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Review Article

A CRITICAL REVIEW OF THE SIDE EFFECT OF EXCESSIVE EXERCISE ACCORDING TO AYURVEDA WITH CONTEMPORARY MEDICAL SCIENCE

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ABSTRACT

Ayurved covers all the aspects of human healthy life for preventing and curing diseases. Exercise plays a key role to treat common and chronic health-related issues. Bruhatrayi has mentioned the definition and limits of proper exercise and the application of exercise for positive health. The present study was planned with the aim and objective to study the side effects of excessive exercise such as exhaustion, thirst, bleeding disorders, fever, breathlessness, cough, etc according to Ayurved and understanding with contemporary medical science. Bruhatrayi, journal research papers were materialized for study.

INTRODUCTIION

Exercise and nutrition are fundamental to good health, but extreme behaviors can be a red flag indicating unhealthy behaviors. To achieve in life both mental and physical development is vital. Therefore exercises are really important for overall development in one's life. One should maintain a balance between his work, rest, and exercise. There are many ways to have a healthy relationship with exercise. There are three good benefits of exercising. Health benefits such as, reducing the feeling of depression and anxiety, get better quality of life, and helping weight management.

Excessive exercise not only interferes with an individual's life and interpersonal relationship, but it is also dangerous. Excessive exercise can easily result in overuse injury and stress fracture which would be temporary or permanent. ayurved is one of the ancient medical sciences in the world. Bruhatrayi (Charak Samhita, Sushruta Samhita, and Ashtanga Hridaya) provided definitions of Vayama (exercise) and the application of Vyayama for better health in various diseases. Ancient Indian culture was familiar with the science of exercise and its benefits. It highlighted the fact that exercise is for the sustained development of human beings. Ashtanga Hridaya emphasized the maintenance of positive health which includes proper diet, sleep, rest, active habit, regular exercise, etc.[1] It also indicated the harmful effect of excessive exercise such as exhaustion, thirst, dyspnoea, cough, fever, vomiting, bleeding from different parts of the body.[2]
For twenty types of kaphaja disease and many other diseases to cure or minimize, Ashtanga Hridaya is living evidence of exercise therapy that prescribed exercise.[3] Ashtanga Hridaya describes the exercise practice as per different seasons.[4]

AIMS AND OBJECTIVE

- To study the side effects of excessive exercise according to Ayurveda.
- To study the side effects of excessive exercise according to contemporary science.

MATERIAL AND METHOD

The knowledge regarding the effect of Excessive Exercise in Ayurved Bruhatray, journals, research papers has been materialized for this study. Based on current scientific evidence an integrated module of side effects of Excessive Exercise has been prepared.

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CONCEPTUAL STUDY

Definition

The physical movement which is meant for getting firmness and strength is known as physical exercise. Everyone should exercise according to their strength. Individuals who are strong and who take oily eatables daily should exercise to half of their strength in the cold and spring seasons. While in other seasons they should perform light exercise only.[5] The appearance of perspiration, feeding of obstruction in the cardiac region, increased respiration lightness of the organs, etc. are the signs of appropriate physical exercise.[6]

Benefits

By physical exercise, one gets lightness, capacity to work, firmness, tolerance of difficulties, diminution of impurity, and stimulation of Agni (digestive fire/ metabolism).[7]

Effect of excessive exercise:

- Excessive physical exercise gives rise to fatigue, tiredness, emaciation, thirst, bleeding disorders, dyspnea, coughing, fever, and vomiting.[8] Exercise is generally classified into two types depending upon the type of muscular contraction.

1. Dynamic Exercise: Primarily involve the isotonic muscular contraction. It keeps joints and muscles moving. E.g. swimming, bicycling, walking, etc. In this type of exercise, cardiac output, a force of contraction, the heart rate, systolic blood pressure increase and diastolic decreases.
2. Static Exercise: It involves isometric muscular contraction without movement of joints e.g. pushing heavy objects. During this exercise apart from an increase in heart rate, a force of contraction, cardiac output also increases. It is because of an increase in peripheral resistance during static exercise.[9]

Based on the type of metabolism involved, the exercise is classified into two types.

1. Aerobic Exercise: involve activities with lower intensity, which is performed for a longer period. In the beginning, the body obtains energy by burning glycogen stored in the liver, after some time (20 min.) when stored glycogen is exhausted the body starts burning fat. E.g. fast walking, jogging, running, swimming, etc.
2. Anaerobic Exercise: it involves exertion for short periods followed by periods of rest. It uses the muscles at high intensity and a high rate of labor for a brief period. The body obtains energy by burning glycogen without oxygen hence it is called anaerobic exercise. This type of exercise cannot be performed for a longer period e.g. pull-ups, pushups, weight lifting, etc.[10]

DISCUSSION

Bruhatrayi mentioned many ways to have a healthy relationship with exercise; if one does not maintain the relationship it includes some physiological and pathological changes. An adverse effect of excessive exercise mentioned in Bruhatrayi when understood with contemporary science can be as below.

Fatigue: Exercise in excess of 20 min. with lower power or with extreme focus high rate of work, for a brief period the body gets energy by consuming glycogen, put away in the muscles without oxygen which frees lactic corrosive and aggregation of lactic corrosive leads to weakness.[11]

Tiredness: Cortisol which is transmitted by the adrenal organ. During times of activity, it invigorates gluconeogenesis (the creation of new glucose) in the liver and builds protein break in the muscle. Hypersecretion of cortisol increases the release of amino acid from muscle by catabolism of protein so hypersecretion causes muscular weakness due to negative nitrogen balance and due to hypokalemia and it leads to tiredness.

Bleeding: Hemoglobin atoms are clung to a focal iron. With exceptional effort during exercise, a portion of the overabundance hemoglobin delivered from the cracked red platelets in the lungs is moved through the bronchi to the mouth. Once in our mouth, the iron particles interact with receptors on the tongues that are delicate to press. These receptors at that point hand-off the message to the mind that we sense as a metallic intuition with regards to our mouth, which can be seen as blood or metal. While weighty exercise, the heart siphons blood everywhere on the body at a greatest rate as muscles request more oxygen.

A portion of that blood courses through the little vessels inside the nose itself. It doesn't take a lot to harm these vessels. On the off chance that a Person is commonly delicate to a nose drain, it might prompt a bigger number of nosebleeds in the wake of practicing than typical. Running in dry condition or breathing heavily through may lead to dryness of the nasal cavity. Bleeding in the nose is most often when there is less moisture inside the nose. So after a heavy workout rubbing the nose or sneezing after exercise, when the capillaries have less moisture and sensitivity, could be the reason to trigger a nosebleed.

Emaciation: excessive exercise-induced hypersecretion of cortisol which has 95% of glucocorticoid activity suppresses the immune system of the body by decreasing the number of circulating T lymphocytes. It is done by suppressing lymphoid tissues, i.e. lymph nodes and thymus and proliferation of India cells. Glucocorticoids also prevent the release of interleukin-2 by India cells. Thus, hypersecretion or excess use of glucocorticoids decreases the immune reaction against all foreign bodies entering the body. It leads to severe infection causing weight loss and death.

Vomiting: Because of unnecessary exercise glucose isn't accessible for cells to utilize; fat from fat cells is separated for energy rather, acknowledging ketones. As ketones collect in blood more ketone passes in the pee, taking Sodium and potassium salts out with them. After some time, levels of sodium and potassium salts inside the body become drained which may cause sickness and retching.

Breathlessness and coughing: During anaerobic exercise, extreme acidosis expands the rate and profundity of breath which is known as Kussmaul relaxing. Hacking or windedness during or after exercise is a typical manifestation of the condition called work out initiated bronchoconstriction, which happens when the aviation routes in your lungs tight incidentally because of any sort of physical movement that raises the pulse[12].

CONCLUSION

Exercise is the base of good health. It is necessary to understand its benefits and limitations for the individual, this study reveals the effect of excessive exercise causes metabolic changes and serious health-related issues as mentioned above. Exercise beyond physical strength leads to the destruction of strength and life.

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