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# EFFICACY OF YOGIC THERAPY ON EOSINOPHILS AMONG MIDDLE AGED WOMEN FIREWORKS SUFFERING FROM PNEUMOCONIOSIS

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## Abstract

In this study, 120 middle-aged lung-affected patients were selected at random, observing random sampling method, screened, and further reduced to 40 with their Chest X-ray, from a fireworks factory at Sivakasi, Tamil Nadu, between 35 to 50 years of age. Women were grouped into an experimental and control group of 20 each. The hypothesis was fixed that there would be a positive impact on Eosinophils among middle-aged women suffering from pneumoconiosis due to yogic practices. The Experimental Group underwent therapy for 12 weeks one hour each day. The control group was allowed to lead a normal life. The data collected from the groups were statistically analyzed by Analysis of Variance (ANOVA). The result of the study showed that Eosinophils were decreased significantly due to regular Yogic practices. The hypothesis was accepted at a 0.05 level of confidence.

**KEYWORDS:** Yoga, Yoga therapy, Pneumoconiosis, Eosinophils, Middle-Aged Women.

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## **INTRODUCTION**

Yogic therapy is ancient medicine. Yogic practices make aware of body posture, alignment, and movement patterns. It gives flexibility and helps to lead a healthy life.

Pneumoconiosis inflames and narrows the airways. Pneumoconiosis causes recurring whistling sounds when breathing, chest tightness, shortness of breath, and coughing. There are many types of Pneumoconiosis. Allergens are any substances, the body treats as a foreign body, triggering an immune system. They are widely between individuals and often include animal proteins, fungi, pollen, house dust mites, and other forms of dust in a fireworks factory. Women working there get allergen due to dust, and the smoke of the waste chemicals. The airway cells are sensitive. Cough-induced Pneumoconiosis is one of the toughest Pneumoconiosis

The disease has different forms, depending on the type of dust inhaled. They are black lung disease (miner's lung), brown lung, and dust from cotton or other fibers. Other types of dust that causes pneumoconiosis to include silica and asbestos. The compound used to give movie popcorn its buttery flavor, leads to popcorn lungs.

## **OBJECTIVE OF THE STUDY**

The study aims to assist fire workers with their occupational disease of Pneumoconiosis with traditional yoga therapy.

## **HYPOTHESIS**

Hypothesized that there would be a significant difference in eosinophils count among Pneumoconiosis affected fire workers due to yogic therapy than in the comparative group.

## **INCLUSION CRITERIA**

1. The subjects were delimited to women between 35 to 50 years of age only.
2. The subjects were delimited to women fire workers from Sivakasi, Tamil Nadu, India only.
3. The variant was Eosinophils only.
4. The independent variable was yoga therapy only.

## **EXCLUSION CRITERIA**

1. The extreme lung disorders conditions, climatic conditions, lifestyle, diet taken, and medications taken were not considered.
2. The Socio-Economical status was excluded.

3. Routine activities of patients were not taken into account.

## RESULTS AND DISCUSSIONS

The data of Eosinophils collected from both the groups before and after the intervention was statistically analyzed by using Analysis of Variance (ANOVA). The significant difference was tested at 0.05 level of significance.

## RESULTS ON EOSINOPHILS

In this study, 120 middle-aged lung-affected patients were selected at random, observing a random sampling method, screened, and further reduced to 40 with their Chest

X-ray, from a fireworks factory at Sivakasi, Tamil Nadu, between 35 to 50 years of age. Women were grouped into an experimental and control group of 20 each. The hypothesis was fixed that there would be a positive impact on Eosinophils among middle-aged women suffering from pneumoconiosis due to yogic practices. The Experimental Group underwent therapy for 12 weeks one hour each day. The control group was allowed to lead a normal life. The data collected from the groups were statistically analyzed by Analysis of Variance (ANOVA).

TABLE – I

### ANALYSIS OF VARIANCE OF THE MEANS OF EXPERIMENTAL GROUP AND THE CONTROL GROUP IN EOSINOPHILS(microliter)

| Test      | Exptl group | Cont group | Source of variance | Degree of freedom | F-Ratio |
|-----------|-------------|------------|--------------------|-------------------|---------|
| Pre-test  | 936.67      | 926.67     | between            | 1.00              | 0.02*   |
|           |             |            | within             | 38.00             |         |
| Post-test | 656.67      | 916.67     | between            | 1.00              | 10.90*  |
|           |             |            | within             | 38.00             |         |
|           |             |            | within             | 37.00             |         |

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of

**confidence for 1 and 38 (df) =4.2, 1 and 37 (df) =4.21)**

Table I shows an “F” ratio of pre-test was 0.01\*, which indicates a statistically not significant 0.05 level of confidence. Whereas the “F” ratio of post-test was 98.36, which indicates a statistically significant difference among the post-test means at a 0.05 level of confidence. The obtained F-ratio value was 98.36, which was higher than the table value of 4.21. The above study was substantiated by Amit Kumar Rai (October 2017) and Hiroki Tashiro (2022).

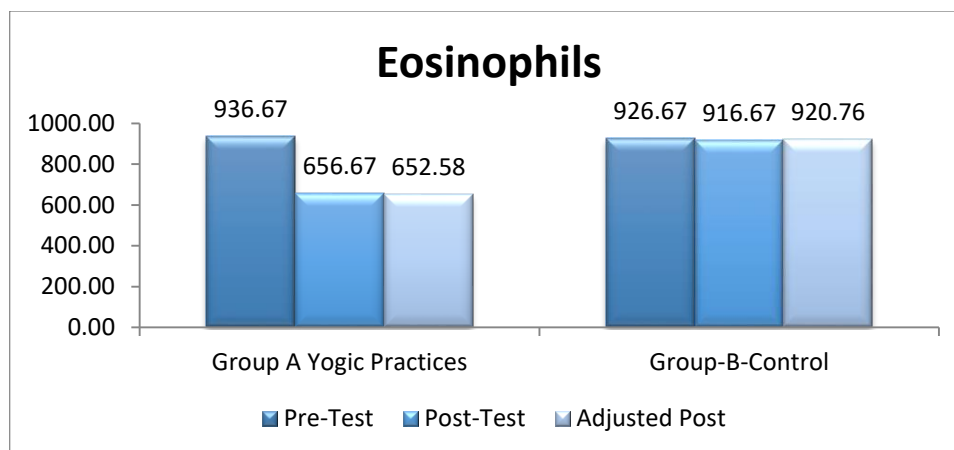
**Amit Kumar Rai (October 2017):**

Traditional Yoga and Ayurvedic therapy helped to resolve occupational respiratory diseases. Persons with the disease may never experience symptoms, whereas severe respiratory debilitation and death. Occupational lung diseases are usually misdiagnosed as COPD, pulmonary fibrosis, or other diseases leading to a delay in the identification of the etiological factor. No suitable treatment than prevention of occupational exposure. Long-term practice of Ayurveda and Yoga, reduces the susceptibility towards inhaled particles & allergens, providing

symptomatic relief and at the same time enhancing the quality of life and work performance of the patient.

**Hiroki Tashiro (2022)** The characteristics of 30 patients with ICEP, 12 patients with ICEP who had corticosteroid dose tapering, were evaluated retrospectively. In addition, 4 ICEP patients with frequent relapse treated by IL-5-targeted biological agents were reviewed. Out of 30 patients with ICEP, 40.0%(12) recurred after corticosteroid dose tapering, and 30 percent were treated with maintenance doses of corticosteroid. Of ICEP patients who experienced recurrence, 50.0% had frequent relapses (2 or more times). All 4 patients treated with anti-IL-5 agents had their corticosteroid dose reduced without any relapses; in 3 patients, corticosteroids were withdrawn. Anti-IL-5 agents accepted alternatives for treating ICEP patients with frequent relapses.

**Bar diagram showing the mean difference among Experimental Group And Control Group of Eosinophils (microliter)**



**Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 38 (df) =4.2, 1and 37 (df) =4.21)**

## DISCUSSION ON HYPOTHESIS & CONCLUSION

From the above analysis, traditional yogic therapy decreased Eosinophils and thus was more successful in resolving pneumoconiosis, than the control group. The result presented in the above Table and Graph proved that the hypothesis was accepted at a 0.05 level of confidence. Hence, yoga therapy is beneficial to middle-aged women suffering from pneumoconiosis.

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