

Seven Strategies for Normal Breathing

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Abstract

For both healthy persons and respiratory patients, breathing normally is the aim of multiple allopathic and alternative interventions. Breathing is a compulsory condition for life and many cultures have tried to enrich the level of knowledge in the area. All people, regardless the gender, age, dwelling, health status and beliefs are influenced by the quality of air, the presence of pollutants, the pattern of breathing, physical activity and exercises, diet, colours and stones around.

Keywords: Respiratory Diseases; Oxygen; Pollution; Formaldehyde; Breathing Pattern; Physical Activity; Diet; Colours; Stones

Introduction

Talking about normal breathing is a generous issue to consider and reflect about. There is nothing more valuable than a good health. Maintaining and strengthening it implies a deep harmony between body, mind and spirit. The quality of air, the pattern of breathing, physical activity, diet and other elements around are important only if connected with positive thinking and healthy emotions; fear, sadness, anger and bereavement will always render sick lungs.

Quality of air

Low levels of particle pollutants and ozone, and high concentration of negative ions are necessary conditions for a good air quality. Trees are essential in this process, as they produce oxygen through the leaves, absorb carbon dioxide and clean the air. Carbon dioxide is absorbed and locked away in the wood, roots and leaves in order to produce tree's food [1]. They cleanse the air by lowering air temperature and by absorbing pollutants as carbon monoxide, sulphur dioxide and nitrogen dioxide [1]. It has been for long recognised that negative air ions have a clear positive effect on human health by mood improving, stabilizing catecholamine secretion and circadian rhythm, supporting recovery from physical exertion and protecting from positive ion-related stress [2]. Walking next to the forest borders, where the oxygen concentration is higher, is one of the most beneficial interventions for human health.

Pollutants

There is an outdoor and an indoor pollution referred nowadays, and the origins are extremely diverse. Tiny pollution particles in the outdoor air (particulate matter, nitrogen dioxide and aerosols) are originated in industrial activities, transport gas emissions, wood and coal burning for home heating, and even natural sources (e.g. sea spray). Indoor pollution is even more sophisticated, resulting from tobacco smoking [3], burning biomass for heating and cooking (wood, coal and corn cobs), methane gas for cooking and formaldehyde. Pressed-wood products containing formaldehyde resins are a significant source of formaldehyde in homes, along with cigarette smoke and unvented fuel-burning appliances, such as gas stoves, wood-burning stoves, and kerosene heaters. Pressed-wood products include

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plywood, panelling, particleboard, and fibreboard and are different from pressure-treated wood products, with chemical preservatives and intended for outdoor use. Persistent exposure to formaldehyde in home environment was linked to leukaemia in humans, particularly with myeloid leukaemia and nasopharyngeal cancer, and still debatable, with lung cancer [4]. Formaldehyde levels in homes can be reduced through adequate ventilation, moderate temperatures, and reduced humidity levels by using air conditioners and dehumidifiers [4].

Breathing pattern

The need to have a correct breathing in chronic respiratory diseases is obvious; breathing training and abdominal breathing usefulness are generally underestimated. Yoga breathing (sequential mobilization/expanding of abdomen, lower chest and upper chest when breathing in, while adopting a slower and deeper pattern with prolonged expiration) [5], pursed-lips breathing (for an improved breathing out of the air) and computer-aided breathing feedback [6] are some possibilities easy to be implemented. Unfortunately, many children at gym hours are taught to breath in by sucking the abdomen and they will keep this behaviour throughout their lives; consequently, implementing abdominal respiration in pulmonary patients is a long and difficult process.

A correct breathing was promoted by the Russian physician and scientist Konstantin Pavlovich Buteyko in the 1950s, aiming to maintain the correct ratio of oxygen and carbon dioxide within the bloodstream. The set of developed breathing exercises is known as the Buteyko Breathing Technique (BBT) [7]. The exercises encourage nose-breathing and taking an effective amount of air. The BBT or breathing re-training is highly beneficial for asthma sufferers in terms of reducing symptoms (cough, breathlessness, wheezing), improving sleep, ability to exercise, quality of life, and even a reduced need of medication [7]. Moreover, it is also helpful for the patients with other chronic respiratory diseases like chronic bronchitis, emphysema, COPD, bronchiectasis, snoring, sleep apnoea, sinusitis, rhinitis and allergies [7]. To prevent and even to treat an asthma attack, the patient should sit with the back upright, stop breathing for 5 seconds by holding both nostrils with the thumb and index, then release the nose, breathe shallow through the nose for 20 - 30 seconds and have another 5 seconds break. This pattern of breathing should last for 5 minutes.

Bowen technique, a unique, manual and holistic therapy, suggests a breathing exercise to strengthen intercostal muscles. With both hands placed tight anteriorly at the base of hemithoraces, the patients are encouraged to slowly breathe in, keep the air for a few seconds, breathe out slowly and then release the pressure. They should do six repetitions at a certain time, practising repeatedly during the day.

Physical activity and exercises

Physical activity is defined as any bodily movement produced by skeletal muscles that produce energy expenditure. It comprises leisure-time, domestic and occupational activities, activities of daily living (everyday tasks required for personal self-care and independent living) and exercise. Physical inactivity, simply defined as the absence of physical activity, is a fundamental characteristic of many chronic respiratory diseases, being a cause and a consequence as well [8]. The need to remain physically active in lung illnesses is a must nowadays [9,10].

Walking outdoor, Nordic walking, calisthenics, cycling, sit-to-stand from a dining chair, step ups on an internal or external stair, and swimming are excellent methods to keep people moving [6,11-13]. Water-based exercise training appear to be more effective in improving exercise capacity than land-based; some properties of water are responsible for these findings, like unique capacity of water to support body weight, resistance and turbulence with increased exercise intensity and effects of warm water over muscle blood flow [14]. There are other forms of physical activity, even more acceptable, like singing, dancing and creative playing; they harmonise body's energy and improve its flow through the chakras.

Energy medicine is one of the major categories of complementary and alternative medicine. T'ai chi is a traditional Chinese medicine form involving the whole body, characterised by circular unique movements, described as slow, smooth flowing and graceful; it is thought to strengthen the body's energy and enhance its passage throughout the body [15-17]. It incorporates elements of muscle

endurance and strengthening, balance, relaxation and breathing. Sun-style t'ai chi comprises less difficult movements, less deep-knee bending and single-leg standing, being more suitable for older people [16].

In Reiki, an ancient therapy originated in Tibetan sutras, there is a special breathing exercise leading to an increased respiratory capacity. It can be performed while sitting or better while walking. In the first week, a long breathing out (six seconds or six steps) will be followed by a long breathing in of an equal number of seconds or steps; the session will be stopped at fatigue. Second week will bring an increase from six to seven seconds or steps for breathing out and breathing in respectively. In the third week, it will be a progressive increase from 6 seconds or steps for breathing out and breathing in to thirteen seconds or steps and backwards. This breathing exercise will be respected for the rest of the patient's life and will be performed on his own rhythm [18].

Diet

For a healthy respiratory system, people should respect the Hippocratic principle with 80% alkaline food and only 20% acidic food; moreover, they should drink 30 ml/kg body weight of alkaline spring water per day. A less known clue refers to respiratory conditions where mucus is excessively secreted, when it is essential to provide a diet with low-forming mucus foods. The dietary sources of mucus are: dairy products (including goat's milk and yoghurt); eggs; grains (mainly gluten-rich ones as wheat, oats, rye and barley); sugar; potatoes (and other starchy root vegetables like swedes and turnips). These aliments will be replaced with fresh fruits and juices [19].

Having this long-term restriction pattern in mind, it should be highlighted that the influence of diet on lung health is a complex issue and permanent restriction of certain food (e.g. eggs or butter) might lead to deficiency of some important ingredients such as vitamin D. This vitamin has evidence-based role in local lung defence mechanisms (macrophages activity) [20] and many epidemiological studies have shown an association between its low levels and a higher risk of developing various respiratory diseases [21]. *In vitro* studies demonstrated important anti-inflammatory and antibacterial effects of vitamin D [22]. Since its deficiency is highly prevalent in some pulmonary diseases, the supplementation of vitamin D is in focus of many current studies [23].

Lung cancer is the most common cancer worldwide in both men and women, therefore preventive measures should be strongly emphasized. There are ten nutritional factors to be addressed, like in any other cancer site prevention: alcoholic beverages, overweight and obesity, physical activity, red and processed meat, salt and salted foods, fruits and vegetables, dietary fibers, dairy products, beta-carotene supplements and breastfeeding. People should be more health-conscious, as lean as possible within the normal range of body weight, daily physically active, limit consumption of energy-dense food, of red meat, especially processed meat, salt, and eat mostly foods of plant origin. Avoiding sugary drinks and limiting alcohol intake is strongly advisable. Cancer survivors should follow same recommendations for cancer prevention. As proven already, about one third of lung cancer cases are preventable through a healthy, balanced and diversified diet, maintaining a normal weight and practicing regular physical activity [24,25].

Colours

Green colour relates to the the forth chakra, Anahata, and it is associated with the heart, lungs and thymus. Exposure to green has a positive effect in respiratory and cardiovascular diseases, being recommended for cloths and wall decoration. A stroll in the nature is a unique opportunity to relax, offering a calming effect on mind and body. Parks and small forests nearby overcrowded cities are of big help for all people; pollen and grass allergic patients will need more attention and specific treatment.

Stones

Respiratory activity being dependent on the forth chakra, it will be positively influenced by green and pink stones, worn with a chain long enough to be placed in between the breasts. Moss agate, malachite, beryl, peridot, amber, diopside, emerald, chrysocolla, turquoise, kunzite, rhodochrosite, morganite, pink tourmaline [26] and vanadinite are some useful crystals. They can help stabilize the respiratory system and bring relief from breathing difficulties. They can be used not only as jewellerys, but crystals can also be placed in the room, next to the patient.

Conclusions

Apparently, there are not too many requests for normal breathing: clean air, physical activity, avoidance of outdoor and indoor pollutants (industrial, environmental, smoking, traditional heating and cooking, formaldehyde), and a healthy diet. Still, not all conditions are dependent on the individuals; communities are called to take control over pollution of any kind, providing a good quality air. There are many allopathic and alternative methods to intervene in respiratory diseases, but it will be always easier to prevent them instead of curing.

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