflammation that correlates with aging referred to as “inflamm-aging” and is a strong risk factor for many chronic diseases including obesity, cardiovascular disease, and neurodegenerative diseases.

Need of naturopathy:

- You are not getting aged because you didn't take a medicine

- Diseases are Broken Biochemistry of cells
- Body can Heal itself, if a chance is given

Aims and methods of naturopathy:

Aim: is to maintain/restore health and function , rather than simply controlling signs and symptoms

Method: by strengthening the fundamental physiologic process.

by restoring balance in the dysfunctional systems.

Naturopathic consultation:

- What is the first cause; what is contributing now?
- How is the body trying to heal itself?
- What is the minimum level of intervention needed to facilitate the self-healing process?
- What are the patient's underlying functional weaknesses?
- What education does the patient need to understand why he or she is sick and how to become healthier?
- How does the patient's physical disease relate to his or her psychological and spiritual health?

Hierarchy of therapeutic approach:

- Establish the optimum condition of healing – life style modification
- Stimulate/ assist the self-healing power- General Naturopathic Treatment
- Address the specific weak or damaged organ- system specific treatments
- Address pathology – Neutraceutical herbs

Naturopathy Therapies

- Return to Nature : give attention to basics – Diet, rest, exercise, microbes, and rhythm.
- Elementary Remedies : Air, water , earth & Sun
- Mechanical Remedies : Yoga, Massages, Manipulation and Physical therapies .
- Mental Remedies : Meditations, Mind healing techniques, Placebo effects

- Chemical Remedies : Herbs and Nutraceuticals

Naturopathic management:

Always give importance to DREMMER, the building blocks required for maintaining body rhythm and balance.

D – Diet

R – Rest

E – Exercise

M – Mind

M – Microbes

E – Environment

R – Rhythm

Therapeutic diet:

- Low Glycaemic diet
- Anti – Inflammatory Diet
- Alkaline Diet
- Fibre Rich Diet

Dietary prescription:

- Friendly to digest – not easy to digest
- Food is not a Medicine
- Taste - Don't eat anything which you don't like
- Presentation - Eat with Five senses
- Restrictions - Eat as much as 'YOU' Need
- Myth Vs. Science - facts about carbs and Fats

Rest

Body heals itself when a chance is given, chance is nothing but rest, in the means of Sleep & Fasting.

Fasting:

Inhibition of mTOR mechanism leads to Self killing and Consuming of old, unwanted, extra, foreign cell organelles/ cells - Autophagy / Apoptosis which further results in Regeneration & Healing

Irisin -the “sport hormone”:-

- Released from muscle cells after physical activity
- induces oxygen consumption in fat cells as well as thermogenesis.
- Suppress the production of pro-inflammatory cytokines.
- Reduction of oxidative stress, inflammation and physiological stress through exercise and movement is attributed to the effect of irisin.
- Irisin positively correlates with the expression of a brain-derived neurotropic factor in the hippocampus, where it plays a major role in neurogenesis, resulting in better cognitive functions.
- Irisin contributes to the neuro-protective effects against cerebral ischemia help in the treatment of memory dysfunction.

Mind Full Aging:

Aging is often accompanied - By depression and/or anxiety, Feelings of insecurity and loss of self-esteem.

Strategies to improve Vagal Tone:

Bottom - Up approaches	Top – Down approaches
Deep Breathing	Meditations
Singing / Om chanting	Relaxation techniques
Yoga/ exercises	NLP techniques
Coffee Enemas	Inner child healing
Laghu Sangha Prakshalana	Connecting with Nature
Gargling / Dhauthis	Laughter
Cold Baths	Social connections
Energy Medicine	Prayer

How environment heal?

- Earth – Mud therapy, Bare foot walking
- Water – Hydrotherapy, water intake
- Sun – Sun gazing, Sun bath, Banana Leaf Bath
- Air – Fresh air, Pranayama
- Space – Massage, Energy Medicine, Reflexology walk

Conclusion:

Aging is an inevitable , yet controllable & reversible Disease process , through Naturopathy & Yoga.

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CRITICAL REVIEW OF AYURVEDIC ASPECT OF GERIATRIC HEALTH CARE

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ABSTRACT

Geriatric medicine is the specialized branch of medicine that deals with the problem of elderly persons. Increase in average life span due to enhanced medical facilities has resulted in demographic shift towards older age. Also, a lot has been stated in Ayurveda texts regarding longevity and vitality in terms of Jarachikitsa and Rasayan. The aim of this paper was to critically review the Ayurvedic texts and to analyse the idea of jara (ageing), as well as to examine the many factors and therapeutic interventions that have a preventative, curative, and promotive effect on old age. **Material and Methods:** An effort is being made to study Jara from Ayurvedic Samhitas and research papers highlighting Jara from databases such as Pub Med, Scopus & Ayush Portal. **Discussion:** The three primary texts of Ayurveda, including Brihatryi and modern aspect were studied for concept, effects & signs of ageing as well as preventive, therapeutic, and promotional elements. The scriptures showed that the preventive components of the optimal regimen, such as daily regimen (dinacharya etc), sound food habits, the use of Rasayana drugs, and Panchakarma, were all mentioned. This improves the person's quality of life, particularly if they are elderly. **Conclusion:** Analyses of the literature found that including the preventive features of an ideal regimen, healthy eating habits, the use of Rasayana medications, and Panchakarma cleaning procedures into daily routine can improve the body's vitality and lifespan. This improves the quality of life for everyone, especially the elderly.

Keywords: Jara, Ageing, Daily regimen, Diet, Rasayana, Panchkarma **Introduction:**

Introduction:

The word GERIATRICS has been derived from latin word —geras meaning —To grow old. Geriatric medicine is the specialised branch of medicine that deals with the problems of elderly persons. The term comes from the Greek word —Geron meaning old man and —ias means —healer. The word geriatric has also a close link with the Sanskrit word —Geeryadi, which means degeneration. —geras meaning —To grow old. Geriatric medicine is the Ageing is a universal, intrinsic, progressive and deleterious process.

CONCEPT OF AGEING:

Ageing, an involuntary phase in the development of the organism, is characterized by the loss of adaptability of an individual as time passes. It is a natural process; in other words, it is the anatomical, physiological, bio-chemical and functional changes that occur in man with the passage of time. This paper discusses the ageing with reference to ayurvedic concept of jara.

The percentage share of the elderly population in the total population is said to rise from 8.6 per cent in 2011 to 10.1 per cent in 2021 and projected to touch 13.1 per cent in 2031. Census 1991 showed the elderly female population (29.4 million) outnumbered elderly males (27.3 million). People worldwide are living longer. Today most people can expect to live into their sixties and beyond. Every country in the world is experiencing growth in both the size and the proportion of older persons in the population. While this shift in distribution of a country's population towards older ages – known as population ageing – started in high-income countries (for example in Japan 30% of the population is already over 60 years old), it is now low- and middle-income countries that are experiencing the greatest change. By 2050, two-thirds of the world's population over 60 years will live in low- and middle-income countries.

Ageing explained

At the biological level, ageing results from the impact of the accumulation of a wide variety of molecular and cellular damage over time. This leads to a gradual decrease in physical and mental capacity, a growing risk of disease and ultimately death. These changes are neither linear nor consistent, and they are only loosely associated with a

person's age in years. The diversity seen in older age is not random. Beyond biological changes, ageing is often associated with other life transitions such as retirement, relocation to more appropriate housing and the death of friends and partners.v

WHO response

The United Nations General Assembly declared 2021–2030 the Decade of Healthy Ageing. The Decade of Healthy Ageing (2021–2030) seeks to reduce health inequities and improve the lives of older people, their families and communities through collective action in four areas: changing how we think, feel and act towards age and ageism.

Common health conditions associated with ageing

Common conditions in older age include:-

- Hearing loss
- Cataracts
- Refractive errors,
- Back and neck pain and osteoarthritis,
- Chronic obstructive pulmonary disease,
- Diabetes,
- Depression and dementia.

As people age, they are more likely to experience several conditions at the same time. Older age is also characterized by the emergence of several complex health states commonly called geriatric syndromes. They are often the consequence of multiple underlying factors and include frailty, urinary incontinence, falls, and delirium and pressure ulcers.

AYURVEDIC ASPECTS OF JARA:

__Jru' which means decline stage or old age.

The word Jara itself has been derived from root word __Jru' which means decline stage or

old age.

Definition:

According to Ayurvedashabdakosha, the process of deterioration is called Jara. Jara also called as Vardhakya. According to Ayurveda, Jara is not a disease but a natural phenomenon like hunger, thirst or sleepvi. Swabhav and Kala play pivotal role in the process of ageing. Modified Improper dietary habits, sedentary life style, excessive stress and Anxiety enhances the process of ageing.

Varddhakyavastha:-

Charaka states that jaravastha is considered as an old mud house which is ready to crumble in the ensuing rain water. This stage begins from 60 years (Charaka) or 70 years (Suhruta) marked by diminished strength of dhatus, indriyas, mental factors like perception, retention, enthusiasm along with wrinkled skin, greying hair and baldness. There will be breakdown of dhatus due to increased vata.

Types of Jara:

Jara has been divided into two types physiologically-

- 1) Kalajajara- It refers to chronological ageing. The symptoms of ageing occur at the appropriate age of the person due to swabhav and kala. It is a naturally occurring inevitable process.
- 2) Akalajjara (Premature ageing)-Ageing which occurs before the appropriate age of the individual i.e. before old age is Akaalajjara

Sushruta classifies jara as kalaj (timely i.e. at 70 years onwards) and akalajjara (untimely).

Vagbhataviihas quoted that Jaraavastha appears because of

- Pantha (excessive walking or traveling)
- Sheetam (cold or frozen food)
- Kadanna (food articles which are devoid of Jeevaniya properties),

➤ Manas Pratikulata (improper condition of mind).

All these causes are responsible for AkalajaJara or early aging. Some other causes found regarding KalajaJara are Kala (time factor)viii, Swabhava (nature)ix, and Karma Swbhava.

Sequential bio-loss in ageing:

From birth to death the moment of conception, right into the extreme old age, the human body undergoes considerable changes in shape, size and composition. SharangadharaSamhitax and Ashtanga Sangrahexi describe the sequential bio-loss during different decades of life due to process of ageing.

Decade of life	SharangadharaSamhita	AshtangaSamgraha
1st	Balyam(Childhood)	Balyam(Childhood)
2nd	Vridhhi(Growth)	Vridhhi(Growth)
3rd	Chavi(Complexion)	Prabha(lusture)
4th	Medha(intellect)	Medha(intellect)
5th	Twaka(Skin)	Twak(Skin)
6th	Drishti(Vision)	Shukra(Virility)
7th	Shukra(Virility)	Drishti(Vision)
8th	Vikram(Strength)	Shrotendriya(Hearing)
9th	Buddhi(intellect)	Mana(Spirituality)
10th	Karma(FunctionofalltheIn driya)	Sarvendriya (all theindriyas)

Clinical features of jara viz. ageing:

PHYSICAL FEATURESxii:

Vali-wrinkles	Palitya-grey hair
Khalitya-baldness	Danta shaithilya-teeth loosening & fall
Krishha-emaciation	Kampa-tremors

Namana-kyphosis	Shakti heenata-power loss
Balahani-energy loss	Viryakshaya-decrease of fertility potential
Agnimandya-decrease indigestive fire	Drishtimandya-diminution of vision
Vakashaktihani-diminution of speech	Ayukshaya-diminution of immunity

PSYCHOLOGICAL FEATURES^{xiii}:

1. Gambhirya- seriousness
2. Ekagrata-kshaya-loss of concentration power
3. Smriti nasha -loss of memory
4. Dhritinasha – loss of retention power
5. Avasada- depression
6. Ekantapriyata-loneliness
7. Chinta- anxiety, stress

Various kshayalakshanas observed in old age:

1. Rasakshaya - tvakrksata
2. Raktakshaya - SiraSaithilya, ruksata
3. Mansakshaya- glani, gandasphikSushkata, sandhivedana
4. Medakshya - katiSunyata, plihavlddhi, angakrishata, sandhishunyata, netraglani, ayasa
5. Asthikshaya- kesha-loma-nakha-Shmshru-danta-patana, shrama, sandhishithilata,
6. Majjakshaya- vata disorders, asthisaushirya, bhrama, timirdarshana.

7. Sukrakshaya-daurbalya, mukhashosha, pandutva, avasada,
Srama, klaibya, vrushanatoda

Dosha and ageing:

Ayurveda links the phenomenon of biological aging with the doctrine of Tridosha. In principles, the childhood is embedded with Kapha (Growth Activity) in the body, adult age with Pitta (Metabolic Activity) and old age with Vata (Degenerative Activity). Vatadosha by its quality and action produces senile changes.

Agni and ageing:

In old age, due to vata predominance, the influence of vishamagni leads to vishamagnijanyarogas such as ajirna, adhmana, Shula, udavarta, atisara, antrakujana and pravahana. In young age, due to increased activity of pitta, the digestive capacity will be at its peak. The optimum activity of agni is responsible for growth and development of the body and maintains vitality and vigor. Sushruta states that defective metabolism occurs in old age due to vishamagni which leads to involuntary changes such as ksaya and Shosha.

Oja and ageing:

Sushruta states that the seat of oja is hridaya; hence it is responsible to nourish and strengthen the dhatus, provides energy, happiness, lusture and balances the function of the indriyas. In old age, ksaya of saptadhatus leads to kshaya of Oja

In other words, ageing is an inevitable process involving structural and functional changes in the body with dosha, dhatu, mala (the constituent of sharira), agni, indriya and ojathat destroy the span of life (Aayu = Satva + Atma + Sarira + indriyas). There is no unequivocal age that can be termed as specific period of jara.

Promotive and Preventive modalities of Ayurveda in Jara:

Regimen or Achara

Regimen (routines) refers to the physiological machinery that controls the circadian rhythm or the 24-h body clock and is another component that has an important role in

the aging process. According to Ayurveda, the health of all living beings is governed by an internal clock that runs on a 24-h, light–dark cycle in conjunction with the sun and earth's movement. Ayurveda provides several guidelines about the operations of the body clock in terms of time and season-based routines called day routines (dinacharya), night routines (ratricharya) and seasonal routines (ritucharya)^{xiv}^{xv}. These guidelines include optimal times to arise and sleep, breathing routines, elimination, bath, massage, exercise, diet, study, travel, and other pursuits. Ayurveda recommends healthy and harmonious lifestyle routines to sustain and maintain the synchronicity of the circadian rhythm that results in good health, vitality and immunity, all of which delay biological aging. Modern medicine recognizes these internal clocks as the circadian rhythms that are intimately tied to our health, well-being and the aging process. In humans, these biological clocks or circadian rhythms anticipate various activities throughout the day, from waking up to sleeping and eating. In addition, these clocks regulate hormone levels, body temperature, and metabolism.

AYURVEDIC DIETETICS:

Aahar (food) is one among the Trayopastambha, Nidra and Brahmacharya being other two.^{xvi} The thing which we intake through mouth to sustain the life is called as Ahara. Food and Nutrition is the basic need of every individual. Dietetics is the science that deals with the study of nutrition in health and disease (i.e. planning of meals for the healthy and the sick).^{xvii} For Ahara, Maharshi Kashyapa has given the name Mahabhaishajya, means supreme medicine. Food is responsible for health and disease, happiness and misery.^{xviii} The principles of Ashtaaharavidhivisheshayatana i.e. eight rules of dietary processing described by Charaka and Dvadasha asana vichara (12 – rules of consuming food) should be popularized among the masses to improve the dietary habit of the people. Similarly, the concept of viruddhahara (dietary incompatibility) and its 18– fold approach need to be observed in dietary care and the idea should be brought to the awareness of the masses. Ayurveda describes Nitya sevaniyadravyas. Properties of Nitya Sevaniya Ahara Dravyas^{xix}:

- a. Shashtika is a kind of rice which grows very quickly to maturity, within sixty

days (meaning of shashtika) and is therefore light on digestion. It is rich in carbohydrates, potassium.

b. Shali is a variety of rice, sometimes translated as red rice. It is rich in carbohydrates.

1. Mudga is a pulse called green gram similar to lentils which is light in digestion. It is rich in proteins, phosphorus, calcium, potassium.

2. Saindhava is called rock salt, it is powdery, light pink in colour. Its composition is said to include more of potassium than of sodium. This salt is cooling unlike other types of salt.

3. Amalaki is a type of fruit indigenous to India. It is rejuvenative, antioxidant, pacifying to all Doshas but Pitta, especially. It is rich in vitamin C and calcium.

4. Yava (barley) is also light, laxative, and diuretic and is especially useful for removing excess Kapha from the body. It is rich in carbohydrates, Vit. B1, B2, phosphorus.

5. Rain water is the translation in the text but because of environmental pollution a better meaning would be pure water. It's interesting to note that the source of water determines its Doshic qualities. Well water is heavy while moving water is lighter. Hot water reduces Kapha and body weight while cold water increases Kapha and body weight. It maintains the fluid in the body and minerals.

6. Paya (milk) that comes fresh from cow's udder is best among milks. It is more easily digested if brought to a boil then drunk warm. Milk is light in digestion, nourishing the body and Tri-Doshic. It is rich in fat, protein, vitamins and minerals.

7. Ghee is clarified butter and is best among oils for pacifying Pitta. It also pacifies Vata and because it increases the digestive fire and is digested easily it does not aggravate Kapha. Rich in fat.

8. Honey pacifies Kapha predominantly and Pitta secondarily. Honey must be raw, uncooked and never used in foods to be cooked. The lighter the colour means the less sharpness in it.

Diet containing cereals, vegetables, legumes and fruits should be given to the elderly. The diet should be regulated taking into account the habitat, season, age, etc. the diet should be balanced and the quantity should be according to one's digestive capacity.

Following points may be considered while planning/ advising dietary and other life style regimenxx.

1. The food should be tasty, nutritious, fresh and good in appearance.
2. Too spicy, salty and pungent food should be avoided.
3. It should neither be very hot nor very cold.
4. Liquid intake should be more frequent and in small amount.
5. Heavy food can be prescribed in a limited quantity.
6. Heavy food should not be given at night. The proper time. for night meals is two to three hours before going to bed after dinner, it is better to advice for a short walk.
7. Heavy physical work should be avoided after meals.
8. Mind should be peaceful while eating.
9. Eating only whenever hungry and avoidance of over eating.
10. Inclusion of sufficient amount of vegetables and fruits in diet.
11. Daily intake of vegetable soup and fruit juices.
12. Milk and ghee are the (agry-aushadha) drug of choice of vardhakya (senility). Hence their daily usage is advisablexxi.

Patient with hyperlipidaemia, ischemic heart disease, obesity these use in

moderate quantity is essential.

Concept of Rasayana:

Rasayana has broad meaning indicating qualitative and quantitative improvement of dhatu (tissues). Vayasthapana are specialized rasayana drugs that reverse degenerative changes, increase life span with quality health.xxii Rasayana signifies not a single drug or medication, rather refers to a rejuvenate regimen which of course uses rejuvenate remedies or drugs, dietetics and overall healthy life-style and positive psychosocial conduct. Ayurveda the science of life has observed ageing as a graceful phenomenon. Old age and its health problems were of great concern even for Acharyas during Vedic period. That was the reason why Jara Chikitsa has been mentioned as one independent Anga in Ashtanga Ayurveda. It implies delaying the process of ageing, prevention and managing the problems of old age by using of Rasayana drugs. This Jara or Rasayanachikitsa has widely emphasized promoting, protecting and extending youthful state and thus curtailing ageing process. It is therapy which gives longevity, enhances memory and intellect, maintains good health and restores youth, complexion, body colour, voice. It also gives strength to the physical and to the sense and cognitive organs.

Age specific Rasayana:

Decades	Years	Restorative Rasayana
1 st	1-10	Vacha, Gambhari
2 nd	11-20	Amalaki, Bala
3 rd	21-30	Haridra, Kumari, Lauha
4 th	31-40	Shankhapushpi, Brahmi
5 th	41-50	Kumari, Somaraji
6 th	51-60	Triphala, Jyotishmati
7 th	61-70	Kapikacchu, Ashwagandha
8 th	71-80	Amalaki, Praval, Bala
9 th	81-90	Brahmi, Mandukparni
10 th	91-100	Amalaki, Bala

Some Rasayanas are also age-specific and can be prescribed for particular age groups. As stated, earlier Ayurveda describes the qualities of each decade of the 100 years of estimated life-span. During the process of aging an individual goes on losing these age-related bio-qualities and if this loss is compensated by age specific Rasayana in specific age groups the rate of aging can be retarded to some extent and one can promote longevity. The decade-wise bio-losses described by Sarangdhara and Vagbhatta are as mentioned earlier and this table suggested Rasayana remedies to compensate the losses

Panchakarma Therapy^{xxiii,xxiv}

Panchakarma is a radical approach of Ayurveda designed to cleanse the micro- channels of the body, thus enabling better nutritional status with rejuvenative activity. It is beneficial for preventive, promotive and rehabilitative health purposes and management of various systemic diseases. Panchakarma help to bring about homeostasis of body humors, eliminate disease causing complexes from the body check the recurrence and progression of disease. This is effective in managing autoimmune, neurological, psychiatric and musculoskeletal diseases of chronic and metabolic origin finds a pivotal place in geriatric health care. In geriatric care, selective Panchakarma therapy like Abhyanga (medicated massage), Sarvangadhara (Kayaseka), NadiSweda, Pinda sweda, Shirodhara, Bringhamavasti, Matravasti etc. may be advised to counter the degenerative processes, thereby improving the quality of life.

CONCLUSION:

Jara is one of the inevitable stages of human life and can be experienced by everybody. Jara is the stage of an individual when one feels decline in the physical, physiological as well as mental activity. Ayurveda, being fundamentally the science of life and longevity, contains a measure of geriatric health care. It deliberates on the science and philosophy of life and longevity with the goal of healthy aging and long life to achieve the all pleasures of life. Geriatrics is emerging as a challenging specialty, because of ever-growing population of aged people all over the world. Acharyas mentioned a branch called

Rasayana tantra as one amongst ashtangas of Ayurveda to maintain the normal life span of aged people. Especially the Ayurvedic system of medicine offers an excellent line of management for these i.e aging problems, through Rasayana therapy which compensates the age-related biological losses in the mind –body system and affords rejuvenation effect to a notable extent. The present paper brings a clear picture about the process of ageing in ayurvedic perspective and also suggests the importance of Panchakarma, Rasayana therapy, Ideal life-style regimen, and diet are the main tools to maintain physical, Physiological and psychological restoration. In nutshell we can say that by combining Rasayana therapy, wholesome diet, life style changes e.g. Dinacharya etc and time to time panchakarma are likely to develop an effective package for geriatric care today for global use.

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ROLE OF AYURVEDA IN GERIATRIC HEALTH CARE

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ABSTRACT

Ageing is a multidimensional process of physical, physiological and psychological degenerative change. The number of elderly population is increasing without limits and it is the challenge of the era to limit the disabilities of the elderly. Modern medicine has evolved a separate branch for the cure of illnesses of the aged called as geriatric medicine. It focusses mainly on the health care problems of the elderly. Ayurveda, has a broad spectrum of preventive measures for combating the ageing process. A healthy and successful ageing is what everyone desires. It can be brought about by developing a safe and cost-effective protocol for geriatric care on the basis of Ayurvedic life-style management, balanced geriatric diet, Rasayana therapy and Panchakarma.

Keywords: Jara, Geriatrics, Panchakarma, Rasayana

INTRODUCTION

Ageing is a general response that produces observable changes in structure and function leading to increased vulnerability and decreased viability to environmental stress and disease¹. Living longer has been a goal of mankind since antiquity and ancient scholars working in the area of health have concentrated on the measures for promotion of longevity. Ayurveda, the Indian traditional holistic health science has got the potential for prevention of diseases by promotion of health and management of diseases occurring in old age. Rasayana, a unique branch of Ayurveda deals with the health problems of the aged and measures to delay ageing and to minimize the intensity of problems occurring in this degenerative phase of one's life. Panchakarma is a radical approach of Ayurveda designed to cleanse the srotas of the body. It is beneficial for preventive, promotive and

rehabilitative health purposes and management of various systemic diseases.

Problem statement

Demographically India is the second largest country in the world with the largest number of aged persons (60+ years) 2. According to an estimation, India currently has 75 million persons over 65 years of age-coming to around 6.7% of the population- a gigantic leap from 3.4% in 1998. For the year 2010 the estimates are 8% of total population were above the age of 60 years and is likely to rise to 19% by 2050³. The challenge in the 21st century is to delay the onset of disability and ensure optimal quality of life for older people. A major component of the burden of illness for the elderly derives from prevalent chronic disease. From the morbidity point of view, at least 50% of the elderly in India have chronic diseases⁴. According to Government of India statistics, cardiovascular disorders account for one-third of elderly mortality. Respiratory disorders account for 10% mortality while infections including tuberculosis account for another 10%. Neoplasm accounts for 6% and accidents, poisoning, and violence constitute less than 4% of elderly mortality with more or less similar rates for nutritional, metabolic, gastrointestinal, and genito-urinary infections⁵.

Geriatric health care

A healthy and successful ageing is what everyone desires. Successful aging refers to the ability to age well. This encompasses good physical and mental functioning, life satisfaction, social functioning and social support. Successful aging has been associated with a positive psychological stance in later years, as well as general well-being and happiness⁶. Geriatric health care approach has two aspects: measures for the promotion of health and longevity and management of diseases of old age. Modern medicine has evolved a separate branch for geriatric care called geriatric medicine. The medical field has been able to manage the geriatric disorders, but they failed in the point of promotion of a healthy and successful ageing. Ayurveda is notably strong in this aspect and it has rich potential to promote health of the elderly, besides the scope of rejuvenation and promotion of longevity.

Geriatric nutrition

As a result of reduced basal metabolism and physical activity, the calorie requirements are about 25% less than those of normal individuals doing light work.

Proteins:- due to decreased appetite and poor digestive capacity, old people are likely to consume less proteins and suffer from protein deficiency. The daily protein intake should be atleast 1.0 to 1.4 g per kg body weight.

Fats:-since fat is a concentrated source of energy, the diet should contain atleast about 50gm fat. Half this quantity is in the form of vegetable oils rich in essential fatty acids.

Minerals:-calcium intake should not be less than 0.5gm and the iron intake 20gm. Since even, mild anaemia affects the health of older people due to less efficient circulation of blood, iron intake should be adequate to prevent anaemia.

Vitamins:-mild deficiencies of several vitamins occur frequently among older people. It is therefore essential to ensure adequate intakes of all essential vitamins. It is essential to include 400IU of Vitamin D as it will help in the absorption of calcium and to prevent osteoporosis.

Water:-the importance of adequate fluid intake so as to maintain the volume of urine excreted at a minimum of 1.5 litres is not generally recognised. Water can be consumed as such or in the form of butter milk, fruit juices, porridge, soup etc during summer season.

Roughage:-adequate intake of soft unavailable carbohydrates in the form of tender vegetables and fruits should be ensured to avoid constipation. The senile intestinal mucosa does not tolerate fibre from mature vegetables and bran of cereals.⁷

Modification of diet during old age⁸

Dietary modification	Reason
Food must be soft, easily chewable	Problem of dentition, fallen teeth or dentures
Food should be easily digestible	Decreased production of digestive enzymes
Restricted fat in the diet, inclusion of PUFA	Susceptible to heart disease

Food rich in fibre should be given	To prevent constipation and cholesterol level. To prevent colon cancer
Coffee, cola and tea should be restricted	May result in insomnia due to over stimulation
Calcium rich foods like milk should be given	To compensate the bone loss and reduce the incidence of osteoporosis
Green leafy vegetables can be given liberally	Source of nutrients like carotene, calcium, iron, riboflavin, folic acid and vitamin C besides supplying fibre, rich in anti-oxidants
Food of the elderly should consist of familiar foods. New foods are difficult to accept	Unfamiliar or changes in the food pattern may lead to psychological problems like depression.
Clear soup at the beginning of the meal	Aids digestion
Small and frequent meals instead of three heavy ones	Favours more complete digestion and free from distress
A glass of hot milk just before going to bed	May induce sleep
Heavy meal at noon and light evening meal	Sleep is less likely to be disturbed
Too much sweets with lot of fats and sugar should be avoided.	Too much of sugar may cause fermentation, discomfort due to indigestion and cause tooth ache and increase cholesterol level. May lead to obesity.
Plenty of fluid	To prevent dehydration and constipation

Panchakarma in geriatric practice

Panchakarma therapy is the therapeutic technology of samsodhana karma which forms the most fundamental component of Ayurvedic treatment. Certain procedures of classical panchakarma such as vamana are of drastic nature therefore ordinarily they are contraindicated in elderly persons. However, many procedures may be modified to be administered in elderly persons to achieve desired results. Several intermediary palliative measures like Abhyanga, Sveda, Pinda Sveda, Kaya Seka, shirovasti and shirodhara are very useful in elderly persons too for imparting physical fitness and rehabilitative effect.

The purvakarma like dipana, pachana, snehana and swedana can be easily administered. One can take a little precaution to minimise the dose of internal snehana. External snehana and abhyanga are specially indicated in elderly patients. Vamana after 60 years of age should be administered with great precaution and after careful monitoring of the general health and accompanying diseases. Vamana should not be administered in elderly person if he is suffering from hypertension, ischaemic heart disease, peptic ulcer, cirrhosis of liver, pulmonary tuberculosis or any major lung disease, intracranial tumour, glaucoma etc. Virechana especially of mridu variety is best suited to the elderly patients. Basti is specially indicated. Matrabasti is a harmless standard snehabasti which can be used as a routine measure without complications in disease of vata. It requires less amount of fatty substances digestible within 6 hours. Pratimarshanasya can be done at any age from birth to death and it provides all the benefits of basti. Besides above mentioned classical Panchakarma procedures, a number of Keraliya traditional practices such as dhara karma, Pinda Sveda, Kaya Seka, Anna Lepa, shiroLepa or shirovasti are very useful in geriatric care. The Keraliya practices are very popular in view of their efficiency and safety because of being non-invasive.

Panchakarma therapy in the elderly has two fold objectives:

1. As a therapy for rejuvenation to retard aging i.e. to ward off the effects of aging for healthy ageing
2. as an adjunct in the treatment of diseases of the elderly

An apparently normal elderly person should undergo periodical panchakarma therapy followed by rasayanainorder to promote his overall health and to avert the effect of ageing viz, muscular weakness, muscular atrophy, wrinkling of skin, greying of hairs, loss of vision, hearing and other senses, psychomotor control and coordination, memory and cognition etc.

The common diseases of the elderly are benign enlargement of prostate, osteoarthritis, hypertension and IHD, diabetes, chronic bronchitis, Parkinson's disease, Alzheimer's disease, senile dementia, motor neuron disease, cancer and dysfunction of sensory organs

and locomotor system. Most of these problems are of degenerative nature and treatment has to be restorative, rejuvenative and rehabilitative.

The elderly patients afflicted with degenerative locomotor disorders like myopathies and osteoarthritis are to be treated with abhyanga and sweda in general. In simpler cases, abhyanga and nadisweda with dashamulabashpa for 2-3 weeks is beneficial. In case of single big joint involvements one can try local annalepa therapy or nadisweda following abhyanga. All such patients must take simultaneous rasayana therapy with necessary herbomineral supplements⁹.

Rasayana therapy

The word Rasayana (rasa + ayana) refers to acquisition, movement or circulation of nutrition needed to provide nourishment to the body tissues and tissue perfusion. It is considered conducive to the promotion of qualities of dhatus. The improved nutritional status and the better qualities of dhatus lead to a series of secondary attributes of rasayana such as longevity, immunity against diseases, improved mental and intellectual competence etc. Rasayana agent promotes nutrition through the following three modes:

1. By direct enrichment of the nutritional quality of rasa i.e. nutrient plasma. A large number of rasayana agents are directly added to the pool of nutrition and in turn help in improved tissue nourishment leading to subsequent rasayana effects. Satavari, dugdha, ghrita etc are few examples of rasayana acting at the level of rasa.
2. By promoting nutrition through improving the agnivyapara i.e. digestion and metabolism. Several rasayana drugs are known to promote digestion of food and vitalise the metabolic activity resulting in turn to improved nutritional status at the level of dhatus. Bhallataka and Pippali are examples of rasayana acting at the level of agni.
3. By promoting the competence of srotas i.e. the micro-circulatory channels in the body leading the better bio-availability of nutrients to the tissues and improved tissue perfusion¹¹.

Biological effect of rasayana

Summarising various studies, there is clinching evidence on the multi- dimensional effect of herbs with rasayana attributes.

- a) Anabolic effects- Regular administration of herbs like gambhari (*Gmelina arborea*) was found to improve nitrogen balance and promote tissue building.
- b) Anti-stress, adaptogenic effects- pharmacological investigations on drugs like aswagandha and shilajatu point to this unique biological effect of rasayana drugs. A rasayana drug can neutralize the negative effects of stress on physiology and restore homeostasis. This effect is termed as anti-stress effect. A long term administration of such drugs may enhance one's own tolerance levels and helps to cope with stress better. This is termed as adaptogenic effect.
- c) Immunomodulatory effect- Available evidences show that, rasayana drugs can be used to modulate the immune functions. They may work to enhance the immune function and build you firm deep within, or they might pacify an angry immunity cell to be in limits on the other.
- d) Nootropic effects- this refers to a specified group of drugs which work upon the intellect, the "medha". Some of the herbs have effects mainly on memory and learning abilities. Brahmi (*Bacopa monieri*), Shankapushpi (*Convolvulus pluricaulis*) etc falls in this category.
- e) Anti-oxidant effect- rasayana drugs are now discovered to help the physiology in overcoming oxidative injury. Rasayana drug enhances the natural enzymatic defence mechanism of the body.
- f) Anti-aging effects- neuro transmitters such as norepinephrine or dopamine (DHEA) are released in stress conditions. Repeated stress on every cell causes ageing process. Rasayana drugs could influence the secretion of hormone DHEA the deficiency of which is implicated in ageing¹².

Conclusion

Due to increased elderly population, the prevalence of Geriatric specific disease conditions

is also increasing. This is creating a big burden to the health care providers and the government. Hence development of new geriatric health care management strategies is the need of the hour. The cause of all jarajanyavyadhi is dhatu kshaya which ultimately leads to the degenerative changes in the body. So, the principle line of management should be to reduce the dhatu kshaya and to cope up with the degenerative changes. Ayurveda offers a wide range of therapies i.e. rasayana, panchakarma, lifestyle changes, diet modification etc for the promotion of health of elderly. The rejuvenative and rehabilitative effects of rasayana and panchakarma can be utilised in the field of geriatric health care. It is the duty of the young health care professionals to explore the Ayurveda classics and to create awareness about the strength of Ayurveda in geriatric care.

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YOGA FOR HEALTHY AGEING

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ABSTRACT

Patanjali advocated ashtanga yoga for all-round development of human beings through which one can attain mental purity and harmony. Yoga is an excellent anti-aging tool, capable of relieving symptoms. The science of Yoga works at levels much more subtle and deeper than just physical body level, removes stress from the system, which is one of the causes for many lifestyle disorders. Yoga acts on Shatchakra level and give the best result in improvement of I.Q. Yoga can effectively prevent and retard the progression of cardiovascular & metabolic disorders. Pranayama in bronchial asthma of mild to moderate severity improves the lung function. Yoga has positive effects on the quality of life especially depression in elderly breast cancer patients. Deep breath during Pranayama, tidal volume increases and lungs get more oxygen. It also improves flexibility, muscle strength of accessory breathing muscles so as to facilitate exhalation more effectively. Yoga is beneficial for ligament troubles in several methods: First, yoga facilitates you reinforce the muscle mass around your joints. In case of yoga, Psycho-physiological benefits are highly appreciated. School Students revealed that students perceived the benefits of yoga as increased self-regulation, mindfulness. Advantage of Yoga like "non-attachment to the fruits of labor" (vairagya), equal mindedness in victory and failure" (samabhava) will help the person to be free from anxiety and expectation.

INTRODUCTION

Patanjali advocated Ashtanga yoga for all-round development of human beings through which one can attain mental purity and harmony.

Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana, Samadhi are the 8 steps of Ashtanga yoga.

Yoga enhances healing processes & facilitates overall holistic development of mind, body, emotions.

Medicines acts as a secondary prevention and curing of disease, diet and Yoga acts in Primary prevention.

As we age, we'll come across common physiological modifications in elasticity, stability, pace , patience, physical goals , specific health troubles become as we age.

If Ayurveda and yoga go hand in hand, the success will be definite. While age does affect a person in various ways, but there are a lot of ways, one can do to limit its impact on their body.

Yoga is an excellent anti-aging tool, capable of relieving symptoms and in some cases improving medical outcomes.

It doesn't matter where we're starting from or how old we are—sthilikaranavyayama and Yoga can help

PRACTICES OF YOGA INCLUDE:

Now, Yoga is accepted by the Global Community to be very effective in managing 'Life Style Disorders'. The science of Yoga works at levels much more subtle and deeper than just physical body level, removes stress from the system, which is one of the causes for many lifestyle disorders.

Examples-

Yogic practices such as ShankaPrakshalana kriya, Suryanamaskara and specific asanas such as Bujangasana, Noukasana work better in Dyslipidaemia.

Kriyas such as Trataka, Vamana dhouti.

Pranayama such as Nadisuddi, Sitali, Bhrahmari.

Dyana such as Nadanusandhana, Omkarameditation, Silence.

- For Garbhini, In the third trimester, ArdhaTitali Asana, Poorna Titali Asana, Kati Chakrasana, Parvatasana, Yoganidra are beneficial. The end result of following Garbhiniparicharya is...sukhinasukhenkalebalavatiprasoota which helps in strengthening weak muscles , helps in slowing down the ageing process of Musculo-skeletal system
- In Soothikavastha the dominated dosha will be vata. Practicing gentle yoga & pranayama helps in speeding up recovery, relieving lower back pain and comforting the strained muscles of the shoulders, arms, back, hip and legs. It also improve the posture, also helps to improve psychological status of the woman.
- Practising yogic exercises like pavanamuktasanasankasana, bhujangasa help in pacification of vikruthavata and helps to maintain the normalcy of doshas in prasooti.
- Yoga nidra in Pre menstrual syndrome symptoms & Padmasana, Paschimotthanasana, Badhakonasana, Bhujangasana, Shalabhasana and Shavasana help stretching and opening up the pelvic area, channelize the positive energy and bring about balance in the hormonal imbalance, HPO axis & menstrual cycles.
- Hence this highlights the role of Yoga and Yogasanas in PCOD ,i.e to achieve proper healthy ageing in females.
- In addition to yoga in well established endocrine HPO axis, yoga also helps in thyroid disorders that is at the level of HPT axis. As Nadisudhi pranayama activates both the components of the autonomic & para sympathetic nervous system
- Yogic Practices such as Dhyana, Pranayama, Tratakas are beneficial in improving the status of Memory and I.Q. level. Significant improvement in cognitive tests like Color Cancellation test Color Trail making test, Expressive speech test (EST), Swoden cube memory test, Rey's auditory verbal learning test substantiates the effect of Yoga for improving cognition and affection among middle aged and geriatric group

- Various yogasanas such as ardhamerudandasana, ardhasalabhasana, pavanamukthasana, vajrasana, ardachakrasana, ardhakaticakrasana, paschimothanasana stimulate the pancreas and increased the production of insulin hormone there by reducing the sugar level in blood and urine. [DM-2]
- Yoga acts on Shatchakra level and give the best result in improvement of I.Q. Hence improving the memory and prevents Manasikavikaras in Geriatric age group
- Yoga can effectively prevent and retard the progression of cardiovascular & metabolic disorders. Pranayama in bronchial asthma of mild to moderate severity improves the lung function.
- Yoga has positive effects on the quality of life especially depression in elderly breast cancer patients.
- In case of grahani ,Paschimottasana,ustrasana are found very effective
- Pranayama has 3 components namely controlled inhalation (puraka), controlled exhalation (rechaka) and holding of the breath (kumbaka).
- Deep breath during Pranayama, tidal volume increases and lungs get more oxygen. The partial pressure of oxygen in lungs increases when inhale deeply after exhaling. When the partial pressure increases, the cells take in more oxygen.
- By practice of selected asanas and pranayama helps to drain excess mucous from airway passage so as to help the exhalation to be in smoother way.
- It also improves flexibility, muscle strength of accessory breathing muscles so as to facilitate exhalation more effectively. Long slow exhalation not only helps to get the stale air out but also improves inhalation.
- Yogic practices like following of Yama and Niyama, doing specific asana and pranayama regularly, practice of different bandhas and mudras; all have a therapeutic effect on most of the common sexual problems.

BENEFITS

Yoga is best because of its capable impact on our bodily skeleton & enables to build muscle frame, consciousness, and higher stability.

Current studies suggest everyday yoga exercise can aid in decreasing joint ache and help in enhancing joint flexibility.

A regular yoga exercise may lessen infection.

Yoga assist to construct core power and flexibility to spine, and these things can pass a long way in the reduction of pain.

Any new movement or exercising which we add for our every day existence will bring about a more potent core; as we pass our body frame in new ways, our major stabilizing muscle groups need to adapt. Yoga offers precise poses for core energy, too.

YOGA POSES ENHANCE MOBILITY

Yoga is beneficial for ligament troubles in several methods:

Yoga facilitates to reinforce the muscle mass around the joints. Our knees, for instance, can be higher blanketed if our glutes, hamstrings, and quadriceps are sturdy.

In case if we don't use it, we lose it! Gentle, everyday stretching can help preserve our body's synovial fluid and regulate lymphatic circulation.

Moreover, a yoga exercise often has pranayama, or breath practices.

Focusing on inhaling and exhaling may be beneficial when we have a continual respiratory problem, as Yoga can doubtlessly help to strengthen the muscular tissues of respiratory system [as in COPD]

Time spent in conscious respiration also can help us to have got more attention of our breath;

Intentional, sluggish breathing can foster a feel of relaxation and calm.

A slow yoga and stretching routine before sleep helps in mental calmness and quietness.

In reality, research show that yoga can help to doze off faster and stay asleep longer.

Yoga can be effective as a pain-management device for painful illnesses like rheumatoid arthritis and fibromyalgia.

Considering that yoga is so adaptable, it may be practiced in a chair or in mattress. It can also be a helpful meditative device for the ones identified with a terminal illness.

DISCUSSION

Physiological perspective of modern day exercises and gyming activates sympathetic nervous system & the resultant glandular overload. Excessive chemicals released by the glands [like cortisol] under pressure are highly destructive to the brain leading to debilitation of nervous system.

But in case of yoga, Psycho-physiological benefits are highly appreciated. Yoga is the essential need of today and culture of tomorrow. School Students revealed that students perceived the benefits of yoga as increased self-regulation, mindfulness.

Yoga promotes calmness, relaxes mind, keeps parasympathetic state dominant thereby promoting healing and rejuvenation.

Steadiness (Stiram), one-pointedness (Ekagrata) is developed leading to healthy mind & emotions promoting a healthy competitive spirit with others.

Better leadership & team building is seen.

Physically, Yoga practices help in overall development of all muscle groups in contrast to gyming which focuses on development of only one part of the body and musculature.

CONCLUSION

Advantage of Yoga like "non-attachment to the fruits of labor" (vairagya), equal mindedness in victory and failure" (samabhava) will help the person to be free from anxiety and expectation. Giving your best and the rest (nishikama) is the doctrine of Bhagavad Gita which ultimately helps attain "Quiet mind" and "controlled body" leading to stillness of mind and skill in action

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ROLE OF YOGA IN SENILE DEPRESSION

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As a normal part of the human body's functioning cells age, they function less well and eventually, old cells must die. Humans have long quested for an elixir that would stop this innate process. The reason for this desire is because that ageing is associated with painful moments. Senescence of all the living cells are bound to happen with a certain limit of pain involved. Among all the complaints of elderly it is the psychological disturbances that are the most encountered. Degenerative changes in the neurons present in both physical and cognitive symptoms. In the present era geriatric practise recommends many lifestyle modifications which help in reducing the risks pertaining to health. Out of them regular practice of yoga rates as the best. Patanjali yoga sutra or the Yoga Darshana is one of the unique contributions to mankind from Indian philosophical school which focuses on a systemic calibration of human body and mind to lead a happy life and to attain the ultimate stage of life at ease. The regular practise of Asana, Pranayama helps to maintain physiological system on the other hand the systematic induction to Dharana, Dhyana and Samadhi would prove beneficial in counteracting the psychological ailments. This paper is an attempt to derive some fine conclusions on the effects of yoga practises helping healthy aging.

Keywords; Geriatric, psychological, Yoga, Dhyana

Introduction

The process of Human aging is accompanied by, physiological and psychological changes leading to Senescence the decline of biological functions and of the ability to adapt to metabolic stress. The vulnerability to disease increases rapidly in the

advancement of age which is why comparatively young people tend to recover faster than elderly during an episode of infection. The genes of old cells are programmed to a process that, when triggered, results in death of the cell. This programmed death is called apoptosis. The aging of a cell is one trigger. Old cells must die to make room for new cells. Other triggers include an excess number of cells and possibly damage to a cell.

Old cells also die because they can divide only a limited number of times. This limit is programmed by genes. When a cell can no longer divide, it grows larger, exists for a while, then dies. The mechanism that limits cell division involves a structure called a telomere. Telomeres are used to move the cell's genetic material in preparation for cell division. Every time a cell divides, the telomeres shorten a bit. Eventually, the telomeres become so short that the cell can no longer divide. When a cell stops dividing, it is called senescence.

Sometimes damage to a cell directly causes its death. Cells may be damaged by harmful substances, such as radiation, sunlight, and chemotherapy drugs. Cells may also be damaged by certain by-products of their own normal activities. These by-products, called free radicals, are given off when cells produce energy. A Single case report from a prospective study with pre-post design assessing the level of various markers of cellular aging showed that adopting yoga/meditation-based lifestyle modification causes reversal of markers of aging, mainly oxidative stress, telomerase activity, and oxidative DNA damage. This may not only delay aging and prolong a youthful healthy life but also delay or prevent onset of several lifestyle-related diseases, of which oxidative stress and inflammation are the chief cause. This report suggests this simple lifestyle intervention may be therapeutic for oxidative DNA damage and oxidative stress.

Effect of aging of the body systems

Often, the first signs of aging involve the musculoskeletal system. The eyes, followed by the ears, begin to change early in mid-life. Most internal functions also

decline with aging. Most bodily functions peak shortly before age 30 and then begin a gradual but continuous decline.

However, even with this decline, most functions remain adequate because most organs start with considerably more functional capacity than the body needs (functional reserve). For example, if half the liver is destroyed, the remaining tissue is more than enough to maintain normal function. Thus, disorders, rather than normal aging, usually account for most of the loss of function in old age.

Bones tend to become less dense. Moderate loss of bone density is termed osteopenia and severe loss of bone density (including occurrence of a fracture due to loss of bone density) is osteoporosis. With osteoporosis, bones become weaker and more likely to break. In women, loss of bone density speeds up after menopause because less estrogen is produced. Estrogen helps prevent too much bone from being broken down during the body's normal process of forming, breaking down, and re-forming bone.

The amount of muscle tissue (muscle mass) and muscle strength tend to decrease beginning around age 30 and continuing throughout life. Some of the decrease is caused by physical inactivity and decreasing levels of growth hormone and testosterone, which stimulate muscle development. Also, muscles cannot contract as quickly because more fast-contracting (fast-twitch) muscle fibers are lost than slow-contracting (slow-twitch) muscle fibers.

However, aging's effects reduce muscle mass and strength by no more than about 10 to 15% during an adult's lifetime. In the absence of disease, most of the loss beyond that 10 to 15% is preventable with regular exercise. More severe muscle loss (called sarcopenia, which literally means loss of flesh) results from disease or extreme inactivity, not from aging alone.

The skin tends to become thinner, less elastic, drier, and finely wrinkled. However, exposure to sunlight over the years greatly contributes to wrinkling and to making the skin rough and blotchy. People who have avoided exposure to sunlight often

look much younger than their age.

The heart and blood vessels become stiffer. The heart fills with blood more slowly. The stiffer arteries are less able to expand when more blood is pumped through them. Thus, blood pressure tends to increase.

The muscles used in breathing, the diaphragm and muscles between the ribs, tend to weaken. The number of air sacs (alveoli) and capillaries in the lungs decreases. Thus, slightly less oxygen is absorbed from air that is breathed in. The lungs become less elastic. In people who do not smoke or have a lung disorder, these changes do not affect ordinary daily activities, but these changes may make exercising more difficult. Breathing at high altitudes (where there is less oxygen) may also be harder.

Overall, the digestive system is less affected by aging than most other parts of the body. The muscles of the esophagus contract less forcefully, but movement of food through the esophagus is not affected. Food is emptied from the stomach slightly more slowly, and the stomach cannot hold as much food because it is less elastic. But in most people, these changes are too slight to be noticed.

The kidneys tend to become smaller because the number of cells decreases. Less blood flows through the kidneys, and at about age 30, they begin to filter blood less well. As years pass, they may remove waste products from the blood less well. They may excrete too much water and too little salt, making dehydration more likely. Nonetheless, they almost always function well enough to meet the body's needs

The number of nerve cells in the brain typically decreases. However, the brain can partly compensate for this loss in several ways:

- As cells are lost, new connections are made between the remaining nerve cells.
- New nerve cells may form in some areas of the brain, even during old age.
- The brain has more cells than it needs to do most activities—a characteristic

called redundancy.

Levels of the chemical substances involved in sending messages in the brain tend to decrease, but some increase. Nerve cells may lose some of their receptors for these chemical messages. Blood flow to the brain decreases. Because of these age-related changes, the brain may function slightly less well. Older people may react and do tasks somewhat more slowly, but given time, they do these things accurately. Some mental functions—such as vocabulary, short-term memory, the ability to learn new material, and the ability to recall words—may be subtly reduced after age 70.

After about age 60, the number of cells in the spinal cord begins to decrease. Usually, this change does not affect strength or sensation.

As people age, nerves may conduct signals more slowly. Usually, this change is so minimal that people do not notice it. Also, nerves may repair themselves more slowly and incompletely. Therefore, in older people with damaged nerves, sensation and strength may be decreased.

Aging and psychological disorders

WHO mental health of older adults December 2017 stated that Over 20% of adults aged 60 and above suffer from a mental or neurological disorder. The most common mental and neurological disorders in this age group are dementia and depression, which affect approximately 5% and 7% of the world's older population, respectively.

A review reported that the prevalence of depression among senior citizens in India varies between 8.9% and 62.16% in the community setting.

Older adults suffer from a mental and emotional disorder called geriatric depression.

Mindfulness makes yoga fundamentally different from non yoga exercise, even when similar physical movements are practiced.³⁹ A yoga class teaches a physical process (ie, feeling the sensation of the breath in the nostrils or standing completely

still), which is intended to teach a cognitive process (ie, controlling the thoughts and actions, and maintaining awareness in the present moment).

Exercise over yoga

Yoga is a great option because it does not require specialized equipment and can be done anywhere. arthritis, limited mobility, or other health issues, there is a modification for almost every yoga pose to accommodate your physical needs.

Whether it's at a yoga studio or community center or in your home, yoga is a great way to gently build your endurance while also fostering a mind-body connection.

Common yoga intervention found to be effective : -

Asanas

Asanas, the isometric passive stretching practices in Yoga are non-strenuous, non-fatiguing and can be performed comfortably even at an advanced age. Asanas like Mehruasana and Padahastasana help normalize blood pressure by resetting the baro-reflex sensitivity. Vajrasana, Sukhasana ,Paschimotanasana, Purvottanasana, Vakrasana, ArdhaMatsyendrasana, Navasana, Matsyasana, Makarasana ,Bhujangasana, Ardhashalabhasana , Eka Pada UttanasanaDwi Pada Uttanasana , Pavanamukthasana also have a tremendous effect on normalizing the various physiological functions. Yoga and Meditation, an integral part of our lifestyle, may hold the key to delay aging or aging gracefully, prevent onset of multifactorial complex lifestyle diseases, promote mental, physical, and reproductive health, and prolong youthful healthy life. The shortened muscles are stretched gradually and pain in joints is reduced thus relieving a general complaint found in the elderly. Asanas build up proper tone in the muscles while the function of the vital organs is also improved simultaneously.

Pranayama

Controlled breathing in Pranayama helps in adjusting the circulatory-respiratory complex of the body towards normal activity. Improvement in both cardinal and metabotropic biomarkers of cellular aging and longevity in the healthy population was observed after Yoga and Meditation based lifestyle intervention. Some of the practices recommended are Mukhabhastrika Pranayama, Chandranadi Pranayama, NadiShuddhi, Pranava Pranayama, Bhramari Pranayama, SukhaPurvaka Pranayama and the Savitri Pranayama. These practices improve the flow of the life force (Prana), open energy channels, thus harmonizing functions of the body-mind-emotion complex with increased awareness. It also calms and relaxes the mind, alleviates mood and creates healthy attitudes resulting in emotional stability. yoga can be used as an effective life-style modality to reduce oxidative stress and to enhance antioxidant defense in elderly with hypertension.

Dhyana

The practice of Dhyana (meditation), reduces the feeling of loneliness and gives peace of mind. Directing attention consciously to the different parts of the body during meditation helps increase the blood flow and channelize energy to those parts.

Results of a systematic review and meta-analysis showed that yoga improves multiple physical function and HRQoL (Health-related quality of life) outcomes in older adults not characterised by any specific disease or condition. Compared to inactive controls, small to moderate significant effects favouring yoga were found for balance, lower body flexibility, lower limb strength, depression, perceived mental health, perceived physical health, sleep quality, and vitality. When yoga was compared with active controls, significant small to moderate effects were also found for lower body strength, lower body flexibility and depression.

Discussion

This paper is focused on narrating the changes that take place in the human body

due to old age. The most common disease being senile depression. Study findings reported that elderly people are experiencing a lot of stress and strain. Severe long standing stress leads to depression and ultimately which in turn affects the quality of life. Severe stress and depression sometimes leads to suicidal ideas and or attempted or succeeded suicide. Yoga practice involves training on poses. The findings suggest that the impact is mediated through improvement in genomic stability, telomere metabolism, and balance of cellular oxidative stress, well-regulated stress and inflammatory responses, and increase in neuroplasticity and nutrition sensing. Maintaining telomere length through regulation of telomere metabolism contributes to genomic stability and reduction in telomere attrition (increase in telomere length and telomerase activity levels).

Conclusion

Yoga therapy may be the effective medicine for depression and it can be practiced in the residential setting without cost concern. Yoga therapy is not only a treatment for depression, it can be used for many physical and psychological disorders and also maintain and improve general health. Certain traditional yoga poses and breathing exercises may be contraindicated for certain chronic and acute conditions. For instance, individuals with osteoporosis of the spine should avoid spinal flexion in forward bends or any extreme spinal movement, as well as weight bearing inversions (such as shoulder stand or headstand) due to risk of spinal and cervical fracture. Individuals with glaucoma should avoid all inversions due to the increased ocular pressure in the pose.

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ROLE OF DIET IN OLD AGE

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Abstract :-

Food is the basic entity for substance and survival of all living beings . from the point of breast milk to being dependent on supplements during old age both the micro and macro nutrient play a vital role in human life.

A balanced diet comprise of equal distribution of all the basic factor of food the carbohydrates, fats, protein and vitamin, minerals. The absorption of their nutrients in the human body greatly differ during aging process.

An attempt is made here to analyze the basic constituents of nutrients which must be present in daily elderly diet. The focus on elderly disorder and their possible way of dietary management is emphasized

Ayurvedic balanced diet is one that not only nourishes the body, but also restores balance of tridosha. Vaya or age can be defined as the duration of time since birth to the present for a living individual. According to AcharyaCharaka, age has been divided in three parts i.e. Balyavastha (young age), Madhyamavastha (middle age)

and Jirnavastha (old age). After sixty years of age one is called 'old'. In old age there is progressive diminution of strength of sense organs, vigour, masculinity, bravery, power of understanding.

Key words :- old age, balanced diet, macro and micro nutrients

Introduction: -

“ Let food be your medicine and medicine be your food”, by Hippocrates. In science and human medicine, nutrition is the science or practice of consuming and utilizing foods. Geriatric dietary is combination of two words geriatric and dietary. The word geriatric means old age, and dietary means the customary amount and kind of food and drink taken by a person from day to day. Geriatric dietary means the customary amount and kind of food and drink taken by a person from day to day in old age. Geriatric dietary applies the nutrition principles to delay effects of aging and disease, to aid in the management of the physical, psychological, psychosocial changes commonly associated with growing old.

AGING FACTORS AFFECTING THE NUTRITIONAL STATUS OF THE ELDERLY:-

Physical:- Impairments affect nutritional status e.g. stroke arthritis.

Psychological: Life situational factors increase nutritional risk in elderly.

Pharmacological: unauthorized excess over the counter medication leads to nutrient deficiency, weight loss & malnutrition.

Physiological: Body mass decline leads to decreasing calorie needs.

Electrolytes imbalance leading to impaired kidney and neurological function, Overt deficiency leads to neurological/ behavioral impairment.

Why there is need for nutritional diet in old age :-

Good nutrition is important, no matter what your age. It gives you energy and can help you control your weight. It may also help prevent some disease, such as

osteoporosis, high blood pressure, heart disease, type 2 diabetes, and certain cancer. Some older people may be at risk of malnutrition from restricting their food intake and eat too few nutrients and kilojoules for their age.

NUTRIENT NEEDS FOR THE ELDERLY:-

Nutrients are substances in food that your body needs for energy, proper growth, body maintenance and functioning.

Recommended daily dosage of macro and micro nutrients in elderly:

Nutrients			
Energy	1300Kcal female 1800kcal in male		
Carbohydrate	300 g		
Proteins	60 g		
Fats	35 g		
Vitamins			
	RDA	Deficiency disorder in elderly	Source
Vit A	700-900micg	Metaplasia of salivary gland	Leafy vegetables and carrots
Vit B1	1.1-1.2mg	beriberi	Brown rice
Vit B9	400micg	Mouth ulcer	Leafy green vegetables and nuts
Vit B12	2.4micg	Anemia	Meat and eggs
Vit C	75-90micg	Delayed wound healing	Lemons, orange
Vit D	10 micg	Osteoporosis,	Fish eggs, exposure to sun rays
Vit K	1micg	Coagulopathy	Leafy green vegetable spinach
Vit E	15micg	Numbness ,Tingling sensation in finger , libidity	Nuts and seeds
Minerals			
Calcium	1200mg	Osteoporosis	banana
Iron	8mg	Anemia	Dates, leafy green vegetables.
Zinc	15mg	Memory loss	Leafy vegetable like drun stick
Magnesium	420mg	Muscular weakness	nuts

Importance of micro and macro nutrients in elderly :

There are nearly 138 million elderly persons in India in 2021, including 67 million men and 71 million women, according to the report. An increase of nearly 34 million elderly persons was seen in 2021 over the population census of 2011. This number is expected to increase by 56 million by 2031. Although the main focus of malnutrition in the elderly is on protein–energy undernutrition, especially in the

very old (75+ years), the elderly as a whole are also frequently micronutrient deficient.

These deficiencies may arise because coeliacs avoid fortified wheat products, or because of malabsorption of micronutrients (including Fe, Ca, folate, and fat-soluble vitamins) during the average time to diagnosis of 14 years.

The initial effects of micronutrient deficiencies may be relatively mild, diffuse and subclinical and hence easily missed. For example, deficiencies in B vitamins may result in mild cognitive decline; thiamine insufficiency increases levels of advanced glycation end-products (which are linked to the development of type 2 diabetes); deficiencies of vitamin B12 and folate raise homocysteine levels that are linked to CVD, and a lack of vitamin D changes immune function. Prevention of micronutrient deficiencies is key to successful management, a policy that would bring significant savings compared with the cost of treating diseases arising from malnutrition.

Most common geriatric disorders and role of diet :-

Type 2 DM , Hypertension , Heart diseases , Cancer , Respiratory Diseases , Alzheimer's Disease , Osteoporosis , Influenza and Pneumonia , Urine incontinency

Recommendations:-

1) Ideal diet for metabolic disorders:-

Type 2 diabetes:- Type 2 diabetes involves problems getting enough glucose into the cells. When the sugar can't get where it is supposed to be, it leads to elevated blood sugar levels in the bloodstream, which can lead to complications such as kidney, nerve, and eye damage, and cardiovascular disease.

- Fruits (apples, oranges, berries, melons, pears, peaches)
- Vegetables (like broccoli, cauliflower, spinach, cucumbers, zucchini)

- Whole grains (quinoa, couscous, oats, brown rice, farro)
- Legumes (beans, lentils, chickpeas)
- Nuts (almonds, walnuts, pistachios, macadamia nuts, cashews)
- Seeds (chia seeds, pumpkin seeds, flax seeds, hemp seeds)
- Protein-rich foods (skinless poultry, seafood, lean cuts of red meat, tofu, tempeh)
- Heart-healthy fats (olive oil, avocados, canola oil, sesame oil)
- Beverages (water, black coffee, unsweetened tea, vegetable juice)

Foods to avoid with type 2 diabetes:-

- High fat meat (fatty cuts of pork, beef, and lamb, poultry skin, dark meat chicken)
- Full-fat dairy (whole milk, butter, cheese, sour cream)
- Sweets (candy, cookies, baked goods, ice cream, desserts)
- Sugar-sweetened beverages (juice, soda, sweet tea, sports drinks)
- Sweeteners (table sugar, brown sugar, honey, maple syrup, molasses)
- Processed foods (chips, microwave popcorn, processed meat, convenience meals)
- Trans fats (vegetable shortening, fried foods, dairy-free coffee creamers, partially hydrogenated oil)

Foods that help in to control high blood pressure

Eat foods lower in fat, salt, and calories And Use less oil, butter, margarine, shortening, and salad dressings.

Foods not to eat for hypertention

Skim or 1% milk, yogurt, Greek yogurt (calcium-rich foods can lower blood pressure) ,Lean meat , Skinless turkey and chickEn , Low-salt, ready-to-eat cereals , Cooked hot cereal (not instant) , Low-fat and low-salt cheeses , Fruits (fresh, frozen, or canned without added salt) , Vegetables (fresh, frozen or canned, no added salt) , Richly colored green, orange, and red items are high in potassium and minerals that help lower blood pressure.

Foods to eat less for hypertention

Butter and margarine, Regular salad dressings, Fatty meats, Whole milk dairy products, Fried foods, Salted snacks, Canned soups, Fast foods, Deli meats.

Ideal diet for osteoporosis :-

Milk and Dairy Products: Milk has calcium in abundance and hence is extremely essential for healthy bones. Apart from milk, yogurt and cheese are also some dairy products which can provide enough vitamin C to the body to keep the bones healthy and is quite a good option to delay the progression of Osteoporosis. **Salmon:** Along with vitamin C, vitamin D is also an essential ingredient for healthy bones. Salmon is one food which has both of these vitamins in abundance and is considered a good food for osteoporosis. Along with salmon other types of food items which have rich amounts of vitamin C and D are tuna fish, mushrooms, and egg yolk.**Almonds:** Almonds are rich in minerals like magnesium and has lots of protein and calcium making it a good food to include in your osteoporosis diet.

Fortified Cereals: If an individual may not be able to incorporate milk or dairy products due to any reason then another option is to consume Fortified Cereals.

Green Peas: One must try and include green peas in their diet for osteoporosis.

Lettuce: Lettuce has calcium, boron, and Vitamin K1 which are all necessary for good bone health and making it a god food to fight osteoporosis.

Broccoli: Broccoli is extremely rich in Vitamin B6, calcium, magnesium, vitamin K, and folate which can keep the bone healthy for a long period of time and prevent

progression of osteoporosis.

Cabbage: Cabbage is yet another good food for Osteoporosis.

Green Tea: Green Tea has a lot of minerals and nutrients for a good bone health and hence is good for Osteoporosis.
Lemon: Lemon is quite rich in vitamin C help in prevention in osteoporosis.

Foods that are bad for Osteoporosis:-

Salty Snacks: There are many snacks available in the market which tends to have a lot of sodium and sugar in it which inhibit calcium absorption and hence are bad for bone health and hence should be avoided by people suffering from osteoporosis.

Colas: if you are a regular consumer of colas then it may not be good news for your overall bone health. Cola results in low bone density and hence an overall poor bone health and leads to osteoporosis.

Caffeinated Beverages: Caffeine when used excessively is bad for osteoporosis as well as overall health. Ingredients of caffeine tend to dent the production of calcium in the body which results in poor bone health.

Alcohol: Excessive amount of alcohol affects the bones .

A heart-healthy diet consists of:-

lots of fruits and vegetables , lean meats , skinless poultry , nuts, beans, and legumes , fish, , whole grains , plant-based oils, such as olive oil , low-fat dairy products , eggs (you can eat up to six per week)

These are all low in saturated fats and empty calories.

Foods to avoid

As a rule of thumb, you'll want to avoid excess sugar, salt, and unhealthy fats. This is especially true after experiencing a heart attack.

The following is a partial list of foods to limit or avoid:

fast food , fried food , boxed food , canned food (veggies and beans are the exceptions, as long as there's no added salt) , candy , chips, processed frozen meals , cookies and cakes , biscuits , ice cream , condiments such as mayonnaise, ketchup, and packaged dressing, red meat (enjoy in limited quantities only) , alcohol. , hydrogenated vegetable oils (these contain trans fats) , deli meat , pizza, burgers, and hot dogs.

Ayurvedic interpretation of Jara (old age) :-

Ayurveda has considered Jara or vdrdhiikya as a natural and inevitable process as well as a Swabhdvavyddhi (natural disease). This term has been used frequently in almost all the treatises of philosophy, mythology, art etc. It is depicted as an unwanted, distressful phase of life full of miseries. Etymologically, the term Jara comprises of Jr+ Ana+ Tap. The term Jara has been derived from the Sanskrit root, "Irisbvayohanow" which can be explained as "Vayahkrtaslatamamsadyavasthavisesa" which means the muscles and other tissues are loosened under the influence of aging. Totally this term indicates of the 'loss' in the period of life span.

Aging and Agni There are 13 types of Agni described in Ayurveda which represents the digestive and metabolic fire in the body. It consists of digestive juices, enzymes, hormones etc. participating in metabolism. Carakacikitsa 15/3states that Agni is responsible for Ayu.Varlfa, Bala, Svasthya, Utsdha, Upacaya, Prabha, Ojas, Agni, Prana etc. Based on the Bala, Agni in turn is of 4 types: Tiksnagni, Samagni, Visamiigni and Mandiigni. In old age, due to the predominance of \;(itadosa, visamagni prevails leading to Visamagnijanya ragas such as Ajeerna. Adhmiina, Sula, Udavarta, Atisiira, Antrakuja. Pravahana etc. In young adults, due to increased activity of Pitta, the digestive capacity will be at its peak. The optimum activity of Agni is responsible for growth and development of the body and maintains vitality and vigor of an individual. So, in old age, due to visamagni, defective metabolism occurs within the body leading to involuntary changes such as Ksaya and 'Sosa',

CONCEPT OF BALANCED DIET IN AYURVEDA

Ayurvedic balanced diet is one that not only nourishes the body, but also restores balance of tridosha, which is very much essential for maintaining health and mental upliftment. The constituents of a well balanced diet includes good and fine Shastik and Shali rice (carbohydrate), Mudga (green gram, plant protein), saindhava (rock salt), Amlaki (vitamin-C), Yava (Barley), Milk (contains protein, fat, carbohydrate, vitamin etc.), Sarpi (ghee, fat), JangalaMangsha (flesh of animals living in dry forest, animal protein), Honey and jala (sterile water).

Discussion

Vaya or age can be defined as the duration of time since birth to the present for a living individual. According to AcharyaCharaka, age has been divided in three parts i.e. Balyavastha (young age), Madhyamavastha (middle age) and Jirnavastha (old age). After sixty years of age one is called 'old'. In old age there is progressive diminution of strength of sense organs, vigour, masculinity, bravery, power of understanding. In present scenario due to improper dietary habits, defective life style, excessive stress and lack of exercise, the process of ageing starts very earlier. These factors produce various degenerative changes as well as metabolic disorders in our body. Jara, the old age is an unavoidable phase of life which ultimately ends into death. The etiology of jara is not clearly mentioned in Ayurveda .

Ayurvedic management of elderly people: Ayurveda advocates wonderful approach to delay Kala-jara (natural ageing) and to avoid Akala-jara (premature ageing).

Conclusion

A balanced diet as per age and underlying health condition in the elderly is essential. Most degenerative diseases are because of a deficiency of micro nutrients which when taken care by supplements will help in counteracting the possible geriatric diseases. Ayurveda comprises of a specialized branch that deals with ageing and has a rich source of drugs, formulations and various principles for anti ageing. RasayanaTantra literally means the science that deals with anti ageing, longevity of

life span, improving physical strength, cognition and memory i.e., improving the functions of brain and body as well as treating various diseases in old age. More the elderly are independent; more improvement in their quality of life is seen.

So, to improve the quality of life of the elderly, holistic approach in making them active and healthy is necessary. For this Ayurveda with all its medicines and principles related to lifestyle, food and psychological well being can be applied to benefit the senior citizens in Indian society.

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CHERISHING AGING THROUGH HEALTHY DIETARY ADVOCACIES

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Introduction:

Science and technology have been a boon to Mankind in many ways. Advancements in the field of medicine, have led to an increase in the life span leading to a rise in geriatric population worldwide and India has acquired the label of “An Aging Nation” with 7.7% of its population being more than 60 years old. While this becomes good news in health domain, yet it brings in a great responsibility to the Mankind – A responsibility to take suitable care of the elderly population. Age related changes in physiology, predispose the elderly to nutrient deficiencies

resulting in spectrum of diseases. Good Quality of Life (QoL) is the right of the elderly and the acceptable way to achieve this is through healthy nutrition. Supplementing adequate nutrients to cater the needs of the aging body is a primary requisite in planning geriatric diet.

Goals of Adequate Dietary Advocacies in Elderly:

Dietary recommendations in geriatric population should aim at improvement in indicators of nutritional status to optimize functional status and general well-being and promote positive nutritional status.

Dietary challenges in Geriatric population:

Nutritional deficiencies and Geriatric Problems are mutually dependent. Major health challenge in elderly population is undernutrition. Undernutrition acts as a primary factor to various diseases. Undernutrition occurs due to:

i. **Physiology:** Decline and change in various aspects of body physiology like decrease in the number of functioning cells, reduced cellular metabolism occur. Constant deterioration occurs in Nervous system, Skeletal System and Dentition, Gastrointestinal tract, Cardiovascular System and Renal System. Hence, decrease in lean body mass and redistribution of fat around internal organs lead to decreased caloric requirements. Change in taste (from medications, nutrient deficiencies, or taste bud atrophy) can also alter nutritional status.

ii. **Appetite:** Elderly consume fewer meals because of the declining appetite, problems with eating or swallowing, eating inadequate servings of nutrients and consuming fewer meals pose the risk of undernutrition to the elderly.

iii. **Dietary History:** Lack of access to groceries, difficulty in cooking due to disabilities, loneliness may cause loss of desire to cook and eat.

iv. **Chronic illness:** Chronic conditions can affect intake. Illness can hinder ability to prepare or ingest food, depression can cause decreased appetite, poor oral health (e.g., cavities, gum disease, and missing teeth) and xerostomia, or dry mouth,

impairs ability to lubricate, masticate, and swallow food and medications like antidepressants, antihypertensives, and bronchodilators can contribute to xerostomia (dry mouth).

v. Socio-economic status: Limited income may cause restriction in the number of meals eaten per day or dietary quality of meals eaten.

Dietary Advocacies for Geriatric population:

As a result of reduced basal metabolic rate & physical activity, the calorie, carbohydrate and fat consumption should be adjusted to keep the body weight constant in old people and to prevent DM, and CVDs. Consumption of adequate amount of protein rich food is necessary. Micronutrients like Vitamins, minerals and fibers should dominate the geriatric meal as they act as Rasayana (rejuvenators) by the virtue of antioxidants and thus help to maintain optimum health in elderly. Adequate fluids in the form of water and other healthy beverages also govern the geriatric health, hence should be consumed as dietary supplements. Frequent small portions of healthy recipes help to prevent the risks of DM and CVDs, thereby preventing further complications.

i. Calorie requirement generally reduces with age, because of changes in body composition, BMR and physical activity. Complex CHOs as whole grains, fruits and vegetables should be used more. ICMR recommends 1590 -2177 k Cal for sedentary elderly, and 1870 – 2565 kcals for moderate worker elderly.

ii. Stores of protein in skeletal muscle may be inadequate to meet body's needs, hence recommended protein intake is 1g/kg body wt/day.

iii. Fats like PUFA, MUFA and omega 3 fatty acids rich foods (soyabean oil, flax seeds, walnuts, safflower, and sunflower oil) should be involved in diet. Its consumption beyond 30-35% increases risk of CHD etc. Low intake causes inadequate intake of Vit E and affects palatability.

iv. Vitamins play a vital role in health maintenance. Vitamin A is required in

higher quantum in elderly due to possible role of provitamin, carotenoids in prevention of CA and CVD. Recommended allowance is 600mg/day for elderly. Inadequate intake of Vit D leads to bone loss and osteoporosis. WHO recommendation is – 10-15micro gram /day. Vitamin E prevents Alzheimer's, Cataract, CA and CHD.WHO recommends 100-400 IU/day. Vitamin C prevents senile cataract and CVDs. ICMR recommends 40mg/day. Vitamin B group maintains cognitive ability and neuromuscular ability as age advances.

v. Evidence of mineral malnutrition are various minor and serious health conditions such as energy loss, premature aging, diminished senses, and degenerative diseases like osteoporosis, heart disease, and cancer. In many cases, these could be prevented with proper mineral supplementation. Boron deficiency also accentuates vitamin D deficiency. It is required to convert vitamin D to its most active form within the kidneys. It also appears that boron is required to activate certain hormones including estrogen.

Calcium builds strong bones and healthy teeth. Aids nervous system, especially in impulse transmission. Helps in normalizing blood clotting action and metabolize our body's iron. It may help prevent bone loss associated with Osteoporosis. Calcium is more effective when combined with Vitamins A, C, & D, Iron, Magnesium, Manganese, Phosphorus, Potassium, Copper, Silica, Zinc, Boron, Selenium, Chromium, and many other trace minerals. Supplemental chromium may be used to treat some cases of adult-onset diabetes, to reduce insulin requirements of some diabetic children, and to relieve symptoms of hypoglycemia. Taken regularly in supplements greater than 1000 mcg, however, chromium inhibits insulin's activity and can be toxic. Cobalt helps form red blood cells and maintains nerve tissue. Consuming large amounts of inorganic cobalt stimulates growth of the thyroid gland. This in turn may lead to the overproduction of red blood cells or a disorder. Copper may also protect tissue from damage by free radicals, support the body's immune function, and contribute to preventing cancer. Most adults get enough copper from a normal, varied diet, although supplementing with a high-quality

multination supplement, insures adequate intake. Seafood and organ meats are the richest sources

Table 1: WHO Recommended Daily Nutrient Intake for Elderly

Nutrient	Recommended Quantum
Energy	1.4-1.8 multiples of BMR to maintain body weight at different levels of physical activity
Protein	0.9-1.1g/kg
Fat	30% in sedentary older persons and 35 % for active older persons. Saturated fats should not exceed 8%
Riboflavin	1.3mg for men and 1.1mg for women
Folate	400microgm
Vit B 12	2.5 microgm
Vit C	60-100mg
Vit A	600-700 micro gram retinol equivalents
Vit D	10-15microgram
Vit E	100-400IU
Vit K	60-90microgram
Ca	800-1200 mg(in presence of adequate vit D nutrition)
Iron	10mg assuming that there is no excessive iron loss
Selenium	50-70 microgram
Zn	> 50% of routine

Foods acting as a boon to Elderly Health:

- Oats and Millets: Cholesterol lowering b- glucan, prevent risks of CVDs and CA.
- Soy: Protein rich. Prevents CVDs, Osteoporosis and CA
- Flax seeds: Omega 3 fatty acids. Prevent estrogen dependent cancers, reduce LDL
- Tomatoes: Lycopene- reduces risk of CA
- Garlic: Prevents CA & CVDs.
- Citrus fruits: Most potent in CA prevention

- Tea: Catechins and polyphenols of green tea – proven to reduce risk of Stage 1 and 2 breast cancer.
- Fish: Linolenic acid – prevents CA.
- Dairy products: Calcium rich- prevent Osteoporosis and Colon CA

Food Based Dietary Guidelines for Older Persons as per WHO:

Limiting the use of traditional foods which are heavily preserved (Ex: Pickles), consumption of fat from whole foods as nuts, seeds, beans, olives, and fatty fish. Eating several 5-6 small non-fatty meals. More use of nutrient – dense foods as fruits and vegetables, herbs and spices, whole-grain cereals and millet rich diets, nuts, and seeds. Consuming vegetables and few fruits in the chopped, grated or juice form will help the elderly to gain adequate nutrition through diet.

Conclusion:

The goal of advocating dietary regimen in elderly is to maximize disability free life-span. Balanced diet builds good resistance to disease & aid in early recovery from illness in old age. Sound dietary advice & counseling should also be a part of geriatric health care policies. Healthy eating habits developed early in life promote good health in old age. Hence, healthy dietary practices should be a part of primordial prevention.

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GERIATRIC DIETARY RECOMMENDATIONS

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Abstract

In geriatric age group we need to give utmost importance in their diet. Because peoples above 60 years of age needs adequate vitamins, protein for proper functioning of body. Ayurveda deals with the diet very broadly. acharya mentioned aahara as one among the trayopastambha. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity.

Keywords: Geriatrics, nutrition, Calorie restriction

Introduction

When we grow older, the rate at which we burn calories (our metabolic rate) slows, we lose muscle mass, and even our organs start to slow. However people can still give their bodies the fuel they need to maintain or even improve their health by adhering to a proper diet. Ayurveda deals with diet very broadly. Trayopastambha is mentioned by aacharyacharaka under the Nirdeśachatushka of Charaka Samhita Sootrasthana of Trisreshaneeya adhyaaya¹. The word Trayopastambha is made up of two words “Traya” and “Upastamba”. Traya indicates three components or factors or combination of it. Trayopastambha are the three strong pillars which has the capacity to sustain or to cause. Food (Aahara) is one among the trayopastambha.

त्रयउपस्त्म्भाइति- आहारः, स्त्वप्नो, ब्रह्मचययमिति;

Trayopastambha are Aahara, Nidra and Brahmacharya. If these are maintained properly through Yukti, then they act as a pillar for nourishment and growth of the body by providing strength, complexion till the end of life².

Managing the nutritional intake of an elderly one requires a comprehensive understanding of their dietary needs, as well as the time to provide sufficient support. Maintaining a balanced diet is crucial to warding off the effects of malnutrition, and can help to improve both quality of life and (in some cases) the potency of the body's defences against specific conditions. A healthy eating plan emphasizes fruit, vegetables, whole grains and low-fat or fat-free dairy; includes lean meat, poultry, fish, beans, eggs and nuts; and is low in saturated fats, trans fats, salt (sodium) and added sugars.

A balanced diet is one which contains variety of foods in such quantities and proportion that the need of all nutrients is adequately met for maintaining health, vitality and general wellbeing and makes a small provision for extra nutrients to withstand short duration of leanness.

The major food issues of concern are insufficient/imbalanced intake of foods/nutrients. One of the most common nutritional problems of public health importance in India is chronic energy deficiency in adults. Health and nutrition are the most important contributory factors for human resource development in the country.

Humans need a wide range of nutrients to lead a healthy and active life. For providing these nutrients, good nutrition or proper intake of food in relation to the body's dietary needs is required. An adequate, well balanced diet combined with regular physical activity is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity.

Diet during different stages of Life

Nutrition is important for everyone. However, the requirement is different for every individual may it be an infant, growing child, pregnant/lactating women and elderly people. The diet varies from person to person depending upon various factors like age, gender, physical activity, nutritional requirement during different physiological stages of the body and other various factors. Body

weights and heights of children reflect their state of physical growth and development, while weights and heights of adults represent steps taken towards good health

Diet for Elderly People:

Individuals of 60 years and above constitute the elderly. The diet for elderly people should include nutrient rich foods to enable them to be fit and active. Senior citizens need more of vitamins and minerals to be healthy and active.

The body composition changes with the advancing age and all these changes affect nutritional needs of the elderly. Elderly or aged people require reduce amount of calories as their lean muscle mass and physical activity decreases with ageing. Elderly need more calcium, iron, zinc, vitamin A and antioxidants to prevent age-related degenerative diseases and for healthy ageing. It is very essential to maintain your health as ageing process starts and it increases the life expectancy. It is very important for elderly people to exercise as it helps to regulate body weight and flexibility in the joints. The risk of degenerative diseases also considerably decreases with regular exercise session.

Elders generally complain of loss of appetite or sometimes difficulty in chewing. A soft diet should be given to elders, with inclusion of fruits and vegetables in their diet. Calcium rich foods like dairy products (low fat), milk (toned) and green leafy vegetables should be included in the daily diet to maintain bone health, so as to prevent osteoporosis and bone fractures. Consume pulses, toned milk, egg-white etc. in good quantities as they are rich in proteins. Elderly people should cut down on their saturated fats, sweets, oily food, salt and sugar level. Use of ghee, oil, butter should be completely avoided. Also, avoid eating spicy food.

The diet for elderly people needs to be well cooked, soft and should be less salty and spicy. Ensure to eat small quantities of food at more frequent intervals and drink water at frequent intervals to avoid dehydration and constipation. Consult a doctor for an individualized diet depending upon the medical condition in the case of persons suffering from chronic diseases and bed ridden patients.

After the age of 60, peoples are more prone to cardiovascular diseases such as atherosclerosis, hypertension. Majority of deaths after the age of 60 are caused by coronary artery disease or stroke³. Restrictions of salt intake, overly salted food, diet rich in cholesterol, saturated and trans fatty acids is an important component of dietary advice in the elderly as per Western Medicine. Ayurveda explains that four drug or dietary principles can be applied for protection of cardiovascular system in advance age such as a) Hridaya, b) Ojo, c) Srotoshodhana, d) Manoprasadana. Milk and milkproducts, Tulsi, Amalaki fruits, Pomegranate, Apple, seasonal vegetables are good for heart. Fruits that are most beneficial for keeping the heart healthy are oranges, Papaya, grapefruits. Garlic is beneficial for blood pressure.

For the better functioning of brain and mind - Brain needs four basic nourishments i.e. oxygen, glucose, fat and protein. Medhya rasayan⁴, vayasthapan, balya, jeevaniyaaahara or aushadha is beneficial for brain and mind. Fresh fruits and vegetables, black peeper enhance oxygenation of brain, whole grain is the source of glucose. Fruits like nuts especially walnuts and pure cows ghee in balanced amount, turmeric and amlaki is good for brain. Use of protein food such as milk,

soyabean stimulate brain activity. Ayurveda mentioned Yoga meditation which are much effective for mental performance and promote intelligence.

For the better functioning of musculoskeletal system Ayurveda recommends vataharaahara (snigdabhojana). So, daily physical activity associated with grains, vegetables, fruits, oils, dairy products, meat, fish and beans should be consumed regularly to strengthen the musculoskeletal health.

Endocrine glands are related to metabolism, immune function, bone density, energy level, sexual desire and brain function. For free from endocrinological problems in old age ayurvedic texts mentioned vrishyas and vajikaran diets with adjuvents. Sastik variety of rice, milk and milk products, kharjur, pure cows ghee, mamsa rasa, and amlaki.

For immune function in old age These are specific diets and medicinal plants that act immune function include whole grains, milk and milk products, meat, soup, fresh seasonal fruits, some kitchen spices like garlic, ginger, cinnamom, turmeric etc.

Conclusion

- Eat a variety of nutrient-rich foods.
- Avoid fried, salty and spicy foods.
- Consume adequate water to avoid dehydration. Good hydration is essential. Fluid intake is atleast 1L/day⁵
- Exercise regularly or go for a walk.
- Avoid smoking, chewing of tobacco and tobacco products (Khaini, Zarda, Paan masala) and consumption of alcohol.
- Go for regular checkups. Check regularly for blood sugar, lipids and blood pressure.
- Avoid self-medication.
- Adopt stress management techniques (Yoga and Meditation)

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GERIATRICS DIETARY RECOMMENDATION

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Abstract

The care of aged is called geriatrics or clinical gerontology. Geriatrics refers to medical care for older age. Nutrition is essential determining factor of elderly mass specifically over

the age of 65 years. adequate nutrition such as carbohydrate, fats, proteins, vitamins, minerals and water are always important for better ageing. Therapeutic diet is helpful for geriatrics health conditions. Good nutrition gives energy and helps prevent some geriatrics diseases. In Ayurveda deals with the diet very broadly Like rasayana. Ayurveda, has got the potential for prevention of diseases by health promotion and management in old age. We discuss dietary recommendation good nutrition and rasayana for older age.

Keywords: Geriatrics, Nutrition, rasayana, diet

Introduction

Geriatrics- sub-branch of general medicine which is concerned with the promotion of health by preventing, treating the diseases and disability management in old age.¹ Ageing is natural process. With increasing age, people become more prone to malnutrition for many reasons.² including - Arochaka (Anorexia), Smritinash (Dementia), Manoavasada (Depression), Stroke, Kampavata (Parkinson disease) and other neurological disorders, delayed gastric emptying. The diet should be regulated taking into account the habitat, season, age, and according to one's digestive capacity³. Proper nutrition is essential to the health in elderly. Nutrition deserves special attention as an individual reaches old age. Various factors like physical, social, physiological contribute to reduced food intake among the elderly population, resulting in the nutrient deficiencies which indirectly contributes to their poor health status. Demography of geriatrics

Worldwide, there are 600 million persons aged 60 and above. Raise of elderly population 6% to 8% from 1957 to 2010. Estimated to raise double to this by 2015.¹ in india the is tagged as aging when the age group 60+ year crosses 7% of the overall population. in has 7.7% of the older population, among them, 40% are below the poverty line and 73% are illiterate.

Primordial prevention like dincharya, hitaahar seven, rasayana is important for geriatrics. In Geriatrics Rasayana is a unique therapeutic methodology to delay ageing and to minimize

the intensity of problems occurring this degenerative phase of one's life and diet that is rich in fruits, vegetables, and fat-free or low-fat milk and milk products is most often recommended by nutrition. Geriatrics disorder⁴: classified in physical, mental, social, economic

Physical problems

Cardiovascular system – cardiovascular diseases, thickening of blood vessels
Respiratory system – asthma, bronchitis, decreased gas exchanges, emphysema

Gastrointestinal system – difficulty in chewing, dry mouth, constipation, heart burn after meal

Neurological system – reduction in nerve conduction, confusion, slow learning

Menopausal - in addition to all these, ladies experience menopausal health disorders

Mental problems

Senile dementia, emotional distress, fearfulness, suicidal tendency

Social problems

Loneliness, isolation, dependency, abuse

Economic problems

Lack of money

Diet and nutrition requirement in aging

Caloric Need:

Caloric requirements decrease with advancing age, owing to reduced energy expenditures and a decrease in basal metabolic rate.⁵ Depending on activity levels and body type, older women typically need 1,600-2,200 calories per day, while men require 2,000-2,800 calories per day. Exercise is beneficial for many reasons, but one is that more calories are burned during and after exercise. Another benefit — muscle burns more calories than fat, even while you're resting.

Protein

As the patients become older, the amount of protein required increases. The RDA for proteins, for persons aged 51 and over, is 0.8-g protein/kg body weight per day. However, because of the general decline in energy intake, as age increases, the recommendation is

that the elderly should satisfy 12% or more of their energy intake with protein-rich foods. A lack of protein can lead to bone density loss (osteoporosis) and weaken the immune system.

The best sources of proteins for the elderly diet are dairy products, poultry, meats and fish in the boiled and not dried form. Nuts, grains, legumes and vegetables contain protein, which if eaten in the proper combination, is of the same quality as animal sources of protein. More easily digestible forms of protein include lentils, beans, and chickpeas.

Water Intake

Dehydration is more common in older adults due to a reduced sense of thirst. “The part of the brain (hypothalamus) which controls our thirst mechanism slows a bit as we age,”

overconsume water, causing an imbalance in the nerves, muscles, and bodily tissues. Elderly is particularly susceptible to negative water balance, usually caused by excessive water loss through damaged kidney.⁶ Under normal conditions, fluid intake should be at least 30 ml per kg body weight per day. For people of any age, a diet that is rich in fruits, vegetables, and fat-free or low-fat milk and milk products is most often recommended. With increasing age, people become more prone to malnutrition for many reasons.

Calcium

Calcium is not only important for bone strength, but also for heart, nerves, and muscles. prevention, Maintenance of bone health, Regulation of neurotransmitters and nerve

excitability. Vital to maintaining bone density, calcium is particularly important for women as their bones thin with age. The recommended daily allowance of calcium is 800 mg/day. If you don't eat enough calcium, your body will start to take calcium that is stored in your bones to be used in other places in your body, leaving you with weak brittle bones. which may be related to negative balance of calcium, which contributes to development of osteoporosis.⁷ Some sources include milk, shatavari, broccoli, sardines, banana and tofu, Milk, cheese, yogurt leafy greens, beans, almonds, chia seeds, salmon.

Vitamin D

Intestinal calcium absorption, maintenance of muscular strength, prevention of osteoporosis and osteomalacia. Vitamin D aids in the absorption of calcium. The RDA is 5 micrograms. The best way to get vitamin D naturally is from sunlight, but some foods also provide vitamin D like Cheese, egg yolks, fatty fish, soy, fortified cereals, mushrooms, cod liver oil

Zinc

Zinc utilization declines with advancing age, because intestinal absorption decreases after the age of 65 years. The RDA is 15 mg. good sources of zinc are animal products, wholegrains and dried beans. Deficiency causes decreased taste acuity, mental lethargy and slow wound healing.

B-Vitamin Complex

B-vitamin complex consist a group of eight water soluble vitamins, among elderly, deficiency of vitamin B12, B6 and folate are known to affect cognitive functioning and is accompanied with depressive symptoms prevalent among older adults. The Recommended Dietary Allowance (RDA) for this vitamin is 0.9-2.4 µg/day. The deficiency of B-complex vitamins, particularly B6, B12 and folate is associated with increases the risk of diseases like Alzheimer's disease and dementia, which is very common among this age group.

Magnesium Neuromuscular excitability, Co-factor for protein synthesis and nucleic acid synthesis. In order for vitamin D to help the body metabolize calcium, it must first be converted to the active form. Magnesium is the mineral that is necessary to convert vitamin D to the active form. RDA of Magnesium is 400 to 420 mg. Magnesium is also important for bonemineralization that prevents gout and arthritis. Adequate dietary intake of magnesium rich foods like whole grains, green leafy vegetables, beans, nuts and fruits, fish, lentils, dried fruit, bananas.

Potassium

Potassium helps to maintain fluid balances in the body and protects bones by counterbalancing bone damaging acids. Among its many functions, potassium aids in maintaining muscle tissue, and facilitates heart and kidney functions. It also helps lower blood pressure and decreases the risk of stroke. RDA of potassium is 4700mg. Dark leafy greens, bananas, potatoes, oranges, squash, yogurt, coconut water, tomatoes.

Vitamin K

The role of vitamin K and bone health concluded that increased intakes of vitamin K are warranted to reduce bone loss and fracture risk among the elderly. In addition to improving cardiovascular health, having adequate vitamin K in your diet reduces the risk of bone fractures in osteoporotic patients by playing a role in improving bone mineralization. RDA of vit. K is 90mcg. Sources like Green leafy vegetables, such as, spinach, mustard greens, parsley, and green leafy Vegetables such as Brussels sprouts, broccoli, cauliflower, and cabbage, Fish, liver, meat, egg.

Iron

iron is important for Oxygen transport, Hormone synthesis, Component of enzymes and cytochrome and plays role in electron transport, Thyroid metabolism. A recent review concluded that the prevalence of iron deficiency, is relatively rare among the healthy elderly. When anaemia is found in an older person, blood loss should be suspected. The RDA for iron is 10 mg. Deficiency causes burning tongue, dry mouth, anaemia's and angular cheilosis.⁸ sources - meat, fish, poultry, whole grains, fortified breads and cereals, leafy green vegetables, dried beans and peas.

OMEGA-3

Food rich in omega-3 can lower elevated triglyceride levels, and help with stiffness and joint pain. Sources include salmon, halibut, herring, sardines, tuna, walnuts, flaxseed, and canola oil.

Fiber

Fiber regulates the digestive system, can lower cholesterol, and help control blood pressure. Older people are prone to constipation, in order to compensate for their infirmity, foods high in fiber content. Some sources of fiber are fruits, raw vegetables, whole grains, and legumes. And 6 to 8 cup of water per day are most desirable.

Rasayana Therapy

The Rasayana remedies described in Ayurveda are claimed to possess special nutritional supplement effect. Vayasthapana are specialized rasayana drugs that reverse degenerative changes, increase life span with quality health.⁹ Rasayana stands as an answer in preventing premature ageing and to solve the problems due to ageing; it also ensures healthful

longevity including mental health and resistance against various geriatric disease conditions. The Rasayana drugs are likely to be nutrient tonics, antioxidants, anti-stress, adaptogen and immuno-modulators. The net effect of all these attributes is the anti-aging effect. Certain recent studies on popular Rasayana remedies like Amalaki, Ashwagandha, Gudachi, Brahmi and classical compound Rasayana Chyavanaprash have shown evidence to suggest their efficacy as anti-aging remedies. Generally, most of the Rasayanas are micromolecular nutrients and they act through nutrition dynamics and not really on pharmacodynamics like other drugs.

1. Guduchi as immunomodulatory agent.¹⁰
2. Ashwagandha on the process of aging and showed statistically significant increase in

haemoglobin, RBC count, hair melanin and seated stature and decrease in serum cholesterol and ESR.¹¹

3. Guggulu in hyperlipidemia and anti-ischaemic effect of the drug in the treatment of ischemic heart diseases.¹²

Rasayana refers to daily rejuvenative dietetics. Regular use of Ghee, milk, fruits and vegetables in diet acts as Rasayana.

Conclusion-

Considering the high prevalence of poor nutritional status among elderly, more focus on diet and possible nutritional interventions are required. Ageing is a process of physical,

psychological and social change in multi-dimensional aspects. The literature has shown that disorders like osteopenia, fractures, malnutrition and nutritional deficiencies are common among elderly. The majority of the age-related disorder can be prevented by following

proper nutritional interventions and consuming food rich in nutrients and antioxidants.

Prevention and rasayana as a treatment of these conditions can be done through

interventions of correct dietary habits, supplements and adequate intake of nutrients as required for maintenance of proper health. The correct dietary modifications have a potential to raise the health standards of the older population globally.

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**PREVENTION OF AKALAJA JARA THROUGH SWASTHAVRITTA
PRACTICES**

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Abstract

The main principle of Ayurveda is SwasthaysaSwasthyaRakshanamAtursyaVikaraPrashamanam. Ayurveda deals with both healthy life and diseased condition. Ayurveda states ShiryateitiShariram which means sharir is the one which always undergoes degeneration. Degeneration of body is continuous process, eventually it results into ageing and other degenerative processes. Akalajajara means premature ageing occurs when this degeneration occurs rapidly. Swasthavritta practices like dincharya, ratricharya, rutucharya, sadvritta, achara rasayana are recommended in Ayurveda for healthy individual. These practices result in longevity, immunity, and healthy life eventually prevent premature ageing. Ayurveda explains jarachikitsa means geriatrics care as a special branch of ashtang of Ayurveda. It deals with diseases and care of old aged people. Rasayanasevana has benefits like delay in ageing process by preserving youthfulness. Herein, this presentation there will be complete discussion of how these Swasthavritta practices help in prevention of premature ageing.

Keywords: Swasthavritta, premature ageing, Akalajajara, rasayana, geriatrics

Introduction:

Ayurveda explains the principles which maintains the health by following various dietary and lifestyle modifications and prevent from diseases through various therapeutic measures. Swasthavritta is one of the unique concepts of Ayurveda which deals with the rules of healthy diet, lifestyle and their effects on the various aspects of the life of an individual. It is reported that in 2050, 1/5th of the population of world will be around 65 years of age. Jarachikitsa (geriatrics) is the branch of Ashtanga Ayurveda which deals with the disease and care of aged people. The body is decaying continuously, as shown by its etymology, that is, ShiryateItiShariram. Akalajajara can be prevented by following swasthavritta practices

Aims and Objectives

1. To discuss and elaborate Ayurvedic concepts related to jara (ageing)
2. To discuss swasthavritta practices for prevention of akalajajara (untimely or premature ageing)

Materials and Methods

This paper is based on a review of Ayurvedic texts and various websites were searched for collecting information on relevant topic

Concept of jara (ageing)

Ageing is naturally occurring phenomenon which results because of time bound inherent evolutionary processes by the evolutionary changes occurring in the mind-body system. In simple language ageing means getting older. Jara is process in which muscles and other tissues get loosened under the influence of ageing.

Pathophysiology

According to Ayurveda growth, development, and maintenance of the anatomy and physiology of the body completely depends on four factors that are kala (time), Swabhava (nature), aahara (diet) and absence of obstructive factors in the growth and development of body².

Among these, diet is essential component, it nourishes our body and keeps it in healthy state. When the diet is defective for example virrudhahara or when rules are not followed regarding diet as well as defective lifestyle (excessive physical work, lack of exercise, mental and emotional fluctuations there is vitiation of tridosha, which leads to various progressive pathological changes. These pathological changes include loss of compactness of the muscles, looseness of joints improper production of dhatu and loss of oja. This pathology leads the person to become susceptible to various types of diseases and fails to live out his complete lifespan³. When all these changes are produced according to Kala (time) and Swabhava (nature), it is known as KalajaVriddhavastha (natural aging). When these changes are produced due to defective diet and lifestyle, and there is earlier ageing it is then known as akalajavriddhavastha (untimely aging).

Concept of Swasthavritta

Swasthavritta word is derived from three words Swa, Stha and Vritta.

Swa signifies one's own, Stha signifies to live, Vritta signifies to follow the things for maintenance of health

Prevention of akalajajara

Primordial prevention:

Now we will see how swasthavritta practices should be applied in our life to prevent akalajajara

Concepts in swasthavritta

Dinacharya

Rutucharya

Sadvritta

Trayopastambha

Rasayana

Dinacharya

Activities concerned to food intake and routine works, which are done regularly come under dinacharya (daily regimen)⁴. Dinacharya helps in living healthy life, promoting good health and preventing diseases. Some are explained below:

1. Brahmi muhurta uttishte (Waking in Brahma muhurta) provides you clean, pleasant, pollution free atmosphere.
2. Abhyanga (padabhyanga, shiroabhyanga) imparts stability, skin becomes moist, strengthens the body and makes it appear attractive and it postpones the senile period, skin looks young even in old age⁵
3. Vyayama not only improves physical health but also mental health, gives proper nourishment and postpones senile period⁶
4. Nasya and Anjana maintains health of indriyas (sensory organs)
5. Gandusha maintains oral hygiene
6. Bathing reduces tiredness, stress and anxiety

Rutucharya

Ayurveda always emphasized on maintaining relationship with environment.

Seasonal changes affect our health in many ways so we should adapt ourselves according to changing environment. By following rutucharya we can maintain equilibrium among doshas, our prakruti and Ritu

For example- In Vasant Ritu, Laghu and Ruksha Ahara should be consumed.

In Grishma Ritu, Madhura, Laghu and Snigdha ahara should be consumed.

In Sharad Ritu, Madhura, Kashaya Rasa, Snigdhaahara should be consumed.

Trayostambha

According to Ayurveda, Ahara, Nidra and Brahmacharya are the three basic pillars of a healthy life⁷.

Ahara: Nutrition is essential component in maintain health. As food we eat builds us and maintains equilibrium of doshas. Ashtaaharavidhivishshaayantana and aharavidhi Vidhana are explained in Ayurveda which are rules of consuming food.

Ageing phenomenon also depends upon the food we consume as food is responsible for growth of tissue of our body and wear and tear phenomenon of body.

Nidra:

Proper sleep imparts pushti, varna, bala, utsaha (enthusiasm), increases appetite maintains equilibrium of dhatu⁸.

Proper sleep helps in maintaining physical and mental health, it helps in removing the stress, makes sense organs active, increases and also helps in repairing of damaged cells.

Brahmacharya:

Observance of celibacy enhances life span of individual⁹

Through the practice of celibacy with proper routine, one can avoid the various ailments of old age.

Sadvritta and achara rasayana

Acharya charaka explains that one who adopts the rules of good conduct in life will attain long life, health, wealth.

Rasayana

It stands for rejuvenation therapies to prevent the premature ageing and to cure the various ageing related disorders

Primary prevention

Health education and exercise, rituanusarashodhana

Secondary prevention

Check weight, stress, regular health check ups

Application of panchakarma and rasayanadravya

Conclusion

Ageing is a naturally occurring phenomenon. Ayurveda explains jara is result of swabhav and kala. Early and untimely aging can be prevented if the principles of Ayurveda are strictly followed. The pathophysiology of akalajajara is

mostly dependent on defective diet and lifestyle. Ayurveda is science of life and it greatly explains healthy diet practices and healthy lifestyle through which untimely ageing can be prevented.

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SWASTHAVRITTA - A PREVENTIVE TOOL AGAINST AKALAJA JARA - REVIEW

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INTRODUCTION:

Ageing is defined as the process of growing old and accumulating damage to cells, tissues, and organs over time. Premature ageing is defined as a decline in biological functions of the body at a young age. It is commonly seen as a result of various irregular dietary and lifestyle factors, as well as a stressful social status. As a result of modernization and urbanisation in lifestyle changes and psychological factors, the incidence of premature ageing is increasing worldwide. Polluted air, water, and soil, an abundance of processed foods, and a lack of mental calm all contribute to premature ageing in today's world. Jara is explained in Ayurveda as one of Ashtanga Ayurveda, where Chikitsa and preventative care are discussed. Premature ageing is linked to Akalajajara in Ayurveda, which has various implications for slowing down the ageing process. Swasthavritta is a science that focuses on health prevention and promotion. Swasthavritta practices like Dinacharya, Ritucharya, Trayopastamba, Rasayana will help in preventing AkalajaJara. Ceaseless practice of the above mentioned procedure will help in prevention of Akalajajara.

CONCEPT OF AGEING:

Vaya is explained in the Charaka Samhita as a factor that is dependent on Kala PramanaVishesha which is based on time¹. Vaya refers to the body's time bound changes. Ayurvedic texts divide human life span into three major categories they are Balya, Madhya and Vriddha based on chronological age.

Classification of Vaya :

Acharya Charak has divided Vaya in three major parts².

- 1) Balyawastha 1 to 30yrs.
- 2) Madhyamawastha 31 to 60yrs.
- 3) Jirnawastha 61 to 100yrs.

Acharya Sushruta has classified the Vaya in three parts³.

- 1) Bala 1 to 16yrs.
- 2) Madhya 17 to 70yrs.

3) Vriddha 70 to 100yrs.

Acharya Sushruta in AdhidaivikaVyadhi mentioned Svabhavabalapravritta Vyadhis⁴, which include Kshudha, Pipasa , NidraJara and Mrityu .

Jara is of two types 1.Kalaja jara and 2.Akalaja Jara. Kalajajara is Swabhavaja or Sahaja in nature which affects everyone⁵.

Dalhana opines that Jara is defined as a Vata dominant stage occurring in spite of prevention and is Upacharahita , Yapyā , Kalakritvyadhi and requires extreme rejuvenation to reverse agony⁶.

Bhavamishra defines Jara as a progressive deteriorating stage of life, characterized by decline of Dhatu, Indriyas, Bala, and presence of Vali, Palitya, Khalitya, Karma Akshamata, Kasa and Shwasa⁷.

Akala jara is defined as “Akalotpannalakshana-Akalaja and AkalejaitiAkalaja means process of ageing happens in improper time ⁵due to ‘Arakshana’ (lack in care)⁸

ETIOPATHOLOGY OF AKALAJA JARA:

Ahara predominant with Amla, Katu, Lavanarasa,Guru, Ruksha, Abhishyandi are the factors fastens the process of ageing. Viruddhaahara and Faulty dietary practices such as Vishamashana and Adhyashana also causes AkalajaJara. Divaswapna (day sleep), Ativyavaya (excessive indulgence in sexual act) Manasikakarana like Bhaya, Krodha, Shoka, Lobha, Moha may lead to Akalaja Jara⁹.

In Jara,WhenVata increases with age, it causes the Rasadhi Dhatu to be malnourished. This gradual malnutrition leads to the Irreversible ageing process⁹.

In AkalajaJaraAgnimandya leads to the formation of Ama. When Agni's function is vitiated, the Rasa and subsequent Dhatu are improperly nourished, resulting in ShareeraApachaya (improper body sustenance) and OjoHrasa (depletion of the Ojas)

SIGNS AND SYMPTOMS:

Physically Vali (wrinkles), Palitya (premature greying of hair), Khalitya (hair loss), SukraApravartanam, Ojakshaya(weakness), MamsaSaithilya (muscles weakness), AsamarthaChesta (inability to work), Analpmeda (debilitated) are seen⁵

Mentally Medhahani (Decreased functions of Intellect), Avasannata&Nairasya (Depression), Smritihani (Loss of Memory), Utsahahani (Decreased Enthusiasm), Buddhihani (Deterioration in Wisdom) are seen⁵

SWASTHAVRITTA PRACTICES:

Swasthavritta discusses the notion of staying healthy by recommending a daily routine. A Swasthapurusha should have Dosha balance, regular Agni functioning, a normal state of the seven Dhatus, and proper waste excretion. By following Swasthavritta practices such as Dinacharya, Ritucharya, Trayopastamba, Rasayana, and others should be followed to sustain health.

Dinacharya refers to the daily activities concerned with personal hygiene, food intake, physical activities, and a code of conduct that are carried out without interruption. Susruta emphasises the significance of Dinacharya by declaring that a sensible person desiring a long and healthy life should adhere to the Dinacharya protocols.

BRAHMA MUHURTA:

Getting up at Brahma Muhurta that is two hours before sunrise is the foremost in Dinacharya. It is the ideal time to make any progress and gain knowledge and best time to assess the physiology of digestion.

By waking up in Brahma Muhurta, we increase the Satva Guna, which is the primary controller of our physical and mental well-being. After Brahma Muhurta Malavishodhanam, Dantadhawana & Jivha Nirlepana, Ushapana etc are practiced¹⁰

ABHYANGA

Abhyanga is a procedure done with the Snehadravyas which is well known for its effect both physically and mentally. Vagbhata has been quoted Abhyangamacharetnityam¹¹ as daily practice to delay ageing, cures Vata disorders, improves vision, complexion, nourishes, lead to healthy life, sound sleep, lustrous skin etc. Abhyanga is a unique therapeutic methodology to delay Akalaja Jara and to minimize the intensity of problems occurring in this degenerative phase of one's life. Abhyanga should be performed in Anulomagati for the proper absorption of the oil by follicles. Time taken for the oil to reach from hair root to Majja is 900 Matra kala. Doing Abhyanga daily for 15 to 20 minutes helps in prevention of ageing. Shiro Pada and Karna are the main areas where Abhyanga should be done¹¹.

NASYA

Prathimarsha Nasya can be done on a daily basis because of its minimal dose of 2 Bindu. Nasya Karma interrupts the cycle of pathogenesis and provides a nutritive effect to the root of the hair, reversing the premature ageing process and strengthening the hair follicle. Anu Taila or Tila Taila can be administered. It can be done at any time of day or night, after a vigorous workout etc¹²

SADVRITTA AND ACHARA RASAYANA¹³

The appropriate balance between one's intellect and body is crucial to a person's development. Sadvritta and Achara Rasyana strives to maintain this equilibrium. In AkalajaJara mental health is just as vital as physical health. It is a method of rejuvenation that is not pharmaceutical. It gives an idea of how to live a healthy lifestyle. It promotes social and mental well-being. A person must be honest, free of rage, free of drink and sexual immorality, and free of violence and tiredness. A person must be completely free of barbarous deeds, have a regular wake and sleep cycle.

TRAYOPASTHAMBA¹⁴

They act as a pillar for nourishment and growth of the body by providing strength, complexion till the end of life provided a person does not indulge in any such regimens which are detrimental to health. Food, Sleep and controlled sex are regarded as the pillars or tripods holding life and health. Timely intake of suitable and good quality food, regular sleeping habits and controlled indulgence in sex ensure long and healthy life one can improve the Purusha Bala by strengthening the Stambhas and hence the whole life is protected and prevented from various diseases and also in the management of various diseases.

RASAYANA

RasayanaChikitsa is an Ayurvedic branch of science that focuses on several areas of health prevention. This branch of Ashtanga Ayurveda aims to help people live a long and healthy life. It includes things like increased memory, health, youthfulness, glow, complexion, generosity, body strength, and senses.

JaraChikitsa, also known as Rasayana Tantra, is a rejuvenating technique enhances radiance, skin tone, and vocal quality. The strength of the body and sensory organs is improved. It balances the Doshas, offers stability, soothes muscle slackening, and boosts internal digestion. Thus, Rasayana therapy can aid in the promotion of health and the prevention of mental and physical ailments and can prevent AkalajaJara.

Charaka has explained Vayasthapana Mahakashaya¹⁵ as a group of drugs having antiageing properties. Amrita (*Tinospora cordifolia*), Abhaya (*Terminalia chebula*), Dhaatri (*Embilica officinalis*), Rasna (*Pluchea lanceolata*), Shveta (*Alpenia galanga*), Jeevanti (*Leptadenia reticulata*), Atirasa (*Asparagus racemosus*), Mandookaparni (*Centella asiatica*), Sthira (*Desmodium gangeticum*) and Punarnava (*Boerhaviadiffusa*).

TABLE 1: AGE WISE SPECIFIC RASAYANA BY SHARANGADHARA

Sharangadara explains qualities lost during different age group¹⁶

AGE (in years)	QUALITIES LOST	RECOMMENDED RASAYANA
1-10	<i>Balya</i>	<i>Vacha, Swarna</i>
11-20	<i>Vridhhi</i>	<i>Kashmari, Bala, Ashwagandha</i>
21-30	Chavi	<i>Amalaki, Lauha</i>
31-40	<i>Medha</i>	<i>Shankhapushpi, Brahmi, Jyotishmati</i>
41-50	<i>Tvak</i>	<i>Tuvaraka, Somaraji, Bhringaraja</i>
51-60	<i>Drishti</i>	<i>Triphala, Jyotishmati, Dhatri Lauha</i>
61-70	<i>Shukra</i>	<i>Atmagupta, Ashwagandha</i>
71-80	<i>Vikrama</i>	<i>Amalaki, Bala, Mahabala</i>
81-90	<i>Buddhi</i>	<i>Brahmi, Mandukaparni</i>
91-100	<i>Karmendriya</i>	<i>Bala, Ashwagandha, Sahachara</i>

Medhya Rasayana¹⁷ – explained by Charaka Samhita

- a) Mandukaparni (swarasa)
- b) Yashtimadhu (curna)
- c) Guduchi (swarasa)
- d) Shankhapushpi (kalka)

They increase longevity, cure diseases and promote Bala (strength), Agni (power of digestion and metabolism), Varna (complexion) and Svara (voice).

DISCUSSION

Once traces of AkalajaJara appear on the body, it is difficult to reverse the ageing process even with general treatment, it takes a long time to restore the human body to its former glory. Ahara with Amla, Katu, Lavana, Guru, Ruksha and Abhishyandi, Virudhahara and faulty dietary practices like Adhyashana, Vishamashana are the causative factors for akalajajara. vata pitta vridhi causes AkalajaJara. Vitiation on Agni resulting in information of ama which further leads to improper nourishment of Rasadhi Dhatus resulting in ShareeraApachaya (improper body sustenance) and OjoHrasa (depletion of the Ojas). Day to day stress and physiological factors is also the reason for the AkalajaJara. Thus following the right daily regimens is the greatest approach to stay healthy and avoid the signs of premature ageing.

Waking at Brahma Muhurta following of Dinacharya and Sadvrutta, increases the Satva Guna which results in mental wellbeing, freshness, positivity while the Tamo Guna causes awakeness, negativity, anxiety, depression, loss of confidence. Thus it will help to increase the healthy life of human being and increase the longevity and prevent AkalajaJara.

Prevention of AkalajaJara can be achieved due to the proper Dhatu Poshana by Abhyanga. It is recommended that Abhyanga should be done in head, ears, and feet regularly. Because of its qualities like Jaraapaha, Prasadhakara, Ayu-Pushtikara (age prolongation), and VataShamaka it helps in maintaining both physical and mental health combating many of the symptoms of ageing.

By doing PratimarshaNasya on a regular basis, stress can be released to a great extent. Nasya Karma enhances the activity of sense organs and prevents the diseases like Khalitya and ensures growth of hair. The symptoms of proper effect of Nasya is Shiro Laghuta, IndriyaShuddhi, Sukha Swapna, ManahSukha, SukhaPrabodhana and VikaraUpashamana.

Ahara predominant of Amla and Lavana which are Pitta prakopaka rasas, accelerates the ageing process. Amla has the ability to cause flabbiness in body tissues, whereas Lavana can cause wrinkles, hair greying, and baldness. Thus avoiding the above Rasas and faulty dietary practice such as Vishamashana and Adhyashana one can avoid AkalajaJara. Correct practice of Nidra by avoiding Ratrijagarana and Dhivaswapna ensure longevity. Bramacharya practice enhance the Sukradharana and prevents VataPrakopa leads to Longevity.

Rasayana's major goal is to offer a longer life with fresh power to all Dhatus and Ojas, as well as resistance to a variety of geriatric diseases and premature ageing. Rasayana acts in three modes.

- i. At the level of Rasa (promoting nutrient value of plasma)

ii. At the level of Agni (promoting digestive system responsible for digestion and metabolism)

iii. At the level of Srotas (promoting micro-circulation and tissue perfusion)

Vayasthapaka drugs are used to prevent premature ageing. Amlaki was deemed the best Vayasthapaka Dravya 15

Medhya Rasayana gives longevity, cure diseases and promote Bala (strength), Agni (power of digestion and metabolism), Varna (complexion) and Svava (voice). Among them, Shankhapushpi is the best drug for the promotion of intellect 17

Achara Rasayana describes the mode of living, behaviour and conduct like Sadvritta. This kind of behaviour and conduct should be followed by everyone who wishes for longevity.

CONCLUSION:

Premature ageing, which is a serious problem in today's period, is primarily caused by lifestyle and poor food habits in this civilised era. To avoid illnesses which we come across, we must adhere to Ayurveda's concept that deals with the goal of Swasthasya Swasthya Rakshanam. It discusses how to maintain and promote health by changing certain behaviours. Food consumed in a suitable manner maintains Dosha and Dhatus balance, and it must be consumed in accordance with seasonal variations. To avoid premature ageing, one should follow Dinacharya, Trayopastamba and Rasayana. Ayurveda has dealt extensively with the impact of eating on the body and mind by establishing particular dietary norms and habits. Rasayana medications work largely at the levels of Rasa Dhatu, Agni, and Srotas to compensate for age-related bio-losses in the body and give a rejuvenating effect. In a nutshell, Rasayana therapy, a healthy diet, Dinacharya, Ritucharya, Sadvritta, are likely to result in an efficient in premature ageing.

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18. MadhumitaPanigrahi -Prophylactic Approach of Abhyanga in AkalajaJara – Literary Documentations from Ayurveda :2019

GERIATRIC DIETARY RECOMMENDATON

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INTRODUCTION:

Ageing is a natural process and commences at birth culminating in death. New cells are being formed and old cells die all the time, this is a natural biological process. Old age is defined as age 60 and over. As life progresses so does the ageing population. Ageing brings with itself many physiological, biological, psychological and emotional changes. They all determine the nutrient needs of the individual. The nutrient needs of the elderly are similar to those of younger individuals, implying that similar amount of nutrients are needed while consuming fewer calories to maintain weight.

A BALANCED DIET IN OLD AGE

A diet rich in antioxidants has been shown to impart positive effect on the bodily functions. Vitamin E has been shown to retard coronary artery disease in atherosclerosis. Vitamin C metabolism has shown to play an important role in preventing complications in diabetes mellitus. Beta carotene / Vitamin A have an important role to play in eye health, it has been found through research that when ingested in ocular diseases, it retards the risk of development of advanced or exudative age related macular degeneration.

The antioxidants inactivate the free radicals, which are known as oxygen scavenging and damage the cells.

Normal antioxidant requirements are:

Vitamin E-1000 to 3200 IU/day

Vitamin C - 500 to 1000 mg/day

Carotenoids 10 to 50 mg/day

Selenium 100 to 300 mg/day

Zinc-15 to 25 mg/day

NUTRITIONAL REQUIREMENTS

Energy

Energy requirements gradually reduce with age due to changes in body composition, a decrease in basal metabolic rates, reduced physical activity. The calorie intake should be adjusted to maintain the body weight constant in the case of old people with normal body weight. In the case of obese people, the calorie intake should be adjusted to reduce the body weight gradually to about normal level.

Older people require fewer calories due to a variety of reasons. Firstly, the biological need for energy is reduced. Secondly, they have less muscle mass, which decreases the amount of calories needed to maintain their weight because fat requires fewer calories to maintain than muscle. Thirdly, they have slower metabolisms, so it takes them longer to burn the calories that they consume through their daily activities. Fourthly, physical activity is reduced requiring fewer calories. Fifthly, endocrine production is also decreased.

Carbohydrates

The calorific requirements are reduced during old age. Corresponding to this the carbohydrate requirements is also reduced. The aim should be to supply complex carbohydrates rather than simple carbohydrates to help supply the body with a good fibrous diet to facilitate bowel movement and avoid constipation, a common problem in old age.

Avoid too much of green leafy vegetables and pulses as they may cause flatulence. Too much of simple carbohydrates like sugar, jaggery, honey, processed foods and refined cereal preparations should be avoided as they provide the body with too many calories, sugar and fat compromising on nutrient dense foods.

Proteins

The protein requirement of 1 g/kg body weight remains the same as adults. Despite the need remaining unchanged, older people consume less protein due to reduction in their appetites, gas formation and poor digestibility. Emphasis should be on consumption of good quality proteins, which are easy to prepare and eat. Egg is a good source of procuring good quality protein in a little amount of food. Almond milk and soy milk besides cow's milk will be helpful in providing the proteins as well as introducing variety in the diet.

Fat

Proportional to reduced caloric intake, the fat requirements in diet are also reduced. Dietary guidelines recommend that not more than 20% to 30% of the total dietary calorie intake come from lipids. Emphasis should be placed on reducing the intake of saturated fat and choosing monounsaturated or polyunsaturated fat sources. Essential fatty acids should also constitute an integral part of the diet. Flax seeds, almonds, sunflower seeds, melon seeds, avocado, coconut, olives, cod liver oil tablets, seafood, coconut oil are all good alternatives.

Vitamins

The requirements of vitamins are important even in old age to maintain a healthy life. The parameters being good vision, good hearing, good reflexes, proper muscular coordination, strong bones and teeth, proper brain function, healthy heart etc. Despite ingesting a rich diet some factors like poor vitamin absorption or inadequate intake may cause constipation, poor appetite, impaired absorption and malaise. Given this fact conditions like pernicious anaemia and B12 deficiency may appear.

Food sources rich in Vitamin A and beta-carotene help in maintaining good vision and elastic skin. Vitamin C helps the body form collagen, which is needed for healing wounds and repairing bones and teeth. It is also used to make skin, ligaments, tendons and blood vessels. Vitamin C and E are antioxidants - they help protect a person from free radicals released when food is turned into energy. Antioxidants are thought to prevent heart disease and cancer. Vitamins D help keep bones strong, less prone to fractures. Vitamins B complex have a crucial role to play in carbohydrate and protein metabolism.

Taking adequate B complex vitamins in diet or through supplements help in maintenance of proper appetite and digestion in the elderly. Vitamin B12 is used by the body to keep the nervous system working well, help form healthy red blood cells and increase energy and alertness. As a person ages, their body does not absorb vitamin B12 as well as when they were younger.

Alzheimer's and Parkinson's disease, which has become quite common in the elderly, associated with cognitive function and brain functioning, has been found to greatly benefit from B complex vitamins especially B12, B6 and B9.

Minerals

Minerals are important to some extent in the body. For smooth functioning of the processes, some minerals become vital as one ages. Calcium, iron, zinc, sodium and magnesium play a crucial role.

Calcium: The bones become weaker as one grows old as the skeleton loses calcium. Women lose more calcium from their bones in the five to 10 years around the age of menopause. However, both men and women lose bone mass as they grow older and need to make sure they get enough calcium in their diet to offset these losses. Right levels of vitamin D are required by the body to absorb calcium. Milk, dairy products, sesame seeds are good sources of calcium in old age.

Iron: Usually iron deficiency has been observed in the elderly due to low intake of iron, faulty absorption of iron, low bio-available iron from food sources, blood loss as a result of chronic diseases or/and a reduced non-haem iron absorption as a consequence of achlorhydria or atrophic gastritis. The cheapest way to get most iron out of diet is to cook in iron utensils. Increase consumption of iron rich foods like green leafy vegetables,

amaranth, nuts, dry fruits, fortified pulses and cereals, whole grains, enriched breads, iron fortified salt. 30 mg/day iron is sufficient for normal elderly while an additional 10 mg/day helps in cases of anaemia.

Zinc: The adequate availability of zinc in the body can evade skin, nerves and body system problems. Lean meats, and seafood are good sources, and oysters have the highest level of zinc from food. Grains and other protein-rich plant sources like beans and legumes also have quite a bit of zinc. But on consuming a plant-based diet, many of the foods also contain a compound that binds up zinc so it doesn't absorb well and would have to be consumed even more.

Magnesium: Inadequate magnesium intake is common, especially in older persons. It is necessary for the body for the maintenance of muscles and nerves, in controlling blood pressure and maintaining a steady heart rhythm. Sarcopenia is prevalent in older persons and is a strong, independent risk factor for disability and mortality. Spinach, nuts and seeds, legumes (eg. Beans and peas), meats, whole grains, fruits, dairy products are good sources of magnesium.

Sodium - It is advisable to control the levels of sodium in the diet, at every stage in life. A healthy diet comprises as much natural foods and low in processed foods as possible. Table salt should be avoided and low salt added in home cooked meals. The goal is to keep blood pressure in check and control elevated levels of sodium in the body.

Water

Consumption of inadequate water and water loss through the body has been associated with increased incidence of dehydration among the elderly. Fluid needs are affected by variations in activity, insensible water losses, medications, and urinary solute load. Daily fluid replacement is essential, particularly in those who exercise regularly, consume large amounts of protein, use laxatives or diuretics, or live in areas with high temperatures. Elderly people should consume water as such or in the form of buttermilk, fruit juices, porridge, soups, etc. Since elderly people have a fading sense of thirst, they should be made to consume some fluid at regular intervals even if they are not thirsty.

Fiber

Increasing the intake of dietary fibre is an important adjunct in the treatment of constipation in the elderly, although abdominal discomfort, flatulence, and potentially decreased absorption of iron and zinc may be the unwanted side effects of excess consumption. Nonetheless, improving the intake of foods high in dietary fibre is a healthful nutritional option for elderly adults because these foods contain important vitamins and minerals.

MODIFICATIONS IN THE DIET

During old age, diet needs to be modified to meet the daily nutrient needs of the individuals. Issues with digestion, dentition, constipation, taste preferences, availability, accessibility and lifestyle all contribute to these changes.

CONDITION	MODIFICATION
Impaired Digestion	Easily digestible foods Inclusion of soups and salads Taking small meals at regular intervals rather than three heavy meals Taking roasted fennel powder/chewing roasted fennel seeds after meals Taking a pinch of ajwain seeds with black salt warm water once a while. Drinking milk infused with fennel.
Dentition issues	Consuming soft easily chewable foods Avoiding sugary foods Taking a glass of warm water after meals Maintaining dental hygiene
Sleeplessness/Insomnia	A glass of hot milk before bedtime Eating light at night, preferably 3 hours before bedtime Taking a heavy lunch and soup, salads etc at night Avoiding tea, coffee, cola beverages
Constipation	Consuming fiber rich diet Taking salad with meals Drinking plenty of fluids throughout the day Eating dried or fresh figs Eating whole fruits rather than fruit juices Engaging in light to moderate physical exercises Walking a little after meals
Osteoporosis	Taking foods rich in calcium, milk and milk products Engaging in light exercises Exposure to sun for vitamin D formation

DISCUSSION

Nutritional needs of older adults are determined by multiple factors, including specific health problems and related organ system compromise; an individual's level of activity, energy expenditure, and caloric requirements; the ability to access, prepare, ingest, and digest food; and personal food preferences. In old age, the physical strength will start to go. They will lose their strength and firmness. A diet which provides the maximum nutrition without much effort, both in eating and preparing has to provide. Emphasis should be on

consumption of unprocessed foods, as they contain more nutrients, less fat-sugar-sodium as compared to processed foods. Consumption of mainly nutrient-dense foods should be emphasized. Salads, soups, stir fried vegetables, cereal pulse combinations, egg preparations, seafood are good options. Consumption of sweets, fatty foods and junk food should be limited.

CONCLUSION

Food must be palatable, soft and easy to consume and digest as the elderly person may have problems in mouth like dentures, mouth cancer, etc. dysphagia, oesophageal stricture, neurological changes. Food should be well cooked and with wide variety without much restriction because increased restriction will lead to inadequate intake. Following proper meal timing will help the elderly people to follow small and frequent meals properly. It will favour more complete digestion and free from distress. Three heavy meals may hinder the digestion process as well as sleep is also less likely to be disturbed. So, Ahara is considered as Mahabhaishajya (the superior medicine). Various life style disorders and numerous diseases occur due to faulty dietary habits which may be prevented by proper Ahara and eating habits. Here comes the importance of pathyaahara in Ayurveda and proper diet in contemporary science.

YOGA FOR BETTER AGEING

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ABSTRACT

It is an undeniable fact that as we age, the human body has a natural tendency to become increasingly rigid and inflexible. The body of the young child is exceptionally pliable. Even as young adults, we still retain the capacity to maneuver and bend in every direction. The loss of this capability is a defining hallmark of old age. Yoga is a natural prescription for reversing aging. Of all the forms and systems of exercise devised by human beings, Yoga is preeminent in its ability to preserve and extend our youthful suppleness. Yoga is a science. Yoga based on ancient observations, theories, and principles of the mind-body affiliation, several of that square measure currently being discovered in medical analysis. The Yoga interventions produce improvements in physical measures as well as quality-of-life, sense of well-being, energy, and fatigue. Hatha Yoga has been reported to produce improvements in cognitive functions as compared to other manoeuvres. Yoga emphasizes alertness. The other potential of Yoga is seen in the improvement of cognitive function. The main goal of geriatrics and preventive medicine is to extend a healthy lifespan. One approach that has been available for hundreds of years and it has gained popularity in recent years is very beneficial for anti-aging is the practice of Yoga. Yoga has been commonly practiced in Hinduism and has scientifically been proven to reduce oxidative stress from the body—one of the key factors in combating aging.

Keywords- Yoga, Geriatrics, Anti-aging, preventive medicine, Hatha Yoga

INTRODUCTION

The word Yoga comes from the Sanskrit 'Yuj', which suggests 'uniting'. Yoga refreshes your mind and spirit. It keeps all the systems of body in balance. All the more reason for individuals of geriatric ages group to try and practice yoga. Regular practice of yoga asanas, pranayama and meditation will result into a happier and more fulfilling life. Yoga not only tones the body, but also inspires the mind.

Therapeutic yoga is defined as the implementation of yoga postures and its employment to the treatment of health conditions. Regular yoga practice strengthens the muscles, endurance, and flexibility, as well as kindness, compassion, and self-control, all the while creating a sense of peace and well-being. Yoga is a type of mind-body exercise that combines muscular exertion with an internally directed focused concentration on self-awareness, breath, and energy.¹ Sustained practice also leads to important outcomes such as changes in life perspective, self-awareness and an improved sense of energy to live life fully and with genuine enjoyment.²

Yogic techniques increase muscular strength and flexibility, improve cardiorespiratory function, aid in addiction recovery and treatment, alleviate stress, anxiety, depression, and chronic pain, improve sleep patterns, and improve general well-being and quality of life.^{3,4,5}

Yoga as prescription

Medical Yoga Therapy or “Yoga Chikitsa” is the dynamic state of physical and mental ease, coupled with spiritual well-being. Yoga helps one to develop a positive state of health by not only treating illness, but also helping one to understand the underlying causes of disease. Medical yoga involves appropriate breathing methods, mindfulness, meditation, and self-reflection/study in addition to the physical elements of yoga, which are necessary and effective for strengthening the body. It is an individualized, personalized and holistic approach that takes into account not only the patient’s mind, body and spirit, but also their family, support network, work situation, and culture, as part of the patient’s treatment plan. In scenarios where a patient is at likelihood of developing an illness but does not yet require more intensive treatment, yogic exercises may be used to delay or prevent the need for medical treatment. Yoga brings the autonomic nervous system into healthy balance by stimulating the parasympathetic nervous system.⁶

Yogic practices work by decreasing physiologic arousal and quieting down this continual play of the autonomic system. They can reduce one's heart rate and blood pressure, ease one’s respirations and increase heart rate variability—all signs of improved parasympathetic tone.⁷

STRESS

Chronic stress occurs when there is a mismatch between a perceived demand and one's ability to meet that demand; it encompasses one's emotional and mental reactions to the external situation. When a person is constantly worried, whether it is direct or indirect, his or her nervous system can be pushed into sympathetic overdrive.⁸

Up to 80% of all visits to primary care providers are for stress-related complaints. These involve a wide spectrum of complaints, including headache, back pain, hypertension, arrhythmias, irritable bowel syndrome, insomnia, depression, anxiety, skin problems,

fatigue, obesity, migraines, hyperlipidaemia and accidents. Stress, whether chronic or long-term, can depress immunity by reducing the number and activity of immune cells. These events may worsen pro-inflammatory disorders, increasing one's vulnerability to infections and, potentially, various types of cancer.⁹

Slow and rhythmic breathing has also been shown to promote the release of prolactin and the hormone oxytocin, which can encourage feelings of friendship, calmness and bonding to others.¹⁰ The yoga practices also reduce circulating levels of cortisol and have been demonstrated to reduce the manifestations of stress. With practice, there is decreased firing from the locus coeruleus, which is the principal site in the brain for synthesis of norepinephrine in response to stress and panic. This decreased norepinephrine output helps the body to relax and quiet down with reduced respiratory rates and heart rates. The decreased sympathetic output decreases the release of corticotropin releasing factor, with resultant decrease in cortisol output.¹¹ Meditation has been reported to enhance the thickness of the left hippocampus, a significant part of the brain that plays a vital role in resistance to chronic stress and depressed states, emotional regulation and cognition, probably due to the expression of hippocampal neurotrophic protein. (brain-derived neurotrophic factor or BDNF).¹²

INFLAMMATORY DISORDERS

Yoga has been shown to lower inflammatory indicators in the blood, such as C-reactive protein and cytokines, while raising levels of immunoglobulins and natural killer cells.¹³ As per recent research, individuals who practise yoga on a daily basis have higher amounts of leptin and adiponectin in their bodies, two natural hormones that work to reduce inflammation. Adiponectin is a crucial component of endothelial function and has been shown to be cardioprotective.¹⁴ Yoga therapy has been demonstrated to be more effective than physical therapy in improving pain, back function, spinal mobility, depression, and anxiety in individuals with persistent low back pain.¹⁵

CARDIAC DISEASE

"Yoga tends to lower blood pressure, increase lung capacity, improve pulmonary function and heart rate, improve blood circulation, and boost muscle tone," according to the American Heart Association.¹⁶ According to a study by Sarvottam et al., even short-term yoga training can reduce the risk of CVD. A ten-day yoga intervention programme was found to significantly lower BMIs and systolic blood pressures in 51 overweight and obese males in the study. These individuals also saw significant improvements in inflammatory markers, with IL-6 levels dropping and adiponectin levels rising.¹⁴

Training of Yoga Asana practice for 30 minutes per day.¹⁷

- Mudrasana
- Balasana

- Vajrasana
- Paschimottanasana
- ArdhaMatsyendrasana
- SuptaVajrasana
- Dhanurasana
- Shavasana

CONCLUSION

Current researches demonstrate the benefits of Yoga therapy for addressing common diseases and the effects of sedentary lifestyles including recommendations for health conditions & disorders such as Dementia, COPD (Chronic Obstructive Pulmonary Disease), Cardiac Rehab, Anxiety and Depression, Cancer, Fall Prevention (Balance and Gait), Arthritis, Chronic Pain, Sleep Problems and Palliative Care Patients. Yogasanas are effective in improving balance in elderly individuals.

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PREVENTION OF AKALAJA JARA THROUGH SVASTHAVRITTA PRACTICES

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ABSTRACT:

Changing of life in child, young and old age is the universal truth of every living creature on the earth. Among above all the last one is the undesirable stage mainly for human. All branches of life science are in the search of the way that can prevent the aging but opposite to it, due to improper diet and life style habits the new health issues arise. Early aging is one of them. Ayurved describes Jara as one of branch of AshthangAyurved. As per it, gradually decreasing Preeranakram of Rasadhatu and thus negative effect on other dhatu are responsible for the Jara. Jaraaccepted as Svabhavabalapravruttyaadhi and sub divided in to kalaja and akalajaJara. From which, the first one is unavoidable but the later one can be manageable and curable by Ayurved. It can be prevented by PathyaAhara and Vihara which as whole comes under Svasthavritta. It's including the various Ahara and Vihara as per individual Prakruti, Desha, Bala, Kala, Agni, etc. which helpful to avoid the early aging as well as providing support for easy going of old age. The preventive aspects are includes diet and lifestyle changes as Dincharya, Rutucharya, Sadavritta along with RasayanChikitsaa. Timely application of these measure definitely helpful. It must should starts in early age of life and continuous for the required duration for desirable result.

Key Words: AkalajaJara, Svasthavritta, Rasadhatu, Dincharya, Rutucharya, Rasayan

INTRODUCTION:

स्वाभाविकास्तुक्षुत्पिपासाजरामृत्युनिद्राप्रभृतयः ॥२५॥ - सु.सू.१

स्वभावबलप्रवृत्तायेक्षुत्पिपासाजरामृत्युनिद्राप्रभृतयः;

तेऽपिद्विविधाः- कालजा, अकालजाश्च; | - सु.सू.२४/२७

कालजाइतियेसमयेप्राप्ताभवन्ति | अकालजाअसमयेजाताइत्यर्थः| - सु.सू.२४/२७डब्बळ

Acharya Susruta includes Jara in svabhavabalapravrutavyaadhi and divided in Kalaja and Akalaja type means either it happens on its natural time or not which depends upon the Parirakshana. Thus, when Jara happen prior to its normal period it known as AkalajaJara.

तत्रपरिरक्षणकृताःकालजाः, अपरिरक्षणकृताअकालजाः | - सु.सू.२४/२७

परिरक्षणंरक्षाप्रयत्नः, तस्मिन्नपिपरिरक्षणेयेभवन्तितेकालजाः|

अपरिरक्षणकृताइतिअपरिरक्षणंरक्षणेऽप्रयत्नः, तस्मिन्येभवन्तितेअकालकृताः|

- सु.सू.२४/२७डब्बळ

Dalhan clears Parirakshan as Rakshaaprayatna. So, Akalajajara is result of lack or absent of the precautions which are required to prevent Jara. It results in various diseased conditions or more prone for other complications and morbidity, too. There for Prevention from AkalajaJara is required as it may result in to death also as seen in COVID-19 pandemic.

आचत्वारिंशतःसर्वधात्विन्द्रियबलवीर्यसम्पूर्णता, अतऊर्ध्वमीषत्परिहाणिर्यावत्सप्ततिरिति |

सप्ततेरूर्ध्वक्षीयमाणधात्विन्द्रियबलवीर्योत्साहमहन्यहनिवलीपलितखालित्यजुष्टंकासश्वासप्रभृतिभिरुपद्रवैरभिभूयमानंसर्वक्रियास्वसमर्थजीर्णागारमिवाभिवृष्टमवसीदन्तंवृद्धमाचक्षते ||२९||

- सु.सू.२४/२९

Up to age of 40 years there is fulfillment of all Dhatu, Indriyabal, Virya and this period known as Sampoonata. After that there are gradually declines of above all till 70 years of age. Above 70 years, there is day by day decline of Dhatu, Indriyabal, Virya and utsaah with other diseases like Khalitya, Palitya and Kas, Shvas etc as Upadrava, person is unable to perform all the activities and gets destroy as old house get destroy by Heavy rain. This condition is known as Vruddha as per Ayurved.

As per the modern, after 35 years there is decline in physiological processes. The rate of decline varies from person to person and from one physiologic system to another. Thus, the physiology of ageing is extremely complex and diverse. It comes under early aging when it happens before 40 years of age. One theory for aging is suggests that intrinsic factor is responsible and is genetically controlled. The free radical theory postulates that the accumulation of free radicals, which are very reactive, can cause random damage within the cell. The extrinsic factors like over exposure to sun light results in an alteration of cell biochemistry and cellular metabolism that affects synthesis of DNA and RNA leading to

alterations in protein and enzyme production and this may leave cell inactive or dead. So, both the intrinsic and extrinsic factors are responsible for aging.

MATERIAL AND METHODS:

The material which is helpful and needed is collected from the online as well as offline sources. All Samhita with their commentaries were properly read. The online e-Samhita of NIIMH use to search and collect the material related to topic. Modern medicine books are learned with proper guidance. The collected sources were properly examined and explored which useful for the preparation of preventive guidelines for AkalajaJara.

BODY:

Purush having process of formation of Ahararas throughout life in which with the help of Jatharagni four type of Anna get digest and as per the Khalekapotnyaya, Kedarikulyaanyaya and Ksheeradadhinyaya provides poshan to all dhatu by Preeran karma. In Vrুদ্ধhavastha there is changes happens at the level of Dhatu in ParipakvaAvastha. So, Dhatu cannot get proper Preeran. In female the same Pakva Dhatu are responsible for Raj Kshaya. The preventive measures for the longevity are in details explained in SvasthaChatushka by Acharya Charak. Matraashiteey is the first step towards it as maatravyuktahar is not does any harm to prakruti and give benefits of Bala, Varna, Sukh and Ayush. Trividhukshibhojan and following of AshthvidhaAharavidhiVisheshaatana are the basic things that must follow for avoid the illness and get proper nutrition. One should not consumes less food than own requirement as it is harms Ayushya. All the reasons that responsible for Ajirna are also avoided from proper matra of ahar to the manasikbhaav like irsha, chinta, krodha etc while consuming the food. All the Nidaan which are responsible for the Srotodushti should avoid as normal state of Srotas is prior condition for health. Excess consumption of some dietary substances like Lavan, Pippali, Tiktaras and mental stress like atichinta, shoka are alone having potency for AkalajaJara. Following dinachryaa is secondary approach to prevent it. Awakening in Bhramamurhut, Asan, Pranayama, Yoga, Dhoomapan, Nasya, TailaGandush, MoordhniTaila, KarnPooran, Abhyang, Vyaayam, etc are helpful for this which are directly or indirectly beneficial to sensory or motor organs individually or as whole. Following of Sadavritta will help to built stronger relations with the society and surrounding environment and as result of this it's provide positive approach for living and healthy state at psychological level. Human gets Pran from the three Upasthambha. Proper methods for the Ahar, Nidra and Anand will provide Sustainability of health. Consumption of dravya which are Ayushyakar like Amalaki, Haritaki, Mansa, Dugdha, Ghruta, JeevaneeyDravya, Vayasthaapana and Madhur-ras Pradhan Dravya are the specialized to prevent AkalajaJara. To apply diets and habits as per Rutu will sustain bala and gives longevity. RutuShodhan to purify the body and pacifies respective Dosh-prakopa. One should not suppress the natural urges which cause vitiation of mainly Vata Dosha that is the dominant dosha of Jaravastha. To sustain Preeran karma

of Rasdhatu specific yog like Chyavanprasha, TriphalaRasayan, NagabalaRasayan, Dhatrihruta are helpful and can use as preventive measures also. To maintain the level of memory or sustain it MedhyaRasayan can also useful. Superior to above all Achara Rasayan plays vital for Emotional and Spiritual Health of person. Avoid excess Walking or work out more than own capacity will give prevention from AkalajaJara. Modern medicine gives some additional reasons for the aging like Smoking and Alcohol consumption, UV or Sun rays exposure, alteration in blood pressure, lack of sleep, heavy weight, outdoor work, etc. as the early aging. Thus, one should try to avoid all these.

DISCUSSION:

All the preventive advices given above are too significant for preventing early aging as well as beneficial in old age also. The changes that are happen during aging like decline in muscular strength and mass, bone mass and structural integrity, reduces maximum cardiac output, diminishes of lungs effectiveness, difficulty in language, memory and cognition, decrease ability to recall, slow rate of learning new materials are seen. Some abnormalities of sensory organs like presbyopia, dry eyes, hearing loss, diminish in taste, touch and smell. Less efficiency of digestive and elimination process, impaired excretion of urine, nocturnal diuresis, decreased urine flow rate are also seen. Skin heals more slowly with age and develops spots and moles. Immune system becomes less efficient. Endocrine system also exhibits. All the above changes that happen during aging are can prevent by all the measures given in Ayurved. Thus it will provide healthy life with minimal discomfort and prevent from later diseases that can produces.

CONCLUSION:

बालेविवर्धतेश्लेष्मामध्यमेपित्तमेवतु ।

भूयिष्ठं वर्धते वायुर्वृद्धे तद्वीक्ष्य योजयेत् ॥३१॥ - सु.सू.२४/२७

Jara in stage have more chances to develop diseased condition as it dominated by vata and thus the Preventive measures that are mentioned in Ayurved gives distal vision for the betterment. Preventive cure of Ayurved followed by society will definitely helpful at individual and national level by improving level of life and thus will sustain economy, social relations and environment as well.

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E Samhita of NIIMH

PREVENTION OF AKALAJA JARA THROUGH SWASTHAVRITTA PRACTICES

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ABSTRACT

Ayurveda, the oldest science of life proves its integrity in all aspects. In last two decades, people are majorly getting affected by AkalajaJara i.e. premature ageing. The symptoms which are used to be seen in sixties of the person are getting just in their thirties and forties. Ageing is an inevitable process with various aspects. No one can escape from this natural process in the body. When biological ageing is faster than chronological ageing then one can suffer from AkalajaJara. Ayurveda defined Jara as the process of getting old by degenerative of Dhatu (changes of body tissues and organs.) Jara is mainly defined into two types i.e. KalajJara and AkalajaJara. In Ayurveda, Acharya has clearly mentioned the decade wise ageing process. For prevention of AkalajaJara, Swasthavritta offers us Dincharya, Ritucharya, Sadvritta and RasayanaChikitsa in very detailed form. We can definitely slow down the process by acquiring these regimens. The preventive aspect of this irreversible process of ageing has been elaborated in this article.

Keywords: AkalajaJara, Dincharya, Ritucharya, Rasayana, Sadvritta.

INTRODUCTION

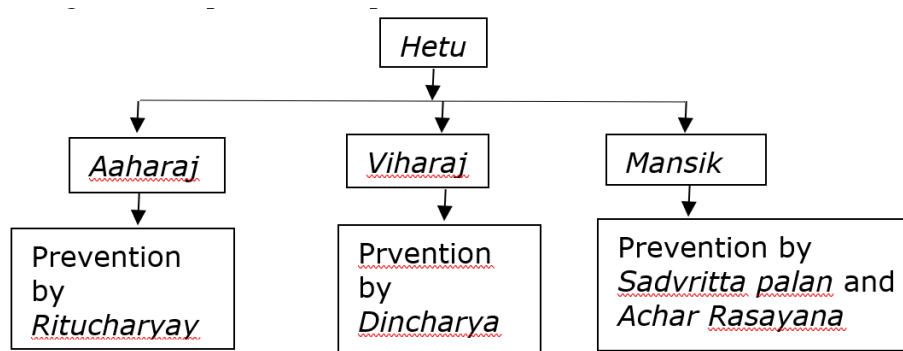
Growing old is a process occurs in every human being. It is a natural process occurs by changes in various systems in the body. In recent years, life expectancy has increased which shows significant increase in the number of elderly population. Now a days this ageing process is getting faster. Many environmental causes are responsible for this. Mainly chemicals, fertilizers, ammonium compounds, are commonly used in food and milk industry which decrease the quality of food. These all chemicals increase the toxins in the body and increase the rate of premature ageing. While running in the race of gaining luxurious life man losing his mental health and stress

level is increasing tremendously. Stress is one of the major reason for premature ageing. These all factors are responsible for symptoms like wrinkles, greying of hair, baldness, depression etc.

While explaining process of ageing occurs in living organism various scientist gives many theories. Johan Bjorksten suggests that an accumulation of cross-linked proteins damage cells and tissues, slowing down processes and results in ageing.[1] Another one is free radicle theory postulated by Denham Harman, he stated that molecules with free electrons react with healthy molecule in a destructive way which causes ageing. Rate of living theory tells us that duration of life of an organism dependent upon the exhaustion of a fixed quantity of a vital substance at a rate proportional to the metabolic rate.[2] But no one is able to give satisfactory theory for it.

Ayurveda is divided into eight branches and Jarachikitsa is one of them. [3] Jara means a process in which body elements get degenerate continuously. Jara is divided into KaalajJara (natural ageing) and AkalajJara (premature ageing). Acharya Charaka has explained KalajJara as a SwabhavikRoga.[4] . AkalajJara is nothing but the condition in which you look older than your actual age. Swasthavritta mainly focuses on prevention of diseases i.e. [5] “swasthyasyaswasthyarakshanam.” The person who follows rules of Swasthvritta acquires good physical and mental health, complexion, compact body, luster, happiness, longevity and disease free state. If we able to prevent Hetus, then we can easily control the health of a person. Swasthavritta offers the ideal lifestyle which we should follow according to day i.e. Dincharya, according to night i.e. Ratricharya and according to season i.e. Rutucharya. In Ayurveda, Acharya told three types of etiological factors responsible for it as AhartmakHetu, ViharatmakHetu and MansikHetu. By following proper Dincharya, Rutucharya and Sadvritta we can counter these Hetus and able to prevent AkalajJara.

Figure no. 1 showing Hetu and preventive aspect



OBJECTIVE

To discuss, appraise and elaborate various preventive aspects of AkalajaJara mentioned in Samhitas.

MATERIALS AND METHOD

Literature regarding Jara, AkalajaJara and its preventive measures was collected from various Samhitas like Bruhatrayi, compendium textbooks and standard online database. Correlation between effect of various regimens and its preventive effect on AkalajaJara was found and try to elaborate.

DISCUSSION

Causative factors for premature ageing

Table no: 1 showing Hetu of premature ageing according to various Acharyas

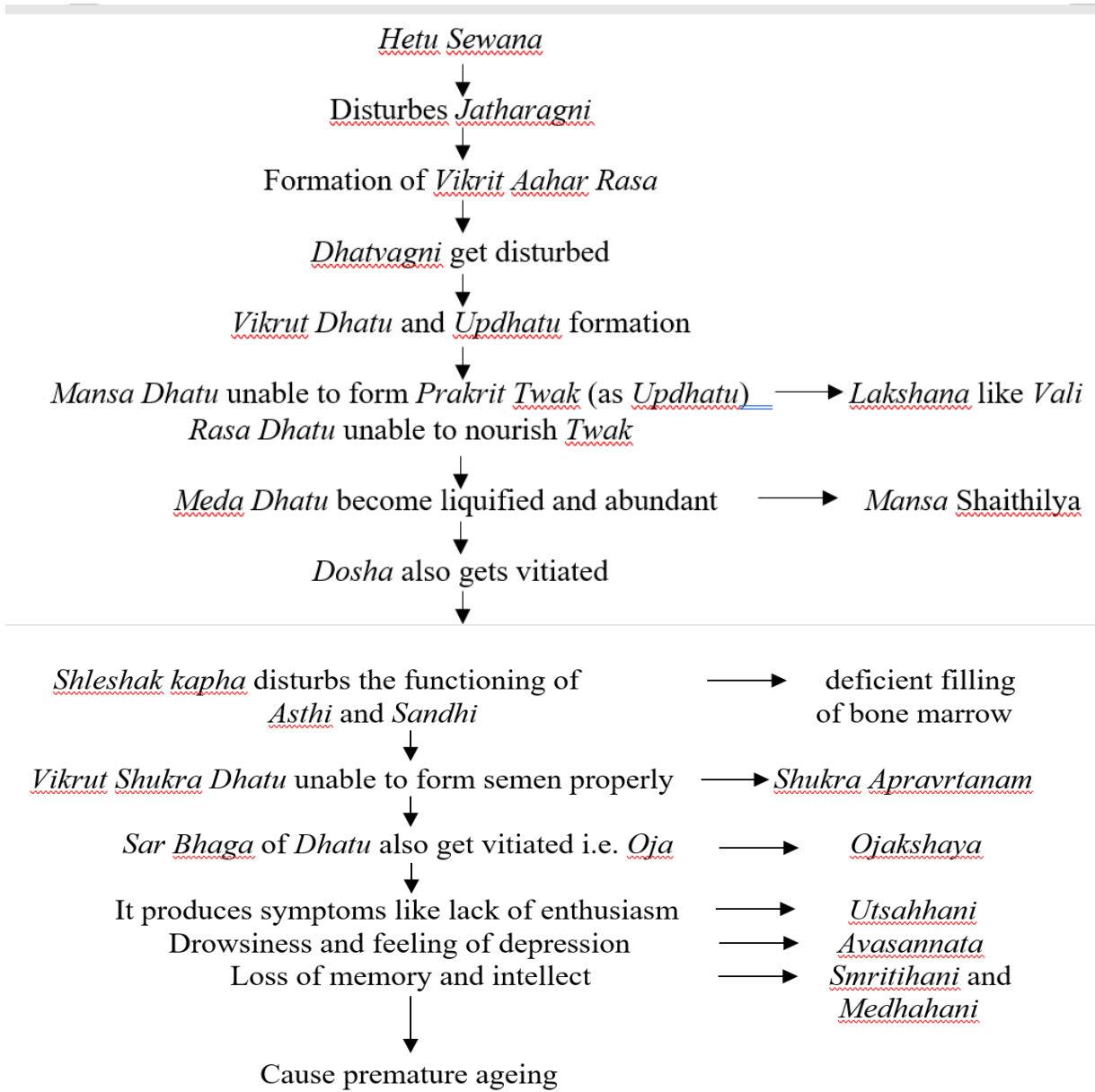
<i>Acharya</i>	Factors
<i>Charak</i> ^{[6],[7]}	<p><i>Aaharaj :-</i> <i>Amla</i> (sour), <i>Lavana</i> (saline), <i>Katu</i> (pungent), <i>Kshara</i> (alkaline), <i>Shushkashaka</i> and <i>Mamsa</i>, <i>Tila</i> and <i>Pishtannabhojan</i>, <i>Virudhha</i>, <i>Navashuka</i> and <i>Shamidhanya</i> (germinated or fresh monocots and dicots), <i>Virudhha</i>, <i>Asatmyabhojana</i>; <i>Klinna</i> (decomposed), <i>Guru</i> (heavy), <i>Putiparyushitabhojana</i> (putrefied and stale food items), <i>Vishamashana</i> (indulging in irregular diet or eating when the previous food is undigested), <i>Ayathagniabhayavaharana</i> (eating in excess than one's own digestive power),</p> <p><i>Viharaj :-</i> <i>Divaswapna</i>, <i>Ativyavaya</i>, <i>Atimadyapana</i>, performing irregular and excessive exercise, <i>Vishamashareerasana</i> (irregular posture of the body), <i>Atimaitihuna</i> (excessive indulgence in sexual activity) <i>Asatsamshraya</i> (association with wicked persons), <i>Udirnavegavinigraha</i> (Non suppression of suppressible urges) <i>Vegavidharana</i> (suppression of natural urges)</p> <p><i>Mansik:-</i> <i>Bhaya</i> (fear), <i>Krodha</i> (anger), <i>Shoka</i> (grief), <i>Lobha</i>, <i>Moha</i>, <i>Ayathabalarambha</i> (over strain),</p>
<i>Sushrut</i> ^[8]	<p><i>Mansik :-</i> <i>Krodha</i>, <i>Shoka</i>, <i>Shram</i></p>
<i>Vagbhat</i> ^[9]	<p><i>Aaharaj:-</i> intake of <i>Amla rasa</i></p>
<i>Rasaratnasamuchchaya</i> ^[10]	<p><i>Aaharaj:-</i> <i>Atisheetasevana</i> (Excessive cold intake), <i>Kadannasevana</i> (Unwholesome food)</p> <p><i>Viharaj:-</i> <i>Pathanamatigamana</i> (Excess walking), <i>Vruddhoanganasatatasanga</i> (Excessive indulgence in sex with elderly woman.)</p>

	<i>Mansik :- Manapratikula i.e. Mental stress.</i>
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Process of AkalajaJara (early ageing)

All the causative factors mentioned above mainly affect the Jatharagni. When Jatharagni is affected, food does not get digested properly, as a result Aahar Rasa will not form properly. Due to VikrutAahar Rasa Dhatvagni is also get disturbed and results into disturbed Dhatu formation i.e. Vikrut Rasa, Rakta, Mansa etc. furthermore Dhatus form VikrutUpdhatus. As a result, Mans Dhatu unable to produce Prakrit Updhatu of Mans i.e. Vasa and Shat Twacha and Rasa Dhatu is also unable to nourish Twaka. Mainly disturbance in equilibrium of Tridosha occurs. Degeneration of musculature takes place. It disturbs the functioning ShleshakaKapha which disturbs Asthi and Sandhi. As a result, deficient filling of bone marrow occurs. VikrutDhatwagni produces less Shukra Dhatu and Ojas which is Sarabhaga of all Dhatus is also gets vitiated and it ultimately hampers one's immunity and many diseases occurs at young age.[7]

Figure no: 2 showing process of ageing



Lakshanas of AkalajJara[7]

Sharirik :- vali (wrinkles)

Palitya (premature greying of hair)

Khalitya (hair loss)

Mamsashaithilya (muscle weakness)

Shukraapravartanam

Ojakshaya

Analpameda (debilitated)

Mansik :- Smritihani (loss of memory)

Medhahani (decreased intellectual functions)

Buddhahani (deteriorated wisdom)

Utsahhahi (loss of enthusiasm)

Nairashya and Avasannata (depression)

Management of AkalajaJara

The very powerful potential of prevention of diseases has only been discovered by Ayurvedic Acharyas. Though ageing is a progressive and irreversible process, we can still slow down this process. To avoid pre mature ageing Swasthavritta plays very important role. Mainly Dinacharya, Rutucharya, SadvrittaPalan and RasayanChikitsa give magnificent results.

Dinacharya

1) BramhamuhurtJagaran[11]

It is a time between respiration and photosynthesis in plants. There is abundant oxygen present naturally which enhances the process of binding of oxygen to hemoglobin. It easily reaches to distant tissues and helps to increase immunity which ultimately helps to keep away diseases. As it is a apana kala, it enhances the natural urges of the body and stool is evacuated easily. This helps to keep digestive system healthy and maintain equilibrium of the dhatu.

Probable mode of action :- If we wake up at bramhamuhurta the melatonin which is secreted by pineal gland is absent or low as compared to day time in the body. It helps us to concentrate more and keep our mind calm and stable. This helps us to maintain our memory, intellect, wisdom in good state. Hypothalamus secretes cortisol from adrenal cortex which is also called as fright and flight hormone under the influence of ACTH. Plasma level of cortisol helps us to fight against stress and trauma. The ACTH get secreted more in morning hours as compared to evening. So by waking at bramhamuhurta we can able to fight against stress and it helps to prevent premature ageing.[12]

2) Dantdhavana[13]

Brushing teeth with Katu, Tikta and Kashaya Rasa mainly act on Kapha Dosha. It helps to prevent oral disease and keeps your teeth & gums strong. Several dental and gums problems like breaking, decaying, loosening of teeth which generally occur in old age can be prevented by Dantdhavana.

Probable mode of action:- Now a days we use Madhur Rasatmak toothpaste for better taste. But it secretes unnecessary hormones like insulin which proves harmful. These hormones increase the brain degeneration which cause premature ageing. DantDhavana with Katu, Tikta, Kashaya rasa cleans the oral cavity and its astringency tightens the gums and prevents loosening of teeth which

ultimately slow down teeth related ageing process. Tikta and Kashaya Rasa enhances the secretions of salivary gland more as compare to madhur rasa. This helps to remove toxic substances like plaque etc. and good health of teeth can be achieved.

3) Anjana

By doing Souviranjana Anjana which is used daily we can prevent eye and vision related disorders. Presbyopia, glaucoma and other diseases which generally occur in old age can be prevented by doing Anjana. Now a day's computer and screen use has been tremendously increased. Excess use of blue light used in a screen is very dangerous to eye health. This blue light. As a result, people are facing vision problems at very early age. If we do Anjana on regular basis we can prevent these problems and can delay the process of ageing related to eyes.

Probable mode of action:- Anjana mostly contains arsenic and bismuth compounds. These compounds have large molecular size which makes it unable to cross blood brain barrier when administered orally. In Anjana we increase the bioavailability of these compounds and can increase tissue contact time. We can get desired medicinal results of arsenic and bismuth compounds on anxiety, depression, insomnia, obsessive compulsive disorder etc. Thus it will be helpful to slow down premature ageing process. [14] Anjana is also useful in nasolacrimal duct blockage. In Anjana Karma most of the particles in the drugs are excreted by nasolacrimal duct and helps to clear blockages in the duct.

4) Nasya

Daily Nasya which we can practice is PratimarshaNasya. Generally, Anu Tail is used for PratimarshyaNasya. Nasya mainly acts on Vata Dosha which is the main reason for many diseases. Main symptoms of AkalajJara i.e. Khalitya and Palitya are mainly prevented by Nasya Karma.

Probable mode of action:-While doing Nasya we directly come in relation with olfactory nerve which is very close to the brain as compared to other cranial nerves. This olfactory nerve gives us direct access to limbic system. So by administration of drug through nose, we can stimulate higher centers of brain which regulate secretions of endocrine and nervous systems. Therefore, by doing Nasya we can regulate hormone secretions, emotional and behavioral pattern, body temperature, circadian rhythm which helps us to prevent AkalajaJara[15]

5) Gandusha and Kawala

Gandusha is mainly done by Sneha Dravyas. All VatajVikaras of Mukha are prevented by Gandusha. Symptoms which may lead to look you older like cracked lips, swarbheda are all prevented by doing Gandusha.

Kawala is mainly used in KaphajaVikaras. Aruchi, Daorgandha, Mukhavairasya can be prevented by Kawala.

Probable mode of action:- Gandusha and Kawala increases the mechanical pressure inside the oral cavity and send signals to salivary nuclei in the brain stem. PNS increased salivary secretions by means of facial and glossopharyngeal nerve and toxins, food debris in mouth removed out and helps us to maintain oral hygiene. It also increases vascular permeability and helps to maintain pH.[16]

6) Dhoompana

As a preventive aspect we can use PrayogikDhoompana on daily basis. It mainly acts on diseases of head and neck area. Shirogourava (heaviness of head), Shirahshoola (head ache), Kasa, Shwasha, Karna Strava (ear discharge), Nasa Strava (nasal discharge), Netra Strava (eye discharge) are treated and can be prevented by Dhoompana.

Probable mode of action:- In Dhompana we use to convert drug in gaseous form and then administer in the body. This increases the bioavailability of the drug. The gases get absorbed in the blood and reach to every part of head region. [17] This increases brain functions and helps to delay ageing process.

7) Abhyanga

Abhyanga helps to strengthen body, pacify Vata, relieves tiredness and repair tissues. In symptoms like Khalitya, Palitya, Smurtihani and Budhhihani, Shiroabhyanga gives remarkable results. It also improves sleep and nourishes skin which helps in reducing symptoms like Vali and Pali. In AshtangSangraha, Acharya told Abhyanga as a 'TwachashyaParamabhyango' which means for any skin related disorder Abhyanga is the best.[18] Another shloka states that Abhyanga is 'JarashramaVataha' i.e. it helps in delaying ageing. That is why Abhyanga is the best preventive measure in AkalakaJara.

Probable mode of action:- Abhyanga produces energy in fatigued muscles by means of increasing peripheral circulation which cause vasodilation and provides more oxygen to the muscle. It activates PNS and slows down heart rate, breathing and helps to improve digestion. These gives soothing effect to nervous system and endocrine system and release the load on brain and helps us slow down the process of ageing.

8) Udwartan

When we use powdered form of drugs to massage the body then we call it as a Udwartana. It mainly acts on Kapha Dosha and acts as Kaphahara. It is 'Twakprasadkaram Param'. It helps to open up the skin pores and improves complexion which helps you to fight against symptoms of premature ageing.

Probable mode of action:- The mode of action of Udwartana is almost same as Abhyanga. In additionally it acts on adipose tissue and enhance assimilation of fat. This helps to decrease subcutaneous fat deposition and improves lymphatic circulation. It prevents Lakshanas like Analpameda and Mansshaithilya and slow down ageing process. [19]

9) Vyayam

The action which produce tiredness in the body is called as Vyayam. If we do Vyayama daily, it enhances digestive fire, sweating and also causes Dosha Kshaya which helps to maintain equilibrium. It also helps in reducing excess fat. Immunity is also get increased by doing Vyayam on daily basis which keeps a man healthy.

Probable mode of action:- Vyayama reduces the ageing by modulation of sympathetic activity, increasing skeletal muscle mitochondrial content and protein synthesis.[20],[21] Daily exercise have been proven for delaying symptoms like dementia, depression and other mood disorder.

10) Snana

Snana helps to keep body clean. It keeps away bad odour, itching, impurities etc. Acharya said that Snana is 'Param Ojaskar'. Immunity is also depends upon Oja so by doing Snana we can boost our immunity.

Probable mode of action:- Snana produces hyper thermic reaction in the body which increases temperature. Because of increased temperature heat sensitive neurons get excited and cold sensitive neurons get inhibited in hypothalamus. This causes stimulation of parasympathetic nerves and leads to perspiration which decreases body temperature. Automatically peripheral pO₂ will increase which will stimulate metabolism, induce elimination of toxins and waste material and refresh body.[22]

11) Padatrandharan

Acharya Sushruta, specially mentioned that daily use of Padatrana acts as Vrushya, Ojasam and Chakshushya. It helps to maintain virility, vision and immunity and delays ageing process.[23]

12) Chatradharan

This also helps to maintain complexion, vision and Ojas. This protects us from excess heat, direct contact to sunlight, rain, wind etc. and ultimately protects our skin, and helps to maintain its nourishment. [24]

Ratricharya

Aahara :- Acharya said that food must be consumed in less quantity (compare to afternoon) and in first Prahara of the night i.e. first three hours of the night.[25] It helps to digest the food easily. Aahara must be of LaghuGunas.

Vihar :- Acharya said to practice Nasya in Sayamkala for Vata predominance Vyakti. It helps to Vali and Palita i.e. wrinkles and greying of hairs.

Charakacharya said to perform Rasanjana once in five or eight days at night.[26] It helps for lacrimation and keep eyes and vision healthy.

Maithuna is also included in Ratricharya and it has a great impact in AkalajaJara. That is why Acharya gives specific time to perform sexual intercourse. Otherwise it effects on Shukra Dhatu & Ojas and produces various diseases like Karshya, Pandu which causes premature ageing. According to Yogratnakara one should have intercourse once in the three days. Except in GrishmaRitu. By following this we can save shukra dhatu, maintain Ojas and stay healthy.

With busy working schedule, late night party trends, night shifts, people are sleeping late and waking up late in the morning. It disturbs the circadian cycle completely. These circadian rhythms are coordinated by supra chiasmatic nucleus (SCN), located in hypothalamus. Hypothalamus secretes melatonin naturally at night time and we use to sleep. But in disturbed circadian rhythm melatonin level in the body increases and produce symptoms like sleepiness, lethargy, less of enthusiasm. These symptoms enhance the process of ageing and people suffer from premature ageing. By following proper ritucharya we can able to slow down the process of ageing.

Ritucharya

In AkalajaJara, Ritucharya also plays a very important role. If you do not follow the proper Ahara, Viharas as told by Acharyas then you can definitely suffer from premature ageing. Ritucharya mainly divided into 2 parts. One is Aadan Kala and another is Visarga Kala. [27] Aadana Kala is comprises of three Ritus i.e. Shishira, Vasanta and Grishma. Visarga Kala is comprises of another three Ritus i.e. Varsha, Sharad and Hemanta. Aadana Kala starts from late winter. Tikta, Katu and Kashaya Ras are mainly dominant. [28] As moisture is get absorbed, symptoms of ageing like Vali is increases. Tikta, Katu, Kashaya Rasa helps to aggregate symptoms like Khalitya, Palitya. Long day exhaust you completely. Strength of the body is also get diminished. So to keep body cool and moist one must eat sheet and SnigdhaBhojana. Practice Diwaswap in GrishmaRitu, it helps to restore body strength. Eat Madhur aand Amla RasatmakAhara. By doing this we can able to maintain Dosha and Dhatu in equilibrium state and it helps to delay ageing.

Visarga kala starts from Varsha Ritu. Moon is more powerful than sun. Amla, Lavan and Madhur Rasas are predominant respectively.[28] Snigdha Guna in the body is increases and gives more strength to the body. Hansodaka is also mentioned in a sharadritu.[29] It has Laghu and Sheet Guna which helps to prevent the body from heat of Sharad Ritu and also counter the Hetu of Pitta Prapoka.

Table no. 2 showing Doshas Sanchaya, Prakopa and shaman with respect to Ritu[30]

<i>Doshas</i>	<i>Sanchay</i>	<i>Prakopa</i>	<i>Shaman</i>
<i>Vata</i>	<i>Grishma</i>	<i>Varsha</i>	<i>Sharad</i>
<i>Pitta</i>	<i>Varsha</i>	<i>Sharad</i>	<i>Hemant</i>
<i>Kapha</i>	<i>Shishir</i>	<i>Hemant</i>	<i>Grishma</i>

Sanchaya, Prakopa and Prashama of the Doshas have close relation with Ritu. By following proper Ritucharya we can able to maintain equilibrium of the Doshas. Acharya explains Aahara, Vihara according to Ritu which helps us to prevent diseases in SanchayaAwastha only.

When we shift from one Ritu to another, Doshas also changes their state. To inhibit this process there is a Ritusandhi period (inter seasonal period) i.e. last seven days of pervious Ritu and early seven days of upcoming Ritu.[31] In this period, regimen of the previous preceding Ritu should be discontinued gradually and succeeding Ritu should be gradually adapted. Sudden adaption and sudden discontinuation can cause disease and decrease your immunity. Hence, Ritucharya and all the regimens told under these are must be followed for slow down the ageing process.

Ageing is not a process which is limited only upto the Sharirik level. Mansik Bhavas are also responsible for Swasthya. These Dincharya, Ratricharya and Ritucharya prevent us from Sharirikageing. But to prevent Mansik ageing we must have to follow Sadvritta and Achar Rasayana which will ultimately lead to complete health.

Sadvritta

Good regimen which should be followed ideally is known as Sadvritta. The conducts which promote your health and keep mind healthy are come under SadvrittaPalana. It promotes you towards Sattvik life. Sadvritta further divided into VyayaktikSadvritta, social Sadvritta, MansikSadvritta, DharmikSadvritta and SharirikSadvritta.

For prevention from AkalajaJara following SadvrittaPalana helps you most.[32]

- By keeping body clean with cutting nails, frequent hand wash, wearing good clothes, applying oil to head, ears, nostrils and feet we can prevent the entry of foreign particles into the body.
- Never lie, don't hate someone, threatening others, making fun of others, must be avoided. These help you to keep your mind healthy and prevent you from bad thoughts.
- One must follow the rule of public etiquette. Don't laugh loudly, sit properly, avoid yawning, sneezing, nail biting etc., these help you to maintain your immunity strong and help you to maintain equilibrium of Doshas.
- Food must be eaten in a clean and hygienic place. Don't talk or laugh while eating. Use clean clothes while eating this prevent the infection source. Always have fresh food. Prefer fruits and vegetables, this helps to maintain Sattvik Guna and keep Agni in good condition.
- Never insult a woman. Do not get indulge in sex with many women, do not sex with older women. This prevents your Shukra Dhatu and helps to maintain Ojas. AkalajaJara gets prevented by doing this.

While describing importance of Sadvritta, Acharya Charaka said that one who follows description of five sense organs, mind, four etiological factors and good conducts for healthy body and positive mind will definitely live hundreds of years. [33]

Rasayana

Ayurveda has separate disciplines called as Rasayana Tantra. It helps to delay ageing process. Rasa means Dhatu and Ayana means movement. According to ShabdaKalpa Drum, which helps the Dhatu to reach their destination is called as Rasayanas. While defining Rasayana Acharya Charaka said that 'Labhopayohishastanamrasadinamrasayanam' which means the way by which RasadiSapta Dhatu get proper nourishment in all ways. [34] In Bhavprakash, it is mentioned that therapy which stops and prevent the ageing and at the same time cures disease is called as Rasayana. In Harit Samhita, Acharya explained that the process which strengthens the body, organs, teeth and prevent Vali (wrinkling skin), Palit (whitening hair), Khalitya(loss of hair) is

known as Rasayana.[35] From all the above Niruktis and definitions we get that to prevent ageing, Rasayana plays a major role.

Rasayana mainly defines into two parts. First one is Achara Rasyana which explains that which person able to take actual Rasayana therapy and other is Rasyana therapy. Just by following Achara Rasayana we can get the actual benefits of Rasayana therapy. As everyone is not able to take Rasayana therapy so by following Achara Rasayana we prepare ourselves for actual Rasayana therapy. Achara Rasayana includes some conducts which should be practiced. They are as, always speak truth, get free from anger, don't drink alcohol, don't get indulged in sex & violence, talk smoothly, practice Japa, respect elders etc. These help you to maintain mental, spiritual and social well-being. It will give you a benefits of rejuvenation therapy. [36]

Acharya Sharangdhara and Vagbhata already mentioned the expected loss of Dhatu according to age. Rasayana are also explained according to age. By taking these Rasayana according to age we can definitely prevent and able to slow down the process of AkalajaJara.

Table no:3 Showing loss of impact according to decades and Rasayana used for it.

Decades of life	Loss of impact <i>Sharangdhar Samhita</i> ^[37]	Loss of impact <i>Asthangsangraha</i>	Desirable <i>rasayan</i>
1-10	<i>Balyam</i>	<i>Balyam</i>	<i>Vacha, Swarna</i>
11-20	<i>Vridhhi</i>	<i>Vridhhi</i>	<i>Kashmari, Bala</i>
21-30	<i>Chavi</i>	<i>Prabha</i>	<i>Amalaki, Lauha</i>
31-40	<i>Medha</i>	<i>Medha</i>	<i>Shankhapushpi</i>
41-50	<i>Twaka</i>	<i>Twaka</i>	<i>Jyotishmati</i>
51-60	<i>Drishri</i>	<i>Shukra</i>	<i>Jyotishmati</i>
61-70	<i>Shukra</i>	<i>Drishri</i>	<i>Atmagupta, Ashwagandha</i>
71-80	<i>Vikram</i>	<i>Shrotendriya</i>	<i>Amalaki, Bala</i>
81-90	<i>Budhhi</i>	<i>Mana</i>	<i>Bramhi</i>
91-100	<i>Karmendriya</i>	<i>Sarvendriya</i>	<i>BalaRasayan</i>

Rasayana therapy mainly divided into three types on the basis of its utility.

1)Kamyarasyana:- when person desires health, luster, intellect by using Kamyarasyana we can able to fulfill ones desire. They are of three types-

Prankamyam to promote health

Medhakamyam to promote mental efficiency

Strikamyam to promote body luster

2) NaimaitikRasyana:- it is used in treatment of specific disease.

3) AjarasikRasyana:- where goat milk, cow milk used as a part of diet.

On the basis of mode of administration, it is divided into two parts

- 1) KutipravesnikRasayana
- 2) VatatapikRasayana

KutipravesnikRasayana is very hard to do and VatatapikRasayana Sevan is very easy and feasible in this modernized era. In this process Samshodhana Karmas are not required so it is time saving. It is also affordable to everyone and has all rejuvenating effects.

It is further divided into three types

- 1) AushadhRasayana
- 2) AharaRasayana
- 3) Achara Rasayana

Table no. 4 (showing types of rasayana)[38]

Basis of utility	Basis of mode of administration	Special Rasayana	drugs	and	measures
On the basis of effect	Based on drug, diet and lifestyle				

A. Kamyarasayana

i)prankamyar

ii)medhakamyar

iii) shrikamyar

B. Naimittikar

C. Ajasrikar A.KutipravesnikRasayana

B. VatatapikRasayana A. Medhyar

B. AacharRasayana A. Samshodhanar

B. Samshamanar A. AushadhiRasayana

B. AaharRasayana

C.AacharRasayana

Rasayana drugs mainly act on RasadiSapta Dhatu, Agni and Strotas. These are the main SampraptiGhatak in any Vadhi. If these three are in PrakrutAvastha then there is no possibility of any disease will occur.

In recent era cosmetics are very commonly used in every age group of people. These cosmetics are made from very harmful chemicals. They are mainly made up of lead compounds. When we apply these cosmetics on skin they get absorbed in skin and cause very harmful effects. Increasing symptoms like Vali, Palitya and Khalitya are mainly occur due to these harmful chemicals used in soaps, shampoos, powders, hair oils, nail paints, lipsticks etc. Though beauty is the desire of every human being now a days artificial beauty products decreasing the natural beauty as well as push the man into pre mature ageing process. By using Ayurvedic preparations for beauty purpose like, Kantivardhak Yoga (complexion promoter), GatraDaurgandhyahara Yoga (body deodorant), Osthalepa (cosmetics for lips), Kakshavasa (armpit deodorant), Darunakahara Yoga (anti-dandruff preparations) we can reduce the side effects caused by chemical cosmetic products and slow down ageing.

CONCLUSION

Jara is an irreversible process occurs in every living being. Though rate of premature ageing is increasing day by day. Ayurveda provides us the solutions in the form of Dinacharya, Rutucharya, Sadvritta, Achara Rasayana, and Rasayana therapy. Though we can not stop the process but we can definitely able to slow down it and stay away from premature ageing by following these daily and seasonal regimen with some code of conducts.

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