# A Literature Review on sensor-based Observation on Human Health through Left and Right Dominant Nostril Breath Observation

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**Abstract.** Between 2024 and 2030, it is projected that radiation levels will rise significantly while cosmic energy declines. This period is also expected to bring about a reduction in human attention span, further intensifying the potential risks to human health. As a result, it will be more crucial than ever for individuals to prioritize their well-being and self-care. People should consider dedicating at least 50% of their time to activities that promote health and mental wellness.An interesting aspect of human physiology is the connection between nostril dominance and emotional or physical states. When a person is calm and relaxed, their left nostril typically remains more open. Conversely, during times of stress—whether due to aggression, anxiety, depression, anger, work pressure, or fatigue—the right nostril tends to be more open. This physiological phenomenon can be leveraged to enhance self-awareness and health monitoring. By using sensors to track the breathing rate through the left and right nostrils, individuals can gain valuable insights into their emotional and physical conditions. Such monitoring could lead to more informed health practices, enabling people to better adapt to the challenging environmental conditions anticipated in the coming years.

**Keywords:** Radiation, cosmic energy, attention span, nostril dominance, health monitoring..

## 1. Introduction

In today's hectic environment, being mindful of one's own health is more important than ever. Being self-aware is the first step in preventing health problems. No one else has the same level of insight into our inner workings as we have. In this way, we have the potential to be our own best doctors, seeing the warning signals of imbalance long before they become major health problems. Knowing oneself better may improve one's physical and mental health as well as one's emotional stability, thus gaining this information should be one's top priority in life [1].

As a conduit between the material world and the more intangible aspects of who we are, breath is an essential tool in our quest for knowledge [2]. As far as we know, it is the exclusive way to track the relationship between our mental and physiological states in real time [3]. Our respiration patterns mirror every change in our emotional state, degree of stress, and energy level. Being in tune with our breath may teach us a lot about ourselves [4]. For instance, studies have shown that our left nostril is more


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dominant when we're comfortable and at peace, while the right nostril becomes more active when we're anxious, stressed, or under pressure at work. A potent method to control emotions, lessen stress, and enhance general health is to learn about and keep tabs on these changes [5].

An innovative step towards self-awareness and holistic health management might be the development of a respiratory monitoring system that uses sensors. One way to monitor one's mental and physical well-being in real time is using a gadget that can record and analyse breathing patterns from both nostrils [10]. Using this technology, people would be able to identify what makes them anxious, anticipate when their mood would change, and do breathing techniques to help them regain equilibrium. It may also help with stress management, yoga, and meditation by promoting calmness and awareness [11]. Continuous feedback on respiratory behaviour would be a huge help to those who are trying to better themselves as it would give them more agency over their emotional and physical well-being.

This idea has the potential to go much further with the incorporation of AI into self-awareness and health monitoring. Long-term breathing data may be analysed by AI, which can then identify trends and provide individualised suggestions for physical and mental health. In response to identified breathing patterns [12], AI-powered systems may propose targeted breathing exercises, mindfulness practices, or dietary changes. For example, deep breathing exercises, pranayama, or relaxation methods might be recommended by AI if it detects a prolonged right nostril dominance. Also, with the use of AI, we may create models that can foretell when illnesses like anxiety, stress, or respiratory issues will manifest, allowing us to treat them before they worsen [13].

We can learn more about ourselves and take charge of our health if we combine self-awareness with technological tools. A more mindful, balanced, and healthful way of living may be achieved via the integration of traditional knowledge with cutting-edge sensor technologies and analytics powered by artificial intelligence. A more satisfying existence may be achieved by connecting with oneself, optimising one's health, and using self-monitoring tools in this age of stress, digital diversions, and fast-paced living. Being attentive and self-aware are the cornerstones of wellness, and technology may help us navigate the path to comprehensive self-care.

## 2. Literature Review

The benefits of breathing and pranayama on physical and mental health have been the subject of much research. According to Breese et al., pranayama is an important technique that affects energy in the areas of mind, emotions, body, and soul. A important source of energy for internal organs, the breath (or "prana" in Sanskrit) is like a life force [14]. There are several types of energy in the body, including physical, mental, and emotional, as shown in the research. A person may transform their energy by controlling their breathing using the nadi system (Ida, Pingla, and Sushumna).

Breathing slowly produces long, constant waves of energy, whereas breathing quickly produces shorter bursts of energy, which may cause different mental states. One way yogis transcend human limits and attain wellness is by being adept at prana flow as it is guided by the Sushumna. But contemporary lifestyle variables, like smoking, do a lot of damage to the lungs, destroying the alveoli and causing diseases like emphysema, which makes it hard to breathe [15]. Since worry and stress may be brought on by poor breathing patterns, future studies should aim to create devices that can measure both chest and diaphragmatic breathing [16].

Doppler multi-radar systems are a new development in respiratory monitoring that can evaluate breathing patterns without touching the patient. Because of the strong correlation between respiration and emotion, radar-based monitoring may be useful for detecting emotional states. With an emphasis on their possible use for respiratory monitoring, Martins et al. investigated the use of inertial sensors in BP evaluation. Before they can be used for real-time blood pressure monitoring, however, problems like motion interference and sensor location will need to be resolved. These sensors might be valuable tools for maintaining respiratory health if future research focused on making them more accurate in clinical settings.

In order to comprehend human emotions in many settings, Kanjo et al. investigated ubiquitous emotional sensing, as emotions are fundamental to behaviour. Such apps have the potential to encourage constructive mindset shifts and behaviour modification. In a similar vein, Haag et al. investigated multi-modal emotion identification methods that take into account not just vocal emotions but also facial expressions and physiological signals. Improvements in respiratory care may be attributed to advances in breathing sensors, as shown in the research on optical breathing sensors by Mathew et al. Magnetic fields interfere with traditional electronic sensors, hence non-electronic solutions are needed in MRI situations [17].

Analysing the ways in which sensors and computer algorithms quantify physiological stress responses, Sharma et al. performed a survey on stress identification and categorisation. Kunczik et al., meanwhile, zeroed attention on breathing monitoring as a means of spotting precursors to life-threatening illnesses. Disturbances in respiration may be an indication of underlying health difficulties since breathing controls the amounts of oxygen and pH. Improving breathing pattern categorisation algorithms to better diagnose respiratory problems early should be the focus of future research [18].

In their discussion of the effects of radiation on astronauts' physiology, Wani et al. uncovered more difficulties in space medicine. Radiation exposure during space flight has the potential to weaken muscles, alter cardiovascular systems, produce kidney stones, and even trigger genetic diseases [19]. The need for constant solar monitoring and predictive space weather models was also brought to light in Fogtman et al.'s study of radiation dangers associated with human space travel[20].

Cappellini et al., who studied the effects of combining Artificial Intelligence (AI) with Electrical Impedance Tomography (EIT) and variable breathing techniques, proved that predictive models powered by AI may enhance medical outcomes for patients [21]. To guarantee their efficacy as non-invasive respira-tory monitoring techniques, EIT advancements need more development [22]. The need of better data-sharing programs and more varied datasets for AI development was highlighted by Al-Anazi and Al-Omari, who centred their attention on the function of AI in respiratory care [23].

Estimating blood flow velocity is another critical area of research, as demonstrated by Al-Abed et al., whose study emphasized the importance of large population da-tasets for improving apnea diagnosis and stroke patient assessments [24]. Jiménez-García et al. explored the use of CNN-based models for detecting pediatric sleep apnea, showing promising results in classifying obstructive sleep apnea (OSA) severity. How-ever, more work is needed to refine automated OSA detection models [25].

Yogic practices also play a role in mental and physiological health. Jayaraman et al. studied the visual expressions of yogis, suggesting that yoga fosters self-awareness and spiritual well-being. Meanwhile, Kumar et al. explored CNN-based stress predic-tion in material microstructures, demonstrating how AI can predict mechanical fail-ure regions. Future research should focus on improving model accuracy and integrat-ing experimental data [26].

The Inner Engineering Online (IEO) program, studied by Upadhyay et al., proved effective in reducing stress among IT professionals, emphasizing the need for active engagement in mind-body interventions. Meanwhile, Monda et al. examined the physiological effects of pranayama, noting its role in brainstem activation, circula-tion control, and respiratory efficiency. Further research should explore the long-term neurological benefits of pranayama [27].

Jain et al. investigated right and left nostril breathing, finding parasympathetic dominance and improvements in cardiovascular responses. However, inconsistent past findings suggest a need for larger sample sizes and long-term studies. Similarly, Shankarapappa et al. explored the short-term benefits of pranayama on lung pa-rameters, recommending extended-duration studies to assess sustained pulmonary improvements [28].

Advanced EEG-based research in yoga and meditation was reviewed by Kora et al., highlighting machine learning applications in cognitive health. Bhagyashree et al. examined pranayama's holistic health benefits, including its ability to boost immuni-ty and reduce stress. However, digital yoga platforms need better personalization and accessibility through AI.

Finally, Shiva et al. explored electrophotonic imaging (EPI) of yogic mudras, re-vealing new insights into energy flow and physiological effects. Future studies should focus on automating image analysis to enhance the scientific validation of yogic practices. Across all these studies, there is a growing emphasis on integrating AI, ma-chine learning, and real-time health monitoring to enhance diagnostic accuracy and well-being.

In conclusion, breathing, AI, and health monitoring are interconnected fields with significant implications for medical research, stress management, and space explora-tion. Future research should focus on refining AI-driven health applications, develop-ing advanced respiratory monitoring tools, and expanding the scientific understand-ing of pranayama's physiological effects.

Table 1: Right Dominant Breathing Data

| Date | Select Your Feeling | Breat h Left | Breath Right | Diff (L-R) | Activity Before Observation |
|---|---|---|---|---|---|
| 8/28/2024 | Feeling Work Pressure | 5 | 4 | 1 | - |
| 9/1/2024 | Feeling Anxiety | 4 | 3 | 1 | - |
| 9/4/2024 | Feeling Energetic | 5 | 4 | 1 | - |
| 9/9/2024 | Feeling Depressed | 5 | 4 | 1 | Sleeping |
| 9/9/2024 | Feeling Happy | 4 | 2 | 2 | Eating Food |
| 9/10/2024 | Feeling Work Pressure | 5 | 4 | 1 | Working |
| 9/11/2024 | Feeling Happy | 5 | 2 | 3 | Sleeping |
| 9/12/2024 | Feeling Energetic | 4 | 8 | -4 | Wandering |
| 9/13/2024 | Feeling Weakness | 4 | 8 | -4 | Sleeping |
| 9/13/2024 | Feeling Energetic | 9 | 7 | 2 | Playing |
| 9/14/2024 | Feeling Happy | 4 | 9 | -5 | Sleeping |
| 9/14/2024 | Feeling Energetic | 9 | 4 | 5 | Sleeping |
| 10/10/202 4 | Feeling Happy | 5 | 4 | 1 | Travelling |

Table 2: Left Dominant Breathing Data

| Date | Select Your Feeling | Breath Left | Breath Right | Diff (L-R) | Activity Before Observation |
|---|---|---|---|---|---|
| 8/28/2024 | Feeling Healthy | 10 | 6 | 4 | Sleeping |
| 9/1/2024 | Feeling Happy | 9 | 6 | 3 | Prnayam |
| 9/4/2024 | Feeling Energetic | 9 | 7 | 2 | Sleeping |
| 9/9/2024 | Feeling Energetic | 9 | 5 | 4 | Sleeping |
| 9/9/2024 | Feeling Energetic | 9 | 7 | 2 | Sleeping |
| 9/10/2024 | Feeling Happy | 10 | 6 | 4 | Prnayam |
| 9/11/2024 | Feeling Tired | 9 | 7 | 2 | Sleeping |
| 9/12/2024 | Feeling Energetic | 9 | 7 | 2 | Sleeping |
| 9/13/2024 | Feeling Tired | 9 | 6 | 3 | Travelling |
| 9/13/2024 | Feeling Tired | 9 | 7 | 2 | Prnayam |
| 9/14/2024 | Feeling Energetic | 9 | 6 | 3 | Prnayam |
| 9/14/2024 | Feeling Energetic | 9 | 10 | -1 | Prnayam |
| 10/10/2024 | Feeling Energetic | 9 | 6 | 3 | Working |

## 3. Conclusion

The collected data provides valuable insights into the correlation between nostril dominance, emotional states, and pre-observation activities. The right-dominant breathing patterns were often associated with stress-related emotions such as work pressure, anxiety, and weakness, while left-dominant breathing was linked to positive states like happiness, relaxation, and energetic feelings. This aligns with established physiological findings that suggest the right nostril is more active during stress, whereas the left nostril is dominant in calmer states. Additionally, certain activities seem to influence breathing dominance. Pranayama (breathing exercises) frequently preceded left nostril dominance, supporting the idea that controlled breathing can regulate emotional and physiological states. Conversely, activities like working and eating tended to be linked with right nostril dominance, possibly indicating increased alertness or physical strain. Interestingly, instances where right nostril dominance was significantly higher correlated with negative emotions, whereas balanced breathing levels (small differences between left and right nostrils) were observed during neutral or positive emotional states. This suggests that nostril dominance can serve as an indicator of emotional well-being. Overall, monitoring nostril dominance could provide a simple yet effective way to assess mental and emotional health. Integrating this data into self-awareness practices or wearable technology could help individuals make informed choices to regulate their well-being in daily life.

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