

AN AYURVEDIC APPROACH TO DELAY AGING THROUGH RASAYANA THERAPY

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ABSTRACT

It is a long time human quest to defeat aging and since time immortal researchers are tirelessly working on it. Several theories have been given to understand this physiological change. Chronological and Biological Aging; are the two components of Aging. The latter one can be reversed or delayed. In Ayurveda, a very unique concept of Rasayana (Rejuvenative Therapy) is mentioned which delays aging and hence is the area of great interest for researchers.

KEYWORDS: Aging, Rasayana, Health span, Cellular Aging.

INTRODUCTION

Aging has been defined as the total sum of physiological changes that progressively leads to the death of the individual. It is also defined as the intrinsic, inevitable, and irreversible age-associated loss of viability that render us more susceptible to a number of diseases and death or a progressive functional decline of physiological function and a decrease in fecundity with age. Undoubtedly, aging is associated with a wide range of physiological and cellular changes that limit our normal functions and make us more susceptible to death.

Aging has two main components, Chronological aging which refers to the actual age of the person in terms of years, months, and days. This component of aging is unstoppable, unchangeable and irreversible. Physiological/Biological aging is the second component and refers to an individual's development and changes based on certain cellular or molecular parameters. This involves looking at the individuals as they are and as they function, and not when they are born. Thus, biological aging is a set of processes that triggers deterioration of health and ultimately to death as a function of chronological age. Unlike chronological aging, biological aging can be reversed or delayed.

Health span refers to how long an individual lives a disease-free healthy life.

Therefore, biological aging in terms of health span is a result of complex structural and functional changes across molecules, cells, tissues and whole body systems. Its manifestation is influenced by several factors including genomic instability, telomere attrition, epigenetic alterations, loss of proteostasis, deregulated

nutrient sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion, and altered intra- and intercellular communication.

Cellular health is controlled at various points in the cell, starting in the nucleus through chromosome structure/organization, transcriptional regulation, and nuclear export/import, ranging outward to protein translation and quality control, autophagic recycling of organelles, maintenance of cytoskeletal structure, and finally maintenance of the extracellular matrix and extracellular signaling. Each regulatory system receives information from every other system, resulting in an intricate interplay of regulation controlling the aging of the cell.

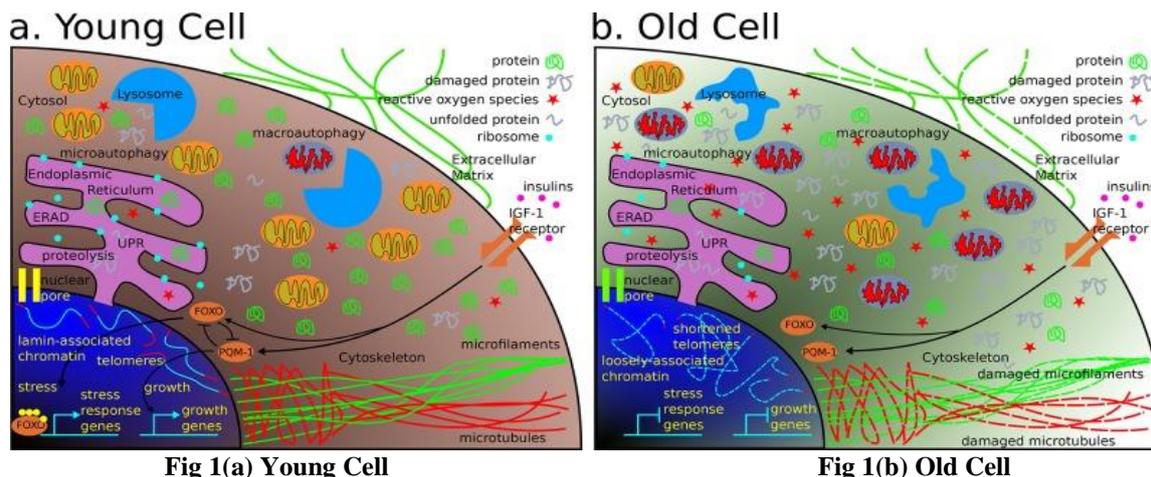


Fig 1(a) Young Cell

Fig 1(b) Old Cell

Fig. 1(a): In a young cell, most organelles are very healthy, and when proteins are translated and misfolded or acquire damage in the cytosol, they are cleared either by ERAD (in the ER) or autophagy (in the cytosol). When organelles become too damaged, they are degraded to component parts by macroautophagy. **Fig 1(b)** In an older cell, accumulated damage leads to a less healthy cell. ROS build up from damaged mitochondria and contribute to a greater fraction of the proteome consisting of damaged proteins and protein aggregates.

At the genomic level, accumulation of mutations in DNA together with faulty DNA repair processes and telomere shortening are all associated with early signs of aging.

However, there is no one single cause or trigger of the aging phenomenon and hence there are many different and often conflicting theories of aging. Theories of aging include but are not limited to.

- Genetic theory of aging,
- Damage or Error theory,
- Dilman's Neuroendocrine theory,
- DNA damage theory,
- Free radical damage theory,
- Gene mutations,
- Cell divisions/telomere shortening,
- Cellular senescence and
- Antagonistic Pleiotropy

Metabolism also promote aging, among many other factors, it has inspired a lot of excitement among researchers and they have been trying to understand why caloric restriction extends the life span in mice and other animals.

Another factor that is being thoroughly explored is the fallout from long term chronic inflammation. While several age-associated diseases involve the inflammatory process, long lived healthy individuals including centenarians are generally free from age-associated inflammatory diseases. Inflammation cannot be completely shut down as our bodies need the short term adaptive inflammatory process to fight infections and ward off short term stress. Thus, we need to better understand the inflammatory process at a molecular level to see if drugs can be developed that specifically target the aberrant pathways.

Hence, researchers strongly believe that a combination of several of these factors may contribute to overall aging.

Also, it is clear that aging in itself is inevitable; but there are ways to reduce or delay the pathological effects of aging. This involves looking at strategies to combat aging to see if any of the above mentioned triggers of aging are amenable to suitable drug interventions.

The researchers have shown great interest in aging in the modern era but this field was widely explored even in the ancient time. In Ayurveda, well planned diet, specific food items, lifestyle changes and specific drugs for rejuvenation are mentioned to delay aging and to remain youthful and vibrant for a long time. This specialized knowledge to deal with aging and associated problems is well explained as Rasayana Therapy.

Reasons of Ageing as per Ayurveda: Persons indulging in unhealthy foods, excess use of sour, salt, pungent and alkaline food which are incompatible, unaccustomed, dry, moisture producing, moisture soaked, hard to digest, bad smelling, stale foods, freshly harvested grains, dried vegetables, raw meat, sesame, horse-gram, curd, vinegar, fermented gruels, food prepared from flour and germinated grains, day sleep, copulation, drinking wine, irregular and excess physical exercise, exertion, strain, indulging greatly in anger, greed, fear, grief, fatigue, sinful acts, not careful about their food, activities and attending to urges of urine, feces etc cause aggravation of all the doshas.^[3]

Manifestation: As a result, the first dhatu ie.rasa gets vitiated, rakta gets overcooked (vidhaha), mamsa gets loose (sithila), medas get watery (visyanda), joints get loosened, majja does not adhere inside the bones, sukra does not get nourished well, neither ojas nor strength nor valor gets increased.^[3]

Features: Then, the person gets emaciated becomes weak with lethargy, stupor and laziness, perspires greatly, does not relish anything, becomes disinterested,

incapable of doing any special work of both the body and mind, loses complexion and memory, short of intelligence, unable to attain the desires (of the body and mind) either of the day or of the night takes deep breath in utter despair leads a miserable life though not become a store house of many diseases.^[3]

When to take Rasayana Therapy: It should be taken either in young age or middle age, by the person who is self-controlled, who has undergone oleation, blood letting and other purificatory therapies.^[3]

Things to avoid to delay Ageing: Hence, an intelligent person, firstly should avoid aggravation of doshas caused by foods etc, described above and if doshas are already accumulated then only after eliminating it by purificatory therapies should start rasayana therapy³Excess use of food with sour, bitter, alkaline pungent taste, hot and penetrating potencies are the cause for hastening old age. Avoiding these leads to normalcy of fire and that is the root cause for proper growth of the tissue.^[3]

Benefits of Rasayana: Long life, good memory, intelligence, health, youthful life, good color, complexion, voice, broadmindedness, increase of strength of the body and sense organs, success in speech, sexual prowess, brilliance.^[3] Rasayana drugs augment lifespan, mental capacity, brilliance and vitality.^[3]

DISCUSSION

The Researchers are always tirelessly working to come out with the safest and the most effective drug to reverse aging. Several theories to explain aging has been proposed but the picture is still not clear on the most ideal one to be selected so as check the suitability of the drug to reverse aging without disturbing the other physiological process.

Use of Haritaki, Brahmi, Amalaki, Mandukaparni, Sankhapushpi, Bhallataka, Pippali, Lasuna, Silajita etc in combination have been mentioned as the Rasayana in Ayurveda Classics. Many important and very popular yogas like Chyawanprash Awaleha, Brahma Rasayana, Abhyaamalaki yoga, Vardhaman Pippali, Saptamruta Churna etc. is clinically proven as very effective rejuvenators. Also, the different methods to undergo Rasayana Therapy like Kutiprivasika and Vatatapika Rasayana Therapy is also mentioned in the classics and has been researched by many scholars.

Based on all these age old scientific knowledge from Ayurveda classics; like knowledge of effective drug to rejuvenate and various methods to undergo Rasayana Therapy mentioned there; can be adopted to match the contemporary needs which may prove a boon to human kind as aging is always associated with chronic health problems and complications.

CONCLUSION

Aging is a major risk factor for most chronic diseases and researchers agree that if we can address the issue of aging itself, we could potentially delay and diminish age-associated diseases all at once. Researchers are looking at slowing down aging with the promise that a drug targeting the aging process will not only slow down aging but will also delay age-associated pathologies and diseases. This approach is very attractive as researchers do not need to discover drugs to combat specific age-associated conditions like cancer, diabetes or dementia, but instead treat the aging process itself.

Hence, in this context, the role of Rasayana Therapy is a very interesting area of research which seems to be very promising on the above said scales as it not only delays aging but also combat age specific disease and its complications.

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