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Effect of pranayama on respiratory functions in agriculture polytechnic students of Prof. Jayashankar Telangana state agriculture university

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Abstract

Pranayama Improved lung functions in numerous Studies. Yoga involves isometric contraction and improves skeletal muscle strength. Yoga training improves the strength of expiratory as well as inspiratory muscles. The present study is planned to find the effect of pranayama on pulmonary functions in Agriculture polytechnic students. Pranayama helps in bringing the sympathetic and parasympathetic nervous system into harmony. Through breathing we can influence the nervous system. Pranayama may allow bronchi dilatation by correcting abnormal breathing patterns & reducing muscle tone of respiratory muscles Yoga training improves the strength of expiratory as well as inspiratory muscles. Bhastrika Pranayama is a bellows type breathing in which one breath forcefully and rapidly and thus, exercises inspiratory as well as expiratory muscles. In breathing exercises like Kapalbhathi, short powerful strokes of exhalation in quick succession with contraction of abdominal and diaphragmatic muscles train the subject to make full use of diaphragm and abdominal muscles in breathing.

Keywords: vital capacity (VC), tidal volume (TV), expiratory reserve volume (ERV), breath holding time (BHT), PEFr, pranayama, pulmonary functions, endurance, yoga

Introduction

The word yoga means 'union', union of mind, body and spirit - the union between us and the intelligent cosmic spirit of creation- 'the oneness of all things' so pranayama literally, "control of prana" isn't just breathing exercises. Through pranayama, you use the breath to affect the constellation of energy that is your body mind. Prana - "life force" or "life energy" Yama - "discipline" or "control" niyama - "expansion", "non-restraint", or "extension The five principles of yoga are relaxation, exercise (asanas), pranayama (breathing control), nourishing diet, and positive thinking and meditation, pranayama are yogic breathing techniques that increase the capacity of lungs. Pranayama which is control of inspiration and expiration the inspiration of prana-vayu is shwasa and expiration is prashwasa and cessation of both is characteristic of pranayama. Pranayama improves overall performance of the body. The regular practice of pranayama increases chest wall expansion and almost all lung functions. The beneficial effect of different pranayama is well reported and has sound scientific basis. Pranayama makes efficient use of abdominal and diaphragmatic muscles and improves the respiratory apparatus. Yoga strengthens the respiratory musculature due to which chest and lungs. inflate and deflate to fullest possible extent and muscles are made to work to maximal extent. 85 Yoga strengthens the respiratory musculature due to which chest and lungs inflate and Deflate to fullest possible extent and muscles are made to work to maximal extent. Abdominal breathing uses the diaphragm and performs respiration with least effort. While, chest breathing utilizes intercostals muscles. It is less efficient. With the regular practice of breath holding the individual's central and peripheral chemoreceptor's gets adapted to the anoxia, this result is achieved by the body by causing hypo metabolism. Thus, reflecting as prolonged breath hold and decreased urge to breathe while doing so. In addition to this, the training of the stretch receptors in the respiratory muscles, chest wall and also walls of the alveoli support the breath holding Pranayama training causes an increase in the voluntary breath holding time.

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Objectives of the Study

Effect of pranayama on respiratory functions in adults has already been studied by various researchers. This study is done to find out the significant increase in pulmonary functions in Agriculture polytechnic students under pranayama training. The primary purpose of this exploratory analysis is to study the importance of pranayama on pulmonary functions. similar conditions. In -35 minutes. The 30 subjects (experimental group) assembled in the gym at morning for 5 days per week of six weeks for total 45-65 minutes. Control group was not exposed to physical fitness programme.

Materials and Methods

This study is conducted on 50 students pursuing Agriculture polytechnic 1st years. Consent form has been taken from them. They have been given yoga training 30 min daily for 2 months under the guidance of a trained yoga instructor. Vital capacity (VC), Tidal volume (TV), Expiratory Reserve volume (ERV), Breath holding time (BHT), 40 mm endurance, Peak expiratory flow rate (PEFR) are measured before & after yoga training.

Nadisuddhi

Close the right nostril with the right thumb. Now inhale slowly through the left nostril and fill your lungs. After inhalation, close the left nostril with ring finger of right hand. Open the right nostril, exhale slowly. After complete exhalation, again inhale through right nostril and close it with right thumb. Open the left nostril, breathe out slowly. This is one round of Nadisukthi Pranayama. Students were given Nadisuddhi training for 5 minutes daily for two months.

Kapalbhati

Kapalbhati Pranayama is a type of breathing exercise that helps you rid of various ailments over a period of time. Kapal" means forehead and "bhati" means shining. Kapalabhati is done in a sitting posture. Focus on "exhaling". Inhale as normal. Exhale and simultaneously contract the abdomen muscles with each exhalation. Students were given Kapalbhati training for 5 minutes daily for 2 months.

Bhastrika

Bhastrika is a Sanskrit word which means bellows. In Bhastrika pranayama, the breathing pattern resembles the blowing of bellows. Bhastrika pranayama is all about inhaling and exhaling completely so that your body gets maximum amount of oxygen. Students were given Bhastrika training for 5 minutes daily for 2 months.

Bramhari

The word "Bramhari" comes from the Sanskrit name bhamar which is humming black bee. The practice of bramhari breathing calms the mind, reduces the stress or fight - flight response. In this pranayama one needs to create a sound while exhaling and inhaling in the throat. The sound is similar to chanting of Om, especially the long mmm. In Omkar. The sound should be deep, steady and smooth. Students were given Bramhari training for 5 minutes daily for 2 months.

Conclusion

Yoga practice can be advocated to improve pulmonary functions in healthy individuals and hence to prevent respiratory diseases in future After 2 months of yoga training, the readings of Vital capacity (VC), Tidal volume (TV), Expiratory Reserve volume (ERV), Breath holding time

(BHT), 30mm endurance, PEFR show significant increase. From the present study we may conclude that yoga practice can be advocated to improve pulmonary functions in healthy individuals and hence to prevent respiratory diseases in future. This beneficial effect of pranayama can be used as an adjuvant therapy for many respiratory diseases. The daily practice could also be parts of physical fitness and life style modification programs in maintaining better physical and mental health. Hence, it can be said that pranayama improves respiratory breathing capacity by increasing chest wall expansion and forced expiratory lung volumes.

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