



## NEWER INSIGHT OF AYURVEDA- ARDHASHAKTI VYAYAMA TO PREVENT ANOREXIA ATHLETICA

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Article Received on  
17 Dec. 2018,

Revised on 08 Jan. 2019,  
Accepted on 29 Jan. 2019

DOI: 10.20959/wjpps20192-13185

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### INTRODUCTION

**Anorexia Athletica (sports anorexia)**, also referred to as **hypergymnasia**, is characterized by excessive and compulsive exercise. An athlete suffering from sports anorexia tends to over exercise to give themselves a sense of having control over their body. Most often, people with the disorder tend to feel they have no control over their lives other than their control of food and exercise. In actuality, they have no control; they cannot stop exercising or regulating food intake without feeling guilty.<sup>[1]</sup> Generally, once the activity is started, it is difficult to stop because the person is seen as being addicted to the method adopted. Historical development of

exercise physiology illustrates that interest in exercise and health is not new instead it had roots with the ancients. Ayurveda has recognized the importance of Vyayama 2000 years ago in maintenance of health and aetiology of diseases due to Ativyayam (excessive physical activity) or Avyayama (lack of physical activity). Present article gives the idea about literary review of guidelines for vyayama according to Ayurveda. Following these guidelines may prevent an individual to fall into symptoms of anorexia Athletica. This paper, aimed to discuss if Ayurveda can provide newer insights.

**Anorexia Athletica:** Anorexia athletica is used to refer to "a disorder for athletes who engage in at least one unhealthy method of weight control".<sup>[2]</sup> Unlike anorexia nervosa, anorexia athletica does not have as much to do with body image as it does with performance.

Athletes usually begin by eating more 'healthy' foods, as well as increasing their training, but when people feel like that is not enough and start working out excessively and cutting back their caloric intake until it becomes a psychological disorder.

### **Sign & Symptoms**

Someone with anorexia athletica can experience numerous signs and symptoms, a few of which are listed below. The seriousness of the symptoms is dependent on the individual, and more symptoms come with the length the athlete excessively exercises. If anorexia athletica persists for long enough, the individual can become malnourished, which eventually leads to further complications in major organs such as the liver, kidney, heart and brain.<sup>[3]</sup>

- Excessive exercise
- Obsessive behaviour with calories, fat, and weight
- Self-worth is based on physical performance
- Enjoyment of sports is diminished or gone
- Denying the over exercising is a problem

### **Treatment**

According to the National Eating Disorder Information Centre (NEDIC), the first step for someone going through Anorexia Athletica is to realize their eating and exercise habits are hurting them.<sup>[4]</sup> Once an individual has realized they have a disorder, it is important to go to a dietician as well as a personal trainer. People with sports anorexia need to learn the balance between exercise and caloric intake. Thus, setting a limit for exercise is a first step towards prevention of Anorexia Athletica. Acharya of Ayurveda have described about guidelines of vyayama, which are described here under.

**Vyayama:** Physical exercises or activities which produce exertion of the body are known as Vyayama (S.Ci.24/38). Physical activity is defined as any bodily movement produced by skeletal muscles that result in energy expenditure. Physical activity in daily life can be categorized into occupational, sports, household, or other activities. The exercise is a subset of physical activity that is planned, structured, and repetitive and has a final or an intermediate objective the improvement or maintenance of physical fitness.<sup>[5]</sup>

**Signs of proper Vyayama**

Sr. No.	Lakshana
1	Sweating (svedaagamah)
2	Increased respiratory rate (svashavridhi)
3	Increased heart rate (pulse rate) (hridayoparodhaccha)
4	Feeling of lightness in body (gatranamlaghavam)
5	Dryness of mouth (mukhasosha)
6	Exertion (Aayasa) (C.Su.7/33).

On observation of above described characteristics of Balardha Vyayama it seems that scholars of Ayurveda have also made the grading of exercise on the basis of energy consumption, cardiovascular and respiratory system responses. The WHO grading of muscular exercise i.e. light, moderate, heavy, severe is made on the basis of Relative load index (RLI i.e. percentage of maximum O<sub>2</sub> utilization), Heart rate.<sup>[6]</sup>

**Grading of exercise according to Ayurveda**

The person who is healthy and strong, taking unctuous (oily) food should perform the regular exercise of following grade as per the season (A.Hri. Su.2/19,27)

1. Mild exercise (Alpavyayama) - in Grishma( summer), Varsha (rainy).
2. Moderate exercise (Balardha) – in Sharat (autumn) Hemant (dewy), Shishira (winter) and Basanta (spring) season.
3. Severe exercise (Ativyayama)- should not be performed in any season.

Different grade of Vyayama is advised in different seasons because the Sharir bala (body strength) does not remain same all through the year, it varies with the seasons. Sharira bala is srestha (best) in Hemant (dewy), Shishira (winter), madhyam (moderate) in Sharat (autumn), Basanta (spring) and Alpa (poor) in Grishma(summer), Varsha, (rainy) season (C.Su.6/8). Balardha / Ardhashakti (moderate exercise)- When Vayu residing in the region of the heart comes up through the mouth, in other words more upward breathing is the sign of half the strength of the person (C.Su.7/32).

Recognizing the various effects of physical activity the American College of Sports Medicine (ACSM) also has given recommendations on the quantity and quality of exercise for adults, and suggested to engage in at least 150 minutes of moderate-intensity exercise each week. A program of regular exercise - beyond activities of daily living - is essential for most adults.<sup>[7]</sup> Armstrong L. has given guidelines in year 2006 for exercise testing and prescription and defined the exercise intensity as how hard the exertion during exercise.<sup>[8]</sup> Exercise intensity is

measured in metabolic equivalents (MET). Activities with METs between 3.0 to 6.0 have been considered as moderate intensity, whereas below 3.0 to 1.5 low intensity, more than 8 as severe category.<sup>[9]</sup>

### **Indication for Vyayama**

Exercise must be done daily in all seasons. It should be done to the level of half of the strength of the person (Balardha). After doing physical activity, the entire body should be massaged mildly. Vyayama should be performed after considering the following factors viz. Age (Vaya), Strength (Bala), Physique (Shariraprakriti), Habitat (Desha), Season (Kala), nature of food (Ashan), otherwise person gets affected by disease (S.Ci.24/48). It is indicated in disorders produced due to Vriddhi (aggravation) of Kapha dosha and increased Meda like in Medoroga (obesity and dyslipidemia), Prameha (diabetes).

Acharya Charak and Sushruta both has advised Vyayama in the form of various physical activities like wrestling, sports riding, and brisk walking in prevention and management of Diabetes (a type of Prameha) and Urusthambha (S.Ci.11/11, C.Ci.6/50). Sushruta has advised journey on foot of hundred yojana (one yojana 6 miles approx.) in management of greatly increased diabetes for poor patient (S.Ci.11/12).

### **Contraindication for Vyayama**

Ayurveda has advocated some conditions in which physical activity should be avoided by the persons viz. who has just taken meal, is afflicted with thirst (Trishna) and Bhrama (~dizziness), Ajirna (~indigestion), Raktapitta (~bleeding disorders), Krisha (~emaciation, abnormally thin or weak, especially because of illness or a lack of food), Sosha (~consumption) Svasha (~dyspnoea), Kasha (~cough), Urahksata (injury in the chest), Baala (child), Vriddha (old age), individuals of dominant Vata dosha constitution, Krodha (in state of anger), Bhaya (fear), Shoka (grief) (S.Ci.24/50, C.Su.7/35).

Vyayama causes increase in Vata dosha so it not indicated in conditions in which Vata dosha is found increased like in old age, weight loss, cachexia and after some Panchkarma procedures Vamankaram (emesis) (C.Siddhi.2/8,9)<sup>[10]</sup> Virachanakarma (purgation) (C.Siddhi.2/8,9). Physical activity is contraindicated in acute inflammatory state of disease like Vatarakta (C.Ci.29/49) (acute stage of gout), Visarpa (C.Ci.21/115) (acute fast spreading subcutaneous infection with vesicle formation). Intake of Madya (wine) after physical exertion may give rise to different diseases (S.Uttar 47/15).<sup>[11]</sup> Poisoned person should not

perform exercise (S.Kalp6/31).<sup>[12]</sup> Sushruta has advocated that physical activity should not be performed after Panchakarma procedures like Abhyanga (oleation), Swedana (sudation), Vaman (emesis), Virachana (purgation), enema by decoction or oil (Vasti) and Sirabedha(S.Sha.8/24) bloodletting by venesection), Suturing of wounds (S.Su.5/38) (Sevankarma), management of fracture of bones (Asthibhagnapratisedha) (S.Ci.3/4,25) Recent researches have also identified some medical conditions in which exercise should be advised with precautions or should not be performed. Allyson S. et al, (2007) has given risk factors for heat illness caused by excessive physical activity, that includes dehydration, obesity, concurrent febrile illness, alcohol consumption, extremes of age, sickle cell trait, and supplement use.<sup>[13]</sup>

### **Harmful effect of Ativyayama (excessive physical activity)**

Ayurveda has not only described the beneficial effects of physical activity but the harmful effects of excessive physical activity have been also mentioned viz. Trishna (Thirst), Aruchi (Altered taste perception, Nausea), Charddi(Vomiting), Bhrma (Dizziness), exercise related syncope), Shirma (Exertion), Kasa (Cough), Svasha (Dyspnea), Ksata (Injury in the chest), Kshaya (weight loss), Raktapitta (bleeding disorders), Sosha (Cachexia), Jvara (Exercise induced heat injury), Pratamaksvasha (exertional dyspnea in Asthmatics)(S.Ci24/49).

The harmful acute effects of excessive physical activity have been reported by various researchers in sport persons. Excessive exercise leads to dehydration, hyponatremia and exertional heat illness. The early signs and symptoms of dehydration include thirst and general discomfort followed by flushed skin, weariness, cramps, and apathy. At greater water deficits, dizziness, headache, vomiting, nausea, heat sensations on the head or neck, chills, fever, decreased performance, and dyspnea may be present.<sup>[14-16]</sup> The physical complications of exercise dependence have been documented most comprehensively in long-distance runners. They include repeated soft tissue injuries and stress fractures, pressure-sores, gastrointestinal blood loss and anemia, myocardial infarction and death.<sup>[17]</sup>

### **Pathya for Person Having Physical Exercise**

Sushruta has advised that unctuous food and Abhyanga (body massage) is always Pathya (suitable) for the persons who are performing regular physical activity. Drinking of medicated Vasaa(muscle fat) is indicated in weight loss due to exercise (Vyayamakarshita) (S.Ci.31/17). SnehaVasti (C.Siddhi.4/23)and Patimarshanasya(S.Ci.40/51-52) (nasal drops) is also indicated in exertion produced after physical activity and to pacify Vatadosha produced

after physical activity and to provide nutrition. Kimber et.al, 2003 suggested that proper nutrition is important during exercise in order to aid the body with the recovery process following strenuous exercise.<sup>[18]</sup> Vitamin C supplementation has been associated with lower incidence of URTIs in marathon runners. Thus it can be summarized that regular practice of Vyayama (moderate exercise) results the following effects which help in maintenance of homeostatic state of body and mind.

- Produces balance among Vata, Pitta, Kapha (neuro-endocrinal-immuno modulation).
- Stimulates Agni (Mitochondrial biogenesis, regulation of digestive power and metabolism).
- Enhances Oja (immunity and mental stability).
- Srotoshodhan (clearance of channels and their functional restoration, receptor regulation).

## DISCUSSION AND CONCLUSION

Ayurveda is Holistic Indian traditional system of medicine practiced in India since thousands years. The two prime aim of Ayurveda are preservation of health of a healthy individual and management of disorders of a diseased person. Ayurveda has given great emphasis on preventive measures to remain healthy and to lead a disease free long life. Ayurveda scholars have advocated various preventive measures under the instructions of Dincharya (daily routine), Ritucharya (seasonal regimen) Sadvritta (physical and mental code of conducts). Ayurveda describes Vyayama under different contexts such as: Dincharya.<sup>[19]</sup>

In the textbooks, it has been described that Vyayama produces feeling of lightness in the body, produces firmness, promotes physical development, luster, and compactness of the body parts, confers the ability to withstand exertion, fatigue, thirst, heat and cold, enhances immunity, causes a diminution of impurities, reduces the ageing process, and stimulates Agni (digestion & metabolism). Vyayama is the best form of activity to reduce obesity (corpulence) (S. Ci. 24/39-50).

Marcus Cicero, around 65 BC, stated: "It is exercise alone that supports the spirits, and keeps the mind in vigor."<sup>[20]</sup> The philosopher Plato (427–347 BC) said: „Lack of activity destroys the good condition of every human being while movement and methodical physical exercise saves and preserves it."<sup>[21]</sup> During the next 2000 years, the field we call exercise physiology has been evolved. Dr. Tripton a well-known contributor in exercise physiology has quoted that Sushruta of India was the first recorded physician to prescribe moderate daily exercise

along with contribution of Hippocrates of Greece and Galen from Rome who has also recommended use of exercise for management of disease.

Ayurveda has given a vivid description related to preventive and therapeutic significance of Vyayama. Ayurveda has also considered various factors in prescribing the physical activity and its doses like age, sex, physiological state of female, diet, season, nutritional status, disease state, therapeutic procedures etc. Various research evidences has been found which are consistent with the descriptions regarding effects of Vyayama on body and mind. It can be assumed that Following the guidelines described in Ayurveda texts can prevent rising of anorexia athletica. Further studies could be done on this hypothesis on scientific parameters.

## REFERENCES

1. "National Eating Disorder Information Centre". Retrieved November 10, 2011.
2. "Activity Disorder: Too Much Little Of A Good Thing" from WebMD.
3. "mayo-clinic research". Retrieved November 10, 2011.
4. "National Eating Disorder Information Centre". Retrieved November 10, 2011.
5. Caspersen CJ, Powell KE, Christenson GM, et al. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.*, 1985; 100(2): 126-31.
6. Ghai C.L. Text book of Practical physiology. 8 th edition. New Delhi: Jaypee brothers medical publishers Ltd, 2013.
7. *Medicine & Science in Sports & Exercise*, ACSM Guidelines, <http://www.acsm-msse.org/>
8. Armstrong L. ACSM's guidelines for exercise testing and prescription. Philadelphia: Lippincott Williams & Wilkins, 2006.
9. Jette M, Sidney K, Blümchen G. Metabolic equivalents (METS) in exercise testing, exercise prescription, and evaluation of functional capacity. *Clin Cardiol*, 1990; 13: 555–65.
10. Sharma PV. Charak Samhita of Agnivesh, Siddhistan Sthana; Panchakarmiya Siddhi. Chapter 2, verse 8,9. Reprint edition. Varanasi: Chaukhambha Orientalia, 2008; 2: 597.
11. Murthy Shrikantha. Susruta Samhita of Susruta, Uttarsthana; Panatyaya pratisedha Adhyaya Chapter 47, verse 15. 4 th edition. Varanasi: Choukhambha Orientalia, 2010; 3: 307.



12. Murthy Shrikantha. *Susruta Samhita of Susruta, Kalpa Sthana; Dundubhiswaniya Kalpa. Chapter 6, verse 31. Reprint edition. Varanasi: Choukhambha Orientalia, 2014; 2: 227.*
13. Allyson S. Howe, MD, and Barry P. Boden et al. Heat-Related Illness in Athletes. *The American Journal of Sports Medicine, 2007; 35(8): DOI: 10.1177/0363546507305013© 2007 American Orthopaedic Society for Sports Medicine.*
14. Douglas J. Casa et al. National Athletic Trainers' Association Position Statement: Fluid Replacement for Athletes. *Journal of Athletic Training, 2000; 35(2): 212-224. www.journalofathletictraining.org.*
15. Armstrong LE, Maresh CM. The exertional heat illnesses: a risk of athletic participation. *Med Exerc Nutr Health, 1993; 2: 125-134.*
16. American College of Sports Medicine. Position stand: Exercise and fluid replacement. *Med Sci Sports Exerc, 1996; 28(1): i-vii.*
17. Veale Covrly DMW. Exercise Dependence. *British Journal of Addiction, 1987; 82: 735-740.*
18. Kimber N et al. Skeletal muscle fat and carbohydrate metabolism during recovery from glycogen-depleting exercise in humans. *The Journal of Physiology, 2003; 548(3): 919–927.*
19. Murthy Srikantha. *Astanga Hridaya of Vagbhata, Sutra Sthana; Dincharya Adhyaya. Chapter 2, verse 10-14. 10th Edition. Varanasi: Chowkhamba Krishndas Academy, 2014; 24-25.*
20. Jerry Morris. Wikipedia. [https://en.wikipedia.org/wiki/Jerry\\_Morr](https://en.wikipedia.org/wiki/Jerry_Morr) issearched on 29/12/16.
21. Fox SM, Haskell WL. Physical activity and the prevention of coronary heart disease. *Bull N Y Acad Med., 1968; 44: 950-967. [PMC free article] [PubMed].*