

## EFFECT OF ANUTAILANASYA ON SHOULDER AND CHEST MUSCLE ENDURANCE OF ATHLETES

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### ABSTRACT

Activities like Sports and Exercise are essential part of human life. *Maharshi Sushrut* explains that *Vyayam* makes body firm and strong. In this era, busy life style, irregular eating habits, stress are the major culprits behind life-style diseases. In order to avoid there adverse effects there should be something which can be incorporated in daily life style. *Nasya* is one of the effective ways to improve the musculature of the neck, shoulder and chest. Present study was done to assess the effectiveness of *Anutaila Nasya* on muscular endurance of shoulder and chest in Athletes. Study trials were carried out in two groups of 50 male athletes between age group 20 yr. – 30 yr. **Experimental Group** received 2 drops of *Anutaila Nasya* along with their regular Exercise. **Control Group** continued on only Exercise without *Nasya*. **Results: 1.** There were no significant difference observed in Experimental and Control Group in Chest Muscular endurance after 90 days of *Nasya* Therapy **2.** There were no significant difference observed in Experimental and Control Group in Shoulder Muscles Endurance after 90 days of *Nasya* Therapy

**Keywords:** Sports, Exercise, *Vyayama*, *Nasya*, *Pratimarsha Nasya*, Muscle endurance

### INTRODUCTION

“Prevention is better than cure” is one of the basic principles of *Ayurveda*. *Maharshi Sushrut* explains the effect of *Vyayam* (Exercise) on body with great detail.<sup>1</sup> He says *Vyayam* (Exercise) makes body firm and strong. It allows proper and ideal growth of limbs and muscles. It improves the complexion, texture of the skin and *Agni* i.e. digestive power. It doesn't allow laziness in the body and keeps the body light and glossy, firm and compact. It enhances

the power of endurance against the fatigue and weariness and variations in temperature, provided it should be performed correctly. Or else one may land with musculoskeletal problems. The issues arising due to improper exercise, sports, injuries are handled in a specialized branch called Sports Medicine. Although it is one of the blooming branch, with the addition of *Ayurvedic* treatment we can definitely add

some of the good treatments and modalities to it. It will ultimately result in betterment to Indian Sports. Activities like Sports and Exercise are essential part of human life. It helps in development of an individual's persona at physical, mental, social, cultural and spiritual level. It inculcates the spirit of friendship, endurance, forgiveness, acceptability and obedience which is a sportsman quality. Physical constitution as well as mental constitution plays a vital role to form a sportsperson. Neck and shoulder joints are primarily used in all activities. Shoulder joint has maximum possible movements. Along with the daily exercise, help of Ayurveda in training of a sportsman can give lucrative results.

Exercise plays a great role, not only in professional players but also in common man. In this era, busy life style, irregular eating habits, Stress are the major culprits behind lifestyle diseases. People are facing many health problems to which allopathic medicines cannot be a perfect solution. In order to avoid there adverse effects there should be something which can be incorporated in daily life style.

*Nasya* is one of the effective ways to improve the musculature of the neck, shoulder and chest. Thus it can prevent the impact of injuries in these parts of the Body. *Nasya* tends to cure the diseases peculiar to the supraclavicular regions of the body, removes the dullness of the sense-organs, imparts a sweet aroma to the mouth and strengthens the teeth, jaw, head, neck, shoulders, arms and the chest . It guards against an attack of baldness, premature graying of hair and premature appearance of wrinkles on face<sup>2</sup> i.e. signs of aging.

Generally the sports persons or regular athletes consume various health supplements to improve their muscular Strength and endurance, which ultimately may show adverse effects on the body in long term. *Nasya* can be used as an adjuvant therapy as a solution in above circumstances.

#### **Aim:**

To assess the effectiveness of *Anutaila Nasya* on muscular endurance of shoulder and chest in Athletes

#### **Objective:**

- To quantify the shoulder muscles and chest muscles endurance after *Anutaila Nasya* by Push-ups

**STUDY DESIGN:** An open Randomized controlled clinical Study

#### **SETTING OF THE STUDY**

#### **MATERIALS:**

Equipment needed for measuring Endurance of Shoulder and Chest muscles are as follows:

- Mat

Experimental group: Athletes

Medicines: *Anutailam* of AVP - (*Arya Vaidya Pharmacy* – Coimbatore).

2. Control Group: Athletes

Medicines: This group did not received any medicine they were only put on their regular exercise

#### **METHODOLOGY:**

**SAMPLE SIZE:** 100

**GROUPING:** Experimental GROUP A - 50  
Control GROUP B - 50

Study trial consist of 2 groups of 50 male candidates in each group

1. **Experimental Group:** This Group received *Anutaila Nasya* along with their regular Exercise.

2. **Control Group:** This Group was continued on only Exercise without *Nasya*

**Dosage:** 2 Drops of *Anutaila* per nostrils daily in the morning.

**Follow – Up:** Day 0- Visit 1

Day 30= Visit 2 =1<sup>st</sup> Follow up after 1<sup>st</sup> Month,

Day 60= visit 3 = Second Follow up after 2<sup>nd</sup> month

Day 90 = visit 4 = Third Follow up after 3<sup>rd</sup> Month.

**Duration of study:** 3 Months.

**Ethics committee approval:** Study trial was started after Institutional Ethics committee approved and informed consent of all the subjects was obtained and documented.

#### **SELECTION CRITERIA**

#### **Inclusion criteria:**

- Male Athlete between age gr. 20 yr. – 30 yr.
- Athletes working out in the Gym at least for 6 months for minimum 1 hr. 6 days per week.

- Athletes with no health complaints and having no systemic Diseases.
- Athletes those who are willing to give informed Consent and ready to abide with the trial procedures.

**Exclusion criteria:**

- All *Nasya Contra Indicated* individuals
- The Athletes who are not willing to give Consent.
- Muscle related pathology.
- Neurological problems.
- Those who were taking Nutritional Supplements.

**ANALYSIS METHODS:**<sup>3</sup>

**OBSERVATION**

**Table 1.1:** Descriptive Statistics for Chest Endurance by Push-Ups Pre Test and Post Test of Control and Experimental Groups

	EXPERIMENTAL		CONTROL	
	Chest Endurance Push Ups Pre test	Chest Endurance Push Ups Post test	Chest Endurance Push Ups Pre test	Chest Endurance Push Ups Post test
<b>Mean</b>	28.22	32.68	25.26	29.72
<b>Median</b>	25.00	30.00	25.00	30.00
<b>Std. Deviation</b>	11.81	11.66	6.78	6.98
<b>Minimum</b>	10.00	12.00	15.00	20.00
<b>Maximum</b>	70.00	72.00	50.00	55.00

The Chest muscles endurance was measured by Push-ups is shown in Table No. 1.1. The Result obtained from table no.1.1 reveal that the mean at Pre - test of Experimental group score was 28.22 (SD=11.81) while that of control group was found 25.26 (SD=6.78).and the Post-test mean of Experimental group was 32.68(SD=12) and that of control group was 29.72(SD=6.98)

From the table no 1.1 the minimum score of Experimental group in Pre-test was 10 and that of Post-Test was 12. Maximum score Pre-test was 70 and

- Muscular Endurance of the Shoulders and Chest by Push-ups



that of post test was 72

For Control group the minimum score for pre-test was 15 and that of Post test was 20. Maximum score Pre-test was 50 and that of Post-test was 55

From the above values of minimum and maximum scores of Pre-test and Post-tests of Experimental and Control group, it is interpreted that there is an improvement in both groups.

To compare the difference between the means t test technique was applied and the results are given in table no 1.2

**Table 1.2:** Summary of Group Statistics of Difference between Chest Endurance by Push-Ups Pretest & Posttest

	Mean	SD	T	df	Sig. (2-tailed)	Decision
<b>Experimental</b>	.0008	1.87083	.010	98	.992	<b>Null Hypothesis is retained</b>
<b>Control</b>	-.0026	1.65088				

1.2 Description of t Test for comparing the difference between the means

After collecting data t test was applied to compare the Chest muscular endurance pre-test and post test Endurance between experimental and control group, from table no.1.2 it is clear that t value is 0.992

which is  $>0.05$ . It interprets that there is no significant difference in Chest muscles strength in Experimental as well as Control group

**Table 2.1:** Descriptive Statistics for Shoulder Endurance by Push-Ups Pre Test and Post Test of Control and Experimental Groups

	EXPERIMENTAL		CONTROL	
	Shoulder Endurance Push Up Pre test	Shoulder Endurance Push Up Post test	Shoulder Endurance Push Up Pre test	Shoulder Endurance Push Up Post test
Mean	28.22	32.68	25.26	29.72
Median	25.00	30.00	25.00	30.00
Std. Deviation	11.81	11.66	6.78	6.98
Minimum	10.00	12.00	15.00	20
Maximum	70.00	72.00	50.00	55

The Shoulder muscles endurance was measured by Push-ups is shown in Table No. 2.1. The Result obtained from table no.2.1 reveal that the mean at Pre - test of Experimental group score was 28.22(SD=11.81) while that of control group was found 25.26 (SD=6.78), and the Post-test mean of Experimental group was 32.68 (SD=11.6) and that of control group was 29.72 (SD=6.98)

From the table no 2.1 the minimum score of Experimental group in Pre-test was 10 and that of Post-Test was 12. Maximum score Pre-test was 70 and

that of post test was 72

For Control group the minimum score for pre-test was 15 and that of Post test was 20. Maximum score Pre-test was 50 and that of Post-test was 55.

From the above values of minimum and maximum scores of Pre-test and Post-tests of Experimental and Control group, it is interpreted that there is an improvement in both groups.

To compare the difference between the means t test technique was applied and the results are given in table no 2.2

**TableNo.2.2:** Summary of Group Statistics of Difference between Shoulder Endurance by Push-Ups Pretest & Posttest

	Mean	SD	T	df	Sig. (2-tailed)	Decision
Experimental	.0008	1.87083	.010	98	.992	Null Hypothesis is retained
Control	-.0026	1.65088				

2.2 Description of t Test for comparing the difference between the means

After collecting data t test was applied to compare the Chest muscular endurance pre-test and post test Endurance between experimental and control group, from table no.2.2 it is clear that t value is 0.992 which is  $>0.05$ . It interprets that there is no signifi-

cant difference in Chest muscles endurance in Experimental as well as Control group.

## RESULTS

1. There were no significant difference observed in Experimental and Control Group in Chest Muscular endurance after 90 days of Nasya Therapy (Table No.1.1 & 1.2 )
2. There were no significant difference observed in Experimental and Control Group in Shoulder Muscles Endurance after 90 days of Nasya Therapy (Table No.2.1 & 2.2 )

## DISCUSSION

*Pratimarsha Nasya* procedure can be performed for a longer duration without aggravating *dosha* because *matra* (Dose) of *Pratimarsha Nasya* is 2 *bindu* (2 drops) which is very less i.e. *Shaman Matra*.<sup>4</sup>We choose *Pratahkal* for the procedure because it is *Dardhyakrutas* explained by acharya *Charak*.<sup>5</sup>

*Vyayam* is a part of *Dincharya*. *Vyayam* makes body strong, tone the muscles and increase the stamina.<sup>6</sup> As explained in *Samhitas*, a man should take physical exercise everyday only to half extent of his capacity (*Balardha*) as otherwise it may prove fatal.<sup>7</sup>*Shushrutacharya* explained that the amount of exercise which makes the *PranaVayu* come out through the mouth i.e. as soon as hard breathing would set in is known as *balardha*.<sup>8</sup>The Location (*Sthana*) of *Pranavayu* is *Murdha* and *Nasya karma* exactly acts on *Murdha*. It pacifies *prakupit pranavayu* and help to prevent the adverse effects of excessive exercise.

*Anutailais* best used for *Nasya Karma*. The process of heating oil 10 times gives effective potentiation i.e. it's dynamic and curative properties are enhanced. *Ajaksheer* (Goat Milk) is also used in the preparation of *Anutaila*. Goat's Milk has the ability to reduce inflammation improve bio-availability of nutrients (*Sukshamasrotogami*) strengthens bones increase immunity improves metabolism and prevents toxins accumulation in Body. Hence it is said that *Anutaila* is having property of *Mahagunama, sarvottamgunam*. (Excellence over other of Oils used for *Nasya karma*).<sup>9</sup>

The study was carried out in 2 groups, of 50 male regular healthy athletes. We selected the age group between 20 yr – 30 yr because this age is *Tarunyavastha*(Completely grown Adult). These regular athletes were working out in the gym 1hr. daily for 6 days a week at least for 6 months and having no systemic diseases. Group A volunteers received *Anutaila Nasya* for 3 months, 2 drops in each Nostril daily in the Morning. Group B did not receive any treatment but it was kept under observation and the follow-up was taken at a month interval.

**Muscular Endurance of Chest and Shoulder** was measured by maximum number of repetition of push-ups. After 3 months both the groups were compared for evaluation of effect of *Nasya*.

The Clinical trial was carried out in the gym. Few lectures regarding *Nasya* procedure and its effect on the body were taken and some video clips and demonstration were shown to the athletes. Consent form was given to the volunteers. The daily diary was given to the enrolled volunteers on every follow up. Those who have a gap of a week that candidate were dropped out from the study.

After a treatment of *Nasya* for 3 months endurance of muscles increased significantly. Regular practice of *Anutaila Nasya* regains the sharpness of the sense-organs. It strengthens the muscles of neck, Shoulders, and Chest. It guards against an attack of premature graying of hair and premature appearance of wrinkles on face.<sup>10</sup>

Whereas the group which was not treated with *Nasya* also showed improvement in muscle endurance significantly after 3 months, this could be because of regular exercise as quoted by *Sushrut*.<sup>11</sup>

All the volunteers took their *Nasya*, according to schedule and prescribed doses without fail. None of the volunteers showed any of the side effects with *Nasya* treatment. This proves safety of the *Nasya* treatment. There were no side effects observed during and after study. Most of the volunteers were Non-Vegetarian.

According to Ayurveda, nose is an entrance of the Cranial Cavity the nasal medicine enters in



*Shringatak marma* and spreads in the cranial cavity, eyes, ears, throat and the minute capillaries of face and the *doshas* are removed from the site. After removal of *doshas* the *poshan* (rejuvenation) of the neck chest and shoulder muscles take place.<sup>12</sup> Now-a-days in gym nobody follows the rule of *Vyayam ahardhashaktya*. So ultimately it hampers the *prakrut vata gati*, vitiation of *doshas* takes place and *Snayu* loses its *drudhata* (tone) and due to this some injuries or pain may occur. But by taking *nasya* we are pacifying *vikrut vata* and once *doshas* come in *saamyavastha*, the pain and injuries can be prevented. Although we didn't get satisfactory result in the form of strength, endurance and girth but the ill effects of excessive exercise, injuries can be prevented by *Nasya*.

The possible reasons behind the results may be as follows

1. Some of the Athletes from experimental group did not perform *Nasya* regularly or as was guided. The *Nasya* was given to athletes only for first time by the researcher and then from next session the Athletes were asked to do *Nasya* by their own.
2. The technique of *Nasya* perform by their own may not be accurate or there may be a error occur while performing *Nasya* by their own so type II error may have occur
3. The amount of *Nasya* i.e. 2 drops of *Nasya* medicine was not sufficient to improve the strength and endurance of the Athletes.
4. This kind of Research would be repeated avoiding above errors to confirm the result

#### Limitation and Scope of Study:

For this study we used *Pratimarsha Nasya matra* ie 2 drops of Anutaila, the large *matra* (Dose) may lead to desired result in the form of strength endurance and girth. *Anutail* is told to be used in *pratimarsha matra* as a practice of *Dincharya*. So, this study can be evaluated with *Mash taila*, *Balataila*, *Mansarasa* in larger doses with a group of non Athletes.

If we had chosen older age group (*vataadhikya*), then we might have got positive result in this age group as in *vrudhavastha*, *vataadhikya* is more in the body and *Nasya* pacifies *vata*.

Athelets have their own strength, they recover the injuries very quickly, so instead of Athletes if we have selected non – exercising persons we might have got some positive result in this study.

## CONCLUSION

Muscular Endurance was increased in the group not treated with *Nasya* hence the effect obtained by *Nasya* treatment was similar to the effect obtained by regular untreated exercising group.

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