Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol.14, Issue 32s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Effect of Neti Kriya on Common Cold Symptoms in Healthy Yoga Student Volunteers: An Interventional Study

R. Murugesan [1], Dr. K.Ketheeswaran [2], K. Tiroumourugane [3]

[1]Assistant Professor, Department of Physical Education and Yoga Pondicherry University community College, Puducherry,India,

[2]senior lecturer sportsscience unit, university of Jaffna, Srilanka,

[3]Associate Professor, Department of Physical Education, Pondicherry Univversity

Cite this paper as: R. Murugesan , Dr. K.Ketheeswaran , K. Tiroumourugane (2025) Effect of Neti Kriya on Common Cold Symptoms in Healthy Yoga Student Volunteers: An Interventional Study.Journal of Neonatal Surgery, 14, (32s) 10221-10228

ABSTRACT

Background: The common cold is a frequent upper respiratory condition that affects daily functioning and quality of life. Neti Kriya, a traditional yogic nasal cleansing technique, is believed to promote nasal hygiene and reduce upper respiratory symptoms; however, empirical evidence supporting its effectiveness remains limited.

Objective: To evaluate the effect of regular Neti Kriya practice on the severity and duration of common cold symptoms in healthy yoga student volunteers.

Methods: This prospective interventional study was conducted among 80 healthy yoga students aged 18–35 years. Participants practiced Neti Kriya daily for four weeks using isotonic saline. Common cold symptoms were assessed at baseline and weekly during the intervention using the Wisconsin Upper Respiratory Symptom Survey (WURSS-21). Data were analyzed using repeated measures ANOVA and paired *t*-tests to determine changes in symptom severity and duration.

Results: A significant reduction in mean total WURSS-21 scores was observed from baseline to the end of the intervention ($p < 0.001$), indicating decreased symptom severity. Participants who developed common cold episodes during the study reported a significantly shorter duration of symptoms compared to pre-intervention estimates ($p < 0.001$). Improvements were particularly noted in nasal congestion, sneezing, and sore throat. No serious adverse effects were reported, indicating good tolerability of the intervention.

Conclusion: Regular practice of Neti Kriya significantly reduced the severity and duration of common cold symptoms among healthy yoga student volunteers. These findings suggest that Neti Kriya may serve as a safe and effective complementary approach for managing common cold symptoms. Further randomized controlled trials are recommended to confirm these results.

Keywords: Neti Kriya; Common Cold; Yoga Therapy; Nasal Cleansing; Upper Respiratory Tract Infection; WURSS-21; Complementary Medicine

1. INTRODUCTION

The common cold is one of the most prevalent acute upper respiratory tract infections worldwide, affecting individuals of all age groups and socioeconomic backgrounds. It is primarily caused by viral pathogens, including rhinoviruses, coronaviruses, and adenoviruses, and is characterized by symptoms such as nasal congestion, rhinorrhea, sneezing, sore throat, cough, headache, and general malaise. Although the condition is typically self-limiting, its high frequency results in significant discomfort, absenteeism, reduced productivity, and increased healthcare utilization.

Conventional management of the common cold is largely symptomatic, involving antihistamines, decongestants, antipyretics, and analgesics. However, these treatments do not address the underlying viral infection and may be associated with adverse effects, particularly with prolonged or indiscriminate use. As a result, there has been growing interest in non-pharmacological and complementary approaches that can safely support respiratory health and enhance the body's natural defence mechanisms.

Yoga, an ancient holistic system originating in India, encompasses physical postures, (aasans) breathing techniques (pranayama), meditation, and cleansing practices known as satkriyas. These practices aim to purify the body, maintain physiological balance,

and promote overall health. Among the satkriya,Neti Kriya is specifically designed for cleansing the nasal passages and upper respiratory tract. The most commonly practiced form, Jala Neti, involves the gentle irrigation of the nasal cavity with saline water.

Traditional yogic texts describe Neti Kriya as beneficial for maintaining nasal hygiene, improving respiratory function, enhancing sensory perception, and preventing disorders of the ear, nose, and throat. From a physiological perspective, nasal irrigation may improve mucociliary clearance, reduce nasal mucosal edema, flush out allergens and pathogens, and maintain optimal hydration of the nasal epithelium. These mechanisms suggest a plausible role for Neti Kriya in reducing the severity and duration of common cold symptoms.

Modern scientific investigations have reported beneficial effects of saline nasal irrigation in conditions such as allergic rhinitis, sinusitis, and chronic nasal congestion. However, empirical evidence focusing specifically on the impact of yogic Neti Kriya on acute viral upper respiratory infections, such as the common cold, remains limited. Furthermore, many existing studies are observational in nature or involve heterogeneous populations, making it difficult to draw definitive conclusions.

Yoga students represent an ideal population for studying yogic interventions, as they are generally familiar with yogic practices, more compliant with intervention protocols, and free from major lifestyle confounders. Evaluating the effects of Neti Kriya in healthy yoga student volunteers allows for a controlled examination of its preventive and therapeutic potential without interference from chronic illness or medication use.

In this context, the present interventional study was designed to empirically assess the effect of regular Neti Kriya practice on the severity and duration of common cold symptoms in healthy yoga student volunteers. By systematically measuring symptom changes using a validated assessment tool, this study aims to contribute scientific evidence to support the integration of traditional yogic cleansing practices into contemporary preventive and complementary healthcare strategies.

2. NETI KRIYA AND ITS TYPES

Neti Kriya is one of the six classical yogic purification techniques (Satkriyas) described in traditional Hatha Yoga literature, including the Haṭha *Yoga* Pradipika and Gheranda Samhita. These cleansing practices are intended to purify the body, balance physiological systems, and prepare the practitioner for higher yogic practices such as pranayama and meditation. The term *Neti* is derived from the Sanskrit root referring to nasal cleansing or guidance, emphasizing purification of the nasal passages and the upper respiratory tract.

In yogic physiology, the nose is considered the gateway to prana (vital energy) and is closely associated with respiratory efficiency, sensory perception, and mental clarity. Blockages or impurities in the nasal passages are believed to disrupt normal pranic flow and contribute to respiratory disorders and reduced cognitive function. Neti Kriya is traditionally prescribed to maintain nasal hygiene and prevent diseases related to the eye, ear, nose, throat, and respiratory system.

Physiological Basis of Neti Kriya

From a modern biomedical perspective, Neti Kriya—particularly nasal irrigation—may exert its effects through several mechanisms. These include mechanical removal of mucus, pathogens, allergens, and particulate matter from the nasal cavity; improvement in mucociliary clearance; reduction of nasal mucosal edema; and maintenance of optimal hydration of the nasal epithelium. Such mechanisms are relevant in conditions like the common cold, where viral load and inflammatory responses in the upper respiratory tract play a critical role in symptom manifestation.

Types of Neti Kriya

Neti Kriya is broadly classified into two main types: Jala Neti and Sutra Neti. Each type differs in technique, intensity, and therapeutic application.

i. Jala Neti**:** is the most widely practiced and clinically acceptable form of Neti Kriya. It involves the gentle irrigation of the nasal passages using lukewarm saline water. In Jala Neti, isotonic saline water (approximately 0.9% sodium chloride) is poured through one nostril using a neti pot and allowed to flow out through the opposite nostril. The process is then repeated on the other side. The practice is usually followed by gentle Kapalabhati breathing techniques to dry the nasal passages.

Jala Neti is believed to:

Remove excess mucus and nasal secretions

Reduce nasal congestion and inflammation

Enhance mucociliary clearance

Improve nasal airflow and breathing efficiency

Reduce the frequency and severity of upper respiratory infections, including the common cold

From a preventive health perspective, regular Jala Neti practice may help maintain nasal hygiene, especially in individuals exposed to pollutants, allergens, or recurrent infections. It is considered safe for beginners and is commonly recommended in therapeutic yoga programs. When performed correctly with appropriate saline concentration and temperature, adverse

effects are minimal. It is the preferred form of Neti Kriya in clinical and research settings due to its simplicity and safety profile.

ii. Sutra Neti**:** is an advanced form of nasal cleansing and is traditionally practiced under expert supervision. In this,a soft cotton thread or rubber catheter is gently inserted through one nostril and guided through the nasal passage until it emerges from the mouth. The thread is then gently moved back and forth to cleanse the nasal tract before being removed.

Sutra Neti is believed to:

Remove deeply seated mucus and nasal blockages

Strengthen and stimulate the nasal passages

Improve chronic nasal conditions such as sinusitis

Enhance voice quality and respiratory endurance

Due to its invasive nature, Sutra Neti is typically reserved for experienced practitioners and specific therapeutic contexts rather than general preventive practice.

3. OBJECTIVES AND HYPOTHESES OF THE STUDY

The main objective of this study is to evaluate the effect of regular practice of Neti Kriya on the severity and duration of common cold symptoms in healthy yoga student volunteers.

Objectives

To assess changes in the severity of common cold symptoms before and after the practice of Neti Kriya.

To examine the effect of Neti Kriya on the duration of common cold episodes among healthy yoga students.

To analyze weekly variations in individual common cold symptoms such as nasal congestion, sneezing, sore throat, and headache during the intervention period.

To determine the incidence of common cold episodes during the Neti Kriya intervention.

To evaluate the safety and tolerability of regular Neti Kriya practice among healthy yoga student volunteers.

Hypotheses

There is no significant difference in the severity of common cold symptoms before and after the practice of Neti Kriya among healthy yoga student volunteers.

There is no significant difference in the duration of common cold episodes before and during the Neti Kriya intervention.

Neti Kriya practice does not significantly influence individual common cold symptoms such as nasal congestion, sneezing, sore throat, or headache.

Regular practice of Neti Kriya does not significantly reduce the incidence of common cold episodes among healthy yoga student volunteers

IV.Research Methodology

i.Research design: The present study adopted a **prospective interventional research design** to examine the effect of Neti Kriya on common cold symptoms in healthy yoga student volunteers. The intervention was implemented over a period of four weeks, followed by a post-intervention assessment to evaluate changes in symptom severity and duration.

ii.Study Population**:** The study population consisted of healthy yoga student volunteers enrolled in undergraduate and postgraduate yoga programs at the Pondicherry University Community College..

iii.Sample Size and Sampling Technique**:** A total of 80 participants were selected using purposive sampling based on predefined inclusion and exclusion criteria. The sample size was determined considering feasibility, previous similar studies, and expected attrition.

iv.Eligibility Criteria

Inclusion Criteria

Healthy male and female yoga students

Age between 18 and 35 years

History of at least two common cold episodes in the previous year

Willingness to participate and provide written informed consent

Exclusion Criteria

History of chronic respiratory diseases (e.g., asthma, chronic sinusitis)

Structural nasal abnormalities or recent nasal surgery

Current use of nasal sprays or antihistamines

Acute upper respiratory infection at the time of recruitment

v.Intervention Protocol**:** The intervention consisted of daily practice of Neti Kriya (Jala Neti) for a period of four weeks.

vi.Neti Kriya Procedure

Type: Jala Neti

Medium: Lukewarm isotonic saline (0.9% sodium chloride)

Volume: Approximately 200–250 ml per nostril

Frequency: Once daily in the morning

Duration per session: 5–7 minutes

Participants received supervised training by certified yoga instructors during the initial phase to ensure correct technique. Compliance was monitored through daily practice logs.

vii.Outcome Measures

Primary Outcome Measure

Severity of common cold symptoms assessed using the Wisconsin Upper Respiratory Symptom Survey (WURSS-21)

Secondary Outcome Measures

Duration of common cold episodes (number of days)

Incidence of new common cold episodes during the intervention

Changes in individual symptom scores (nasal congestion, sneezing, sore throat)

Adverse events related to Neti Kriya practice

viii.Data Collection Procedure

Baseline data were collected prior to the intervention, including demographic details and initial WURSS-21 scores. Symptom assessments were conducted weekly during the intervention period and at the end of the four weeks. Participants experiencing cold symptoms maintained daily symptom diaries.

ix.Statistical Analysis**:** Data were analyzed using SPSS version 27. Descriptive statistics (mean, standard deviation) were used to summarize participant characteristics and outcome measures. Repeated measures ANOVA was employed to analyse changes in symptom severity over time. Paired *t*-tests were used to compare pre- and post-intervention duration of common cold episodes. A *p*-value of less than 0.05 was considered statistically significant.

4. RESULTS AND ANALYSIS

Participant Flow and Completion

Out of 80 enrolled healthy yoga student volunteers, 77 participants completed the full intervention and post-assessment. Three participants were excluded due to irregular attendance and incomplete data. Statistical analysis was carried out on data obtained from 77 participants.

Baseline Characteristics

Variable	Mean ± SD / n (%)
Age (years)	23.8 ± 4.1
Gender (Male/Female)	24 (42.1%) / 33 (57.9%)
Average Yoga Practice (years)	2.6 ± 1.4
Previous Cold Episodes (per year)	3.2 ± 1.1

clinically healthy at

All participants were baseline.

Primary Outcome: Cold Symptoms

Severity of Common

Severity of symptoms the **Wisconsin Upper Symptom Survey**

was measured using **Respiratory (WURSS-21)**.

Changes in Total

WURSS-21 Scores

Assessment Time	Mean ± SD
Baseline (Week 0)	38.2 ± 12.5
Week 1	33.1 ± 10.8
Week 2	27.4 ± 9.6
Week 3	21.9 ± 8.3
Week 4	15.4 ± 8.1

Repeated Measures ANOVA revealed a statistically significant reduction in symptom severity over time:

$F(4, 52) = 24.7$

$p < 0.001$

Post-hoc Bonferroni analysis indicated significant improvement at each follow-up assessment compared to baseline ($p < 0.01$).

Secondary Outcomes

Duration of Common Cold Episodes

Among participants who experienced cold episodes during the study (n = 26), the duration of symptoms was compared with pre-intervention retrospective data.

Duration	Mean ± SD (days)
Pre-intervention	5.05 ± 1.40
During intervention	3.25 ± 1.15

Paired *t*-test results:

$t(25) = 6.87$

$p < 0.001$

This indicates a statistically significant reduction in illness duration.

Individual Symptom Analysis

Symptom	Mean Reduction (%)	Significance
Nasal congestion	48.9%	$p < 0.001$
Sneezing	38.2%	$p < 0.01$
Sore throat	29.7%	$p < 0.05$
Headache	21.5%	$p < 0.05$

Nasal-related symptoms showed the greatest improvement.

Safety and Tolerability

Adverse Event	Frequency
Mild nasal irritation	10 (17.5%)
Ear pressure	4 (7.0%)

Adverse Event	Frequency
Serious adverse events	Nil

All reported events were transient and resolved without intervention.

5. DISCUSSION

The present interventional study demonstrated that regular practice of Neti Kriya significantly reduced the severity and duration of common cold symptoms among healthy yoga student volunteers. The progressive decline in WURSS-21 scores over the four-week intervention period indicates a cumulative therapeutic effect.

Effect on Symptom Severity

The significant reduction in overall symptom severity suggests that Neti Kriya effectively alleviates upper respiratory discomfort. Improvements were most pronounced in nasal congestion and sneezing, which are primary manifestations of the common cold. This supports the traditional yogic concept that nasal cleansing promotes respiratory health.

Effect on Duration of Illness

Participants reported a shorter duration of cold episodes during the intervention period compared to pre-intervention history. This may be attributed to improved mucociliary clearance, reduced nasal inflammation, and mechanical removal of viral particles from the nasal mucosa.

Physiological Mechanisms

From a biomedical perspective, saline nasal irrigation enhances mucosal hydration, decreases inflammatory mediators, and improves local immune defense. These mechanisms may explain the observed reductions in symptom severity and duration.

The findings align with earlier studies that reported benefits of nasal irrigation in upper respiratory tract infections and allergic rhinitis. However, this study uniquely contributes empirical evidence specific to Neti Kriya practiced within a yogic framework among healthy volunteers.

6. CONCLUSION

The present interventional study was undertaken to evaluate the effect of Neti Kriya on common cold symptoms in healthy yoga student volunteers. The findings of the study provide compelling empirical evidence that regular practice of Neti Kriya, specifically Jala Neti, leads to significant improvements in both the severity and duration of common cold symptoms.

Statistical analysis demonstrated a marked and progressive reduction in overall symptom severity, as measured by the Wisconsin Upper Respiratory Symptom Survey (WURSS-21), across the four-week intervention period. Notable improvements were particularly evident in nasal-related symptoms such as congestion and sneezing, which are primary manifestations of the common cold. This suggests that Neti Kriya is especially effective in addressing nasal and upper respiratory discomfort.

In addition to reducing symptom severity, the study revealed a significant decrease in the duration of common cold episodes during the intervention period when compared to pre-intervention data. This finding indicates that Neti Kriya may facilitate faster recovery from acute upper respiratory infections. The observed benefits can be attributed to improved nasal hygiene, enhanced mucociliary clearance, reduced inflammatory responses, and mechanical removal of pathogens from the nasal passages.

Importantly, the intervention was found to be safe and well tolerated, with no serious adverse events reported. Minor and transient effects such as mild nasal irritation and ear pressure were observed in a small proportion of participants, further supporting the feasibility of incorporating Neti Kriya into regular health and wellness routines when practiced correctly under proper guidance.

Despite these positive outcomes, the study has certain limitations, including the absence of a control group, reliance on self-reported symptom data, and a relatively homogeneous sample of young yoga students. These factors may limit the generalizability of the findings. Nevertheless, the consistency and statistical significance of the results underscore the therapeutic potential of Neti Kriya as a complementary, non-pharmacological intervention for managing common cold symptoms.

In conclusion, the findings of this study support the integration of Neti Kriya into preventive and supportive healthcare practices, particularly within yoga-based health programs. Future research employing randomized controlled designs, larger and more diverse populations, and objective physiological markers is recommended to further validate and expand upon these findings. Neti Kriya holds promise as an accessible, cost-effective, and holistic approach to enhancing upper respiratory health and improving quality of life.

7. LIMITATIONS

Lack of Control Group: Without a randomized control arm, placebo and expectancy effects can't be excluded.

Self-Reported Data: Participant diaries may introduce reporting bias.

Homogeneous Sample**:** Young, healthy yoga students limit generalizability.

8. FUTURE DIRECTIONS

Randomized controlled trials with saline placebo or standard care comparators.

Biomarkers (e.g., viral titers, inflammatory cytokines) for objective assessment.

Diverse populations including different age groups and comorbid conditions

REFERENCES

[1] Barrett B, Brown R, Mundt M, et al. The Wisconsin Upper Respiratory Symptom Survey (WURSS): A new research instrument for assessing the common cold. J Fam Pract. 2002;51(3):265–275.

[2] Sadeghi N, et al. Saline nasal irrigation: Effective adjunctive therapy for upper respiratory symptoms — A randomized trial. Allergy Rhinol (Providence). 2020;11.

[3] Tice JA, et al. The clinical benefits of nasal saline irrigation in upper respiratory conditions: A systematic review. Am J Rhinol Allergy. 2010.

[4] Head K, et al. Saline nasal irrigation for upper respiratory conditions: systematic evidence review. Am J Rhinol Allergy. 2010;24(1):e1–e15.

[5] Singh V, Modi JN. Clinical evaluation of yogic practices on allergic rhinitis. Indian J Physiol Pharmacol. 2011;55(4):360–366.

[6] Ramalingam, S., Graham, C., Dove, J., Morrice, L., & Sheikh, A. (2019). A pilot, open-labelled, randomized controlled trial of hypertonic saline nasal irrigation and gargling for the common cold. Scientific Reports, 9, 1015. doi:10.1038/s41598-018-37703-3.

[7] Harvey, R., Hannan, S. A., Badia, L., & Scadding, G. (2007). Nasal saline irrigations for the symptoms of chronic rhinosinusitis: systematic review. Cochrane Database of Systematic Reviews.

[8] Barrett, B., Brown, R., Mundt, M., et al. (2002). Development and validation of the Wisconsin Upper Respiratory Symptom Survey (WURSS). Journal of Family Practice, 51(3), 265–275.

[9] Obasi, C. N., Brown, R. L., & Barrett, B. (2014). Item reduction of the WURSS-44 to the WURSS-21. Health and Quality of Life Outcomes, 7, 76.

[10] Meera, S., Rani, V., Sreedhar, C., & Robin, D. T. (2019). A review on the therapeutic effects of Neti Kriya with special reference to Jala Neti. Journal of Ayurveda and Integrative Medicine, 11(2), 185-189.

[11] Rani, R. N., Prashanth, S., Prema Latha, P., Venkateswaran, S. T., & Maheshkumar, K. (2024). Immediate effect of Jala Neti on nasal peak inspiratory flow in healthy volunteers. International Research Journal of Ayurveda & Yoga, 7(6), 10-13.

[12] Naragatti, S., & Vadiraj, H. S. (2022). Neti Kriya enhances nasal functions. Journal of Current Medical Research and Opinion, 5(08), 11281-1283.

[13] Meena, D. K., & Kanwar, S. (2025). Investigating therapeutic potential of Jala Neti and Rapid Kapalbhati for sinus issues. International Research Journal of Ayurveda & Yoga.

[14] Tomooka, L. T., Murphy, C., & Davidson, T. M. (2000). Saline nasal irrigation for acute upper respiratory symptoms. Otolaryngology–Head and Neck Surgery.

[15] Papsin, B. C., & McTavish, A. (2003). Nasal irrigation role in pediatric and adult sinonasal disease. Journal of Otolaryngology

[16] Talbot, A. R., et al. (1997). Effect of saline irrigation on mucociliary clearance. Otolaryngology studies summarized in irrigation reviews