

Prevention and Management of Respiratory Diseases Including Lung Cancer Through Exercise Interventions

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Background

The objective of the paper is to create awareness among people about alternative and complimentary methods to protect themselves from respiratory diseases like asthma, bronchitis, chronic obstructive lung disease, cancer etc. The following changes take place in airways as a result of Lung diseases

- 1) Inflammation:** Is a physiological process and plays the role of immunological defense against infection, injury or allergy
- 2) Hyper secretion of mucus:** is a major pathological feature of Airway diseases. It is the result of goblet cell hyperplasia in respiratory mucosa and is a prominent feature of inflammation. Acute inflammation is a defense process and where as Chronic inflammation is a disease process. Chronic Inflammation and mucus hyper secretion are a potential risk factors for an accelerated loss of lung function. It is a common feature in elderly.. The thick viscous mucus in the Lungs will be conducive to pathogens. Continued inflammation and mucus hyper Secretion may significantly contribute to transformation of normal cells into cancer cells (often as a result of chemical , viral or radioactive damage to genes)
- 3) Broncospasm: is an additional factor in asthma patients. The three factors together cause breathlessness.**

Further, Chronic inflammation and its prominent feature, Hyper secretion of mucus are the fuses that ignite cancer. Without these factors, there cannot be inflammatory cell recruitment to the site of infection, injury or allergy. Continued presence of inflammatory cells or Carcinogens may lead to cycles of tissue injury and repair resulting in carcinogenesis of airways. Therefore, treating these two factors is very important for airway integrity and to protect from airway diseases including Cancer. For resolution of the said factors, a rapid programmed clearance of excess mucus is necessary. As a result, the origin of it inflammation gets resolved. A little medicinal assistance may become necessary.

Methods: Exercise is a potent medication in history. They are mucokineses and a recipe for healthy ageing. Exercises strengthen the remodeled airways and reset the biological ageing process.

They are **a) Upper airway passages cleansing Exercises:** They help in cleansing mouth, nose and pharynx, the primary sites of colonization of pathogens and the sinuses, the way stations to the brain. These exercises should be practiced with hypertonic solution i.e., a solution having greater osmotic pressure than that of cells or body fluids and draws water out of cells thus inducing plasmolysis. **b) Bronchial airways cleaning exercises:** They are based on forced expiratory techniques. They help in draining out excess mucus from bronchial airways. **c) Physical, aerobic and yogic exercises:** help in strengthening the Inspiratory and expiratory muscles.

The following are the exercises I have devised, they help in removing excess mucus from respiratory passages.

- a) Upper airway passages - mouth, nose, pharynx and the sinuses cleaning exercises**
- b) Bronchial airways cleaning exercises and**
- c) physical, aerobic and yogic exercises.**

Upper Airway passages cleaning Exercises:

These exercises should be practiced with hypertonic solution i.e., a solution having greater osmotic pressure than that of cells or body fluids and draws water out of cells thus inducing plasmolysis.. A glass of warm water mixed with a little sodium chloride (common salt crystals) NaCl will meet the purpose. The solution should be warmer than that of body temperature i.e., 37.00 degrees Celsius. Better results can be achieved if the patients use the solution having the temperature of 40.00 to 41.00 degrees Celsius.

The concept is based on “Living cells are osmotic systems and will shrink in hypertonic solutions (high salt concentration than in cell organelles) and swell and can burst in hypotonic solutions (pure water or low salt concentration).

This concept is useful, because the nasal mucosa is lined with permeable membrane bound in it by the cell organelles. During Inflammatory process the cells get filled with water, secretions enzymes etc. Osmotic pressure varies with concentration of the solution and with temperature increase.

Exercises

1. Take a glass of hypertonic solution, keep it at the entrance of nasal passages, bend the body forward to about 70 to 80 degrees, slowly snort in the solvent, it goes in through the nostrils, up through the nasal passages, down in throat (pharynx) from where it takes a 'U' turn, enters the oral cavity and collects in the mouth, spit it out. Blow out the nose forcefully, the excess mucus collected in nasal lining gets drained out.
2. Take the solvent, bend the body forward as stated and keep it at the entrance of the nasal passages (ala nasi), breathe out forcefully through mouth till the lungs become empty from maximum air, then slowly snort in the solvent, it goes in through the nostrils, up through the deep cone shaped tortuous nasal passages affecting all the turbinates (inferior, middle and superior) on the lateral sides of the nose, down in the throat (pharynx) from where it takes a 'U' turn, enters the oral cavity and collects in the mouth. Spit it out. Blow out forcefully, the excess mucus collected in the nasal linings get drained out.

Conclusions

Any mucus related respiratory health problem commences from upper airway passages and spreads to tracheo bronchial tree as they constitute only one path way. The mucociliary clearance mechanism becomes defunct when excess and sticky mucus forms. Once the

upper airway passages are cleaned of it, the defunct cilia become active and ciliate mucus towards nasal passages and it can be blown out easily. The bronchial airways cleaning exercises help in draining out total mucus from airways. The respiratory and other diseases originating from its pathway come under control. Healthy ageing process commences. The exercises are based on the concept "Once the offending factor, excess mucus is removed, the origin of it, Inflammation gets resolved" There will be no scope for formation of lesions leading to carcinogenesis of the airways and if already lesions are formed, treating them will become easy [1-4].

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