

# Safety and Efficiently Management Through Alternative Medicine (Yoga and Naturopathy) Lifestyle in Patients Suffering from Cervical Spondylosis

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## Abstract

*Cervical spondylosis (CS) is generally explained as the degeneration and age-related condition or state of affecting joints of the neck. It is also known as cervical osteoporosis. This situation or symptoms is usually found in men and women at the age of 40 years or above. The aim of the study focuses on reduction of symptoms and increase in functional activities of elderly patients with spondylosis before and after modalities of yoga, naturopathy and physiotherapy. Throbbing carotene usually not found in cervical spondylosis. In this clinical study, total 65 patients were recruited. All human participants were treated on yoga, healing, naturopathy, physiotherapy, diet control and Panchakarma. The study parameters were assessed at baseline and at 18th month follow-up. Results found in this study showed an improvement in pain and pain in neck region. Rigidity neck pain and the problem of coordination was assessed by symptomatic score used by VAS, physical examination through MMT, radiological examination (X-ray, HRCT, MRI) and examination by pathological test (uric acid, ESR, RA factor, BMD), after taking one year of yoga, naturopathy and physiotherapy healing, Panchakarma treatment with diet control. In conclusion, a combined package of Yoga, Naturopathy and Physiotherapy with diet control is found to be effective in reducing pain, and facilitating improvement in functional status of elderly people suffering from CS.*

**Keywords:** Cervical spondylosis, yoga, naturopathy, physiotherapy, healing

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## INTRODUCTION

Cervical spondylosis (CS) is a degenerative condition involving the vertebrae and discs of the neck. It occurs in both males and females usually after the age of 40 years and result from one area; frequently associated with chronic pain and stiffness in the neck due to disc aging and degenerative changes in the cervical spine. CS may be caused by faulty sleeping habits, sudden jerks to the neck, severe stress and anxiety, and related to occupational hazards such as in computer professionals or call centre workers, additional load on the neck are some of the etiological factors and always any type of jerking movement in work.

Common neck pain (CNP) which is not due to any organic lesion accounts for more than 80% of neck pains. Depression and anxiety are well-known undesirable side effects of chronic

neck pain. In order for the spine to function mechanically, it is affected by skeletal alignment, flexibility, and strength of various parts of the body. The edges of the vertebrae often develop small, rough areas of bone called osteophytes. Over many years, the spur disc becomes thinner. This degeneration is a normal aging process likened to having 'wrinkles in the spine'. Spur of bone disc vertebra is called osteophytes [1].

In many people, the degeneration does not cause any symptoms. Most patients with CS are asymptomatic. Symptoms may develop acutely or insidiously and manifest by the fifth and sixth decade of life. Upon examination, the patient may have difficulty rotating the head and moving it toward the shoulder. Headache is usually occipital with throbbing in surrounding area and secondly rigidity and constriction in the neck muscle occurs. Yoga

and various treatment of our methodology can change the diseases status of patient and healing potentiality [2].

Yoga therapy is the useful technique to ameliorate the symptoms of CS and reduce stress level and neck disorder therefore yoga is an

important treatment in CS. It also can be practiced in supine or sitting posture for achieving the goal of positive health, will power, concentration, and relieving pain and stiffness of the neck. The present study was planned to assess the effects of *yogasanas* on CS in Figure 1.

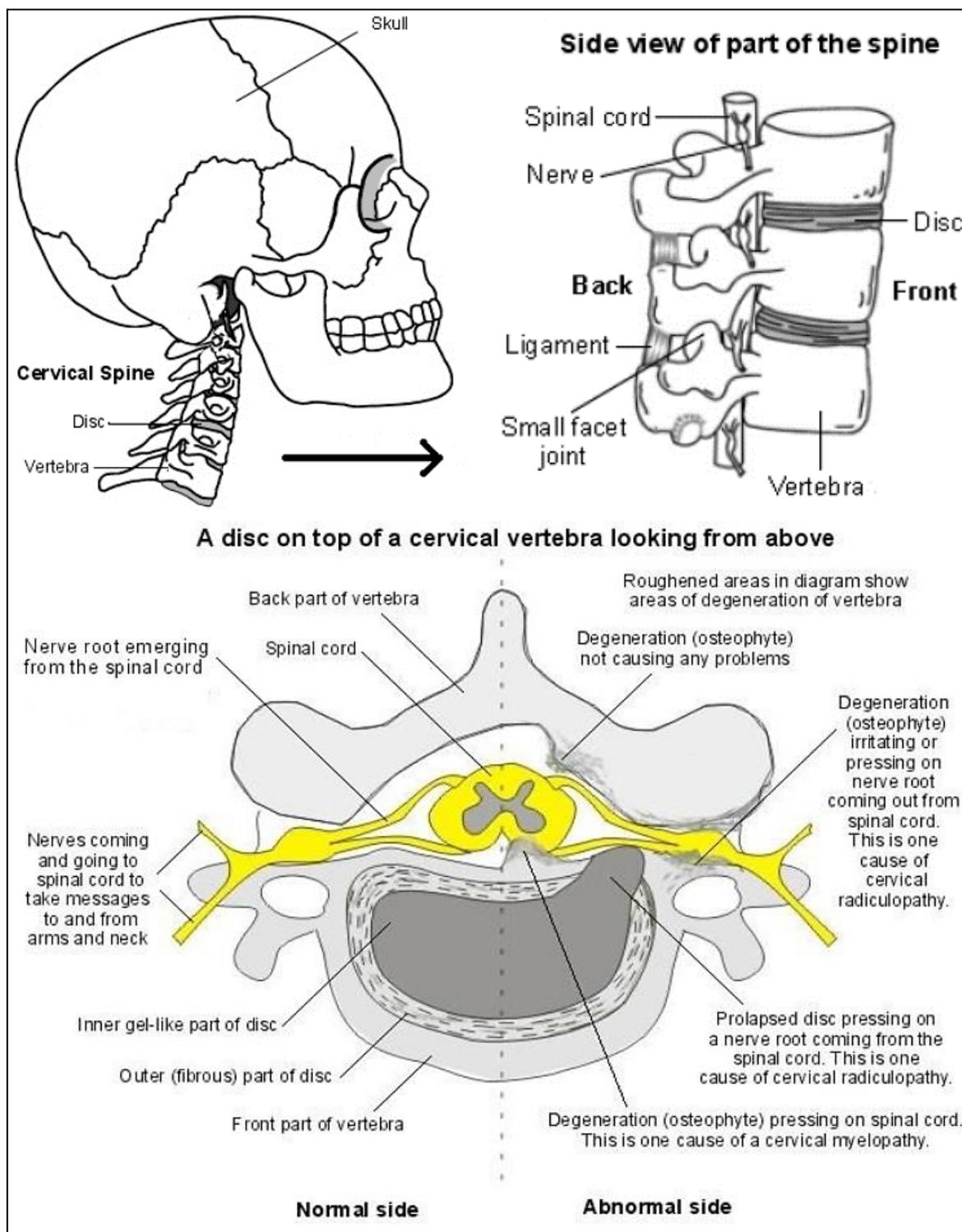


Fig. 1: Side View of Part of Spine and Disc on Top of a Cervical Vertebra (from above).

## OBJECTIVES

- To ameliorate the clinical features of CS.
- To minimize the periodic age fluctuation of the disease.
- To examine the positive effect of yoga management.

## METHODOLOGY

The present study was conducted at the Medical Research and Development Section of Population and Social Development (PSD), Durgapur, West Bengal, India. The patients were selected from the OPD of the PSD for Yoga Naturopathy Education and Research, Durgapur, Bardhaman, West Bengal, India. All patients were appointed at the age ranging from 40 to 60 years. Adequate counselling was carried out for the disease awareness as well as about the study trial. Eligible patients were recruited after taking consent as per research protocol which is recommended by the Institutional Ethic Committee of PSD. The total period of recruitment of patients was 12 months [3].

### Instrumental Assessment

#### *Coronoideus Claviculae (Figure 2)*

The decrease in distance between the ear lobe (tragus) and (tuberculum) coronoideus claviculae was measured with a tape from zero position (head erect) to maximal bending on both sides (left and right) without rotation for assessment of cervical lateral flexion.

The decline in distance between the top of the chin (in horizontal position without flexion) and the coronoideus claviculae was measured with a tape from zero position (chin straight ahead) to maximal rotation on both sides.

#### *Stereophotogrammetric System*

Stereophotogrammetric system (60–120 Hz, BTS S.r.l., Padova, Italy) is a useful method. In this method, six parts of the body and joints angle in the sagittal plane were evaluated (Figure 3).

#### **Description of the Joint Angles in the Sagittal Plane**

For the proper assessment of degree of decency of the diseases of CS, we have used mainly six categories of planes which are used to measure different dimensions. The planes are likely, (a) head protrusion, (b) trunk flexion-extension, (c) pelvic tilt, (d) hip

flexion-extension, (e) knee flexion-extension, (f) ankle flexion-extension [4].

*Head Protrusion (HP):* This supplementary angle to the angle between head and upper trunk flexion-extension (UTFE): the angle between upper trunk (defined by means of the 7th cervical vertebra and the right and left acromions) and trunk.

*Trunk Flexion-Extension (TFE):* This angle between trunk (defined by means of the 5th lumbar vertebra and the right and left acromions) and pelvis in the position.

*Pelvic Tilt (PT):* This angle of rotation about the mediolateral axis of the pelvis.

*Right and Left Hip Flexion-Extension (rHFE, lHFE):* This angle between pelvis and femur.

*Right and Left Knee Flexion-Extension (rKFE, lKFE):* This angle between femur and shank.

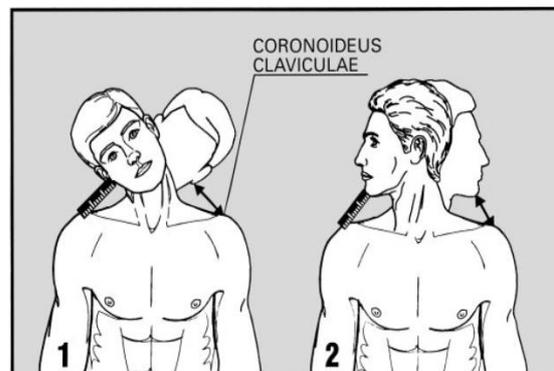


Fig. 2: Coronoideus Claviculae.

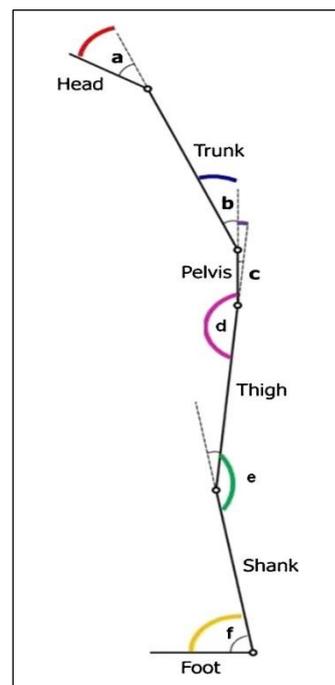


Fig. 3: Stereo Photogrammetric System

**Right and Left Ankle Flexion-Extension (rAFE, lAFE):** This angle between shank and foot. Subjects were asked to stand for 60 sec in an upright position over the force plate, with the feet 30° apart and their arms along the body and to look at a small achromatic circular target placed about 1 m from the eyes at seven different heights: eye height,  $\pm 10^\circ$ ,  $\pm 20^\circ$ ,  $\pm 30^\circ$  than their eye level (e.l.). For the measurement, Romberg test was also performed entailing static acquisitions (stand for 60 sec in an upright position over the force plate, with the feet 30° apart and their arms along the body). In this process one in eyes open (e.o.) and one in eyes closed (e.c.) conditions. The data were collected from both kinematic and centre of ground reaction forces [5].

The total body center of pressure (CoP) trajectory over the support surface was computed from the vertical force of the force platform, which were recorded for 60 sec at 960 Hz and then filtered by a 3rd order, low-pass Butterworth filter (cut-off frequency 5 Hz). The first 20 sec of the acquisition were excluded from the analysis.

A total of 9 CoP measures were computed from the CoP displacement in the horizontal plane in the time domain. We obtained three measures that characterized the CoP trajectory over the support surface, two measures that estimated the area covered by the CoP, and three measures that estimated the velocity of body sway over the support surface. The

following CoP-based measures were computed. In CoP displacement time in per unit ( $\text{mm}^2/\text{s}$ ), Ellipse 95%, time series, in CoP anteroposterior (AP) and mediolateral (ML) directions, mean velocity (total CoP trajectory length/trial duration [ $\text{mm}/\text{s}$ ]), mean velocity in AP and ML directions were evaluated [6].

## DESIGN OF THE STUDY

### Randomization

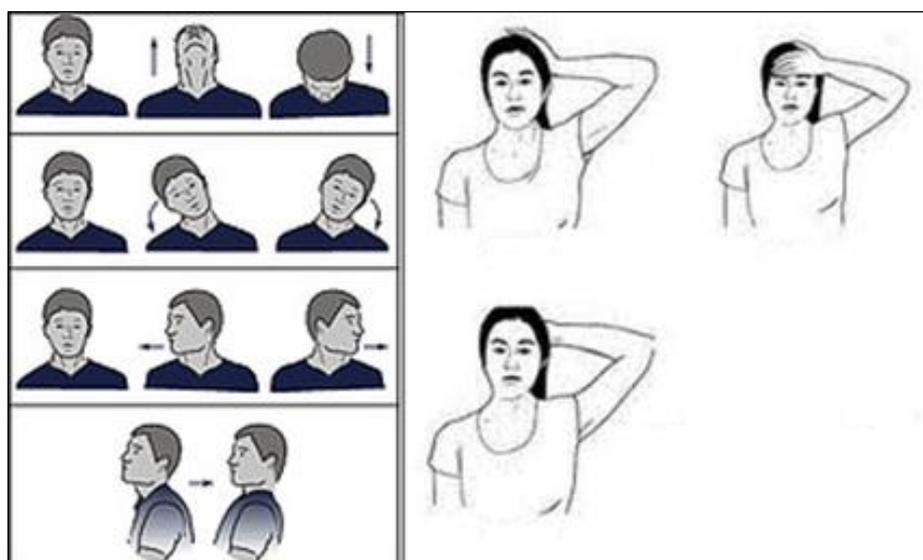
A total of 65 (Male, 48, and Female, 17) patients were recruited from different localities and different ethnic group. These patients were observed randomly into one group. Group was observed through healing and therapy, i.e., yoga, naturopathy, physiotherapy and diet control. Before starting the trial, intensive counselling was done to educate them about the disease and its risk factors, about the benefits of the treatment of yoga, naturopathy, physiotherapy and diet control, X-ray, number of treatment visits to the hospital and about the parameters to be investigated during the study period.

## TREATMENT

### Yoga

#### Exercises

Mild exercise is beneficial for first stages of diseases. One should always start mild exercises in beginning, and gradually, it was increasing the types and time. There are many types of exercises which mainly concentrate on its effects on cervical region such as exercise flexion of neck, extension, rotation, etc. [7] (Figure 4).





## Naturopathy (Figure 5)

### Physiotherapy and Panchakarma

For the treatment and assessment for the progress of research on Cervical Spondylosis basically there are number of physiotherapy process can be applicable but as per consideration of the Institutional Ethical Committee we have applied only four most effective process for CS there are -

- Interferential therapy
- Ultrasonic therapy
- Isometric exercise
- Strengthening exercise



Fig. 5: Naturopathy.

### Panchakarma Ayurvedic Treatments for CS

In Ayurveda—a traditional holistic Indian healthcare system—*Panchakarma* Ayurvedic treatments are the best option to reduce the symptoms of neck pain and disc compression as experienced by those suffering from the malady of CS [8]. The *Panchakarma* treatments include:

#### **Basti (Enema)**

This is usually considered as the mother of all *Panchakarma* treatments. In the application of naturopathy it is basically used for cleansing the accumulated toxins from all the three *doshas*, *vata*, *pitta* and *kapha*, through the colon. Medicated oil or ghee and an herbal decoction is given as enema to clean the colon through the rectum and increase the muscle tone [9].

#### **Kati Basti**

The process is very useful for the treatment which is applied through pouring warm medicated oil for 20 min and it releases stiff, tight and inflamed muscles. In this process oil penetrates deeply to nourish the ligaments and tendons. It is very effective treatment for back pain, stiffness, and other back concerns related to spinal disc problems. The local Marma points are energized, and the warm herbal oil soothes the pain [10].

#### **Shirodhara**

Pouring continuous stream of medicated oil, buttermilk, etc. on the forehead and doing a gentle and soothing head massage which creates profound relaxation of the mind and body and revitalizes the central nervous system [11].

#### **Abhyangam**

This methodology is usually used for whole body massage with specific herbal oils for the achievement of deepest healing effects by naturally harmonizing body, mind, soul and the senses. The oil is massaged into the entire body before bathing or showering to restore the flow of vital energy, Prana, where it has become blocked.

#### **Swedan**

It is a traditional steam therapy designed to open tissues with the saturation of heat and moisture. This method reduces inflammation, improves circulation, and promotes healing and restoration reducing pain in cervical (neck) and lumbar (lower back) part [12].

#### **Patra Pinda Sweda (Medicated Bundle Fomentation)**

Medicated oil massage and fomentation with bundle of herbs reduces pain and swelling of the joints and also checks degenerative process inside the body.

#### **Sweda (Medicated Steam Bath)**

Fomentation with medicated steam for stiffness due to neurological disorders and gives instant relief from pain, spasm of the muscles, and inflammation of the joints.

#### **Nasyam (Administration of Medicated Oil Through the Nose)**

Through this system, a medicated oil is passed through the nose that very gently cleanses accumulated *kapha* toxins from the head and neck region.

#### **Elakizhi (Herbal Leaf Bundle Massage)**

We used this methodology for the treatment CS. In this method, the entire body is massaged with the help of herbal poultices, prepared with various herbs and medicated powder after they are warmed in medicated oils.

#### **Shastika Sali Pinda Swedam/Navarakizhi**

A highly effective rejuvenation technique using a special type of rice that is cooked, tied

into boluses and dipped into an herbal decoction and warm milk, then skilfully massaged all over the body.

#### ***Pizhichil (Medicated Oil Bath)***

Fresh linen dipped in lukewarm medicated oil is squeezed over the body while masseurs slowly and gently rub the oil all over.

#### ***Greeva Basti***

A treatment done on the neck to decrease cervical spinal compression.

### **Dietary Control**

#### ***Role of Dietary Control for CS***

Calcium causes the entire matrix of bone and tissues. Phosphorous ratio can cause demineralization of bone. Only vegetarian, calcium is the major role in metabolism of the body and maintaining the bone specially CS.

#### ***Nonvegetarian Diet***

Cervical spondylosis is aggravated by nonvegetarian diet, specially spicy foods and excessive meat consumption. Confectionery and bread aggravates joint diseases and specially CS.

Constipation also initiates the formation of toxins in the gut, which get absorbed into the blood and increase its acidity. This, too, contributes, along with other factors, in the development of CS and bone demineralisation.

Hormones such as oestrogen, testosterone, adrenocortical hormones, thyroid and growth hormone also play a very major role in the maintenance of normal body structure and function. A strong link between hormonal activity and the kind of food we eat has been established in several studies.

#### ***Vegetarian Diet***

A vegetation diet which is reach source of fibber on the other hand on vegetarians substance/ foods increase the acidity of the blood. Vegetation diet acts especially in reduce the toxic matter of the blood and tone up the boon function cartilage and joint integration.

#### ***Lacto Vegetarianism***

It is a common conception that vegetarians lack calcium in their diet and as a result they suffer from bone demineralisation leading to osteoporosis and osteomalacia. This is not true in the case of a lacto vegetarian because milk

and its products are a very rich source of calcium which is easily available to man. However, there are reports and it is our experience that as age advances the digestion of milk becomes more and more difficult owing to decreased gastric acid, enzyme content. The milk is the reach source calcium, mal digestion of creates the gastro intestinal problem and increase the acid level of blood which deals to the joint pain specially aggravated the symptoms of cervical spondylosis changes the major source of calcium and protein which reduce the toxic level in nonvegetarian patient. Through analysing of the available data shows that vegetarian diets prevent the progression of neck and shoulder pain and the demineralization of bones due to the high fibre, vitamin and mineral content and low acid content.

#### ***Vegetarian Sources of Calcium***

- A. Milk
- B. Cottage cheese
- C. Almonds
- D. Pulses (though bound to phytate)
- E. Seeds especially Sesame, Sunflower
- F. Cheddar cheese
- G. Swiss cheese
- H. Soybeans and their products such as TOFU (bean curd)

#### ***Factors Preventing Calcium Absorption***

- A. Foods containing oxalic acids, e.g. spinach, lotus stem, horse gram.
- B. Lack of vitamin D.
- C. Overuse of proteins such as meat, fish, poultry, eggs, etc.
- D. Excessive use of common salt, alcohol, coffee, tobacco, fat and soft drinks containing phosphorus.

#### ***Easy Dietary Tips for CS***

- Physical exercise and yoga plays a major role in decreasing the problem of CS. Patient should take four meals a day including salad, steamed vegetables, raw vegetables, sprouts, and milk. Also vitamin D, vitamin C, phosphorus, and calcium proteins are also useful. Taking lemon juice mixed with salt at least 2–3 times a day. Additional intake of chebulic myrobalan following meals is also found very effective. Habitual consumption of 2–3 cloves of garlic in the morning decreases the problem of CS.

- Vitamins C and A content of fruits and vegetables fights against free radicals responsible for inflammation and helps to reduce painful swelling around the neck.
- Fish, nuts and oil seeds are rich sources of omega-3 fatty acids and vitamin E acting against inflammation.
- Apple, garlic, ginger and turmeric are also anti-inflammatory.
- Avoid red meat, white potato and coffee as it increases acid load in the body. Include fruit juice and vegetable soup in the routine diet.
- Diet rich in monounsaturated fatty acid help to reduce inflammation.
- Avoid spicy, hot, salty, oily foods.
- Replace rice with wheat.
- Add more bitter vegetables such as bitter guard and drumstick in the routine food.
- Venetian diet is a rich source of calcium, protein, and vitamin D. They prevent the progression of neck and solder pain, also minimizes CS.

### Applying Dietary Control Method in Research of CS (Table 1)

**Table 1: Dietary Control in CS.**

Timing	Instruction
6.00 am 6.30 am to 7.30 am.	Wake up, tooth brush, mouth wash and take two glasses of water. Natural urges, bathing with lukewarm water, etc.
7.30 am	Prayer
7.45 am	Intake 1 cup lukewarm <i>Shunthi fant</i> ( <i>Zingiber officinale</i> ) (1 g dry ginger powder boiled with 1 glass of water).
8.15 am to 8.30 am	Breakfast ( <i>dalia/mamra/upma</i> etc. with toned milk).
11.30 am to 12.30 pm	Light lunch [Boiled rice, <i>dal</i> (pulses), vegetable soup or vegetable <i>khichidi</i> or <i>roti</i> , <i>dal</i> (pulses), vegetable soup], then <i>Shatapad gaman</i> (slow walking for 100 steps).
	Never sleep in day time.
1.00 pm to 1.15 pm	Intake fresh seasonal fruit (e.g. apple, pear, pomegranate, guava etc.). Never take ripe banana and mango.
4.30 pm to 5 pm	Evening snacks, if needed, take toned milk with rice puff or rice flacks in moderate quantity.
7.30 pm to 8.00 pm	Light dinner [Boiled rice, <i>dal</i> (pulses), vegetable soup or vegetable <i>khichidi</i> or <i>roti</i> , <i>dal</i> (pulses), vegetable soup], then <i>Shatapad gaman</i> (slow walking for 100 steps).
9.45 pm	Prayer and intake of 5 ml <i>Eranda taila</i> ( <i>Ricinus communis</i> ) with 1 glass lukewarm toned milk.
10.00 pm	Go to sleep.

### HEALING

Healing touch is an energy therapy in which practitioners consciously use their hands in a heart-centered and intentional way to support and facilitate physical, emotional, mental and spiritual health.

Healing touch is a biofield (magnetic field around the body) therapy that is an energy-based approach to health and healing. Healing touch is also used for revitalizing the vital source of the body and also increases the dynamic force of the mind and body.

Method of healing is based on heart centre therefore relationship in practitioner and client come together and increase the mental, physical and emotional health of affected body and affected parts.

The goal of healing touch is to restore balance and harmonies in the energy system, placing the client in a position to self heal. Duration of healing is 30 min per day. A total of 21 seatings in entire 18 months period is undertaken.

### STATISTICAL METHODS

The data obtained in the study were analyzed by using Mean and SD. For comparison from 18th month to baseline, Paired t-test was performed. For nonparametric method Chi-square test was performed. Result of Pain (VAS) was determined by mean  $\pm$  standard deviation (SD). The p-value (<0.05) was considered to be statistically significant.

### RESULTS OR FINDINGS

Sixty-five (65) CS of neck pain patients were recruited in this study. All the patients have completed their one year follow-up.

### Symptomatic Scoring (Table 2)

Through this digital expression we are trying to measure progressive improvement of clinical feature like Stiff Neck & Neck Pain, Rigidity neck pain, Shoulder Pain through the applying of integrated Effect of Therapy on the following clinical features.

**Table 2: Effect of Therapy on Clinical Features.**

Clinical features	Means of score		% of relief	S.D	t-value	p-value
	Before treatment	After treatment				
Stiff neck and neck pain	2.02	0.67	64.35	0.23	17.23	<0.001
Rigidity and neck pain	2.22	0.75	63.26	0.46	18.25	<0.001
Shoulder pain	2.1	0.23	60.65	0.58	17.23	<0.001

### Physical Examination (Tables 3 and 4)

Through this calculation we can able to find out the improvement of physical movement of Manual Muscle of cervical and thoraces region in rotation of right and left in the position.

**Table 3: Manual Muscle Testing (MMT).**

MMT	Category	Baseline	18th months	p-value
Cervical right	Very	5	0	<0.001
	Fair	25	0	
	Very fair	26	0	
	Good	7	0	
	Very	2	19	
	Normal	0	46	
Cervical left	Very	8	0	<0.001
	Fair	24	0	
	Very fair	28	25	
	Good	5	40	
	Very	0	0	
	Normal	0	0	
Thoracic right	Very	5	0	<0.001
	Fair	25	0	
	Very fair	26	0	
	Good	7	0	
	Very	2	19	
	Normal	0	46	
Thoracic left	Very	8	0	<0.001
	Fair	24	0	
	Very fair	28	25	
	Good	4	40	
	Very	1	0	
	Normal	0	0	

**Table 4: Comparison of Pain (VAS) at Baseline and After 18th Month follow-up.**

VAS% (Mean ± SD)	Baseline	12th month	p-value
	54.64± 15.51	8.57± 7.55	<0.001

### Radiological Examination

- X-ray
- High resolution computer tomography (HRCT)
- Magnetic resonance imaging (MRI)

On analysing the data of radiological examination among the 65 human participants for the research of CS, it was observed that significant number of patients had the thickness of vertebra in the cervical region (1–10 mm) and orthopedic deviation. After integrated application of yoga, naturopathy and dietary control, a comparative study between the baseline situations with 18-month follow-up in the participant group was studied as described in a tabular format (Table 5).

**Table 5: Comparative Study of Radiological Examination of Patient of CS.**

Severity of diseases	Category	Baseline	18th month after	p-values
Mild	(10 mm)	10	60	<0.012
Moderate	(7 mm)	42	5	
Saviour	(3 mm)	13	0	

### Pathological Examination

#### Blood Examination

- Erythrocyte sedimentation rate (ESR)
- RA factor
- Bone mineral density (BMD)
- Uric acid

#### ESR in Blood Examination

There was a significant improvement in ESR level in blood in comparison with 18th month follow-up of 65 patients as compared to baseline (Table 6).

In human participant (p-value <0.011).

**Table 6: Comparison of ESR in Blood of Human Participants at Baseline and 18th Month follow-up.**

Category	Baseline	After 16th month	p-values
Mild (<7 mg)	9	20	<0.011
Moderate (<8 mg)	30	0	
Severe (<9 mg)	25	0	
Normal (<5 mg)	1	45	

**RA Factor in Blood Examination**

There was a significant improvement in RA factor level in blood in comparison with 18th month follow-up of 65 patients as compared to baseline (Table 7). In human participant (p-value <0.011).

**Table 7: Comparison of RA Factor in Blood of Human Participants at Baseline and 18th Month follow-up.**

Category	Baseline	After 18th month	p-values
Positive (+)	60	0	<0.011
Negative (-)	5	62	

**BMD in Blood Examination**

There was a significant improvement in BMD level in blood in comparison with 18th month follow-up of 65 patients as compared to baseline (Table 8). In human participant (p-value <0.010).

**Table 8: Comparison of BMD in Blood of Human Participants at Baseline and 18th Month follow-up.**

Category	Baseline	After 18th month	p-values
Mild (1–2 mm)	13	10	<0.010
Moderate (1–1.5 mm)	10	0	
Severe (1 mm)	42	0	
Normal (1–3 mm)	0	55	

**Uric Acid in Blood Examination**

There was a significant improvement in uric acid level in blood in comparison with 16th month follow-up of 65 patients as compared to baseline (Table 9). In human participant (p-value <0.012).

**Table 9: Comparison of Uric Acid in Blood of Human Participants at Baseline and 18th Month follow-Up.**

Category	Baseline	After 18th month	p-values
Mild (7.9 mg)	0	5	<0.012
Moderate (9.5 mg)	13	0	
Severe (10.3 mg)	42	0	
Normal (7.5 mg)	0	60	

**DISCUSSION**

The results suggest that there was a very high significant improvement in the case group. CS is a general term for age-related wear and tear affecting joints in the neck region. This condition usually appears in men and women

older than 40 years and progresses with age. Development of this condition is more likely when other factors are present, including obesity and sedentary lifestyle, occupation requiring heavy lifting and frequent bending and twisting, previous neck injury, severe arthritis, osteoporotic fractures, and genetic factors. The severity of signs and symptoms directs approach for CS with the following goals such as relieving pain and stiffness of the neck. As quoted in one study, tension that is associated with stress is stored mainly in the neck muscle, diaphragm and the nervous system. Stress can cause spasm and involved in the functioning of neck. If the neck area is relaxed stress gated reduce the physical condition as well as the condition when we are applying *yogasana* therapy. A step-by-step approach should be followed involving aspects of diet, involving aspects of lifestyle modification, involving aspects of the way we think, and also involving yogic counselling.

Yoga is fast advancing as an effective therapeutic tool in physical, psychological and psychosomatic disorders. Stress, anxiety, depression, tension, lack of concentration, mood changes during pain, emotions are the psychological risk factors in neck pain indicating a clear link between psychological variables and neck pain. In a study by Vempati *et al.*, on healthy adults, the yoga-based guided relaxation was shown to reduce the sympathetic activity as measured by autonomic parameters, oxygen consumption and breathe volume. The subjects who practiced *yogasanas* felt that they have experienced and learnt a skill in the form of *yogasanas*, *pranayamas*, loosening exercises. They felt very happy and self-confident, fully satisfied with the treatments.

Results obtained in this study showed an improvement in different dimension such as, symptomatic score of (*stiff neck and neck pain, rigidity and neck pain, shoulder pain*), Physical Examination (MMT of cervical right and left and thoracic right and left), and radiological examination (X-ray, TX CT scan), and lastly pathological test of (uric acid of blood, RSR, RA factor, BMD of blood) one and half (16th month) year of yoga, naturopathy, healing, physiotherapy treatment with diet control of human participants.

These observations indicate that yoga, naturopathy, healing, physiotherapy and diet control when used in a combined manner and adopted as a way of life is safe and efficient in reducing pain, and improving the functional capacity status. Previous studies also support our result. Recent evidence suggests that *Panchakarma* and physiotherapy may be helpful in the treatment of symptomatic neck pain of CS. The mechanisms of potential action of *Panchakarma* remain unclear, however, the proposed mechanisms include improving local blood flow, promoting Venous circulation, reducing the stiff neck and neck pain, Rigidity of neck pain and improving the coordination of problems.

In Ayurveda—a traditional holistic Indian healthcare system—*Panchakarma* Ayurvedic treatments are the best option to reduce the symptoms of neck pain and disc compression as experienced by those suffering from the malady of CS. Actually *Panchakarma* consist of number of segments of treatment means of Ayurveda, which are as follows:

*Basti (Enema)*: It helps to clean the colon through the rectum and increase the muscle tone.

*Kati Basti*: It is used to reduce back pain, stiffness, and other back concerns related to spinal disc problems. The local Marma points are energized, and the warm herbal oil soothes the pain.

*Shirodhara*: It is used for profound relaxation of the mind and body and revitalizes the central nervous system and also tones up the spinal nerve affected.

*Abhyangam*: It is used for restoration of the flow of vital energy, Prana, where it has become blocked.

*Swedan*: This method is used to reduce inflammation, improve circulation, and promote healing and restoration, thereby reducing pain in cervical (neck) and lumbar (lower back) part.

*Patra Pinda Sweda (Medicated Bundle Fomentation)*: It is used for reducing pain and swelling of the joints and also checks degenerative process inside of the body.

*Sweda (Medicated Steam Bath)*: This method is used for instant relief from pain, spasm of the muscles, and inflammation of the joints.

*Nasyam (Administration of Medicated Oil through the Nose)*: This method is for cleansing the accumulated *kapha* toxins from the head and neck region.

*Elakizhi (Herbal Leaf Bundle Massage)*: This process is used for improving the circulation of blood in the body.

*Shastika Sali Pinda Swedam/Navarakizhi*: This is used for rejuvenation of the body.

*Greeva Basti*: This is used for decreasing cervical spinal compression.

Healing uses the gift of touch to influence the human energy system, specifically the energy field that surrounds the body, and the energy centres that control the flow from the energy field to the physical body.

Method of healing is based on heart centre therefore relationship in practitioner and client come together and increase the mental, physical and emotional health of affected body and affected parts.

In this study, it was revealed that application of healing process on the person suffering from CS is most effective and result oriented. It acts on human body to release anti-oxidant materials from the human body and improves the working power and improves the flexibility of joints.

## CONCLUSION

The results of this study showed that yoga and relaxation techniques are a better and beneficial therapy in the treatment of pain and stiffness of the neck region. These techniques may be used as supportive therapy along with conventional medications.

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