

Role of Exercise in Prevention of Ageing from Ayurvedic Perspective

Purva S.Bharde^{1*} and Aniket A. Shilwant²

¹Department of Kriya Sharir, PMT'S Ayurved College, Shevgaon-414502, Dist- Ahmednagar, Maharashtra(India)

²Department of Kriya Sharir, G.J.Patel Institute of Ayurvedic Studies and Research, New Vidya Nagar, Anand-388121, Gujarat, India

Abstract

Media today is enriched having a lot of stories and fairy tales about the anti-ageing therapies. Life style is the way a person lives; this includes the daily set patterns of living, social relations, dietary regimen, behavioral aspect. Man has landed himself in the advanced, progressive and modern era indeed but still has not stopped his quest to define, to term or to postulate that this is the ultimate happiness (*Sukha*) factor which he was in search of. The quest of *sukha* has also led man into eagerness; curiosity to follow the same compensating own health. *Ayurveda* implies the concept of *Swabhavaparamvada* means natural destruction. The ageing broadly can be stated as the continuous, irreversible deterioration in the bodily structures and the efficacy with which they work. Simultaneously with the complete maturation and development of brain with its functional status of a human he is unable to stop himself by ceasing the age which is continuously growing. As the natural ageing (*Swabhavaparamvada*) cannot be avoided altogether, but the onset and manifestation of ageing occurring ahead of time can be prevented by the practicing regular exercise and rejuvenating herbs and similar therapeutics. This topic is concerned with the same subject enhancing the support of exercise in former age and rejuvenating medicines in later age which marks their influence in the process of ageing.

Keywords

Ageing, Swabhavaparamvada, Exercise



Greentree Group

Received 23/11/17 Accepted 03/03/17 Published 10/03/17



INTRODUCTION

In this era everyone is having a clear research agenda to emerge with multiple new ways to stay young as if they are in search of holy nectar to stay young and envisage their victory over ageing. Even though cease of ageing is inevitable, it is essential to know and restrict the changes which diagnose the commencement of ageing.

According to the modern disciplines of medicines ageing is probably the result of the breakdown of the cellular safety factors. Accidental exposure to unfavourable environmental changes, genetics and inheritance stands as the other cause which contributes as the major share of the same. The free radicals necessary for physiological functions may play a role to damage the cellular integrity, accumulation of wastes and altering the natural physiological process by mutation leading to carcinogenic changes. Thus are meant to be highly reactive species. They hold a major share in ageing and development of degenerative disorders. The probable mechanism of any cell or tissue is to react with the free radical and inactivate them keeping them highly potent to create unwanted changes. Body itself is also capable for producing newer antioxidants with certain limits. The body which remains continuously in inactive state, cells tissues lethargic, leads to a condition where the nourishment necessary for cell is not provided properly and gets stagnated thus

affecting nourishment of next coming tissue in the cascade.

It is also believed that the overuse and abuse of cells, damaged tissues of body and the factors contributing same include- ingestion and over accumulation of toxins in body through diet; excessive consumption of sugar, fat items; alcohol and nicotine; aerated drinks, soda; radiations; physical and mental stress and so on. This manifests the wear and tear theory principle. Altogether the movement of body is must which should be at gross level of whole body itself and subtle level at cells, tissues as well. The exercise, workout thus plays an important role in this entire scenario.

OBJECTIVES

- 1) Highlighting the process of Ageing
- 2) Knowing the role of exercise in prevention of premature Ageing
- 3) Role of Lifestyle and *Rasayana* therapy in management of Ageing
- 4) Role of *Ayurveda* in prevention of Ageing

MATERIALS AND METHODS

- 1) Detailed compilation regarding Ageing, Exercise and Lifestyle as mentioned in *Ayurvedic* treatise.
- 2) Literature about the exercise and sports physiology was screened.

REVIEW OF LITERATURE



SWABHAVAPARAMVADA-THEORY OF NATURAL DESTRUCTION¹-

This theory was postulated by Buddha and mentioned in *Ayurved* treatise. Any abnormality or alteration in factors responsible for growth, development and nourishment of any body tissues may lead to destruction, disequilibrium of the body tissues and internal environment as well. However, the tissues regains to normalcy automatically as soon as the causative factors fades away. It also states that there is a reason for origin and development of any object while there is no any reason for destruction or simply the absence of reason is sufficient for destruction of the object. It altogether concludes Ageing as physiological process with no any specific reason for it. This can be explained with the help of time viz., *Kala*. It is always unstoppable which cannot be either changed or altered and as it goes on it shows its impact by manifesting changes in bodily tissues. Thus all the things which are originated and developed are perishable without any specific reason. This makes a clear conclusion that there is no any alteration in destruction pattern of a human being which stands as a physiological process.

AGEING FROM AYURVEDIC PERSPECTIVE-

Ayurveda clearly states that the involvement of three doshas in the origin, existence and destruction² of human body on gross and at its subtle level also. The working mechanism of

three *doshas* is supported by the *Panchamahabhuta*³. The development process throughout life till death is accompanied by the inter conjugation of the *doshas* and thus *Panchamahabhuta*. These *doshas* work due to existence of extremely potential attributes in them namely-*Guna*.

The *doshas* have a very vital role to play throughout the age- diurnal regimen- dietary regime which is stated in *Ayurvedic* treatise⁴. The age factor here shows the rise of or precisely dominance of *Vata* dosha as the age advances. The three biological forces govern all the systemic and cellular activities of body in pursue of their equilibrium condition. As the age advances the gradual rise in *Vata dosha* ultimately land up into diminution of *Dhatu*, *Oja*, *Bala*, *Indriya karma* emerging as manifestations of ageing. The *Agni* responsible for basic metabolism of body maintains vigor and vitality and also keeps the continual growth and decay of body. With the progression in age the *Ahara rasa* formation is hampered due to practicing etiological factors supporting impairment of *Jatharagni*.

The act of wear and tear with the progression of age gradually starts worsening; landing up in *Jara* stage. With this the major vitality force of body – *Prana* is somehow disturbed. *Prana* is the vital force acting in body and governs duos *Oja* and *Teja* principally. As the age advances the displacement of *Oja* from its own site tends to creates *Kapha dosha* related disorders

broadly studied under – *Oja Vistramsa*. Also with the advancement of age there starts quantitative depletion of *Oja* from body resulting into *Vata dosha* related disorders broadly studied under – *Oja Kshaya*⁵. Whereas the *Teja* factor with the advancement of age manifests by showing disturbances in metabolic activities of body. Aggravated and adulterated *Oja* diminishes the strength and potential of *Teja* thus hampering metabolic

- **Karshya**:- Emaciation as seen in Marasmus, prolonged starvation, impaired functioning of *Jatharagni*
- **Karshnya**:- Blackish discoloration, Hyperpigmentation as seen in Cushing's disease, Cyanosis.
- **Ushnakamita**:- Desire for hot items-Hypothermia, Anemia
- **Kampa**:- Tremors as like in parkinsonism, Tetanus, Epilepsy
- **Anaha, Shakrutgraha**:- Constipation, Abdomen fullness, Ascites
- **Nidranasha**:- Insomnia due to stress, anxiety, old age, severe medical ailments e.g. Arthritis
- **Alpabala**:- Weakness due to excess protein depletion, Hypoglycaemic state.
- **Gadhvarchas**:- Hard stool due to diet rich in starch, fibers causing obstruction
- **Alpavakatvam**:- Dysarthria due to loss of muscle tone in articulatory system

activities. The aggravated *Tejas* induces extreme burning sensation inside body which may reduce *Oja* also it over stimulates the *Prana* thus leading to in co-ordination of bodily activities. The effect of all these is seen throughout body on subtle as well as gross levels.

Associative Ageing symptoms manifested in relevance with *Dosha Dhatu Mala*⁶:-

- **Mandacheshtata**:- Sluggish or diminished movements specially seen in Lower Motor Neurons Defects
- **Apraharsha**:- Depression, anxiety in deficiency specially Vit.B12 and Iron.
- **Samdnyamoha**:- Dysfunction of sensory organs. Deficient to perceive senses of vision, hearing, taste, smell; sensory ataxia
- **Balahani**:- Weakness. Loss of Proteins
- **Indriyadaurbalya**:- Weak perception of senses due to non-efficiency of sense organs as age advances.
- **Mandoanala**:- Hypothermia as in hypovolumic state
- **Prabhahani**:- Loss of skin luster, tone as seen in hormonal disorders, decreased melanin secretion, Anaemia.
- **Agnisadana**:- Loss of appetite, hypothermia, decreased metabolic rate
- **Prasek**:- Dribbling saliva



- **Alasya**:- Lethargicity, Inactiveness
- **Shwas, Kasa**:- Breathlessness with or without productive cough as in respiratory distress syndrome.
- **Rukshata**:- Dry and rough skin as in malnourished children, dehydration
- **Antardaha**:- Burning sensation, hot flushes as in post menopausal syndrome
- **Amashayashunyata**:- Deficient gastric juice secretion, Achlorhydria, shrinkage
- **Shleshmashayashunyata**:- Deficient CSF production, loss of synovial fluid, less production of surfactant in respiratory membrane - Interstitial lung disease, etc
- **Shlathasandhita**:- Loosened or Weakened Joints and its movement
- **Rasa dhatu kshaya**- Agni Sadana (Weakened Digestive Fire), Shaitya (Hypothermia), Alasya (Inactive), Shlathangatva (Lethargicity), Shvasa (Dyspnoea), Kasa (Cough), Rukshata (Dryness), Shabda Asahishnu (Irritability)
- **Rakta dhatu kshaya**- Parusha (Roughened Skin), Sphutita (Cracked Skin), Sira Shailthilya (Tortuous And Dilated Veins Over Skin)
- **Mamsa dhatu kshaya**- Dhamni Shailthilya (Lack Of Elasticity Of Blood Vessels), Sandhi Vedana (Joint Pain)
- **Meda dhatu kshaya**- Pliha Vruddhi (Enlargement Of Spleen), Sandhi Sphutan (Crepitation At Joints), Akshano Ayasa (Eye Muscle Fatigue), Krushangata (Emaciation)
- **Asthi dhatu kshaya**- Nakha (Nails), Asthi (Bones), Kesha (Hairs Over Scalp), Loma (Hairs Over Skin), Dviya (Teeth) – Toda (Pain), Patan (Shedding Off)
- **Majja dhatu kshaya**- Parva Bheda (Joint Pain), Asthi Toda (Shivering And Pain At Bones), Alpa Shukra (Quantity Wise Lack Of Seminal Fluid)
- **Shukra dhatu kshaya**- Daurbalya (Weakness), Pandu (Anemic), Klaihya (Impotency), Ashakti Maithun (Lack Of Libido), Medhra Vrushan Vedana (Pain In Genitals)
- **Mutra** - **Mutra Kshaya** (Scanty Urination), **Mutra Kruccha** (Difficulty In Micturition), **Sarakta Mutra Pravrutti** (Hematuria), **Krute Api Akrut Mutra Samvedana** (No Satisfaction In Urination), **Muhurmuhu Mutra Pravrutti** (Frequent, Dribbling Micturition)
- **Purisha**- **Udar Shoola** (Pain In Abdomen), **Aatopa** (Abdominal Discomfort), **Sashabda Purisha Pravrutti** (Flatulence)
- **Sveda**- **Stabdharoma Kupata** (Congested, Blocked Pores Over Skin),



Sparsha Vaigunyata (Lack Of Perception Of Tactile Sensation

*Oja Kshaya*⁷- *Bibheti* (Inferiority complex, feeling under constant threat), *Durbal abhikshna* (General debility), *Dhyayati* (constant worrying without any specific reason), *Vyathita Indriya* (impairment of functioning of sense and motor organs), *Dushchaaya* (loss of luster, complexion), *Durmana* (lack of self confidence), *Moha* (fainting), *Pralapa* (delirium), *Maran* (death), *Mamsa kshaya* (loss of muscle mass)

Special set of ageing symptoms described by Sharangdhara⁸-

- 1) Balya (Childhood)
- 2) Vruddhi (Growth & Reproduction)
- 3) Chavi (Complexion)
- 4) Medha (Intellect)
- 5) Tvak (Skin attributes)
- 6) Drushti (Vision)
- 7) Shukra (Potency)
- 8) Vikram (Vigour and Vitality)
- 9) Buddhi (Reasoning & Aptitude)
- 10) Karmendriya (Motor organs)
- 11) Chitta (Mental State)
- 12) Jivita(Death)

EXERCISE

Exercise is a bodily activity performed to maintain the fitness and overall health of body. It has been called a wonder drug or miracle drug by some health care

providers. Life is nothing but a mere movement. When there is no movement life ceases to exist. Vyayama as per Ayurveda carries a vital importance to sustain the Swastha avastha of an individual. It is defined as the physical potential or strength to carry out any given task. It is again sub-classified as - Sahaja, Kalaj, Yuktikruta⁹

Sahaj bala:- It is the potential which is inherited from parents to their upcoming generation which tries to sustain and maintain the dhatusamya (homeostasis) of body. It may vary from person to person.

Kalaj bala:- The whole universe is endorsed with the limitations of Disha and Kala one of the nine causative factors which are continuously running. This progression of Kala has a crucial impact over our body which is natural and cannot be changed but be prevented from being affected early.

Yuktikrut bala:- This being acquired after birth is achieved by well organized and planned dietary regimen which is chosen for achievement of proper growth, development of body and its organs and enhancing strength, stamina.

Benefits of exercise:-

- 1) Reduces body fat
- 2) Increases lifespan



- 3) Restricts the susceptibility of diseases
- 4) Boosts mood
- 5) Boosts immune response
- 6) Maintains mobility
- 7) Improves memory power
- 8) Improves neuro muscular coordination
- 9) Strengthens heart
- 10) Strengthens muscles
- 11) Strengthens bones
- 12) Detoxifies body
- 13) Decreases stress
- 14) Lowers blood pressure
- 15) Reduces cancer risk
- 16) Increases sexual performance
- 17) Improves physique

Exercise and Ayurvedic examination parameter:-

Dhatu sarta is one of the special concepts of *Ayurveda* depicting its actual role in career or profession choosing specially in up growing children. The main aim of examining *dhatu sarta* is to validate the strength or *bala* potential of any individual¹⁰. Our body having seven different types of tissue framework which are again made of specific constitution endorsed with the five essential elements viz. *Mahabhuta*. This makes up the physical constitutional make up of that particular *dhatu* and ultimately of human

being itself. Thus depending on the constitutional make up of *dhatu*s, the resultant feature is manifested in human body as a are of interest in any particular routine activity which can later be counted as a hobby of that individual. Say for playing outdoor games, body building, glamorous and grooming, food addict, involves more in competitive intellectual events and many more.

The current property of exercise which may be physical or psychological or intellectual but here it means physical exercise is also relevant with the *dhatu sarta*. When we come across the features mentioned in *Mamsa* and *Asthi sarta* we can see the potential of such peoples for physical workout which can be later compared with peoples of *Rasa*, *Rakta*, *Meda Dhatu Sarta*. Following are features mentioned in some *dhatu sarta* verse depicting the status of a individual for physical work out^{11,12}-

Physical potential weak

- 1) *Rasa sarta* - Sukumara
- 2) *Rakta sarta* – saukumarya, anatibalam, klesha asahishnu
- 3) *Meda sarta* – upabhoga, sukumara, aayaas asahishnu
- 4) *Majja sarta* – mrudvanga,

Physical potential strong

- 1) Mamsa sarta – guru sthira mamsopchita, balam
- 2) Asthi sarta – kriyavanta, klesha saha, sara sthira sharira
- 3) Majja sarta – balvanta, uttambala, sthula dirgha vrutta sandhi
- 4) Shukra sarta – balvanta

Rasayana therapy-

Rasayana therapy is a specialized branch of *Ayurveda*, having the potential in immune-enhancing and providing longevity especially at the older stage. It proves to be effective in minimizing the impacts of ageing. It mainly works to – provide *Rasa* (nourishing fluid) throughout body without any hindrance; enhancing *Agni* component to ensure correct metabolism; reassuring *Strotas* the micro circulating channels to maintain the nourishment. Any drug, medicine, herbs, diet or supplement supporting this property lists under *Rasayana*¹³. Broadly these *Rasayana* therapies are meant to compensate the bio-losses. There are some *Rasayana* which are organ specific as – *Medhya Rasayan, Chakshusya, Hridaya* and many more.

Benefits of Rasayana Therapy:-

- *Rasayana* therapy nourishes the tissues by improving circulation of blood, lymph.

- It also improves the metabolic bio-transformations resulting into best quality body tissues
- It also helps to delay the senility and other metabolic diseases especially at older age.
- It also goes hand-in-hand with the *Vajikara* therapy by improving quality of *shukra dhatu*.
- It boosts a natural resistance against susceptible diseases.
- It increases immunity by immune-modulator impact on body preventing auto-immune diseases.
- It reduces the oxidative stress by managing the free radicals and thus delays the ageing process.

Principles for Management of ageing:-

It is a process of natural destruction as the age advances, which comes under the palliative care strategy. It is inevitable to avoid this process but can be prevented in the early age by practicing disciplined lifestyle.

Some of them are mentioned here-

- 1) Practice to prevent any deviation in the *doshas* either *vrudhhi* or *kshaya* say for- suppression of natural urges, daytime sleep, vigorous physical work and many more.
- 2) Daily principles of lifestyle must be practiced as mentioned under *Dinacharya*



say for- ***Brahmya Muhurta Uttishtayet, Abhyanga, Nasya,*** cleaning and purification and many more.

3) Follow the principles as mentioned in ***Sadavritta, Achar Rasayana***

4) Following Seasonal regimen in diet, daily activities as described in ***Ritucharya.***

5) Undergoing ***Panchakarma*** procedure for sustenance of healthy condition and longevity as per seasonal regimen

6) Dietary regimen principle described by *Ayurveda* - ***Laghu*** (light) and ***Santarpan*** (nutritive)

7) ***Rasayana*** drugs for palliative care and prevention of future diseases. Some of them are mentioned below -

Rasayana drugs¹⁴ -

1) **Heart:-** *Terminalia arjuna* (*Arjuna*)

2) **Skin diseases:-** *Semecarpus anacardium* (*Bhallataka*), *Embelia ribes* (*Vidanga*) and *Psoralea corylifolia* (*Bakuchi*)

3) **Memory booster:-** *Baccopa monnieri* (*Brahmi*), *Centela asiatica* (*Mandooka parani*), *Celastrus paniculata* (*Jyotishmati*), *Mucuna pruriens* (*Kapikachhu*)

4) **Musculo skeletal ailments:-** *Boswellia serrata* (*Sallaki*), *Commiphora mukul* (*Guggulu*) and *Zinziber officinale* (*Sunthi*).

5) **Respiratory ailments:-** *Albezia lebbeck* (*Sirisha*), *Inula racemosa* (*Pushkarmula*), *Curcuma longa* (*Haridra*) and *Terminalia chebula* (*Haritaki*).

6) **Diabetes:-** *Trigonella foenum graecum* (*Methika*), *Curcuma longa* (*Haridra*), *Cinnamomum tamala* (*Tejpatra*), *Black bitumen* (*Shilajeet*), *Emblica officinalis* (*Amalaki*).

7) **Hypertension:-** *Rauwolfia serpentina* (*Sarpagandha*), *Valeriana wallichii* (*Tagara*), *Nardostachys jatamansi* (*Jatamansi*).

8) **Immune health:-** *Tinospora cordifolia* (*Guduchi*), *Emblica officinalis* (*Amalak*), *Withania somnifera* (*Aswagandha*)

9) **Geriatrics Care:-** *Formulatory preparations of Commiphora mukul* (*Guggulu*), *Chyawanprasha*, *Medhya rasayanas*, *Ashwagandha*, *Triphala Churna*, *Amalaki Rasayana*.

REFERENCES

1. Tripathi Bramhanand, Charak Samhita with Hindi Commentary, Sutra Sthana 16, Choukhamba Surbharti Prakashan Varanasi, reprint 2004.
2. Vaidya Yadavji Trikamji Acharya, Sushruta Samhita of Sushruta with Nibhandhasamgraha Commentary, Nidan Sthana 1/5-6, Choukhamba Orientalia, Varanasi, 2007.
3. Vaidya Yadavji Trikamji Acharya, Sushruta Samhita of Sushruta with Nibhandhasamgraha Commentary, Sharir Sthana 1/27, Choukhamba Orientalia, Varanasi, 2007.
4. Gupta Kaviraj Atrideva, Ashtanga Hridayam with Hindi Commentary, Sutra Sthana 1, Choukhamba Prakashan, Varanasi reprint, 2012.
5. Aniket A Shilwant. Immunology: An Ayurvedic Aspect with reference to Oja and Vyadhikshamatva. International Journal of Ayurveda and Pharmaceutical Chemistry. Vol.5, Issue 1, 2016
6. Gupta Kaviraj Atrideva, Ashtanga Hridayam with Hindi Commentary, Sutra Sthana 11, Choukhamba Prakashan, Varanasi reprint, 2012.
7. Aniket A Shilwant. Immunology: An Ayurvedic aspect with reference to Oja and Vyadhikshamatva. International Journal of Ayurveda and Pharmaceutical Chemistry Volume 5 Issue 1 2016.
8. Tripathi Bramhanand, Sharangdhara Samhita Purva Khanda 6, Choukhamba Surbharti Prakashan Varanasi, 2008
9. Tripathi Bramhanand, Charak Samhita with Hindi Commentary, Sutra Sthana 11, Choukhamba Surbharti Prakashan Varanasi, reprint 2004.
10. Tripathi Bramhanand, Charak Samhita with Hindi Commentary, Vimana Sthana 8/102, Choukhamba Surbharti Prakashan Varanasi, reprint 2004.
11. Tripathi Bramhanand, Charak Samhita with Hindi Commentary, Sutra Sthana 8/103-109, Choukhamba Surbharti Prakashan Varanasi, reprint 2004.
12. Vaidya Yadavji Trikamji Acharya, Sushruta Samhita of Sushruta with Nibhandhasamgraha Commentary, Sutra Sthana 35, Choukhamba Orientalia, Varanasi, 2007.
13. Tripathi Bramhanand, Charak Samhita with Hindi Commentary, Chikitsa Sthana 1-4, Choukhamba Surbharti Prakashan Varanasi, reprint 2004.
14. Priyavrat Sharma. Dravyaguna vidnyan, Choukhamba orientalia, Varanasi 1976.
15. Swapan kumar dubey. A Textbook of Sports and Exercise Physiology. Jaypee

Brothers Medical Publishers (P) Ltd. 1st
Edition 2012.

16. W. Larry Kenney, Jack
Wilmore, David Costill. Physiology of
Sports and Exercise 6th edition web study
guide. 2015