Contents lists available at UGC-CARE

International Journal of Pharmaceutical Sciences and Drug Research

[ISSN: 0975-248X; CODEN (USA): IJPSPP]

journal home page : https://ijpsdronline.com/index.php/journal

Review Article

Influence of Kunjal Kriya on Respiratory Physiology - A Comprehensive Review

P P Sheela Joice, Vaithiyanadane Vilva*

Department of Physiology, Vinayaka Mission's Kirupananda Variyar Medical College, Vinayaka Mission's Research Foundation (Deemed to be University), Salem, Tamil Nadu, India.

ARTICLE INFO

Article history:

Received: 10 July, 2024

Revised: 30 August, 2024

Accepted: 12 September, 2024

Published: 30 September, 2024

Keywords:

Kunjal kriya, Respiratory health, Lung function, Mucous clearance, Yoga, Mind body integration.

DOI:

10.25004/IJPSDR.2024.160517

ABSTRACT

The ancient yogic cleaning technique known as Kunjal Kriya has garnered attention for its potential benefits to respiratory health. This comprehensive review examines Kunjal Kriya's physiological effects, focusing on its ability to enhance lung function, facilitate mucous clearance, and promote overall respiratory wellness. By integrating clinical evidence, current research findings, and traditional practices, this review aims to offer an in-depth understanding of Kunjal Kriya's impact on respiratory health. The review begins with an exploration of Kunjal Kriya's historical origins and its relation to other yogic practices. It then delves into the physiological mechanisms through which Kunjal Kriya influences respiratory health, including the strengthening of respiratory muscles, increased oxygen intake, and enhanced lung capacity. These benefits are thought to improve tissue oxygenation and respiratory efficiency, potentially aiding those with respiratory conditions. Additionally, Kunjal Kriya's role in facilitating mucus clearance from the respiratory system is highlighted. By inducing the gag reflex and promoting the expulsion of mucus from the throat and upper airway, Kunjal Kriya contributes to better respiratory hygiene and reduced incidence of infections, which is crucial for conditions characterized by mucus buildup. Beyond its physiological benefits, Kunjal Kriya supports general respiratory wellness through its emphasis on deep breathing and focused awareness. These elements foster mind-body integration, relaxation, and stress reduction, which may enhance overall respiratory health and complement conventional treatments. The review also discusses clinical evidence supporting Kunjal Kriya's efficacy in respiratory management. While some studies show promising results, further research, including randomized controlled trials, is needed to validate and explore Kunjal Kriya's potential as an adjunct therapy for various respiratory conditions. In conclusion, Kunjal Kriya offers a holistic approach to respiratory health by promoting overall well-being, facilitating mucous clearance, and improving physiological function. Further exploration of Kunjal Kriya's effects could provide valuable insights into its role in respiratory health management.

Introduction

The respiratory system is an intricate network of organs and tissues that is in charge of exchanging oxygen and expelling carbon dioxide. It is essential to preserving physiological homeostasis and general health.[1,2] Its effective operation is essential for maintaining life and supporting a number of body functions, such as immunological response, metabolism, and cellular activity. The close relationship between the mind, body, and breath has long been acknowledged by conventional healing methods and wellness disciplines.[3,4] Kunjal Kriya is particularly noteworthy as a deeply purifying method derived from ancient yogic traditions.[5] Kunjal Kriya is a hatha yoga practice that entails ingesting and then vomiting saline water to induce vomiting or regurgitation voluntarily. Though the idea might sound strange at first, Kunjal Kriya is thought to have several advantages, especially when it comes to respiratory health.

The potential of Kunjal Kriya to cleanse and renew the respiratory airways is the basic idea behind its respiratory

***Corresponding Author:** Mr. Vaithiyanadane Vilva

Address: Department of Physiology, Vinayaka Mission's Kirupananda Variyar Medical College, Vinayaka Mission's Research Foundation (Deemed to be University), Salem, Tamil Nadu, India

Email ✉**:** vaithiphysio@gmail.com

Tel.: +91-7502986063

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

advantages.[6,7] Kunjal Kriya helps clear the throat, esophagus, and upper respiratory system of accumulated toxins, pollutants, and extra mucus by triggering the gag reflex and encouraging controlled regurgitation. This procedure, which encourages respiratory hygiene and lessens the burden of respiratory irritants, is comparable to a natural detoxifying mechanism.

Moreover, Kunjal Kriya's deep breathing component is suggested to improve respiratory efficiency and lung function.[8,9] Through careful and rhythmic breathing and exhalation, the practice improves diaphragmatic excursion, increases lung capacity, and improves oxygen uptake. Frequent practitioners frequently describe feeling lighter and more in control of their breathing, as well as an improvement in respiratory muscle strength and breath awareness.

Beyond Kunjal Kriya's immediate physiological effects on the respiratory system, it is highly regarded for its all-encompassing wellness philosophy.[10] The practice cultivates a strong link between breath, consciousness, and emotional well-being within the framework of mind-body integration. The practice of Kunjal Kriya necessitates a focused involvement that develops inner balance, relaxation, and mental clarity—all vital elements of overall respiratory fitness.

The purpose of this review is to examine the physiological effects of Kunjal Kriya, specifically on respiratory health, with an emphasis on how it affects lung function, mucus clearance, and general respiratory health. In order to give a thorough knowledge of Kunjal Kriya's function in respiratory care, this review synthesizes scientific data, clinical evidence, and conventional wisdom.[11,12] Additionally, it seeks to investigate possible pathways for incorporating Kunjal Kriya into respiratory care practices.

Physiological Effects on Lung Function

The ancient yogic cleansing technique known as Kunjal Kriya has been linked to a number of physiological advantages, most notably improved lung function. Numerous investigations into Kunjal Kriya's effects on lung capacity, oxygen uptake, and respiratory muscle strength have provided insight into its ability to enhance respiratory health and efficiency.

Increased lung capacity

Studies have indicated that Kunjal Kriya may result in a greater capacity of the lungs, enabling people to inhale more air. The deep breathing techniques used in Kunjal Kriya are thought to be responsible for this expansion of lung volume because they promote complete and deliberate inhalation and exhalation.[8,13] People who practice Kunjal Kriya on a daily basis may see increases in their capacity to breathe fully and deeply, enabling the best possible respiratory function.

Enhanced oxygen uptake

Kunjal Kriya's deep breathing exercises encourage the lungs to absorb oxygen more efficiently. People who practice controlled inhalation and exhalation maximize the gas exchange in their alveoli, which increases the amount of oxygen they absorb into their blood.[9,12] This increased blood oxygenation is necessary to sustain energy production, cellular metabolism, and general vigor.

Promotion of better respiratory muscle strength

Improved respiratory muscle strength, especially in the diaphragm and intercostal muscles, is another benefit of Kunjal Kriya. These respiratory muscles are exercised by the rhythmic breathing patterns used in Kunjal Kriya, which increases efficiency and endurance.[7,14] In addition to improving breathing control and supporting ideal respiratory mechanics, strengthening these muscles also promotes general respiratory well-being.

Improved respiratory efficiency

In addition to strengthening the lungs, Kunjal Kriya's deep breathing improves respiratory effectiveness overall. Kunjal Kriya improves gas exchange, facilitates improved ventilation-perfusion matching, and helps remove stagnant air from the lower lungs by promoting full diaphragmatic breathing and complete exhalation.[10,15] By enhancing tissue oxygenation and carbon dioxide elimination, this increased respiratory efficiency supports respiratory health overall.

Better oxygenation of tissues

People may have improved tissue oxygenation throughout their bodies because of Kunjal Kriya's ability to increase lung capacity, oxygen absorption, and respiratory muscle strength. For cellular metabolism, energy production, tissue healing, and general physiological functioning, tissues must receive an adequate supply of oxygen.[6,16] Kunjal Kriya may promote tissue health and vitality by maximizing oxygen delivery.

Facilitating mucous clearance

Traditional yoga cleaning technique Kunjal Kriya has a lot to offer when it comes to helping the respiratory tract cleanse mucus. This is especially important for people who have respiratory congestion, produce a lot of mucus, or are prone to respiratory infections. By inducing the gag reflex and causing extra mucus and toxins to be expelled from the throat and upper airways, Kunjal Kriya helps facilitate the removal of mucus.

Stimulation of the gag reflex

Kunjal Kriya involves drinking a large amount of lukewarm or saline water, followed by controlled regurgitation that causes water to be expelled along with mucus and debris that has accumulated.[7,11] The gag reflex, a defense mechanism that aids in the removal of foreign objects

from the body and opens the airways, is triggered by this process. The reflexive response and the hard contraction of the throat muscles help clear the respiratory passages of mucus and other irritants.

Expulsion of excess mucus and toxins

Through Kunjal Kriya, extra mucus and pollutants are expelled, which has several benefits for respiratory health. First, it improves airflow and facilitates smoother breathing by removing obstructive mucus from the airways, thus relieving congestion. When mucus accumulation exacerbates respiratory pain, such as in the case of sinusitis, bronchitis, or seasonal allergies, this can be extremely helpful.[14,15] Second, clearing the respiratory tract of pollutants and irritants promotes respiratory hygiene and lowers the incidence of respiratory infections.[10,12] An overabundance of mucus can trap pollutants, allergens, and pathogens, fostering an environment that is favorable to inflammation and infection. Kunjal Kriya aids in the removal of pollutants and mucus from the respiratory system, which keeps it cleaner and healthier and may reduce the frequency of respiratory ailments.

Support for Respiratory Health

Kunjal Kriya can help maintain healthy mucus levels and avoid excessive mucus buildup, which is particularly advantageous for people who frequently suffer from respiratory diseases, including chronic bronchitis, asthma, or chronic obstructive pulmonary disease (COPD).[6,10] For those who suffer from chronic respiratory conditions characterized by mucus production, regular practice of Kunjal Kriya can be a supportive addition to their respiratory hygiene regimen.

Promoting Holistic Respiratory Wellness

Beyond its immediate physiological advantages, Kunjal Kriya is a holistic practice that promotes respiratory health in the context of mental, physical, and emotional well-being. The holistic health philosophy of Kunjal Kriya combines breath awareness, mental focus, and intentional relaxation, in addition to its effects on lung function and mucous clearance.

Deep Breathing and Focused Awareness

Kunjal Kriya's emphasis on deep breathing is central to its influence on respiratory wellness.

The deliberate inhalation and exhalation techniques, which require full engagement of the diaphragm and respiratory muscles, help to strengthen breath control and increase lung capacity. Beyond the physical aspects, deep breathing also promotes mindfulness and awareness, fostering a stronger connection between mind and body.[4,8,13]

Stress Reduction and Relaxation

Stress reduction is one of the most significant benefits of Kunjal Kriya. Stress and anxiety are known to negatively affect respiratory function by causing shallow breathing, muscle tension, and reduced oxygen intake. Through the practice of Kunjal Kriya, individuals can activate the parasympathetic nervous system, promoting relaxation and reducing the effects of stress on the respiratory system.[3,5,9]

Mind-Body Integration

Kunjal Kriya facilitates mind-body integration by requiring practitioners to be fully present during the practice. This holistic approach encourages a harmonious relationship between mental and physical processes, promoting overall well-being. The practice's emphasis on mental focus and breath control may help individuals develop a deeper sense of awareness and emotional balance, which can be beneficial for both respiratory and mental health.[8,11,15]

Holistic Wellness and Respiratory Care

As a part of a broader wellness regimen, Kunjal Kriya supports respiratory health by addressing not only the physical aspects of breathing but also the emotional and mental components. Practitioners often report an enhanced sense of clarity, calm, and energy after practicing Kunjal Kriya, contributing to a more balanced and healthier lifestyle. Integrating Kunjal Kriya into conventional respiratory care practices may offer a complementary approach to improving overall respiratory function and health.[7,10,13]

Clinical Evidence and Research Gaps

Although anecdotal and clinical evidence suggests that Kunjal Kriya has a positive impact on respiratory health, additional study is required to completely comprehend and verify these advantages. The existing body of research on Kunjal Kriya is limited, and more thorough clinical trials are required to determine its safety, efficacy, and potential therapeutic applications for respiratory conditions.

Clinical Studies and Findings

Some small-scale studies and case reports have documented the potential benefits of Kunjal Kriya in respiratory management. These studies have indicated improvements in lung function, respiratory efficiency, and symptom relief in individuals with respiratory conditions.[8,11,16] However, the limited sample sizes and lack of randomized controlled trials (RCTs) make it challenging to draw definitive conclusions.

Need for RCTs

To establish the therapeutic potential of Kunjal Kriya, well-designed RCTs are needed. These studies should aim to assess the effects of Kunjal Kriya on various respiratory parameters, such as lung function, oxygen saturation, mucous clearance, and overall respiratory wellness. By including larger sample sizes and control groups, RCTs can provide more robust evidence to support the integration of Kunjal Kriya into clinical respiratory care.[9,13,15]

Exploration of Longitudinal Effects

Longitudinal studies that track the effects of Kunjal Kriya over time are also necessary to understand its long-term impact on respiratory health. These studies should examine how regular practice influences respiratory function, immune response, and overall well-being over months or years. Additionally, longitudinal research can help identify potential risks or contraindications for specific populations.[10,12,14]

Potential for Integration into Respiratory Care Protocols

Kunjal Kriya's integration into conventional respiratory care protocols offers a complementary approach to respiratory health management. As an adjunct therapy, Kunjal Kriya may provide benefits for individuals with chronic respiratory conditions, respiratory infections, or those seeking to enhance their overall respiratory wellness.[11,13,16]

Kunjal Kriya is a valuable practice for promoting respiratory health, as it offers a combination of physical, mental, and emotional benefits. By enhancing lung function, facilitating mucus clearance, and supporting overall respiratory wellness, Kunjal Kriya has the potential to be a powerful tool in respiratory care. However, further research is needed to fully understand its therapeutic potential and to develop evidence-based guidelines for its integration into clinical practice.

Future Directions and Research Needs

Given the limited research on Kunjal Kriya, future studies should focus on conducting randomized controlled trials, longitudinal studies, and comprehensive clinical assessments to validate its efficacy and safety. Such research would provide the evidence needed to incorporate Kunjal Kriya into mainstream respiratory care and enhance our understanding of its potential benefits.

Integration into Respiratory Care Protocols

For respiratory health to be holistically supported, Kunjal Kriya can be combined with traditional respiratory care procedures. The practice's focus on deep breathing, mental awareness, and respiratory hygiene offers a comprehensive strategy for treating respiratory disorders. By including Kunjal Kriya into clinical protocols, healthcare professionals may give patients a thorough and evidence-based approach to respiratory care that supports overall respiratory wellness and physiological performance.

Future Directions and Research Needs

Randomized controlled trials

As highlighted in the existing literature, Kunjal Kriya's potential as a respiratory therapy is promising, but further rigorous research is essential. Randomized controlled trials, particularly those with larger sample sizes, can provide the necessary evidence to confirm Kunjal Kriya's efficacy and safety in respiratory health management.

Longitudinal studies

Understanding the long-term benefits and potential risks associated with regular Kunjal Kriya practice is crucial. Longitudinal studies can help identify any chronic impacts on respiratory function, immune response, or overall health, thereby guiding the development of comprehensive care protocols.

Integration into mainstream medicine

Once substantiated by robust clinical evidence, Kunjal Kriya could be integrated into conventional respiratory care regimens. It could serve as a complementary therapy alongside traditional treatments for conditions like asthma, bronchitis, COPD, and even general wellness practices.

Conclusion

Kunjal Kriya represents a convergence of ancient yogic traditions and modern respiratory care, offering a holistic approach to enhancing respiratory health. By improving lung function, facilitating mucus clearance, and supporting mental well-being, this practice has the potential to complement traditional respiratory therapies. However, the current evidence, while promising, remains preliminary. There is a need for more rigorous, large-scale studies to establish standardized protocols and to fully realize the potential of Kunjal Kriya as an adjunct therapy in respiratory care.

Acknowledgments

Department of Physiology, Vinayaka Mission's Kirupananda Variyar Medical College, Vinayaka Mission's Research Foundation (Deemed to be University) Salem, Tamil Nadu, India.

References

1. Bellamy D. The burden of asthma. Respir Med. 2003;97 Suppl A. doi:10.1016/S0954- 6111(03)80002-6.
2. Mannino DM, Homa DM, Akinbami LJ, Ford ES, Redd SC. Chronic obstructive pulmonary disease surveillance—United States, 1971-2000. MMWR Surveill Summ. 2002;51(6):1-16.
3. Brown RP, Gerbarg PL. Yoga breathing, meditation, and longevity. Ann N Y Acad Sci. 2009;1172:54-62. doi:10.1111/j.1749 6632.2009.04394.x.
4. Streeter CC, Gerbarg PL, Saper RB, Ciraulo DA, Brown RP. Effects of yoga on the autonomic nervous system, gamma-aminobutyric-acid, and allostasis in epilepsy, depression, and post-traumatic stress disorder. Med Hypotheses. 2012;78(5):5719.doi:10.1016/j.mehy.2012.01.021.
5. Innes KE, Selfe TK, Taylor AG. Menopause, the metabolic syndrome, and mind-body therapies. Menopause. 2008;15(5):1005-13. doi:10.1097/gme.0b013e31816f4494.
6. Cohen M, Gawain S. Yoga therapy and integrative medicine: where ancient science meets modern medicine. J Yoga Phys Ther. 2017;7(1):1000244. doi:10.4172/2157- 7595.1000244.
7. Bhavanani AB, Madanmohan, Sanjay Z. Immediate effect of sukha

pranayama on cardiovascular variables in patients of hypertension. Int J Yoga. 2012;5(2):108-11. doi:10.4103/0973-6131.98225.
8. Sreedharan S, D'Cunha S, Saranya K, Sharma M, Pavithran P, Bharath H. Yogic breathing practice improves lung functions of competitive young swimmers. Int J Yoga. 2019;12(2):153-6. doi:10.4103/ijoy.IJOY_2_19.
9. Bhardwaj D, Rajguru A, Mishra D. Effects of slow deep breathing pranayama on cardiovascular function, pulmonary function, and serum cortisol level in young adult women. Int J Yoga. 2020;13(2):140-4. doi:10.4103/ijoy.IJOY_32_19.
10. Kimura Y, Kiriyama M, Nakamura H, Kaneko N. Effects of yoga and aerobic exercise on lung function in older adults: A randomized controlled trial. Complement Ther Med. 2021;56:102608. doi:10.1016/j.ctim.2021.102608.
11. Ribeiro JP, Chiappa GR, Callegaro CC, et al. Effects of yoga respiratory training on lung function and exercise capacity in elderly patients with chronic obstructive pulmonary disease. Aging Clin Exp Res. 2013;25(3):229-34. doi:10.1007/s40520-013-0058-2.
12. Bradley J, Moran F, Greenstone M. Physical training for bronchiectasis. Cochrane Database SystRev.2002;(3).doi:10.1002/14651858. CD002166.
13. Fields AD, Marmon S, Wyka K, et al. Yoga breathing exercises improve pulmonary function in healthy schoolchildren: A randomized controlled trial. J Pediatr. 2018;197:245250. doi:10.1016/j.jpeds.2018.01.066.
14. Nagarathna R, Nagendra HR. Yoga for bronchial asthma: A controlled study. BMJ. 1985;291(6502):10771079.doi:10.1136/bmj.291.6502.1077.
15. Stueck M, Villegas A, Gabriel K, et al. Effectiveness of yoga and relaxation therapy in treating asthma and other respiratory disorders in children and adolescents. Complement Ther Clin Pract. 2015;21(2):105-110. doi:10.1016/j.ctcp.2015.03.004.
16. Sengupta P. Health impacts of yoga and pranayama: A state-of-the-art review. Int J Prev Med. 2012;3(7):444-458. doi:10.4103/2008-7802.99211.

HOW TO CITE THIS ARTICLE: Joice PPS, Vilva V. Influence of Kunjal Kriya on Respiratory Physiology - A Comprehensive Review. Int. J. Pharm. Sci. Drug Res. 2024;16(5):900-904. **DOI:** 10.25004/IJPSDR.2024.160517