



Ideal Lifestyle to Have Healthy Lungs: Persian Medicine Viewpoint

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Abstract

Persian medicine introduces six essential principles to maintain health and improve the breathing of the patients with pulmonary diseases. Adherence to each of these principles plays an important role in having healthy lungs. The purpose of this study was to review the scientific evidence of the mentioned recommendations while discussing the Persian medicine recommendations. Accordingly, suggestions related to maintaining lung health were extracted from the main sources of Persian medicine. In addition, similar topics were searched in PubMed, Scopus, Google Scholar, Web of Science, and SID databases. Then, results were expressed separately in each aspect of the six essential principles. These recommendations which are the result of hundreds-of-years-experience of Iranian physicians could be useful; however, future experimental investigations are needed to approve their safety and efficacy along with the possible mechanisms of action.

Keywords: Lifestyle; Pulmonary diseases; Persian medicine; Respiratory system; Lung

Introduction

Maintaining a well-advised lifestyle plays a decisive role in human physical and mental health. Scientists are always looking for the best way to define the ideal lifestyle. Iranian traditional

medicine or Persian medicine (PM) is one of the oldest schools of medicine. Having more than 14000 written heritages, it has thoughtful opinions in this regard based on its holistic approach. It seems that reconsidering of these

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experiences in scientific manner can make us aware of what has been neglected over time [1]. From the perspective of PM, observing “six essential principles” is necessary for maintaining a healthy lifestyle. These principles include air, nutrition, sleep and wakefulness, movement and stillness, mental states, in addition to retention of useful substances and disposal of waste. Observance of each of these principles plays an important role in maintaining the health and treatment of the diseases [2]. Regarding the respiratory system, PM suggest specific recommendations to improve its functionality through lifestyle modification [3]. It has also various strategies to prevent and treat the infections of respiratory system related to the pandemics [4-6].

Lungs are constantly moving because they act as a blower for the heart and thus, injury to them is difficult to heal due to this constant movement. Breathing, as one of the most important vital functions in living creatures, requires the observance of these health principles in order to maintain or improve this essential functionality [7].

This study reviews the Iranian physicians' viewpoints about the best way of life for having healthy lungs and for the patients with lung diseases.

Methods

In this narrative review, terms related to maintaining lung health were extracted from the *Hefzo-Sehat* section of Persian medicine main sources. Current medical literature (using PubMed, Scopus, Google Scholar, Web of Sci-

ence, and SID databases) was also searched with equivalent terms. Then, the obtained results were expressed separately in each of the six essential principles. In this study, we discuss the impact of each of these principles on the respiratory system according to PM and modern medicine, emphasizing on the “air”.

Air

Jorjani (1042-1137 AD) has said: None of these six vital principles is closer to the people and is not needed for them more than air [8]. Avicenna (980-1037AD) considered air to be a necessary element for the human body. He also believed in the key roles of air in the function of the body. Just like water which refreshes organs and cleanses the body by excretion in urine, feces, and sweat, so does air by purifying the waste materials through the lungs. Breathing in the healthy air directly affects both physical and mental health. In his viewpoint, nothing acts faster than air in purification [7].

PM physicians have recognized the effect of air on the structure of human body and the adverse effects of polluted air which could result in various diseases. They have emphasized the importance of observing air-related measures including attention to habitat, different seasons, and appropriate weather for different stages of age. According to PM, if a season occurs earlier than its due date, diseases related to that season will appear earlier. In addition, if the seasonal weather conditions last, especially in summer and autumn, the diseases will increase. Avicenna believed that the best years are those in which the spring and autumn are rainy, winter is

mild, and summer is with rain [7].

Generally, spring is considered the best season when the weather is concerned. However, in those who overeat in winter and do not have proper physical activity, various diseases, especially chronic diseases, could occur more in this season. In addition, the probability of arteries rupture, bleeding from the lungs, and cough increases. In this regard, it is notable that evaluation of the seasonal pattern of tuberculosis in Iran has shown that the prevalence of tuberculosis in June is higher than in other months of the year [9].

In winter diseases such as colds increase because of the increased humidity resulted from rainfall. A study in the UK found that common cold is a seasonal disease and the incidence of the respiratory infections in the temperate regions of the Northern hemisphere increases in the autumn. This increase remains in winter and decreases again in spring. Also in the tropical regions, colds often occur during the rainy season [10]. In fact, it seems that autumn and winter are harmful seasons for people with respiratory diseases. A 15-year study of 307 patients with chronic obstructive pulmonary disease (COPD) in London found that the symptoms of the disease are more severe between November and February than in other months of the year and required longer treatment [11].

According to PM literature, the best autumn is the rainy one while little or no rainfall will be the worst condition in this season. As a rule, the weather which is so cold that does not cause shivering and so warm that does not cause sweating is considered as temperate and bene-

ficial for health [7].

Inhalation of extremely cold or hot air has been introduced as a trigger of shortness of breath in PM. Moreover, exposure of the head to the cold air (in conditions such as cold seasons of the year, blowing of cooling devices, exposure of the wet head in the open air) is one of the causes of increased mucous secretions in the airways. The link between rhinitis and asthma is now well established. Patients with persistent and severe symptoms of nasal rhinitis and a history of sinusitis have a higher risk of developing asthma. The basis of this relationship is not fully understood from the perspective of modern medicine [12]. Cold air is often dry, and this dryness can irritate the airways and lungs. Air coming out of air conditioner systems can also exacerbate this sensitivity and cause Sick Building Syndrome [13].

Avoiding the exposure to cold weather (covering the head and neck, keeping the head dry in the open air, and balancing the temperature) is one of the important recommendations of PM physicians to maintain healthy lungs. Covering the nose and mouth with a hat and scarf in cold weather as well as breathing through the nose to maintain heat and moisture are among their recommendations to prevent lung diseases. A recent study has revealed that exposure to extreme cold, as well as very hot weather, is associated with an increased risk of death in patients with COPD [14]. A study including 16,000 patients with exacerbation of COPD symptoms between 1999 and 2009 found that each degree of temperature decrease increases exacerbation by about one percent [15].

Habitat air has different effects on health based on the geographical area, altitude of habitat, proximity to mountains and seas, soil type, vegetation, winds in the area, and proximity to the mines. From the PM viewpoint, the windows and doors of the residence should open to the East and North so that light shines from the East into the house. The sunshine favors the air quality [16].

According to the above mentioned, PM puts emphasis on the important role of the air in the function of body organs. For instance, the temperature and air quality are effective in the sleep status and daily performance. In addition, the amount of oxygen in the air has a direct effect on the quality of sleep [17]. Health measures such as closing doors and windows during the peak of air pollution, using aromatic plants in the living space, using foods that improve cardiovascular and brain function, as well as avoiding salty foods in these conditions are PM advises to the people exposed to air pollution [18].

It seems that PM attention to the importance of air and its effects on human life has led to the development of various strategies for benefiting from healthy air and provision of effective antidotes to repel the toxic effects of the polluted air. These recommendations are needed today more than ever considering the widespread human made air pollutants. Avoiding the air near swamps, reeds, ponds, tombs (distancing houses from cemeteries), the air of leek, cabbage, onions, and garlic fields and around walnut, fig and castor trees that emit large amounts of CO₂ at night are important PM recommendations. Today, there is some evidence that shows the air

around walnut and fig trees is harmful [19,20]. Additionally, smelling aromatic plants or aromatic substances such as violet and camphor for warm tempered individuals and musk and amber for cold-tempered people are other tips in this regard. Today, using aromatic plants such as rosemary, lavender, basil, mint, jasmine, and geranium is considered to be effective in air purification [21].

Nutrition

Reducing food intake, strengthening stomach digestion, reducing drinking cold water, avoiding salty foods, in addition to consumption of orange, onion, garlic, pistachio, and lettuce are some recommendations to reduce the hazards of air pollution [7]. Reducing food intake, especially carbohydrates, reduces CO₂ production and improves respiration [22]. This restriction also activates autophagy to recycle destroyed proteins, organelles, and macromolecules. These proteins can cause cell apoptosis if not cleared by autophagy [23]. Recent studies have also shown that reducing salt intake can reduce the negative effects of air pollution on the cardiovascular system [24].

Patient with shortness of breath should not swallow water at once; they should take sips and drink intermittently considering a gap between drinking and eating the meals.

Considering the symptoms of patients with chronic lung diseases, which usually represent the pattern of cold and wet dystemperament of lungs, it seems that limiting the consumption of cold-natured foods could be effective in reducing the symptoms. Moreover, limiting flatulent

foods, chewing well, and eating meals slowly in a resting position are other suggestions for these patients. Unleavened bread, barley, figs and, fresh grapes, apples, pears, cucumbers, peaches, mushrooms, berries, watermelons, lettuce, eggplant, cabbage, beets, chickpeas, beans, lentils, mung bean, milk, and buttermilk are examples of flatulent foods. These foods could probably cause dyspepsia which may result in abnormal gas flow in the bloodstream and eventually impaired breathing [25].

On the other hand, avoiding food allergens is another important measure that should be observed. A study by Willers et al. reported a weak relationship between the daily consumption of nuts among pregnant women and the incidence of asthma in their children [26]. Recent studies have focused on increasing the incidence of COPD and asthma exacerbation in people who eat processed meats such as sausages and hot dogs [27,28].

Good fragrant fermented bread with seeds such as hyssop, thyme, anise, black seed, cumin, and mint is recommended for patients with lung diseases [7]. Moreover, consuming river fish and some birds with small size and high mobility is useful for them. Omega-3 in fish is an anti-inflammatory ingredient for patients with inflammatory lung diseases [29]. *Plantago major*, cooked fenugreek, and honey syrup are other useful recommendations [30].

Sleep and wake up

In viewpoint of PM, too much sleep and daytime sleeping are harmful to most patients with respiratory disorders. Sleeping immediately af-

ter a meal is also forbidden due to indigestion. It has also been mentioned in the Indian medical school [31]. In this regard, Avicenna has said in the Canon of Medicine that: "Sleeping after a meal is the most harmful act for people with shortness of breath unless they are very tired. In such cases, short sleep has not an obstacle." Both oversleeping and sleep deprivation can interfere with digestion. Studies have confirmed the association of daytime sleep with cardiovascular, neurological, fatty liver and even lung diseases [32-34]. In addition, prolonged sleep during the day is associated with increased mortality, especially in the elderly, as well as an increased incidence of lung disease [35].

PM physicians recommend sleeping some hours after sunset and waking up before sunrise. This is an effective factor in maintaining the health including the respiratory system. Researchers have found that people with evening chronotype, who often stay up late at night, not only confront an increased risk of developing chronic diseases, but also are more prone to develop respiratory disorders, especially bronchial asthma [36].

Movement and stillness

In PM, physical activity is considered as one of the most important factors affecting human health. Avicenna believes that the most important health measure is exercise. After that, diet and then sleep regulation should be observed. The best time for doing exercise is after complete digestion of food and when the body is devoid of waste products including urine and feces. According to Rhazes (865-925 AD), ex-

ercise should be fast to change the breathing and make it more frequent. If one has to move after a meal, it should be very slow so that the state of breathing does not change [37].

PM offers special measures to the people with respiratory disorders regarding their physical activity:

- Singing in such a way that the sound gradually changes from slow to loud and from weak to strong.
- Doing sports that involve the respiratory muscles such as archery.
- Doing exercise movements from slow to fast.
- Holding the breath and then blowing alternately slowly and strongly in special containers.

Recent studies have found that blowing into containers such as balloons is effective in improving the respiratory status of elderly patients, especially the smokers [38]. The amount, time, and manner of physical activity should be adjusted according to the age, sex, and temperament of each person. The importance of physical activity in the improvement of patients with lung diseases has been emphasized in modern medicine [39]. A study by Garcia et al. showed that regular exercise by patients with COPD could reduce hospitalization and mortality [40]. Although recent studies do not prevent healthy people to have physical activity in cold weather, it is not recommended for those with lung diseases [41]. On the other hand, although a number of studies have mentioned that doing exercise in the polluted air is harmful for health [42], other studies showed the superfluous benefits of physical activity, even in polluted air, for preventing asthma and COPD [43].

Mental states

According to PM, mental states including anger, fear, joy, sorrow, and even feelings of embarrassment should be kept in moderation to maintain the health. Rhazes describes situations such as sadness, anger, and rage as factors that disrupt digestion and cause shortness of breath. In this regard, Avicenna believed that avoiding anger is effective in reducing the effects of air pollution.

On the other hand, some mood swings seem to interfere with proper ventilation by causing spasms in the respiratory muscles (both acute and chronic). Some of these conditions, such as anger and rage, increase the number of breaths. Studies have shown that hypocapnia can be caused by anxiety in healthy people [44]. The result of hyperventilation is respiratory alkalosis and consequently decreased oxygen delivery to the tissues (including the brain), smooth muscle contraction, increased pain perception, changes in serum calcium and magnesium levels, and therefore changes in normal skeletal muscle control [45]. That is why shortness of breath is one of the most common symptoms of panic disorders.

A descriptive-analytical study investigating the relationship between respiratory status and mood of patients with chronic bronchitis or emphysema has shown that depressed mood in these patients is associated with irregular breathing [46].

According to aforementioned, stabilization of mental state has an important role in normal function of respiratory system and should be seriously observed in patients with respiratory

disorders.

Preservation of useful substances and disposal of waste materials

According to the PM literature, human beings always need to preserve vital substances in their body and remove the waste products. This important task should be observed considering the specific healthy/unhealthy condition of an individual.

Regarding the respiratory system, facilitating the excretion of sputum and correcting defecation is one of the important health measures which is also considered in PM for the improvement of lung diseases [47,48]. It is also recommended to avoid excessive sexual intercourse in order to reduce the risks of air pollution and improving the respiration [49].

In addition, prohibition of excessive bathing and staying in it for a long time, especially in the cold seasons, is another recommendation of PM for people with lung diseases. Avicenna believes that patients with shortness of breath should avoid bathing as much as possible, especially the bath immediately after eating [7].

Conclusion

Persian medicine puts emphasis on the priority of maintaining health rather than treatment. Even in the first stage of treatment, lifestyle modification is of particular importance [50]. It seems that some recommendations regarding correcting the air we breathe, the food we eat, the times we sleep, the amount of physical activity, mental states, and the state of waste products removal can improve lung health and

reduce the need for therapeutic interventions in patients with respiratory disorders. Consistency of some of these recommendations with current findings could persuade the researchers to conduct experimental studies for investigation of safety and efficacy of these health measures.

Conflict of Interest

There is no conflict of interest to declare by all authors.

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