

**EFFECT OF SŪRYANAMASKĀRA YOGA ON MINIMUM MUSCULAR FITNESS IN
SCHOOL CHILDREN**

Dissertation submitted by

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Towards partial fulfillment of

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M.Sc. (Yoga and Education)

TO

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C E R T I F I C A T E

This is to certify that DIVYA.C.K is submitting this Literary research titled “Significance of *Sūryanamaskāra*” and Experimental research titled “Effect of *Sūryanamaskāra* Yoga on minimum muscular fitness.” in partial fulfilment of the requirement for the Master of Science (Yoga and Education) registered with effect from February 1, 2010 by the Swami Vivekananda Yoga Anusandhana Samsthana under the division Life sciences and is a record of the work carried out by her in this institute.

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Date:

Place:

DECLARATION

I, hereby declare that this study was conducted by me at Swami Vivekananda Yoga Anusandhana Samsthana (SVYASA), Bangalore, under the guidance of Dr.Balaram Pradhan and Dr. R.Rangan Swami Vivekananda Yoga University, Bangalore.

I also declare that the subject matter of my dissertation entitled below has not previously formed the basis of the award of any degree, diploma, associate ship, fellowship or similar titles.

PART – I

SIGNIFICANCE OF *SŪRYANAMASKĀRA*

PART – II

EFFECT OF *SŪRYANAMASKĀRA* YOGA ON MINIMUM MUSCULAR FITNESS IN SCHOOL CHILDREN

Place: Bangalore

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A C K N O W L E D G E M E N T

To all of my teachers who have sparked my curiosity and imagination, and have nurtured and guided me throughout all the twists and turns of my journey:

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Finally I thank that unseen Divine (Lord Viṣṇu) without whose wish, this work wouldn't have been possible.

Bangalore

Date:

STANDARD INTERNATIONAL TRANSLITERATION CODE USED TO
TRANSLITERATE SANSKRIT WORDS

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ṭa ṭha ḍa ḍha ṇa

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य र ल व श ष स ह

ya ra la va śa ṣa sa ha

ळ क्ष ज्ञ ॐ

ḷa kṣa jña om

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EFFECT OF *SŪRYANAMASKĀRA* YOGA ON MINIMUM MUSCULAR FITNESS IN SCHOOL CHILDREN

ABSTRACT

Context: Yoga practices are found positive impact on the health. *Sūryanamaskāra* is a holistic exercise that provides physical health, mental, emotional and spiritual benefits. The obvious advantage of *Sūryanamaskāra* is the workout which provides benefits for the muscles, joints, ligaments.

Aim: The present study was done to evaluate the effects of *Sūryanamaskāra* on minimum muscular fitness.

Settings and Design: The present study was consisting of 403 (217 boys and 186 girls) healthy subjects of 9-12 years age.

Methods and Material: Participants fulfilling the inclusion and exclusion criteria underwent 30 minutes daily yoga program for 15 days taught by yoga teacher. Pre and post were assessed Kraus – Weber Fitness test. The data were analyzed by chi- square Test.

Results: There was significant change in minimum muscular fitness successes rate.

Conclusions: This study showed beneficial effects of short term (15 days) regular *Sūryanamaskāra* on minimum muscular fitness in school children.

Key words: *Sūryanamaskāra*, minimum muscular fitness.

CHAPTER 1

INTRODUCTION

Physical fitness is indirectly related to cardiovascular risk factor such as Hypertension, Coronary Heart Disease, Atherosclerosis and Obesity (Myers & Prakash, 2002) anthropometrical characteristic (Dekkers & Podolsky, 2004). So, physical fitness is one of the important factors to assess individual health status. (Blair, Kohl, Paffenbarger, Clark, Cooper, & Gibbons, 1989; Myers, Prakash, Froelicher, Do, Partington, & Atwood, 2002; Mora, Redberg, Cui, Whiteman, Flaws & Sharrett, 2003; Metter, Talbot, Hulsmann & Quittan, 2004).

According to World Health Organization, physical activity such as cardiovascular fitness, cardio respiratory fitness, muscular fitness, yoga practices and strength exercises is considered as one of the preventive measure to eradicate many diseases (WHO, 2002).

Yoga is an Eastern Indian Science and way of life, which includes the practice of certain moral and social values, postures, controlled breathing, and meditation which is to transform lower instinct of man to divine quality (Taimini, 1961). This traditional practice of lying supine in the 'corpse posture' (*śavāsana*) has been shown to reduce physiological signs of arousal (Vempati & Telles, 2002). Another study on *śavāsana* was found effective in coping with stress manifestations. The recovery from induced physiological stress was significantly faster in *śavāsana* when compared with the resting in chair and supine posture (Bera, Gore & Oak, 1998). A significant decrease in breath rate was noted after another, yoga based isometric relaxation technique when compared to supine rest (Telles & Vempati, 1999). However, not everyone is immediately able to relax in an eyes-closed, supine posture (Telles, Reddy & Nagendra, 2000).

The stress reduction techniques such as progressive muscular relaxation, biofeedback and relaxation metal imagery were useful for many childhood and adolescent stress-related symptoms (Smith & Womack, 1987). Students participated in Deep Breathing Meditation exercises reported having perceptions of decreased test anxiety, nervousness, self-doubt, and concentration loss (Paul, Elam & Verhulst, 2007). The combination of Tai chi and mindful-based relaxation technique were introduced to middle school age children. They experienced well-

being, calmness, relaxation, improved in sleep, less reactivity, increased in self care, self awareness, and a sense of inter connection of interdependence with nature (Wall, 2005).

In spite of limited evidence to support the impact of yoga on children, some specific yoga modules have been developed for children and adolescents (White, 2009). Children participating in yoga training program reported improvements in negative behaviors in response to stress, wellbeing, specifically in behaviors. These results suggested possible role of yoga as a preventive intervention as well as a means of improving children's perceived well-being (Berger, Silver, & Stein, 2009).

Another study showed improvement in mental health component like depression, anxiety, quality and life satisfaction in all age group this depends on physical activity like walking, yoga, and swimming. (Nesper, & Csemy, 2006).

Previous study found that 20.8 per cent boys failed in their minimum muscular fitness the tests. Multiple failures were 4.8 percent while flexibility failures alone were 11.6 percent. Boys at the age of 15 years failed more in flexibility test. Boys at the age of 10 years had the maximum percentage of failures to the extent of 38.5. Hence, this suggested that Inclusion of Yogasanas in the programme of physical activities to be implemented for their improvement of the status of the failures (Gharote, 2000).

Based the above background the present study was aimed to evaluate the minimum muscular fitness using Kraus-Weber test on school children.

CHAPTER 2: LITERATURE SURVEY

2.1 INTRODUCTION

The term *Sūrya* literally means the Supreme Light. Hindus believe it as the chief of solar deity since the term generally refers to the Sun. In Hindu mysticism, the Sun god is worshipped as a symbol of health and immortal life. The Veda declares, "*Sūrya* is the Soul, both of the moving and unmoving beings." *Sūrya* has a lot of significance in the Hindu Dharma. (Page14, Samaveda Sandhyavandanam)

The Hindu scriptures also depict *Sūrya* quite extensively. It is treated as the visible presence of God that people experience every day. Other names that are used to refer to *Sūrya* in various Hindu traditions include *Vivasvat*, *Āditya*, *Divākar*, *Arka*, *Bhānu*, *Gṛhāpati*, *Ravi*, *Puṣā*, *Mitrā* and *Bhāskar*.

The mystic image representation of *Sūrya* has golden arms and hair. He is known to ride his triumphal chariot that is attached to seven horses that takes him through to the heavens. Those seven horses represent the seven Cakras found all throughout the body (*Graha Sutras*, Wilhelm, Ernst). Another common depiction for the *Sūrya* is that of two hands, each holding a lotus in them. In other cases, there are four hands with each holding a Cakra (disc), lotus, conch, and mace.

The Sun Salutation (*Sūryanamaskāra*) originated as a series of prostrations to the Sun. Traditionally, it is performed at dawn, facing the rising Sun. The adaptation of *Sūryanamaskāra* or Sun Salutation in Yoga was firmly based on a form of Hindu worship, which is devoted for the *Sūrya*. This mode of worship is usually done during the rising of the Sun, thus the name Sun Salutation.

Sūryanamaskāra, meaning 'salutation to the sun', can be seen as a form of worship of the sun, and all that it represents on the micro and macrocosmic levels. In Yogic terms this indicates that

Sūryanamaskāra awakens the solar aspects of an individual's nature and releases this vital energy for the development of higher awareness. This can be realized by the practice of *Sūryanamaskāra* each morning, as well as being a fine way to pay tribute to the source of creation and life, thereby carrying on the solar tradition. (Swami satyananda saraswathi).

This is a series of pose that consist of ten Yoga postures done in a graceful and smooth sequence. Therefore, each pose serves as a bridge to the next for one complete flow. During the practice of Sun Salutation, there are twelve sacred Mantras observed to fully emphasize the benefits of this practice. This series of Yoga posture is so arranged that with each *Āsana*, body follow a rhythmic inhalation and exhalation program. Thus *Sūryanamaskāra* comprises *Āsana*, (physical postures), *Prāṇāyāma* (voluntary regulation of breath), Mantra, meditation and Bhakti Yoga (devotion). This literary thesis includes the descriptions of various Yoga-dimensions of *Sūryanamaskāra*.

2.1.2. Aims and objectives

To have a brief understanding of *Sūryanamaskāra* from ancient Yogic texts and available literature.

To collect information regarding how *Sūryanamaskāra* will be made available for future references.

To bring out the benefits of *Sūryanamaskāra*

To identify the areas of future research.

2.1.3. Literature search

The origins of *Sūryanamaskāra* date far back to the earliest epochs of history, when human beings first became aware of a spiritual power within themselves that is also reflected in the material universe. This awareness is the foundation of Yoga. From the Hindu worship of Sūrya, the Sun god originates the series of *HaṭhaYoga Āsanās* called *Sūryanamaskāra*.

In the Vedic texts, devotion to the solar deity has been seen as an indication of sound health and prosperity. *Sūryanamaskāra* entails a routinely physical prostration to the Sun that is a sign of

the self-surrender to the Divine. However, the Yoga posture of sun salutation varies from region to region. Truca Kalpa *Namaskāra* and Āditya praṇa are the two prevalent modes of doing *Sūryanamaskāra*. (Indian Express (04-09-2010). *Destination Delhi*). According to the *Rāmāyaṇa*, *Sri Rāmā* was taught by Sage Agastya the *Sūryanamaskāra* through the Mantra of *Āditya hṛdayam*.

The traditional texts of Yoga like *HaṭhaYogapradīpikā*, *Gheraṇḍasāhita* and *Haṭharatnāvalī* describe the methods and benefits of various *Āsanas* that are involved in *Sūryanamaskāra*. This thesis compiles all those elements. This also compiles the benefits and methods of *Sūryanamaskāra* dealt in the modern texts like Swami Niranjanan Saraswati's Yoga Darshan, Swami Satyananda Saraswati's a. *Āsana*, *Prāṇāyāma*, Mudra and Bandha, b. *Sūryanamaskāra* H R Nagendra's Integrated Approach of Yoga Therapy for Positive Health and David Coulter's Anatomy of *Hatha Yoga*

This thesis also elucidates how the basic principles of *Āsanas* dealt by Yoga sūtra are inherent in *Sūryanamaskāra*.

2.1.4 *Āsana*

Sūryanamaskāra is a combination of various vital *Āsanas*. Therefore it is important to know about the concept of *Āsanas* before detailing the concept of *Sūryanamaskāra*

Patañjali defines *Āsana* as :(Taimni, I.K.)

स्थिरसुखमासनम् । *Sthirasukhamāsanam*.

Āsana is the steady and comfortable Yoga posture.

Patañjali gives a couple of methods by which *Āsana* can be mastered.

प्रयत्नशैथिल्यानन्तसमापत्तिभ्याम् । *prayatnaśaithilyānantasamāpattibhyām*।

The mastery of *Āsana* can be achieved by the gradual slackening of effort and endless meditation (while one is in the posture).

Patañjali describes the result of *Āsana*.

ततो द्वन्द्वनभिघातः ॥ *tato dvandvanabhighātaḥ*।

From that mastery of posture, duality disappears.

This is the result with which the *Sādhaka* is directly concerned in the practice of Yoga. But there are also other important benefits which accrue from this practice. Some of these subsidiary results of practising *Āsana* are:

- (1) Making the body perfectly healthy and resistant to fatigue and strain.
- (2) Acquiring fitness for the practice of *Prāṇāyāma* as a result of proper regulation of *Prāṇic* currents in the body. In fact, those who become proficient in the practice of *Āsana* find that the movements of the breath begin naturally to conform to the requirements of *Prāṇāyāma* and it becomes possible to take to the practice of *Prāṇāyāma* with the greatest ease.
- (3) Development of will-power. The physical body is directly and in some mysterious manner related to the *Ātman*, the source of spiritual power. Gaining control over the physical body which mastery of *Āsana* implies brings about an extraordinary influx of that spiritual force which expresses itself in outer life as will-power.

2.1.5 Difference between *Āsana* and physical exercise

<i>ĀSANAS</i>	PHYSICAL EXERCISE
1. Oxygen consumption is reduced	It is increased.
2. Respiration rate falls	Respiration rate increases .Exercise is done very quickly with lot of heavy breathing. As a result respiration rate tends to work harder.
3. Body temperature tends to drop	Body temperature increases
4. Metabolic rate tends to drop	It increases

5. Muscles receive minimum nutrition/oxygen and organ receives more.	5. Muscles receive more oxygen/nutrition at the expense of other organs. Large muscles develop as a result these need more blood supply and nutrition. when not utilized these become flabby
6. Blood pressure and heart rate decreases	Blood pressure and heart rate increases
7. <i>Āsanas</i> helps to harmonise the endocrine secretion, balancing the emotion and giving the positive attitude to life.	
8. It stimulates parasympathetic nervous system	It stimulates sympathetic nervous system
9. It helps to increase flexibility of joints	It tends to overwork with joints and often endangers rheumatism
10. It is done slowly with relaxation and awareness which encourages coordination between body system and mind.	It is done vigorously without relaxation and it will not encourage that much coordination between body and mind.
11. It eliminates the body toxins	IT tends to build up body toxins
12. It develops inner awareness	Not necessary

2.1.6 Practice of *Sūryanamaskāra*

The Sun Salutation is a graceful sequence of twelve positions performed as one continuous flow. Each position counteracts the one before, stretching the body in a different way and alternately expanding and contracting the chest to regulate the breathing. The sequence also flexes and stretches the spinal column through their maximum range giving profound stretch to the whole body. Practiced daily it will bring great flexibility to spine and joints and trim waist. It limbers up the whole body in preparation for the other *Āsanas* that are practiced as part of a regular Yoga routine. It is known for its ease of performance and rich benefits it can deliver both for the mind and body. But before go deep into that, it is important to first gain an understanding on how it evolved by looking back into history.

Below are the twelve *Mantras*, in specific order, that are observed during the practice of Sun Salutation poses:

Every year the sun passes through twelve different phases, known as the signs of the zodiac in Western astrology, and as the *Rāśis* in *Hindu* astrology. According to *Hindu* astrology each *Rāśi* has specific attributes or moods, and in each of these twelve moods the Sun is given different *Mantras*. These twelve names comprise the twelve Sun *Mantras*, which are to be repeated in their respective order in conjunction with the twelve movements of *Sūryanamaskāra*.

These Sun *Mantras* are not merely names of the Sun, every sound syllable contained within them is the vehicle of a basic eternal energy (*Śakti*) represented by the Sun itself. By repetition and concentration on these *Mantras*, the whole mental structure will be benefited and uplifted.

These *Mantras* are more effective when recited with their understanding.

1. ओम् मित्राय नमः *Aum Mitrāya Namaḥ*

Salutations to the friend of all

The first position, *Praṇamāsana*, embodies the attitude of reverence to the source of all life; the Sun is regarded as the universal friend, endlessly giving light, heat and energy to support this and all the other planets. In the scriptures, *Mitrā* is described as calling man to activity, sustaining earth and sky and beholding all creatures without discrimination, just as the early morning sun signals the beginning of the day's activities and sheds its light on all life.

2. ओम् रवये नमः *Aum Ravaye Namaḥ*

Salutations to the shining one

Ravi means one who shines and offers divine blessings upon all life. In the second position, *Hasta uttānasana* one has to stretch one's whole being upwards towards the source of light to receive these blessings.

3. ओम् सूर्याय नमः *Aum Sūryāya Namaḥ*

Salutations to him who induces activity

Here the sun is in a very dynamic aspect as the deity *Sūrya*. In ancient Vedic mysticism Sun was worshipped as the Lord of the Heavens, pictured crossing the sky in his fiery chariot, drawn by seven horses. This is a beautiful analogy and needs a correct interpretation. The seven horses actually represent the seven rays or emanations of the supreme consciousness, which manifest as the seven planes of existence: *bhūḥ* (earthly, material), *bhuvāḥ* (intermediate, astral), *svaḥ* (subtle, heavenly), *mahaḥ* (the abode of the devas), *janaḥ* (the abode of divine souls who have transcended ego), *tapah* (the abode of enlightened siddhas) and satyam (the Ultimate truth of reality).

Sūrya symbolizes the supreme consciousness itself which controls all these different planes of manifestation. *Sūrya* is regarded as the most concrete of the solar gods, one of the original Vedic triad -his place being in the sky -while Agni (fire) is his representative on earth.

4. ओम् भानवे नमः *Aum Bhānave Namaḥ*

Salutations to he who illumines

The sun is the physical representation of the guru or teacher who removes the darkness of our delusions, just as the darkness of the night is removed with every dawn. In the fourth position, *Aśva sancālanāsana*, we turn our face towards this illumination and pray for an end to the dark night of ignorance.

5. ओम् खगाय नमः *Aum Khagāya Namaḥ*

Salutations to he who moves in the sky

It is the sun's daily movement through the sky which is the basis of our measurement of time, from the earliest use of a sun dial to the sophisticated devices used today. In *Parvatāsanā*, we offer obeisance's to the one by whom time is measured and pray for progress in life.

6. ओम् पूष्णे नमः *Aum Puṣne Namaḥ*

Salutations to the giver of strength and nourishment

The sun is the source of all strength. Like the father, he nourishes us with energy, light and life. Offer respects in *Aṣṭāṅga Namaskāra* by touching all the eight corners of our body to the ground. In essence offering our whole being in the hope that he may bestow mental, physical and spiritual strength and nourishment upon us.

7. ओम् हिरण्यगर्भाय नमः *Aum Hiranyagarbhāya Namaḥ*

Salutations to the golden cosmic self

Hiranyagarbhā is also known as the golden egg, resplendent as the Sun. *Hiranyagarbhā* is the seed of causality, thus the whole universe is contained within *Hiranyagarbhā* in the potential state prior to manifestation. In the same way, all life is potential in the Sun, which represents the great cosmic principle. Offer respects to the Sun in *Bhujāṅgāsanā*, the seventh position, praying for the awakening of creativity.

8. ओम् मरिचये नमः *Aum Marīcaye Namaḥ*

Salutations to the Lord of the Dawn

Māricā means illumination. In the eighth position, *Parvatāsanā*, we pray for true illumination and discrimination in order to be able to distinguish between the real and the unreal.

9. ओम् आदित्याय नमः *Aum Ādityāya Namaḥ*

Salutations to the son of Aditi, the cosmic Mother

Aditi is one of the many names given to the cosmic Mother, *Mahāśakti*. She is the mother of all the gods, boundless and inexhaustible, the creative power from which all divisions of power proceed. The sun is one of her children or manifestations. In the ninth position, *Aśva Sancālanāsana*, we salute *Aditi*, the infinite cosmic mother.

10. ओम् सावित्रे नमः *Aum Savitre Namaḥ*

Salutations to the stimulating power of the sun

Sāvitr is known as the stimulator, the arouser, and is often associated with *Surya* who also represents the same posture, *Pādahastāsana*. *Sāvitre* is said to represent the Sun before rising, stimulating and arousing man into waking active', and *Surya* is said to represent the sun after sunrise, when activity begins. Therefore, in the tenth position, *Pādahastāsana*, salute *Sāvitre* to obtain the vivifying power of the sun.

11 ओम् अर्काय नमः *Aum Arkāya Namaḥ*

Salutations to he who is fit to be praised

Arka means 'energy'. The Sun is the source of most of the energy in the world. In the eleventh position, *Hasta Uttānasana*, we are offering respects to this source of life and energy.

12. ओम् भास्कराय नमः *Aum Bhaskarāya Namaḥ*

Salutations to him who leads to enlightenment

In this final salutation we offer respects to the sun as a symbol of the great revealers of all transcendental and spiritual truth. He lights up the pathway leading to our ultimate goal of

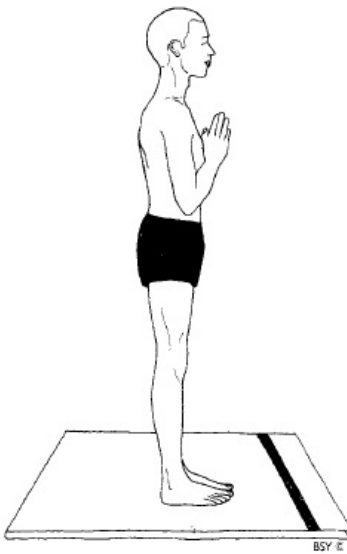
liberation. In the twelfth position, *Praṇamāsana*, we pray that this pathway may be revealed to us.

As an alternative to the twelve names of the Sun, there is a series of *Bīja* Mantras, or seed syllables. The Bija Mantras are evocative sounds that have no literal meaning in themselves, but set up very powerful vibrations of energy within the mind and body.

Each of these Mantras represents key elements in the performance of *Sūryanamaskāra* that has delivered the benefits to performing Sun Salutations as Yogins know today.

Instructions for the twelve postures are given below.

Position One: *Praṇamāsana* (prayer pose)



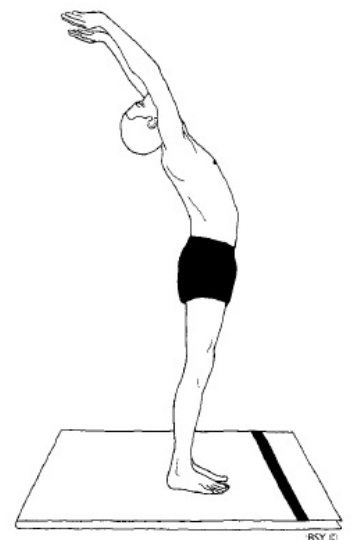
Stand erect with the feet together or slightly apart and close the eyes. Place both palms together in front of the chest (*Namaskāra Mudrā*). Maintain your awareness on the *Mudrā*, the pressure of the palms and the effect of this *Mudrā* on the chest area. Mentally offer homage to the sun, the source of all life. Relax the whole body.

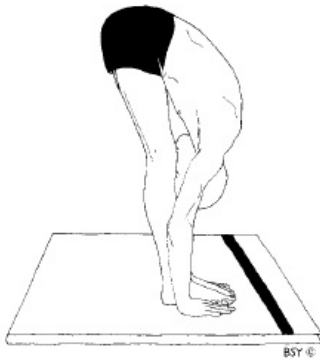
Breathing: Breathe normally.

Position Two: *Hasta Utthānāsana* (raised arms pose)

Raise and stretch both arms above the head, with palms facing upwards. Keep the arms separated, shoulder width apart. Arch the backs and stretch the whole body. Stretch the head as far back as is comfortably possible and be aware of the curve of the upper back.

Breathing: Inhale while raising the arms.





Position Three: *Pādahastāsana* (hand to foot pose)

In a continuous movement bend forward from the hips. Bring the hands to the floor on either side of the feet and try to touch the knees with the forehead. Do not strain. The legs should remain straight. Try to keep the back straight, (using your awareness at the pelvis, the pivoting point for the stretch of the back and leg muscles).

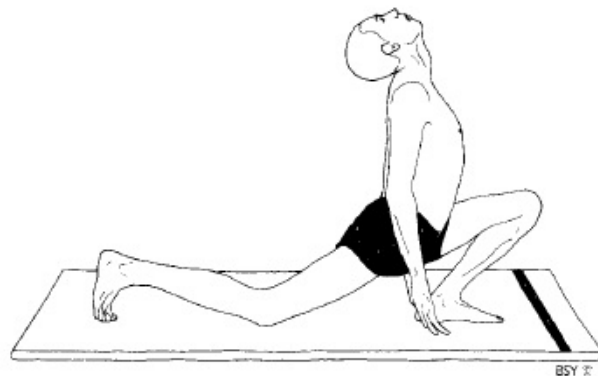
Breathing: Exhale while bending forward. Try to contract the abdomen in the final position to expel the maximum amount of air from the lungs.

Contra-indications: People with back conditions should not bend forward fully. Bend from the hips, keeping the spine straight, until the back forms a ninety degree angle with the legs, or bend only as far as is comfortable.

Position Four: *Aśva sañcālanāsana* (equestrian pose)

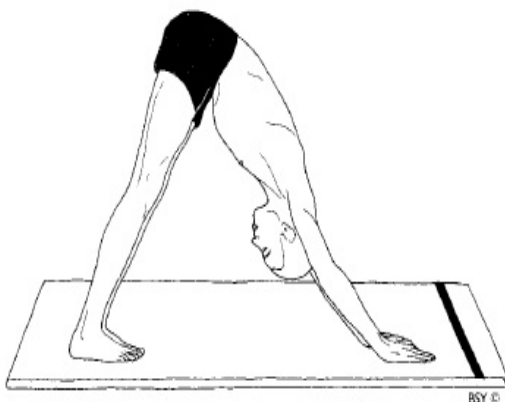
Keeping both hands in place, on either side of the feet, bend the left knee while extending the right leg backwards as far as possible. The right toes are tucked under and the knee is touching the floor. Bring the pelvis forward, arch the spine and look up. The fingertips touch the floor and balance the body. Focus your awareness at the eyebrow centre. You should feel the stretch from the thigh moving upward along the front of the body all the way the eyebrow centre.

Breathing: Inhale while bringing the chest forward and up and stretching the right leg back.



to

Position Five: *Parvatāsana* (mountain pose)



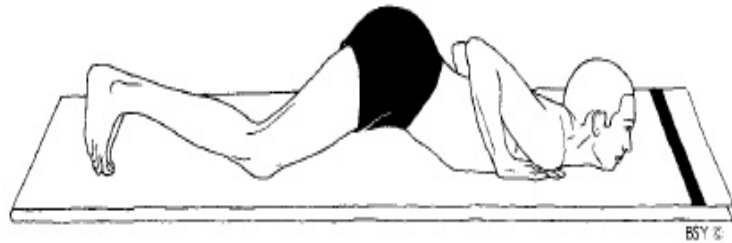
Bring the palms to the floor. Take the left foot back and place it beside the right. Simultaneously raise the buttocks and lower the head between the arms, so that the body forms a triangle with the floor. The

legs and arm should be straight in the final position. Aim to press the heels down to the floor but do not strain. Bend the head as far forward as possible so that the eyes are looking at the knees. Focus your awareness at the neck area.

Breathing: Exhale while taking the left leg back.

Position Six: *Aṣṭāṅga Namaskāra* (salute with eight parts or points)

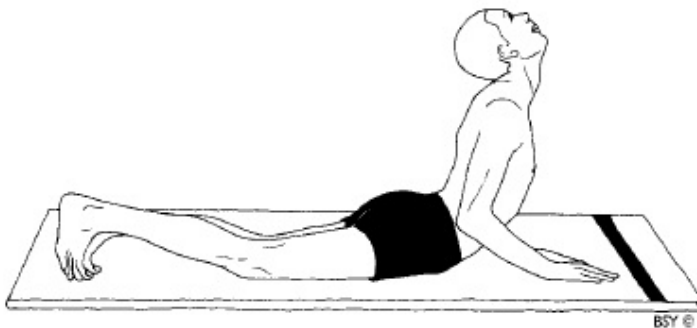
Lower the knees to the floor and then bring the chest and chin to the floor, keeping the buttocks elevated. The hands, chin, chest, knees and toes touch the floor and the spine is arched. Focus the awareness at the centre of the body or on the back muscles.



Breathing: The breath is held outside in this pose. There is no respiration.

Position Seven *Bhujāṅgāsana* (cobra pose)

Lower the hips while pushing the chest forward and upward with the arms. Straightening the



elbows, arch the back and push the chest forward into the cobra pose. The legs and lower abdomen remain on the floor and the arms support the trunk. Unless the spine is very flexible the arms will remain

slightly bent. Focus the awareness at the base of the spine feeling the tension from the forward pull.

Breathing: Inhale while raising the torso and arching the back.

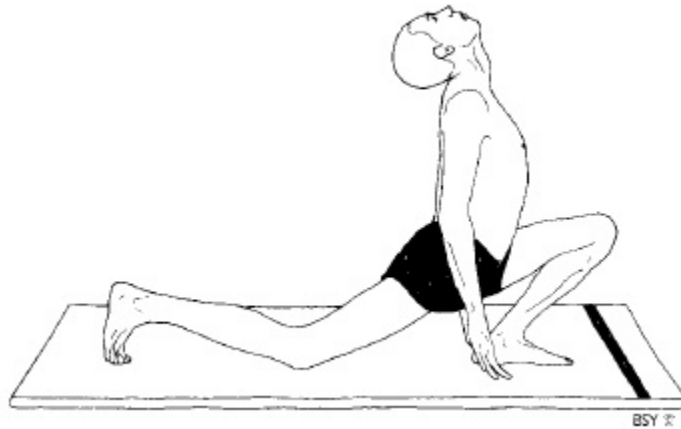
Position Eight: *Parvatāsana* (mountain pose)

This stage is a repeat of position 5. Keep the arms and legs straight. While pivoting from the shoulders raise the buttocks and bring the head down to reassume position 5. The hands and feet do not move from position 7. Raise the buttocks and lower the heels to the floor.

Breathing: Exhale while raising the buttocks.

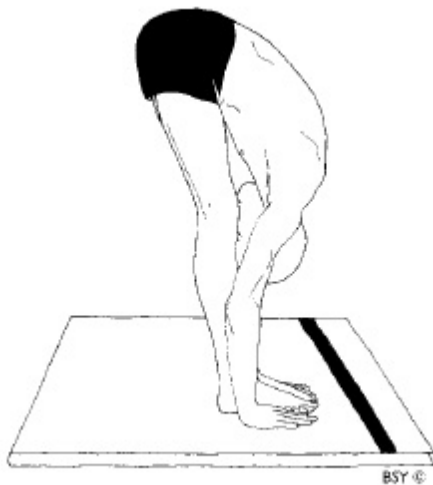
Position Nine: *Aśva Sañcālanāsana* (equestrian pose)

This stage is a repeat of position four. Bring the left leg forward, placing the foot between the hands. Simultaneously bring the right knee down to the floor and push the pelvis forward. Arch the spine and look up to reassume position four.



Breathing: Inhale while assuming the pose.

Position Ten: *Pādahastāsana* (hand to foot pose)

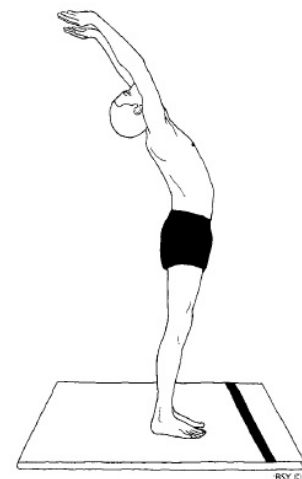


This stage is a repeat of position three. Bring the right foot in beside the left. Straightening the legs, bend forward and raise the buttocks while bringing the head in towards the knees. The hands remain on the floor beside the feet. This is the same as position Three.

Breathing: Exhale while performing the movement.

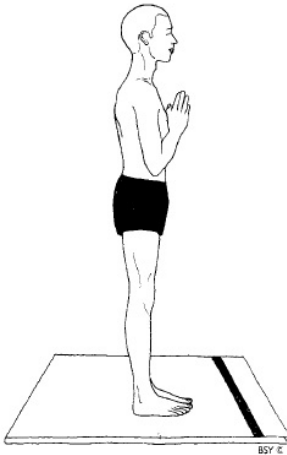
Position Eleven: *Hasta Utthānāsana* (raised arms pose)

This stage is a repeat of position two. Bend from the hips, raise the torso and stretch the arms above the head. Arch backwards to reassume position two.



Breathing: Inhale while raising the torso and arms.

Position Twelve: *Praṇamāsana* (prayer pose)



This stage is a repeat of position one. Straighten the body and bring the hands together in front of the chest, reassuming position one.

Breathing: Exhale while assuming the final position.

Practice note: Positions one-twelve constitute half a round of *sūryanamaskāra*. To complete the other half the same movements are performed, the only variation being that the left leg is brought back in position four, and the right leg is moved forward in position nine. So, one full round consists of twenty four movements, two sets of twelve, giving a balance to each side of the body in each half round. When position twelve is completed, lower the hands to the side, and then commence the second half of the round. One full round consists of twenty four *Āsanas*. In an ideal situation these should be performed in a continuous unbroken flow and, except for *Aṣṭāṅga Namaskāra*, each *Āsana* should change with each breath. Of course, if you tire within the round, rest after twelve postures by taking a full breath before commencing the second half. Breathe normally for a few moments if you need to. The same applies to each individual asana and between rounds. Use the time to reorientate your awareness and posture. Ask yourself, how do I feel? Then adjust yourself so that you are comfortable, ensuring that the breath is slow and relaxed before you go on.

2.1.7. Benefits and Limitation

Sūryanamaskāra provides all of the key health benefits of Yoga in a very succinct package. It is a holistic exercise that provides physical health benefits, but also mental or emotional as well as spiritual benefits. The obvious advantage of *Sūryanamaskāra* is the workout it provides for the muscles, but it also benefits joints, ligaments and the skeletal system by improving posture, flexibility and balance. (TheresaAnn)

It stimulates and tones Endocrine system (especially the Thyroid, the master gland that controls all the other glands). It tones up the internal abdominal organs by alternate stretching, compression cycles that results in better digestion and bowel movement. It increases spine and waist flexibility. Stretches and tones your muscles keeping them supple and flexible. Pose 1 (and 12): Promotes balance, stimulates the respiratory system, exercises shoulder, back and neck muscles. Pose 2 (and 11): Promotes balance, promotes digestion, exercises arms and shoulder muscles, tones the spine, promotes flexibility in back and hips. Pose 3 (and 10): Promotes blood circulation, tones abdominal tracts, stretches back and leg muscles, stimulates spinal nerves, stimulates lymphatic system. Pose 4 (and 9): Exercises spine strengthens hand and wrist muscles. Pose 5 (and 8): Stimulates blood circulation, strengthens the heart, strengthens wrist and arm muscles, and relieves neck and shoulder tension. Pose 6: Strengthens leg and arm muscles, increases flexibility in neck and shoulders, stretches arms, shoulder, neck and back muscles, exercises back muscles, releases tension in neck and shoulder. Pose 7: Stimulates circulation to abdominal organs, tones digestive tract, stretches upper and lower body, promotes flexibility in the back, and stimulates nerves in spine. The obvious advantage of *Sūryanamaskāra* is the workout it provides for the muscles, but it also benefits joints, ligaments and the skeletal system by improving posture, flexibility and balance.

This is especially good in the morning after many hours of lack of movement during sleep (the lymphatic system eliminates toxins through movement). It reduces depression, anxiety and stress by reducing key markers like Cortisol and increases the quantity of “good mood” neurotransmitters like Serotonin. It clears elimination channels helping body rid it of toxins.

It increases mind to body coordination which is very good especially for older persons. The joints can be kept supple with regular practice and by a toxin-free diet, which is preferably vegetarian. Reduction of salt intake also helps. For those with extremely stiff bodies, the *Pavanamuktāsana* series of exercises is recommended as a preparation for *Sūryanamaskāra*. In addition to these physical benefits, *Sūryanamaskāra* practice stimulates and conditions virtually every system in the body. It is good for the heart and stimulates the cardiovascular system. It oxygenates the blood and helps strengthen the heart. *Sūryanamaskāra* is good for the digestive system and the nervous system. It stimulates the lymphatic system and supports respiratory system health, as well. These include the thyroid, parathyroid and pituitary glands as well as the adrenal gland, testes and ovaries. Increased blood oxygenation by copious lung ventilation. *Sūryanamaskāra* is an alternative to caffeine and other stimulants. If suffer from insomnia or sleep disturbances, find practicing *Sūryanamaskāra* aids in helping fall asleep without the need for depressants. A good compromise is Interval Training that consists of hard alternated with light pace cardio exercise. And this is exactly where Sun Salutation comes in. It is similar with Interval Training by combining a low impact resistance training (push-ups, squats) with cardio exercise. Even better, the benefits of Sun Salutation do not stop at the physical level, mind benefits as well. With regular practice, *Sūryanamaskāra* is good way to manage stress and alleviate depression. One will expend a tremendous amount of energy as one move through the two sets of poses. *Sūryanamaskāra* teaches to concentrate, and learning to achieve the poses is incredibly gratifying. During pregnancy, *Sūryanamaskāra* can be practiced until the beginning of the twelfth week. Following childbirth, it may be gradually recommenced for retoning of the uterine muscles, approximately forty days after delivery.

The mental benefits of Sun Salutation are similar with meditation. It is not random that Tai-Chi (Chinese) or Kata in Karate, have a similar focussed mind on movement approach at the core of their practice. The most important point to keep in mind, however, is not to strain. *Sūryanamaskāra* teaches us to tune in to our own capabilities and limitations. With time and practice will find these limitations receding. By developing sensitivity to the body, one can use

Sūryanamaskāra to greatly increase the awareness, health and well-being. Over time, *Sūryanamaskāra* will help you achieve a sense of well-being and purpose. It is a spiritually uplifting exercise and promotes a keen awareness of the interconnectedness of your body, mind and breath. *Sūryanamaskāra* will provide health benefits for individuals regardless of their level of interest in its spiritual benefits. Whether you consider it of spiritual benefit or not, learning the poses and practicing them regularly is incredibly gratifying and humbling. *Sūryanamaskāra* will provide health benefits for individuals regardless of their level of interest in its spiritual benefits. Whether you consider it of spiritual benefit or not, learning the poses and practicing them regularly is incredibly gratifying and humbling. (Constantine George)

Limitations/ Contraindications:

There is no limitation as far as age is concerned. *Sūryanamaskāra* can be practised beneficially throughout all stages of growth, maturity and old age. However, elderly people are advised to avoid over-exertion. As rule children less than eight years of age usually do not need *Sūryanamaskāra* even though they may be quite capable of performing it.

Sūryanamaskāra should not be practiced by people with high blood pressure, coronary artery disease or those who have had a stroke, as it may over stimulate or damage a weak heart or blood vessel system. Nor should it be practiced in cases of hernia or intestinal tuberculosis. People with spinal problems should consult a medical expert before commencing *Sūryanamaskāra*. Many spinal problems can be alleviated through this practice. However, conditions such as slipped disc and sciatica may be aggravated by *Sūryanamaskāra* and a special program of other Yoga *Āsanas* would be more beneficial. During menstruation women can continue to practice *Sūryanamaskāra* However, as a precaution it may be sensible to avoid this practice during a heavy or painful period.

2.1.7.1 Effects of *Sūryanamaskāra* in minimum muscular fitness

It is important to remember that *Sūryanamaskāra* does not seek to develop hypertrophied, overdeveloped muscles. Rather it is designed to stretch tone and realign the musculoskeletal structures, slowly reinforcing better posture and health and reintegrating better total body function through this realignment. One must see one's muscles in perspective, in harmonious interrelationship with the other body organs.

Each muscle is composed of a number of fibres and each fibre is composed of sliding segments which fit into one another in much the same way as a slide rule or sliding door. There is a certain alignment of fibres which allows optimal efficiency. If the resting position is moved in either direction from the optimum alignment, the force each fibre can contribute to the whole muscle is diminished. Strength is not so much a function of muscle bulk; it is more a consequence of the consolidation and concerted, coordinated effort of the individual fibres within the muscle. If there is excessive tension, the muscle fibres do not lengthen enough and strength is then a function of the number of fibres rather than coordination. This is usually the situation with body builders. If the fibres of the muscle are too long they may not function at all.

Sūryanamaskāra provides all of the key health benefits of Yoga in a very succinct package. It is a holistic exercise that provides physical health benefits, but also mental or emotional as well as spiritual benefits. The obvious advantage of *Sūryanamaskāra* is the workout it provides for the muscles, but it also benefits joints, ligaments and the skeletal system by improving posture, flexibility and balance. Holding each posture allows the muscles and tendons time to stretch a little. Once the tendons have been stretched they will remain that way and maintain a degree of suppleness in the body. Resistance Training on the other hand, has multiple benefits: increases muscle mass hence more fat burning capability, increases bone density to mention just a few.

2.1.8. Summary and Conclusion

SUMMARY

Sūryanamaskāra is not only a sequence of physical exercises but also a mode of prayer and meditation. Its ancient Hindu mystic association with good health and a sound mind was not without reasons *Sūryanamaskāra* is a combined process of Yoga *Āsana* and *Prāṇāyāma*, (Yogic postures and regulated breathing). Before students take up the practice of more complicated and difficult Yogic postures and exercises in *Prāṇāyāma*, the spine and body muscles should acquire some flexibility. This exercise of *Sūryanamaskāra* reduces abdominal fat, brings flexibility to the spine and limbs, and also increases the breathing capacity.

Sūryanamaskāra is a well known and vital technique within the Yogic repertoire, its versatility and application make it one of the most useful methods to induce a healthy, vigorous, active life and at the same time prepare for spiritual awakening and the resultant expansion of awareness.

CONCLUSIONS

Sūryanamaskāra is a practice of body to increase mental focus and concentration

Sūryanamaskāra is a preparatory practice to attain the supreme consciousness. Regular practice of *Sūryanamaskāra* develops good stamina by strengthening the muscles and it makes whole body flexible. *Sūryanamaskāra* is of great therapeutic use. Practice of *Sūryanamaskāra* can have repercussions on our whole lifestyle and attitude to life.

2.2 LITERATURE REVIEW

Seventy boarding students from the local high school were tested for their fitness by Kraus-Weber test. Ten students (14.3%) failed. The ranges of their age height and weight were: randomly divided into an experimental group of 4 and control group of 5. Yoga exercise were administered to the experimental groups were again administered the Kraus Weber Tests, Suggesting some utility of Yoga exercises in improving the status of these failures. Further investigation with a large sample is needed to confirm the results of this pilot study (Gharote ML, 1976).

Garrote (2000) found that 20.8 per cent boys failed in their minimum muscular fitness the tests. Multiple failures were 4.8 percent while flexibility failures alone were 11.6 percent. Boys at the age of 15 years failed more in flexibility test. Boys at the age of 10 years had the maximum percentage of failures to the extent of 38.5. Hence, this suggested that Inclusion of Yogasanas in the programme of physical activities to be implemented for their improvement of the status of the failures.

As an aerobic exercise *Sūryanamaskāra* (SN) seemed to be ideal as it involves both static stretching and slow dynamic component of exercise with optimal stress on the cardiorespiratory system (Sinha, Ray, Pathak, Selvamurthy, 2004).

Recent studies on SN showed improvement in pulmonary function, respiratory pressures, hand grip strength and endurance, and resting cardiovascular parameters. The different mode of SN training when performed in a slow and fast manner reveal that the effects of FSN are similar to physical aerobic exercises, whereas the effects of SSN are similar to those of yoga training (Bhavanani, Udupa, Madanmohan, Ravindra, 2011).

The longitudinal prospective randomized control study was aimed to assess flexibility, attention and concentration in students after the intensive practice of *Sūryanamaskāra* as compared to physical exercise. Normal healthy (82) school children (male) 12-16 years (13.21 ± 1.07) from Vivekananda International Public School in Bangalore were randomly assigned into two groups YOGA and CONTROL after signing informed consent. The inclusion criteria were age, sex and health. They were taught *Sūryanamaskāra* (SN) and Physical exercises (PE) respectively. Sit-and-reach (SAR) and goniometry tests for spinal flexibility and six letter cancellation test (SLC) for attention & concentration were administered to both the groups before and after twenty eight days. Result showed that data was normally distributed ($p > 0.05$) and baseline was matched ($p > 0.05$). Paired 't' test (two tailed) showed that there was a significant change between pre and post values in both the groups (Yoga, $p < 0.001$ and

Physical exercise $p < 0.001$) on all the variables in both the groups. There is a significant change between the groups ($p < 0.001$) in SLCT, SAR and Goniometry (forward & backward). In summary this study has shown that *Sūryanamaskāra* practiced for 30 minutes daily improves spinal flexibility & attention & concentration better than PE in students of 12 – 16 years of age (Daspute, Rakesh J 2006).

This longitudinal prospective randomized control study was aimed to assess the awareness and alertness in students after the intensive practice of *Sūryanamaskāra* as compared to physical exercise by using Visual reaction time test (VRT). Normal healthy (81) school children 12-16 years (13.32 ± 1.00) were randomly assigned into two groups YOGA and CONTROL. They were taught *Sūryanamaskāra* and Physical exercises respectively. Visual Reaction time was measured to assess awareness and alertness which was administered to children in both the groups before and after twenty eight days. The data were normally distributed (Kolmogorova Smirnov) and baselines were matched. Repeated Measure ANOVA showed that within the groups the results were significant for the SN group. But between the groups it showed no-significance. With the (mean of 5 attempts of each) VRT for red, yellow and green light the results showed similar trends. As conclusion this study shows that *Sūryanamaskāra* and physical exercise is very much beneficial in improving awareness as well as alertness (Tharangini V 2007).

CHAPTER 3: AIM AND OBJECTIVES

3.1 AIM

To study the effect of *Sūryanamaskāra* on fitness.

3.2 OBJECTIVES

To measure the minimum muscular fitness before and after *Sūryanamaskāra*.

3.3 HYPOTHESIS

The Kraus – Weber Fitness test indicate by flexibility and strength would increase after following *Sūryanamaskāra*.

3.4 NULL HYPOTHESIS

The Kraus – Weber Fitness test indicate by flexibility and strength would not increase after the effect of *Sūryanamaskāra*.

CHAPTER: 4 METHODS

4.1 Sample Size

The sample size of the present study was 403 students (boys and girls).

4.1.2 Sources of the subjects

This study was conducted in Kerala, the participants were selected from Three Govt School Vazamuttam, Kovalam, Vattiyoorkavu.

4.1.3 Inclusion Criteria

Age groups were between 9 to 12 years boys and girls students.

The student of different grade 5th, 6th, 7th and 8th standard students.

Free from acute and chronic injury.

4.1.4 Exclusion Criteria

Unhealthy student

Those who were involved in sports and athletic activities.

4.1.5 Ethical Consideration:

They were explained about study in details and then consent forms were obtained from school principal and parent/guardians.

4.2 DESIGNED

This was a pre-post design. The baseline assessment was taken on day one for all the participant and they underwent 15 days of *Sūryanamaskāra* (Sun Salutation) program twelve rounds per day. At the end of 15 days post assessment were taken.

4.3 ASSEMENTS

PRE	Sūryanamaskāra (15 days)	POST
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Kraus- Weber Fitness Test used to assessed before and after 15 days of training *Sūryanamaskāra*

INSTRUMENTS

Kraus- Weber Fitness test is a direct evaluation of fitness is by strength test. Which in a general way to measure the relationship between performance, condition and strength.

The Kraus- Weber (K-W) Test of Minimum Muscular Fitness has six components. This test measures several large muscles groups for flexibility and strength. The higher the degree of test rating the greater presumably is the muscular function of the body as a whole.

The Kraus- Weber Test is done as follows:

Kraus – Weber Test. 1. With his feet held on the ground by the examiner, the subject lies flat on his back with his hands behind the neck. Perform one sit-up.

Kraus – Weber Test. 2. The subject lies flat on his back with his hands behind his neck. The legs straight are lifted 10 inches off the floor. Hold this position for 10 seconds.

Kraus – Weber Test. 3. The subject in the same position except that his knee are bend with his ankle close to the buttocks. Perform one sit-up.

Kraus – Weber Test. 4. The subjects lie on his stomach with pillow under his lower abdomen and groin. The examiner holds his feet down. Lift head, shoulders and chest off the floor and holds for 10 seconds.

Kraus – Weber Test. 5. The subjects position is the same, but the examiner holds the chest down. With knee straight, lift legs off flower and holds for 10 seconds.

Kraus – Weber Test. 6. The subject hands erect, before footed and with the feet together, The examiner holds the knee straight. Bend over slowly and touch the floor with the fingertips. Holds this position for 3 seconds (Garrote, 1976)

4.4 INTERVENTION

4.4.1 Sūryanamaskāra

1. Each participants asked to sit in crossed leg posture back, spine and neck erect in one line, beginning with chanting of three Omkaras and prayer.

Sūryanamaskāra. Coming to the standing position *tadasana* and going for *Sūryanamaskāra* 10 count practice.

Supine Rest. Coming back to the lying position on the back and going for relaxation for 5 minutes.
Closing prayer

Data Extraction:- Each of the test is a 'pass' or 'fail' test If participant 'fail' in any one out of 6 test then participant recorded as fail in the Karus – Weber test. Pass in Karus –Weher test only when participant successfully pass in the entire 6 tests.

Data analysis: Data were analysed using SPSS Version 10. Data were in nominal type. Hence Chi – Square Test was used.

CHAPTER 5: RESULTS

5.1 DEMOGRAPHIC TABLE

The mean age of the group 10.5±1.29 years.

Table: 1 Number of student failure and success in Kraus Weber Test in whole group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	352 (87.34%)	51 (12.66%)	403 100%	$\chi^2 = 138.73$ P< 0.001
POST	196 (48.64%)	207 (51.36%)	403 100%	

Person Chi – Square test (P= 0.001, $\chi^2 = 138.73$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 1 Changes in successes rate.

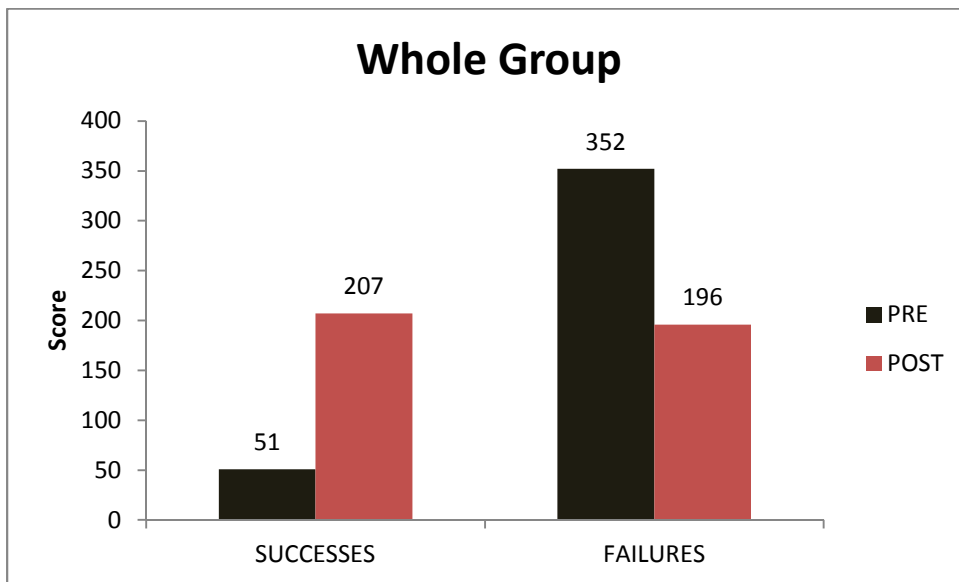


Table 2: Number of student failure and success in Kraus Weber Test in Male group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	192 (88.48%)	25 (11.52%)	217 100%	$\chi^2 = 85.41$ P< 0.001
POST	102 (47.00%)	115 (53.00%)	217 100%	

Person Chi – Square test (P= 0.001, $\chi^2 = 85.41$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 2 Changes in successes rate.



Table: 2 Number of student failure and success in Kraus Weber Test in female group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	160 (86.02%)	26 (13.98%)	186 100%	$\chi^2 = 54.06$ P < 0.001
POST	94 (50.54%)	92 (49.46%)	186 100%	

Person Chi – Square test (P= 0.001, $\chi^2 = 54.06$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 3 Changes in successes rate.

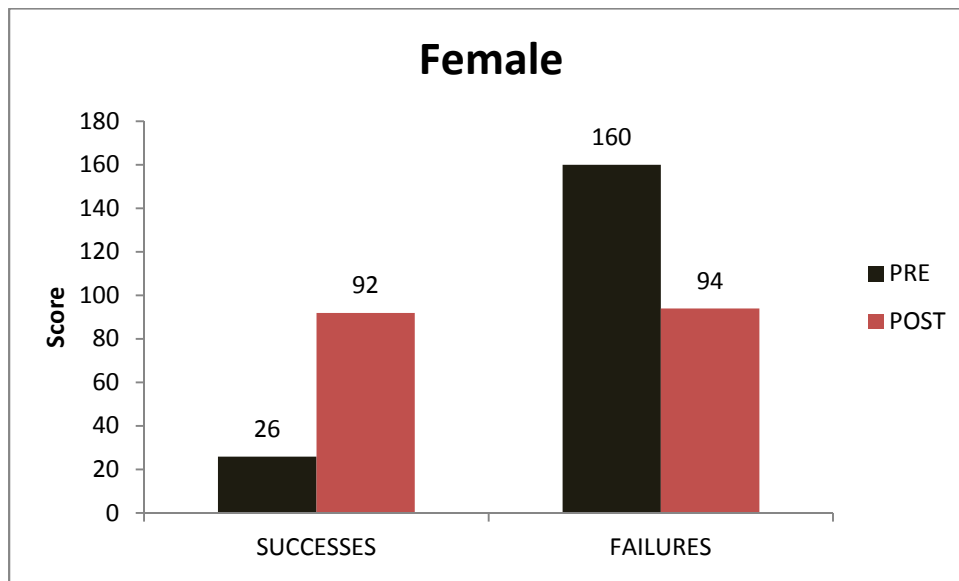


Table: 3 Number of student failure and success in Kraus Weber Test in 9 years group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	62 (87.32%)	9 (12.68%)	71 100%	$\chi^2 = 18.14$ P < 0.001
POST	39 (54.93%)	32 (45.07%)	71 100%	

Person Chi – Square test (P= 0.001, $\chi^2 = 18.14$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 4 Changes in successes rate.

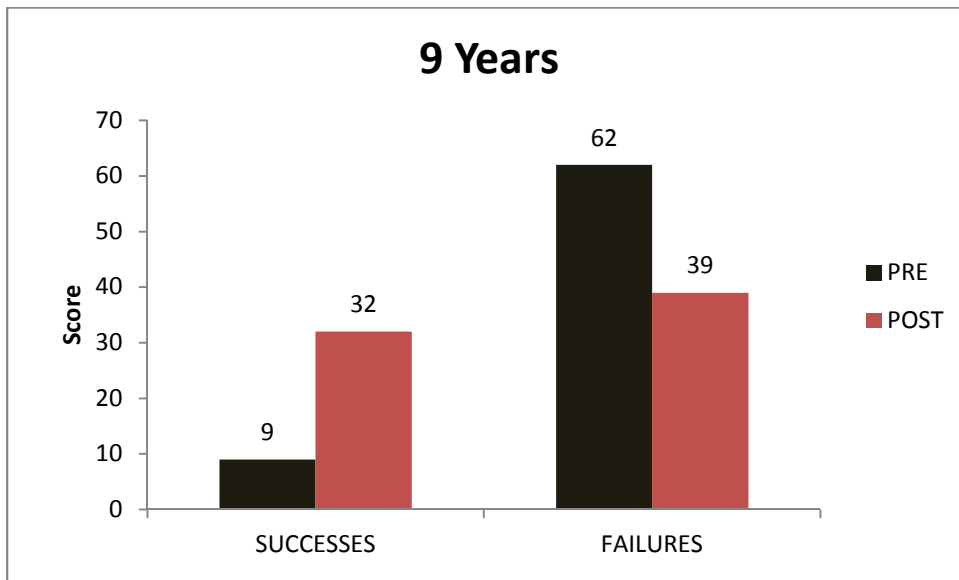


Table: 4 Number of student failure and success in Kraus Weber Test in 10 years group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	97 (86.61%)	15 (13.39%)	112 100%	$\chi^2 = 36.10$ P < 0.001
POST	55 (49.11%)	57 (50.89%)	112 100%	

Person Chi – Square test (P= 0.001, $\chi^2 = 36.10$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 5 Changes in successes rate.

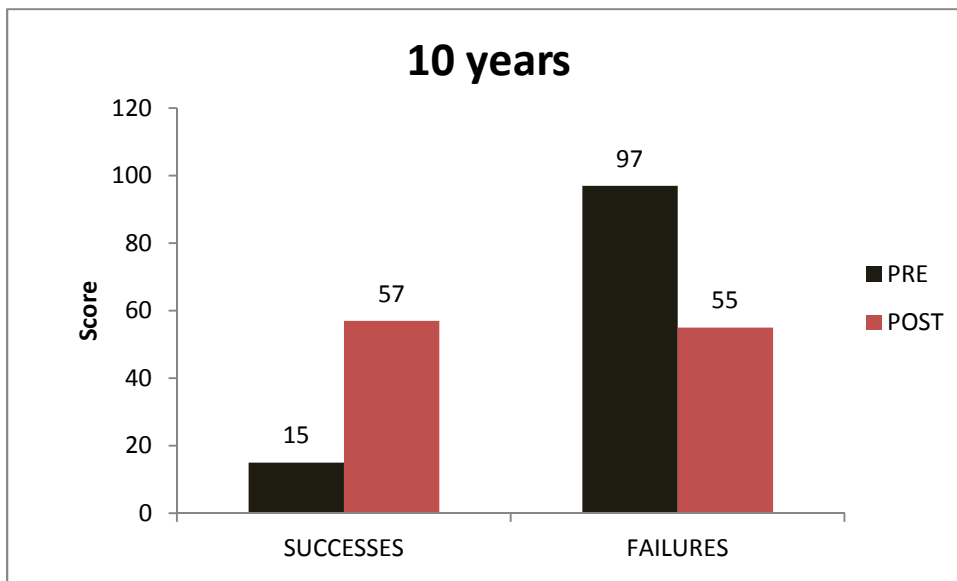


Table 5: Number of student failure and success in Kraus Weber Test in 11 years group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	81 (84.38%)	15 (15.63%)	96 100%	$\chi^2 = 31.38$ P< 0.001
POST	44 (45.83%)	52 (54.17%)	96 100%	

Person Chi – Square test (P= 0.001, $\chi^2 = 31.38$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 6 Changes in successes rate.

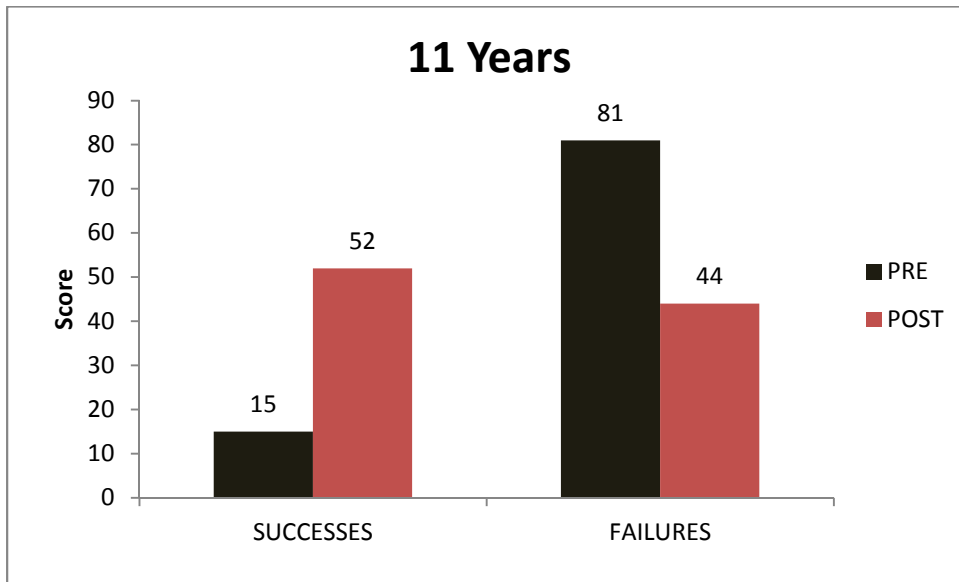
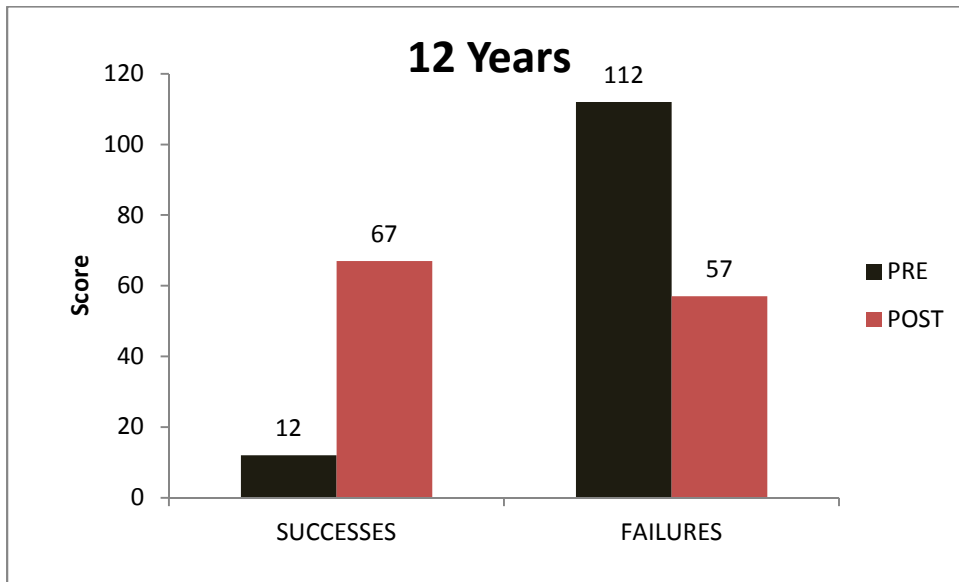


Table 6: Number of student failure and success in Kraus Weber Test in 12 years group

Group	KRAUS WEBER TEST		Total	Chi – Square test
	Failures	Successes		
PRE	112 (90.32%)	12 (9.68%)	124 100%	$\chi^2 = 56.19$ P < 0.001
POST	57 (45.97%)	67 (54.03%)	124 100%	

Person Chi – Square test (P= 0.021, $\chi^2 = 56.19$) showed that yoga practices are effective in Kraus – Waver Test.

Figure: 7 Changes in successes rate.



CHAPTER 6: DISCUSSION

The present study found there was significance improvement successes rate after *Sūryanamaskāra* yoga group. Similarly, Yoga exercises were found to be improving the status of failures in Kraus Weber Tests (Garrote, 1976). The previous study Garrote (2000) suggested that the failure in minimum muscular fitness can be enhance by yoga training. This prediction was support with our finding.

The strength of abdominal, psoas, back muscles and flexibility of back and hamstring muscle were tensed in Kraus Weber Test (Kraus, & Hirschland, 1954). Hence, flexibility and strength are two then main components of this test. Previously yoga demonstrated improvement in flexibility (Ray, Hedge & Selvamrthy, 2001) muscles strength (Madanmohan, Mahadevan, Balakrishnan, Gopalakrishnan & Prakash, 2008), muscle endurance (Bera & Rajapurkar, 1993) test.

Recent study showed positive benefits as of pulmonary function, respiratory pressures, hand grip strength and endurance, and resting cardiovascular parameters (Bhavani AB, Udupa K, Madanmohan, and Ravindra P.2011). Recent study on *Sūryanamaskāra* found significant improvement in Hand grip strength, Practice is consisted of 10 yoga postures were performed one after other. The continuous flows of yoga posture are also done with breathing associated with the movements. The isometric and isotonic muscles contractions are the part of *Sūryanamaskāra* practice which may be contributed for strengthen muscle. Hatha yoga practices showed reduction in EMG amplitude build up. This result indicated that yoga improves muscle endurance and delay fatigue (Ray, Hegde Selvamurthy, 1986).

By these backgrounds we have conducted the current experiment which showed significant changes in whole groups.

CHAPTER 7: SUMMARY AND CONCLUSIONS

Sūryanamaskāra is a holistic exercise that provides physical health, mental, emotional and spiritual benefits. The obvious advantage of *Sūryanamaskāra* is the workout which provides benefits for the muscles, joints, ligaments.

Fitness test and the data were analyzed by chi- square Test showed significant changes in minimum muscular fitness in all the groups. The discussion section showed that Whole group: have shown the minimum muscular fitness in school children Person Chi – Square test ($P= 0.001$, $\chi^2 = 138.73$, $P< 0.001$). The numbers of children were 403 out of which 217 subjects were boys and 186 were girls. The subjects are selected by criteria of inclusion and exclusion. Pre and post were assessed by Kraus – Weber

This analysis allows us to draw our conclusions:

- This study showed beneficial effects of short term (15 days) regular *Sūryanamaskāra* on minimum muscular fitness in school children. The subjects were assessed their muscular fitness as a whole group which has been showed improvement in their muscular fitness the result was (Person Chi – Square test ($P= 0.001$, $\chi^2 = 138.73$, $P< 0.001$))
- Among the whole group 217 boys and 186 girls have participated in the study. Since both the groups have showed significant changes in their muscular fitness ($P= 0.001$, $\chi^2 = 85.41$, ($P= 0.001$, $\chi^2 = 54.06$, $P< 0.001$)).
- It has shown the effect of *Sūryanamaskāra* among children the ages have noticed. In 9years old children showed ($P= 0.001$, $\chi^2 = 18.14$, $P< 0.001$) significant changes.
- In fact the changes with 10years old group also been shown the changes Person Chi – Square test was ($P= 0.001$, $\chi^2 = 36.10$, $P< 0.001$).
- Tendency of similar changes also were noticed in the age range of 11 and 12 years old children the changes reported as follows ($P= 0.001$, $\chi^2 = 31.38$), ($P= 0.001$, $\chi^2 = 56.19$, $P< 0.001$).
- This study suggests that the qualitative evaluation of fitness test on healthy school children which are easy to administer to screen the minimum fitness.

7.1. STRENGTH OF THE STUDY

Large number of sample size.

7.2. LIMITATIONS OF THE STUDY

Limited to one area of government school.

Limited only 9 to 12 age range group.

7.3 APPLICATION OF THE STUDY

To diagnose children health in urban school set up.

This was a qualitative evaluation of fitness test on healthy school children which is easy to administer to screen the minimum fitness.

7.4 SUGGESTIONS FOR FUTURE

Study duration increased

Randomized control trial to be study

Sūryanamaskāra with other Yoga technique should be included.

REFERENCES

- Bera, T. K., Gore, M. M. & Oak, J. P. (1998). Recovery from stress in two different postures and in Shavasana- a yogic relaxation posture. *Indian Journal of Physiology Pharmacology*, 42(4), 473-478.
- Bera, T.K., & Rajapurkar, M.V, (1993). Body composition, cardiovascular endurance and anaerobic power of yogic practitioner. *Indian J Physiol Pharmacol*, 37(3):225-238.
- Berger, D.L., Silver, E.J., & Stein, R.E. (2009) Effects of yoga on inner-city children's wellbeing: a pilot study. *Altern Ther Health Med*, 15: 36-42.
- Bhavanani, A.B., Udupa, K., Madanmohan, & Ravindra, P. A., (2011) comparative study of slow and fast suryanamaskar on physiological function. *Int J Yoga*, 4(2):71-6.
- Bhavanani, A.B., Udupa, K., Madanmohan, & Ravindra, P. A., (2011).Comparative study of slow and fast suryanamaskar on physiological function. *Int J Yoga*, 4(2):71-6.
- Constantine George, <http://www.better-mind.com/sun-salutation-benefits>. *Indian Express*,04-09-2010. Destination Delhi
- Coulter, H. D. PA. (1939), *Anatomy of Hatha Yoga: A Manual for Students, Teachers and Practitioners*, Body and Breath Publisher
- Daspute, R.J. (2006). A comparative study of surya namaskara and physical exercise on flexibility, attention and concentration in adolescents. Dissertation, MSc, Swami Vivekananda Yoga University.
- Dekkers, J.C., Podolsky, R.H., Treiber, F.A., Barbeau, P., Gutin, B. & Snieder, H. (2004). Development of general and central obesity from childhood into early adulthood in African American and European American males and females with a family history of cardiovascular disease. *Am J Clin Nutr*,79:661-8
- Geneva, WHO. (2002).Global report. Innovative care for chronic conditions: building blocks for action.
- Gharote, M. M. (2000). Minimum muscular fitness in school children. *Indian Journal of Physiology Pharmacology*, 44(4), 479-484.
- Gharote, M. M. (2000). Minimum muscular fitness in school children. *Indian Journal of Physiology Pharmacology*, 44(4), 479-484.
- Gharote, M.L (1976).Effect of yoga exercise on failure on the Kraus Weber tests (Perceptual and Motor skills, 43,654.
- Gharote, M.L. (1976).Effect of yoga exercises on failures on the Kraus Weber tests perceptual and motor skills, 43,654.

- Gore, M. M.(1984) Anatomy and physiology of Yogic Practices. Kaivalyadhama: Kanchan Prakashan.
- Hulsmann, M., Quittan, M., Berger, R.,Crevenna, R., Springer, C.& Nuhr, M. et al.(2004). Muscle strength as a predictor of long-term survival in severe congestive heart failure. Eur J Heart Fail,6:101-7.
- Madanmohan, Mahadevan, S.K., Balakrishnan, S., Gopalakrishnan, M., & Prakash, E.S., (2008). Effect of six weeks yoga training on weight loss following step test, respiratory pressures, handgrip strength and handgrip endurance in young healthy subjects. Indian J Physiol Pharmacol, 52(2):164-170.
- Munshiram Manoharlal, V. R. B. S. (1996) The Gheranda Samhita. Chandra, Publishers Pvt. Ltd.
- Myers, J., Prakash, M., Froelicher, V., Do, D., Partington, S., & Atwood, J.E. (2002). Exercise capacity and mortality among men referred for exercise testing. N Engl J Med, 346: 793–801.
- Nagarathna, R. & Nagendra, H. R., (2008) Integrated Approach of Yoga Therapy for Positive Health. Bangalore: Vivekananda Yoga Prakashan
- Niranjananada, S. Swami. Munger(1993) Yoga Darshan. Yoga Publication Trust.
- Paul, G., Elam, B., & Verhulst, S.J. (2007). A longitudinal study of students' perceptions of using deep breathing meditation to reduce testing stresses.
- Ray, U.S., Hegde, K.S, & Selvamurthy, W. (1986). Improvement in muscular efficiency as related to a standard task after yogic exercises in middle aged men. Indian J Med Res. Mar, 83:343-8.
- Ray, U.S., Hegde, K.S., & Selvamrthy, W, (1983). Effect of yogic Asana and Physical exercise on body flexibility in middle aged men. Yoga Rev,3(2):75-79
- Samaveda Sandhyavandanam, (Page14), Drahyayana sutram, Samaveda trust, Chennai, Anantaraman.
- Satyananda, S. Swami.(1997) Asana, Pranayama and Mudra Bandha...: Munger: Yoga Publication Trust
- Sinha, B., Ray, U.S., Pathak, A., & Selvamurthy, W. (2004). Energy cost and cardiorespiratory changes during the practice of Surya Namaskar. Indian J Physiol Pharmacol, 48(2):184-190.
- Smith, M. S., & Womack, W. M. (1987). Stress management techniques in childhood and adolescence relaxation training, meditation, hypnosis, and biofeedback: appropriate clinical application. Clin Pediatr (Phila), 26(11), 581-585.
- Swami satyananda saraswathi, Surya namaskara. Yoga Publications Trust, Munger, Bihar, India

- Taimni, I. K., (1961). *The Science of Yoga*. Adyar, The Theosophical Publishing House.
- Taimni, I.K. *The Science Of Yoga*. Wilhelm, Ernst. Graha Sutras, Kala Occult Publishers, p.49.
- Telles, S. & Vempati, R.P. (1999). Yoga based isometric relaxation versus supine rest: a study of oxygen consumption, breath rate and volume and autonomic measures. *Journal of Indian Psychology*, 17(2), 46-52.
- Telles, S., Reddy, S. K. & Nagendra, H., R. (2000). Oxygen consumption and respiration following two yoga relaxation techniques. *Applied Psychophysiology and Biofeedback*, 25(4), 221-227.
- Tharangini, V. (2007). *A Comparative Study of Suryanamaskara and Physical Exercise on Visual Reaction Time in Adolescents*. Dissertation, MSc, Swami Vivekananda Yoga University.
- TheresaAnn, <http://theresaann.hubpages.com/hub/benefits-of-surya-namaskar>.
- Wall, R. B. (2005). Tai Chi and mindfulness-based stress reduction in Boston Public Middle School. *J Peiatr Health Care*. 19(4), 230-237.
- White, L.S. (2009). Yoga for children. *Pediatric nursing*, 35(5): 277-83, 295.

APPENDICES

A1. CONSENT FORM

Dear Parent/Guardians,

We take this opportunity to introduce Mrs. Divya .c .k, a student in the final semester of Master's programe in Yoga at Swami Vivekananda Yoga Anusandhana Samastana (svyasa), Deemed Univertsity, Banglore, India. As part of the research requirements, she will be conducting a study at Ghss Vattiyoorkavu. The programe will be provided to your child from 1 September to 15 September 2011.

THE STUDY: This will be a small research program to assess the effect of *Sūryanamaskāra* on minimum muscular fitness in school children.

CONFIDENTIALITY: Results obtained will be kept confidential. Parents can obtain information about their Childs performance in this study from the researcher.

This information is to encourage your child to attend the programe.

Note: The Yoga program will be conducted within school time. There will be minimum impact on regular classes.

Kindly fill the following information:-

Your child's name.....

Child's date of birth.....

Child's place of Birth.....

Child's time of Birth.....

.....

Name & Signature of the Parent

A2. RAW DATA

Pre data

Sl no	Name	Age	sex	T_1_1	T_2_1	T_3_1	T_4_1	T_5_1	T_6_1	Total Pre
1	Adithya	9	M	0	1	0	0	1	1	3
2	Akshay Sunder	9	M	0	1	0	0	0	0	1
3	Ashwin Pramod	9	M	1	1	0	0	1	1	4
4	Govind.G.S	9	M	1	0	1	0	1	0	3
5	Anandakrshnan	9	M	0	0	0	0	0	0	0
6	Gokul.S	9	M	0	0	1	0	0	0	1
7	Hari Govind B.M	9	M	0	0	0	0	1	0	1
8	Mukndan.U.S	9	M	0	0	0	1	0	0	1
9	Adarsh.H.S	9	M	1	1	1	0	1	1	5
10	Adityan	9	M	1	1	1	0	1	1	5
11	Nandhu	9	M	1	1	1	0	1	1	5
12	Goutham shanker	9	M	1	1	1	1	1	1	6
13	Kannan Babu	9	M	1	1	1	0	1	1	5
14	Niranjan	9	M	1	0	0	0	0	1	2
15	Adityan	9	M	1	1	0	1	1	0	4
16	Advaith	9	M	1	1	1	1	1	0	5
17	Devranjith	9	M	1	1	1	1	1	1	6
18	Vishnu	9	M	1	1	1	1	1	1	6
19	Sidharth	9	M	1	0	0	1	1	0	3
20	Vishnav	9	M	0	1	0	1	1	0	3
21	Adityan	9	M	1	1	1	0	1	1	5
22	Asifali	9	M	1	1	1	0	0	1	4
23	Goutham krishnan	9	M	0	1	0	0	0	0	1
24	Jayakrishnan	9	M	0	0	0	0	0	1	1
25	Nkhil Sandeep	9	M	0	0	0	1	1	1	3
26	Ashik abdul	9	M	1	1	1	1	1	1	6
27	Malavika.A.M	9	F	0	0	0	0	0	1	1
28	Chandana.B.S	9	F	1	0	0	0	0	1	2
29	Devikripa	9	F	1	1	0	0	1	1	4
30	Akhila	9	F	1	1	1	0	1	0	4
31	Rajalakshmi	9	F	1	0	1	0	1	1	4
32	Arathi	9	F	1	1	1	0	1	1	5
33	Gourighosh	9	F	1	1	1	0	1	1	5
34	Nivedhitha	9	F	0	0	0	0	0	0	0
35	Pramitha.P.B	9	F	1	1	1	0	1	0	4
36	Athira.A.S	9	F	0	0	0	0	1	1	2
37	Jannath	9	F	0	1	0	0	1	1	3

38	Sona	9	M	0	0	1	0	1	0	2
39	Abhirami	9	F	0	1	0	0	1	0	2
40	Devika.A.S	9	F	0	0	0	0	1	0	1
41	Geethika.S.S	9	F	0	1	0	0	1	0	2
42	Aradhana	9	F	0	0	1	1	0	0	2
43	Rizwan	10	M	1	1	1	0	1	1	5
44	Balagopal.R	10	M	1	1	0	0	0	1	3
45	Aravind	10	M	1	0	1	0	1	0	3
46	Vishnav	10	M	0	1	0	1	1	0	3
47	Bharath.V.Nair	10	M	1	1	1	0	1	0	4
48	Nikhil	10	M	0	0	0	0	1	0	1
49	Mohit.Nair	10	M	1	1	1	1	1	1	6
50	Akhil	10	M	1	0	1	0	1	0	3
51	Aromal	10	M	1	1	1	0	1	0	4
52	Adithyan.A	10	M	0	0	0	0	0	0	0
53	Govind	10	M	1	0	1	0	1	0	3
54	Ashwin.S	10	M	1	1	0	0	1	1	4
55	Midhun.M	10	M	0	0	0	0	1	0	1
56	Aditya santhosh	10	M	1	1	1	1	1	1	6
57	Aditya.S.K	10	M	1	1	1	1	1	1	6
58	Ganesh	10	M	1	1	1	1	1	0	5
59	Jithesh saji	10	M	0	1	1	0	1	0	3
60	Gowari.B	10	F	0	1	0	0	1	1	3
61	Vismaya	10	F	1	1	1	0	1	1	5
62	Nazreen	10	F	0	0	1	0	1	0	2
63	Shivakami	10	F	1	0	0	0	0	0	1
64	Archa.A.J	10	F	0	0	0	0	1	1	2
65	Akshara	10	F	1	0	1	0	1	1	4
66	Farzana	10	F	1	1	0	0	1	1	4
67	P.Madhubala	10	F	0	1	0	0	1	1	3
68	Pranathy.das	10	F	0	1	1	0	1	1	4
69	Nandana	10	F	1	0	0	0	0	1	2
70	Rathana	10	F	0	1	0	0	0	1	2
71	Arabind	11	M	1	0	0	0	1	0	2
72	Arjun	11	M	0	0	0	0	0	0	0
73	Ananthkrishnan	11	M	0	1	0	0	1	0	2
74	Aditya nair	11	M	1	1	1	0	1	1	5
75	Akshay .H.Nair	11	M	1	1	1	0	1	1	5
76	Aromal.A	11	M	1	1	1	0	1	1	5
77	Rahul.R	11	M	1	1	1	1	1	1	6
78	Mahima mohan	11	F	1	1	1	1	1	0	5

79	Megha	11	F	1	0	1	0	1	0	3
80	Saral	11	F	1	0	1	0	1	0	3
81	Gopika	11	F	1	0	0	0	1	1	3
82	Deepshika	11	F	0	1	0	0	1	1	3
83	Arabhi	11	F	1	1	0	0	1	1	4
84	Aparna.G.P	11	F	1	1	1	0	1	1	5
85	Arva.S.S	11	F	1	1	1	0	1	0	4
86	Athira	11	F	1	0	1	0	1	0	3
87	Greshma	11	F	1	0	0	0	1	0	2
88	Karuna.R	11	F	1	1	1	1	1	1	6
89	Navami.S	11	F	1	1	1	0	1	1	5
90	Neethu.S	11	F	0	1	1	0	1	0	3
91	Jean vijay	12	M	1	1	1	0	1	1	5
92	Ramesh	12	M	0	0	0	0	1	0	1
93	Charan bose	12	M	1	0	1	0	1	1	4
94	Akhil krishna	12	M	1	1	1	1	1	1	6
95	Ranjith	12	M	1	1	1	0	1	1	5
96	Roshan.S	12	M	1	1	0	0	1	0	3
97	P.v.Yadu.Nair	12	M	1	0	1	0	1	0	3
98	Adhirej.J.R	12	M	1	0	1	0	1	1	4
99	Sanju.M	12	M	1	1	1	0	0	0	3
100	Udayashanker	12	M	0	0	1	1	1	0	3
101	Pranavlal	12	M	0	0	0	0	0	0	0
102	Mohit	12	M	1	1	1	1	1	1	6
103	Harish	12	M	1	1	1	0	1	0	4
104	Goutham	12	M	1	0	1	0	1	1	4
105	Gokul.A.S	12	M	1	0	1	0	1	0	3
106	Devarajan	12	M	1	1	0	0	1	0	3
107	Ananthkrishnan	12	M	0	0	0	0	1	0	1
108	Amal	12	M	1	0	1	0	1	0	3
109	Akhil	12	M	1	1	1	0	1	0	4
110	Abeer	12	M	1	1	1	0	1	0	4
111	Sreehari.B	12	N	0	0	0	0	0	0	0
112	vignesh	12	M	0	0	0	0	1	0	1
113	Shabeer	12	M	1	1	1	0	1	0	4
114	Prabhath	12	M	0	0	0	0	0	0	0
115	Jithin	12	M	0	0	0	0	0	0	0
116	Ananthkrishnan	12	M	0	0	0	0	0	0	0
117	Aditya	12	M	0	0	0	0	1	0	1
118	Ashish	12	M	0	0	0	1	0	1	2
119	Muhamad ajmal	12	M	1	1	1	1	1	0	5

120	Amal	12	M	1	1	0	1	0	1	4
121	Abirej.J.R	12	M	0	0	0	0	1	1	2
122	Abhijith	12	M	0	0	1	0	1	0	2
123	krishna.D.S	12	F	1	1	1	0	1	1	5
124	Aishwarya.S	12	F	1	0	1	0	1	1	4
125	Amritha	12	F	1	0	1	0	1	1	4
126	Atma.B.Nath	12	F	0	0	0	0	0	0	0
127	Reshma soaman	12	F	1	1	1	0	1	1	5
128	Meghana.P.R	12	F	0	0	0	0	0	0	0
129	Shreya vijayan	12	F	0	0	0	0	0	0	0
130	Lekshmi.R.S	12	F	0	0	0	1	0	1	2
131	Lekshmi.V.R	12	F	0	1	0	1	1	0	3
132	Karthika	12	F	1	1	0	1	1	1	5
133	Gouri.G.H	12	F	1	1	0	0	1	1	4
134	Anjana	12	F	1	0	0	0	0	1	2
135	M.S.Aishwarya	12	F	1	1	1	0	1	1	5
136	Aishwarya	12	F	1	0	1	0	1	1	4
137	Gopika	12	F	1	0	1	1	0	0	3
138	Archana	12	F	1	0	1	1	1	0	4
139	Archa	12	F	1	0	1	0	1	1	4
140	Aishwarya	12	F	0	0	0	0	1	0	1
141	Afiya	12	F	1	1	1	1	1	1	6
142	Arabhi	12	F	1	1	0	0	1	1	4
143	Anuraj	9	M	1	1	1	1	1	1	6
144	Asif	9	M	1	1	1	0	1	1	5
145	Rayhan	9	M	1	1	1	0	0	1	4
146	Nasim	9	M	0	1	0	0	0	0	1
147	Sharath	9	M	0	0	0	1	1	1	3
148	Subaid alam	9	M	1	0	0	0	0	1	2
149	Anandhu.A	9	M	0	0	0	0	0	1	1
150	Nandhu.S	9	M	1	1	1	0	1	1	5
151	Surej.S	9	M	1	1	1	0	1	1	5
152	Dhanush.B.D	9	M	0	1	0	0	1	0	2
153	Abhijith	9	M	1	0	1	1	1	1	5
154	Vishnu Anilkumar	9	M	1	1	1	1	1	1	6
155	Amal.A	9	M	1	0	1	0	1	1	4
156	Aaminamol.J	9	F	1	1	1	0	1	1	5
157	Atulya.S	9	F	0	0	0	0	1	1	2
158	Ashvathi.S	9	F	1	1	1	0	1	1	5
159	Athira.S	9	F	1	1	1	0	0	1	4
160	Bismi	9	F	0	1	0	0	0	0	1

161	Rasana.S	9	F	1	0	0	0	0	1	2
162	Emima	9	F	0	0	0	0	0	1	1
163	Parvathi Ashok.A.P	9	F	1	1	1	0	1	1	5
164	Meenu.V	9	F	1	1	1	1	1	1	6
165	Nasiya.L	9	F	0	1	0	0	1	0	2
166	Abhirami.B	9	F	1	0	1	1	1	1	5
167	Aparna.R	9	F	1	1	1	1	1	1	6
168	Arya.A.S	9	F	1	0	1	0	1	1	4
169	Anaswara	9	F	1	1	1	1	1	1	6
170	Althahira.S	9	F	1	1	1	0	1	1	5
171	Karthika.S	9	F	0	0	0	0	1	0	1
172	Amal Raj	10	M	1	1	1	1	1	1	6
173	Muhamed Saheer	10	M	1	1	1	1	1	1	6
174	Ajith.S	10	M	1	1	0	0	0	1	3
175	Midhun.A	10	M	1	1	1	0	1	1	5
176	Unnikrishnan	10	M	0	0	0	0	0	0	0
177	Abhijith.A	10	M	0	0	0	0	0	0	0
178	Abhimannue.J.Pramod	10	M	0	0	1	0	0	0	1
179	Anandhu.A.N	10	M	0	0	0	0	1	0	1
180	Gokul.G.Nair	10	M	1	0	1	0	1	1	4
181	Muhamed	10	M	1	1	1	0	1	1	5
182	Kashinadhan	10	M	0	0	0	0	0	0	0
183	Akshay	10	M	1	0	1	0	1	1	4
184	Vijay.B	10	M	1	1	0	0	1	1	4
185	Vijesh.V	10	M	0	1	1	0	1	1	4
186	Manu	10	M	1	0	0	0	1	0	2
187	Shehna.S	10	F	1	0	1	0	1	1	4
188	Amina.N.R	10	F	0	1	0	0	1	1	3
189	Siyana mol	10	F	1	0	0	0	1	0	2
190	Lekshmi.L.S	10	F	1	0	1	0	1	1	4
191	Jobin.S	11	M	1	1	1	0	1	1	5
192	Rafeek	11	M	1	1	1	1	1	1	6
193	Sajan.S	11	M	1	1	1	0	1	1	5
194	Surej.S	11	M	0	0	1	0	1	0	2
195	Salahudin	11	M	1	1	0	0	1	0	3
196	Aromal.B.S	11	M	1	1	1	0	1	0	4
197	Anvarghan.R	11	M	1	1	1	0	1	0	4
198	Abhijith.AS	11	M	1	0	1	0	1	0	3
199	Adersh.G.S	11	M	1	1	1	1	1	1	6
200	Anu.S	11	M	1	1	1	1	0	1	5
201	Bipin.B	11	M	0	0	0	0	1	1	2

202	Joyal.S	11	M	0	0	0	0	0	0	0
203	Jijo Jose	11	M	1	0	1	0	1	1	4
204	Muhamed Althaf	11	M	1	1	0	0	1	1	4
205	Muhamed Unaise	11	M	0	1	0	0	0	1	2
206	Rahin R.V	11	M	1	0	0	0	0	1	2
207	Subhish.S.N	11	M	0	1	1	0	1	1	4
208	Seyyed.S	11	M	0	1	0	0	1	1	3
209	Sunil kumar.S.V	11	M	0	0	0	0	1	1	2
210	Saji.S.S	11	M	1	1	0	0	1	1	4
211	Vishnu priya	11	F	0	1	0	0	1	1	3
212	Jincy.J	11	F	0	1	0	0	0	0	1
213	Divya.J	11	F	1	1	0	0	1	1	4
214	Shehna.B	11	F	1	0	1	0	1	0	3
215	Krishna Vijayan	11	F	0	0	0	0	1	0	1
216	Gayatri.S	11	F	0	1	0	0	1	0	2
217	Geethu.M	11	F	0	0	0	0	1	0	1
218	Gopika.S	11	F	0	1	0	0	1	0	2
219	Rani Domenic	11	F	0	0	0	0	0	0	0
220	Sajna	11	F	1	0	1	0	1	0	3
221	Eshwary.S	11	F	0	0	1	0	1	0	2
222	Manju	11	F	0	0	0	0	1	1	2
223	Geetha	11	F	1	1	1	0	1	0	4
224	Ashvini.S.N	11	F	1	0	0	0	1	0	2
225	Navami	11	F	1	0	1	1	1	0	4
226	Aishwarya	11	F	1	1	1	1	1	1	6
227	Vishnu.S.L	11	F	1	1	0	0	1	0	3
228	Aadersh	12	M	0	0	1	0	1	1	3
229	Sajin	12	M	1	0	1	1	1	0	4
230	Ajurajan.R	12	M	1	0	1	1	1	1	5
231	Amal	12	M	1	0	1	1	1	0	4
232	Aromal	12	M	1	1	1	0	1	0	4
233	Aashik.A	12	M	1	0	1	0	1	0	3
234	Athul.C.Soman	12	M	1	1	1	0	1	1	5
235	Gifts Ashok	12	M	1	1	1	0	1	1	5
236	Glen domenic	12	M	1	0	0	0	0	1	2
237	Jobin.S	12	M	1	0	0	0	1	1	3
238	Sabin.S	12	M	1	0	0	1	1	1	4
239	Shibhu	12	M	1	1	0	1	1	0	4
240	Sunil.K.Raj	12	M	0	1	0	1	1	0	3
241	Sanoop	12	M	0	0	0	0	0	0	0
242	Bibin Babu	12	M	0	0	0	0	0	0	0

243	Akshay	12	M	0	0	1	0	1	1	3
244	Tulasidharan.K	12	M	1	1	0	0	0	0	2
245	Sreenivasan.K	12	M	0	0	1	1	1	1	4
246	Sharath chandren.P	12	M	1	1	1	1	1	1	6
247	Adityan.P.K	12	M	1	1	1	1	1	0	5
248	Ajith kumar	12	M	1	1	1	0	1	1	5
249	Abhiram Pradeep	12	M	0	1	0	0	1	1	3
250	Gayatri Manikanden	12	F	1	0	0	0	1	1	3
251	Shubha pradeep	12	F	0	1	0	0	1	1	3
252	Sreena Murali.	12	F	1	1	1	0	1	1	5
253	Saritha	12	F	1	1	1	1	1	1	6
254	Pushpalatha	12	F	1	0	1	0	1	1	4
255	Meenakshi	12	F	1	0	1	0	1	1	4
256	Shruthimol	12	F	1	1	1	0	1	1	5
257	Kalyani	12	F	1	1	1	1	1	1	6
258	Anjali	12	F	1	1	1	0	1	0	4
259	Ashamol	12	F	1	1	1	0	1	1	5
260	Raji	12	F	1	1	0	0	1	0	3
261	Alphonsa	12	F	1	0	0	0	0	0	1
262	Sanija Thomas	12	F	1	0	1	0	1	1	4
263	Anija	12	F	1	1	1	0	1	1	5
264	Jotsna	12	F	0	0	0	0	1	0	1
265	Jobina george	12	F	0	0	0	0	1	0	1
266	Anuthomas	12	F	0	0	0	0	0	0	0
267	Joyous sebastian	12	F	0	0	0	0	0	0	0
268	Aardra.V.S	12	F	0	0	0	0	0	0	0
269	Indu lekha.P	12	F	1	1	1	0	1	1	5
270	Yadu krishnan	10	M	0	0	0	0	1	0	1
271	Tijo	10	M	0	0	0	0	0	0	0
272	Venugopal.G	10	M	1	1	1	0	1	1	5
273	unnikrishnan.P	10	M	1	1	1	0	1	0	4
274	Gopinath	10	M	1	0	1	0	1	0	3
275	Nijo John	10	M	0	0	0	0	1	0	1
276	Robin Antony	10	M	1	0	0	0	1	1	3
277	Aneesh	10	M	1	0	1	0	1	1	4
278	Vinaya Krishnan.T	10	M	1	0	1	0	1	0	3
279	Sreenath	10	M	1	1	1	0	1	1	5
280	Sreelesh Suresh	10	M	1	1	1	1	1	1	6
281	Jobi John	10	M	0	0	0	0	1	0	1
282	Manikuttan	10	M	0	0	1	1	1	0	3
283	Satheesh.P	10	M	1	1	1	1	1	1	6

284	Navya Nair	10	F	1	1	0	1	1	1	5
285	Shikha	10	F	1	1	0	0	1	0	3
286	Manjusha	10	F	1	1	1	0	1	1	5
287	Regha	10	F	1	1	1	0	1	1	5
288	Reena	10	F	1	1	1	0	1	0	4
289	Chitra lekha	10	F	1	0	0	0	1	0	2
290	Sujatha	10	F	0	1	0	0	1	0	2
291	Shini mol	10	F	1	1	1	1	1	1	6
292	Krishnaveni	10	F	0	1	0	0	1	0	2
293	Sreelekshmi	10	F	1	1	1	0	1	1	5
294	Ragna.S	10	F	1	1	1	0	0	1	4
295	Sharanya	10	F	0	1	0	0	0	0	1
296	Sreeja A	10	F	0	0	0	1	0	0	1
297	Sheheera	10	F	0	0	0	0	1	0	1
298	Raheema.K.K	10	F	1	0	0	1	0	1	3
299	Ramla	10	F	0	0	0	1	0	0	1
300	Zeenath	10	F	1	1	1	0	1	0	4
301	Anoop.S	12	M	0	0	0	0	0	0	0
302	Adersh.P	12	M	0	0	1	0	1	1	3
303	Abhilash Kumar	12	M	1	1	0	0	0	0	2
304	Anubhav	12	M	0	0	1	1	1	1	4
305	Abhijith.K.R	12	M	1	1	1	1	1	1	6
306	Ajith	12	M	1	1	1	1	1	0	5
307	Aalbin Jacob	12	M	1	1	1	0	1	1	5
308	Anand	12	M	1	1	1	1	1	1	6
309	Abhishek	12	M	1	0	0	0	1	1	3
310	Athul	12	M	0	1	0	0	1	1	3
311	Akash kumar	12	M	1	1	1	0	1	1	5
312	Binu mukalath	12	M	1	1	1	1	1	1	6
313	Bibin Thomas	12	M	1	0	1	0	1	1	4
314	Balakrishnan	12	M	1	0	1	0	1	1	4
315	Chandran K	12	M	1	1	1	0	1	1	5
316	Anannya	12	F	1	1	1	1	1	1	6
317	akhila gopal	12	F	1	1	1	0	1	0	4
318	Navya	12	F	1	1	1	0	1	1	5
319	Kavya madhavan	12	F	1	1	0	0	1	0	3
320	Meera nandhan	12	F	1	0	0	0	0	0	1
321	Nandhana	12	F	1	0	1	0	1	1	4
322	Mridhula	12	F	1	1	1	0	1	1	5
323	Midha	12	F	0	0	0	0	1	0	1
324	Srikutty	12	F	0	0	0	0	1	0	1

325	Ragna ragav	12	F	1	1	1	1	1	1	6
326	Ramyia Nambiar	12	F	1	1	1	1	0	1	5
327	Raheema hassan	12	F	0	0	0	0	0	0	0
328	Aasha Jayakumar	12	F	1	1	1	1	1	1	6
329	Shafna	12	F	1	0	0	0	1	0	2
330	Nithya menon	12	M	0	0	0	0	0	0	0
331	Lijo	11	M	1	1	1	0	1	1	5
332	Sravan	11	M	1	1	1	0	1	0	4
333	Ranjith Nair	11	M	1	0	1	0	1	0	3
334	Ajith Nair	11	M	0	0	0	0	1	0	1
335	Ranjith panikar	11	M	1	0	0	0	1	1	3
336	Damodhar .k	11	M	1	0	1	0	1	1	4
337	Gokul Das	11	M	1	0	1	0	1	0	3
338	Maneesh	11	M	1	1	1	0	1	1	5
339	Sri Ram	11	M	1	1	1	1	1	1	6
340	Abhiram.P	11	M	0	0	0	0	1	0	1
341	Arjun Das.A	11	M	0	0	1	1	1	0	3
342	Jipin	11	M	1	1	1	1	1	1	6
343	Jayesh Kumar	11	M	1	1	0	1	1	1	5
344	Jibu John	11	M	1	1	0	0	1	0	3
345	Danush. R	11	M	1	1	1	1	1	1	6
346	Pranav	11	M	1	1	1	0	1	1	5
347	Pratheesh.S	11	M	1	1	1	0	1	0	4
348	Vijay.D	11	M	1	0	0	0	1	0	2
349	Sharan	11	M	0	1	0	0	1	0	2
350	Vinay Chandran	11	F	1	1	1	1	1	1	6
351	Minnu	11	F	0	1	0	0	1	0	2
352	Ganga Govind	11	F	1	1	1	1	1	1	6
353	Meena	11	F	1	1	1	0	0	1	4
354	Prathana	11	F	1	1	1	1	1	1	6
355	Aparna.A	11	F	1	1	1	0	1	1	5
356	Ammu	11	F	1	0	0	0	0	1	2
357	Malavika	11	F	1	1	0	1	1	0	4
358	Neena	11	F	1	1	1	1	1	0	5
359	Niveedha satheesh	11	F	1	1	1	1	1	1	6
360	Sajini	11	F	1	1	1	1	1	1	6
361	Leena	11	F	1	0	0	1	1	0	3
362	Priyanka	11	F	0	1	0	1	1	0	3
363	Seena murali	11	F	1	1	1	1	1	1	6
364	Sayanora	11	F	1	1	1	1	0	1	5
365	Deksitha P	11	F	0	1	0	0	0	0	1

366	Nazreena nazar	11	F	0	0	0	0	0	1	1
367	Sonali	11	F	0	0	0	1	1	1	3
368	Swarna	11	F	1	1	1	1	1	1	6
369	Shivkami	11	F	0	0	0	0	0	0	0
370	Kiran Jayakumar	10	M	1	0	0	0	0	1	2
371	Adhithya krishna	10	M	1	1	0	0	1	1	4
372	Rahul Ramana	10	M	1	1	1	0	1	0	4
373	Abhishek Nair	10	M	1	0	1	0	1	1	4
374	Adhithyan.A.K	10	M	1	1	1	0	1	1	5
375	Niranjana K.Raman	10	M	1	1	1	0	1	1	5
376	Amar.P.Nair	10	M	0	0	0	0	0	0	0
377	Shine	10	M	1	1	1	0	1	0	4
378	Jayaram.P	10	M	0	0	0	0	1	1	2
379	Prem Kumar	10	M	0	1	0	0	1	1	3
380	Rajan.P.Dev	10	M	0	0	1	0	1	0	2
381	rajagopal	10	M	0	1	0	0	1	0	2
382	Vijaykrishnan	10	M	0	0	0	0	1	0	1
383	Mani	10	M	0	1	0	0	1	0	2
384	Shajahan	10	M	0	0	1	1	0	0	2
385	Shamseena	10	F	1	1	1	1	1	1	6
386	Muhseena muhamed	10	F	1	1	1	1	1	1	6
387	Jenny John	10	F	1	1	1	1	1	1	6
388	Aryanandha.R	10	F	0	1	0	1	1	0	3
389	Reena Jayakumar	10	F	1	1	1	0	1	0	4
390	Anjali vinod	10	F	0	0	0	0	0	0	0
391	Fathima	10	F	1	1	1	1	1	1	6
392	Saifunisa	10	F	1	1	1	1	1	1	6
393	Remya Antony	10	F	1	1	1	0	0	1	4
394	Vini.k	10	F	0	0	0	0	0	0	0
395	Mini.K	10	F	0	1	1	0	0	0	2
396	Praseetha.P	10	F	1	0	1	0	1	1	4
397	Divya Nair	10	F	1	1	1	1	1	1	6
398	Ramla	10	F	1	1	1	0	0	1	4
399	Prasanna Kumari	10	F	0	0	0	0	0	0	0
400	Radha .K	10	F	1	1	1	1	0	1	5
401	Deepa nambiar	10	F	1	1	1	1	1	1	6
402	Rajalakshmi	10	F	1	1	1	1	0	1	5
403	Ebin	10	F	0	0	0	0	0	0	0

Post data

Sl no	Name	Age	sex	T 1 2	T 2 2	T 3 2	T 4 2	T 5 2	T 6 2	Total Post
1	Adithya	9	M	1	1	1	0	1	1	5
2	Akshay Sunder	9	M	0	1	0	0	0	0	1
3	Ashwin Pramod	9	M	1	1	1	1	1	1	6
4	Govind.G.S	9	M	1	0	1	0	1	0	3
5	Anandakrshnan	9	M	1	0	1	1	0	0	3
6	Gokul.S	9	M	1	0	1	0	1	0	3
7	Hari Govind B.M	9	M	0	1	1	0	1	0	3
8	Mukndan.U.S	9	M	0	1	0	1	0	0	2
9	Adarsh.H.S	9	M	1	1	1	1	1	1	6
10	Adityan	9	M	1	1	1	1	1	1	6
11	Nandhu	9	M	1	1	1	0	1	1	5
12	Goutham shanker	9	M	1	1	1	1	1	1	6
13	Kannan Babu	9	M	1	1	1	1	1	1	6
14	Niranjan	9	M	1	1	0	0	1	1	4
15	Adityan	9	M	1	1	1	1	1	1	6
16	Advaith	9	M	1	1	1	1	1	1	6
17	Devranjith	9	M	1	1	1	1	1	1	6
18	Vishnu	9	M	1	1	1	1	1	1	6
19	Sidharth	9	M	1	1	1	1	1	1	6
20	Vishnav	9	M	1	1	0	1	1	1	5
21	Adityan	9	M	1	1	1	1	1	1	6
22	Asifali	9	M	1	1	1	1	1	1	6
23	Goutham krishnan	9	M	1	1	1	0	1	1	5
24	Jayakrishnan	9	M	1	0	1	0	0	1	3
25	Nkhil Sandeep	9	M	1	0	0	1	1	1	4
26	Ashik abdul	9	M	1	1	1	1	1	1	6
27	Malavika.A.M	9	F	1	0	1	0	0	1	3
28	Chandana.B.S	9	F	1	1	1	0	1	1	5
29	Devikripa	9	F	1	1	1	1	1	1	6
30	Akhila	9	F	1	1	1	0	1	0	4
31	Rajalakshmi	9	F	1	0	1	0	1	1	4
32	Arathi	9	F	1	1	1	0	1	1	5
33	Gourighosh	9	F	1	1	1	1	1	1	6
34	Nivedhitha	9	F	1	1	1	0	0	0	3
35	Pramitha.P.B	9	F	1	1	1	0	1	0	4
36	Athira.A.S	9	F	0	1	0	0	1	1	3
37	Jannath	9	F	1	1	1	1	1	1	6

38	Sona	9	M	0	1	1	0	1	0	3
39	Abhirami	9	F	1	1	0	0	1	1	4
40	Devika.A.S	9	F	1	0	1	0	1	0	3
41	Geethika.S.S	9	F	1	1	1	1	1	1	6
42	Aradhana	9	F	1	1	1	1	1	1	6
43	Rizwan	10	M	1	1	1	1	1	1	6
44	Balagopal.R	10	M	1	1	1	1	1	1	6
45	Aravind	10	M	1	1	1	0	1	1	5
46	Vishnav	10	M	1	1	1	1	1	1	6
47	Bharath.V.Nair	10	M	1	1	1	1	1	1	6
48	Nikhil	10	M	1	1	1	0	1	1	5
49	Mohit.Nair	10	M	1	1	1	1	1	1	6
50	Akhil	10	M	1	0	1	0	1	1	4
51	Aromal	10	M	1	1	1	1	1	1	6
52	Adithyan.A	10	M	1	1	1	0	1	1	5
53	Govind	10	M	1	1	1	1	1	1	6
54	Ashwin.S	10	M	1	1	1	1	1	1	6
55	Midhun.M	10	M	1	0	1	0	1	1	4
56	Aditya santhosh	10	M	1	1	1	1	1	1	6
57	Aditya.S.K	10	M	1	1	1	1	1	1	6
58	Ganesh	10	M	1	1	1	1	1	1	6
59	Jithesh saji	10	M	1	1	1	0	1	1	5
60	Gowari.B	10	F	1	1	1	0	1	1	5
61	Vismaya	10	F	1	1	1	1	1	1	6
62	Nazreen	10	F	0	1	1	0	1	1	4
63	Shivakami	10	F	1	1	0	0	1	0	3
64	Archa.A.J	10	F	1	1	1	0	1	1	5
65	Akshara	10	F	1	1	1	1	1	1	6
66	Farzana	10	F	1	1	1	1	1	1	6
67	P.Madhubala	10	F	1	1	1	0	1	1	5
68	Pranathy.das	10	F	1	1	1	1	1	1	6
69	Nandana	10	F	1	1	1	1	1	1	6
70	Rathana	10	F	0	1	1	0	1	1	4
71	Arabind	11	M	1	0	1	0	1	0	3
72	Arjun	11	M	0	1	0	0	0	1	2
73	Ananthkrishnan	11	M	0	1	0	0	1	0	2
74	Aditya nair	11	M	1	1	1	1	1	1	6
75	Akshay .H.Nair	11	M	1	1	1	1	1	1	6
76	Aromal.A	11	M	1	1	1	0	1	1	5
77	Rahul.R	11	M	1	1	1	1	1	1	6
78	Mahima mohan	11	F	1	1	1	1	1	1	6

79	Megha	11	F	1	0	1	0	1	0	3
80	Saral	11	F	1	0	1	0	1	1	4
81	Gopika	11	F	1	0	1	0	1	1	4
82	Deepshika	11	F	0	1	1	0	1	1	4
83	Arabhi	11	F	1	1	1	0	1	1	5
84	Aparna.G.P	11	F	1	1	1	1	1	1	6
85	Arva.S.S	11	F	1	1	1	0	1	1	5
86	Athira	11	F	1	1	1	1	1	1	6
87	Greshma	11	F	1	1	1	1	1	1	6
88	Karuna.R	11	F	1	1	1	1	1	1	6
89	Navami.S	11	F	1	1	1	0	1	1	5
90	Neethu.S	11	F	1	1	1	0	1	0	4
91	Jean vijay	12	M	1	1	1	1	1	1	6
92	Ramesh	12	M	1	1	1	0	1	0	4
93	Charan bose	12	M	1	1	1	1	1	1	6
94	Akhil krishna	12	M	1	1	1	1	1	1	6
95	Ranjith	12	M	1	1	1	1	1	1	6
96	Roshan.S	12	M	1	1	1	1	1	1	6
97	P.v.Yadu.Nair	12	M	1	1	1	0	1	1	5
98	Adhirej.J.R	12	M	1	1	1	1	1	1	6
99	Sanju.M	12	M	1	1	1	0	1	1	5
100	Udayashanker	12	M	1	1	1	1	1	1	6
101	Pranavlal	12	M	1	1	1	0	1	1	5
102	Mohit	12	M	1	1	1	1	1	1	6
103	Harish	12	M	1	1	1	1	1	1	6
104	Goutham	12	M	1	1	1	1	1	1	6
105	Gokul.A.S	12	M	1	1	1	1	1	0	5
106	Devarajan	12	M	1	1	1	1	1	1	6
107	Ananthkrishnan	12	M	1	0	1	0	1	1	4
108	Amal	12	M	1	1	1	1	1	1	6
109	Akhil	12	M	1	1	1	1	1	1	6
110	Abeer	12	M	1	1	1	1	1	1	6
111	Sreehari.B	12	N	0	0	1	0	1	1	3
112	vignesh	12	M	0	1	1	0	1	0	3
113	Shabeer	12	M	1	1	1	1	1	1	6
114	Prabhath	12	M	0	1	1	0	0	1	3
115	Jithin	12	M	0	1	0	0	1	1	3
116	Ananthkrishnan	12	M	1	1	0	0	1	0	3
117	Aditya	12	M	1	1	1	1	1	1	6
118	Ashish	12	M	1	1	0	1	0	1	4
119	Muhamad ajmal	12	M	1	1	1	1	1	1	6

120	Amal	12	M	1	1	1	1	1	1	6
121	Abirej.J.R	12	M	1	1	1	0	1	1	5
122	Abhijith	12	M	1	1	1	0	1	1	5
123	krishna.D.S	12	F	1	1	1	1	1	1	6
124	Aishwarya.S	12	F	1	1	1	1	1	1	6
125	Amritha	12	F	1	1	1	0	1	1	5
126	Atma.B.Nath	12	F	1	0	1	0	1	1	4
127	Reshma soaman	12	F	1	1	1	1	1	1	6
128	Meghana.P.R	12	F	1	1	0	0	0	1	3
129	Shreya vijayan	12	F	1	1	0	0	0	1	3
130	Lekshmi.R.S	12	F	1	1	0	1	0	1	4
131	Lekshmi.V.R	12	F	0	1	1	1	1	1	5
132	Karthika	12	F	1	1	1	1	1	1	6
133	Gouri.G.H	12	F	1	1	1	1	1	1	6
134	Anjana	12	F	1	1	1	0	1	1	5
135	M.S.Aishwarya	12	F	1	1	1	1	1	1	6
136	Aishwarya	12	F	1	1	1	0	1	1	5
137	Gopika	12	F	1	1	1	1	0	1	5
138	Archana	12	F	1	1	1	1	1	1	6
139	Archa	12	F	1	1	1	1	1	1	6
140	Aishwarya	12	F	1	1	0	0	1	1	4
141	Afiya	12	F	1	1	1	1	1	1	6
142	Arabhi	12	F	1	1	1	1	1	1	6
143	Anuraj	9	M	1	1	1	1	1	1	6
144	Asif	9	M	1	1	1	1	1	1	6
145	Rayhan	9	M	1	1	1	1	0	1	5
146	Nasim	9	M	A	A	A	A	A	A	0
147	Sharath	9	M	1	1	1	1	1	1	6
148	Subaid alam	9	M	1	1	1	0	1	1	5
149	Anandhu.A	9	M	1	1	1	0	1	1	5
150	Nandhu.S	9	M	1	1	1	0	1	1	5
151	Surej.S	9	M	1	1	1	1	1	1	6
152	Dhanush.B.D	9	M	1	1	1	0	1	0	4
153	Abhijith	9	M	1	0	1	1	1	1	5
154	Vishnu Anilkumar	9	M	1	1	1	1	1	1	6
155	Amal.A	9	M	1	0	1	0	1	1	4
156	Aaminamol.J	9	F	1	1	1	0	1	1	5
157	Atulya.S	9	F	1	1	0	0	1	1	4
158	Ashvathi.S	9	F	1	1	1	1	1	1	6
159	Athira.S	9	F	1	1	1	0	1	1	5
160	Bismi	9	F	0	1	1	0	1	0	3

161	Rasana.S	9	F	1	1	1	0	0	1	4
162	Emima	9	F	1	1	1	1	1	1	6
163	Parvathi Ashok.A.P	9	F	1	1	1	0	1	1	5
164	Meenu.V	9	F	1	1	1	1	1	1	6
165	Nasiya.L	9	F	1	1	0	0	1	1	4
166	Abhirami.B	9	F	1	1	1	1	1	1	6
167	Aparna.R	9	F	1	1	1	1	1	1	6
168	Arya.A.S	9	F	1	1	1	1	1	1	6
169	Anaswara	9	F	1	1	1	1	1	1	6
170	Althahira.S	9	F	1	1	1	1	1	1	6
171	Karthika.S	9	F	1	0	1	0	1	0	3
172	Amal Raj	10	M	1	1	1	1	1	1	6
173	Muhamed Saheer	10	M	1	1	1	1	1	1	6
174	Ajith.S	10	M	A	A	A	A	A	A	0
175	Midhun.A	10	M	1	1	1	0	1	1	5
176	Unnikrishnan	10	M	1	0	1	0	1	0	3
177	Abhijith.A	10	M	1	0	0	0	1	1	3
178	Abhimannue.J.Pramod	10	M	0	1	1	0	0	1	3
179	Anandhu.A.N	10	M	0	0	1	0	1	1	3
180	Gokul.G.Nair	10	M	1	1	1	1	1	1	6
181	Muhamed	10	M	1	1	1	1	1	1	6
182	Kashinadhan	10	M	0	1	1	0	1	0	3
183	Akshay	10	M	1	1	1	0	1	1	5
184	Vijay.B	10	M	1	1	0	0	1	1	4
185	Vijesh.V	10	M	1	1	1	1	1	1	6
186	Manu	10	M	1	0	1	0	1	0	3
187	Shehna.S	10	F	1	0	1	0	1	1	4
188	Amina.N.R	10	F	1	1	1	0	1	1	5
189	Siyana mol	10	F	1	0	0	0	1	0	2
190	Lekshmi.L.S	10	F	1	0	1	0	1	1	4
191	Jobin.S	11	M	1	1	1	1	1	1	6
192	Rafeek	11	M	1	1	1	1	1	1	6
193	Sajan.S	11	M	1	1	1	1	1	1	6
194	Surej.S	11	M	1	1	1	1	1	1	6
195	Salahudin	11	M	1	1	1	0	1	0	4
196	Aromal.B.S	11	M	1	1	1	0	1	0	4
197	Anvarghan.R	11	M	1	1	1	1	1	1	6
198	Abhijith.AS	11	M	1	1	1	0	1	1	5
199	Adersh.G.S	11	M	1	1	1	1	1	1	6
200	Anu.S	11	M	1	1	1	1	1	1	6
201	Bipin.B	11	M	1	1	1	0	1	1	5

202	Joyal.S	11	M	0	0	1	0	1	0	2
203	Jijo Jose	11	M	1	1	1	1	1	1	6
204	Muhamed Althaf	11	M	1	1	1	1	1	1	6
205	Muhamed Unaise	11	M	0	1	1	0	1	1	4
206	Rahin R.V	11	M	1	1	1	1	1	1	6
207	Subhish.S.N	11	M	1	1	1	1	1	1	6
208	Seyyed.S	11	M	1	1	1	0	1	1	5
209	Sunil kumar.S.V	11	M	1	0	1	0	1	1	4
210	Saji.S.S	11	M	1	1	1	0	1	1	5
211	Vishnu priya	11	F	1	1	1	1	1	1	6
212	Jincy.J	11	F	1	1	0	0	0	0	2
213	Divya.J	11	F	1	1	1	1	1	1	6
214	Shehna.B	11	F	1	1	1	1	1	0	5
215	Krishna Vijayan	11	F	0	1	1	0	1	0	3
216	Gayatri.S	11	F	1	1	1	1	1	1	6
217	Geethu.M	11	F	1	1	1	1	1	0	5
218	Gopika.S	11	F	1	1	1	0	1	1	5
219	Rani Domenic	11	F	0	0	1	0	1	0	2
220	Sajna	11	F	1	1	1	0	1	0	4
221	Eshwary.S	11	F	0	1	1	0	1	0	3
222	Manju	11	F	1	1	1	1	1	1	6
223	Geetha	11	F	1	1	1	1	1	1	6
224	Ashvini.S.N	11	F	1	1	1	1	1	1	6
225	Navami	11	F	1	1	1	1	1	1	6
226	Aishwarya	11	F	1	1	1	1	1	1	6
227	Vishnu.S.L	11	F	1	1	1	0	1	0	4
228	Aadersh	12	M	1	1	1	1	1	1	6
229	Sajin	12	M	1	1	1	1	1	1	6
230	Ajurajan.R	12	M	1	1	1	1	1	1	6
231	Amal	12	M	A	A	A	A	A	A	0
232	Aromal	12	M	1	1	1	1	1	1	6
233	Aashik.A	12	M	1	1	1	0	1	0	4
234	Athul.C.Soman	12	M	1	1	1	1	1	1	6
235	Gifts Ashok	12	M	1	1	1	1	1	1	6
236	Glen domenic	12	M	1	1	1	0	0	1	4
237	Jobin.S	12	M	1	1	1	1	1	1	6
238	Sabin.S	12	M	1	1	1	1	1	1	6
239	Shibhu	12	M	1	1	1	1	1	1	6
240	Sunil.K.Raj	12	M	0	1	1	1	1	1	5
241	Sanoop	12	M	1	1	1	0	1	0	4
242	Bibin Babu	12	M	1	0	1	0	1	0	3

243	Akshay	12	M	1	0	1	0	1	1	4
244	Tulasidharan.K	12	M	1	1	1	0	1	1	5
245	Sreenivasan.K	12	M	1	1	1	1	1	1	6
246	Sharath chandren.P	12	M	1	1	1	1	1	1	6
247	Adityan.P.K	12	M	1	1	1	1	1	1	6
248	Ajith kumar	12	M	1	1	1	1	1	1	6
249	Abhiram Pradeep	12	M	0	1	1	0	1	1	4
250	Gayatri Manikanden	12	F	1	1	1	0	1	1	5
251	Shubha pradeep	12	F	0	1	1	1	1	1	5
252	Sreena Murali.	12	F	1	1	1	1	1	1	6
253	Saritha	12	F	1	1	1	1	1	1	6
254	Pushpalatha	12	F	1	1	1	1	1	1	6
255	Meenakshi	12	F	1	1	1	1	1	1	6
256	Shruthimol	12	F	1	1	1	0	1	1	5
257	Kalyani	12	F	1	1	1	1	1	1	6
258	Anjali	12	F	1	1	1	1	1	1	6
259	Ashamol	12	F	1	1	1	1	1	1	6
260	Raji	12	F	1	1	1	0	1	1	5
261	Alphonsa	12	F	1	1	1	0	1	0	4
262	Sanija Thomas	12	F	1	1	1	1	1	1	6
263	Anija	12	F	1	1	1	1	1	1	6
264	Jotsna	12	F	1	0	1	0	1	0	3
265	Jobina george	12	F	0	1	1	0	1	0	3
266	Anuthomas	12	F	0	0	1	0	1	0	2
267	Joyous sebastian	12	F	1	1	1	0	1	0	4
268	Aardra.V.S	12	F	1	1	0	0	1	0	3
269	Indu lekha.P	12	F	1	1	1	1	1	1	6
270	Yadu krishnan	10	M	1	1	1	1	1	1	6
271	Tijo	10	M	1	0	1	0	1	0	3
272	Venugopal.G	10	M	1	1	1	1	1	1	6
273	unnikrishnan.P	10	M	1	1	1	1	1	1	6
274	Gopinath	10	M	1	1	1	1	1	1	6
275	Nijo John	10	M	1	1	1	0	1	0	4
276	Robin Antony	10	M	1	1	1	0	1	1	5
277	Aneesh	10	M	1	1	1	1	1	1	6
278	Vinaya Krishnan.T	10	M	1	1	1	1	1	0	5
279	Sreenath	10	M	1	1	1	1	1	1	6
280	Sreelesh Suresh	10	M	1	1	1	1	1	1	6
281	Jobi John	10	M	1	1	1	0	1	1	5
282	Manikuttan	10	M	1	1	1	1	1	1	6
283	Satheesh.P	10	M	1	1	1	1	1	1	6

284	Navya Nair	10	F	1	1	1	1	1	1	6
285	Shikha	10	F	1	1	1	0	1	1	5
286	Manjusha	10	F	1	1	1	0	1	1	5
287	Regha	10	F	1	1	1	1	1	1	6
288	Reena	10	F	1	1	1	1	1	1	6
289	Chitra lekha	10	F	1	0	0	0	1	0	2
290	Sujatha	10	F	0	1	1	0	1	0	3
291	Shini mol	10	F	1	1	1	1	1	1	6
292	Krishnaveni	10	F	1	1	1	0	1	0	4
293	Sreelekshmi	10	F	1	1	1	1	1	1	6
294	Ragna.S	10	F	1	1	1	1	1	1	6
295	Sharanya	10	F	0	1	1	0	1	0	3
296	Sreeja A	10	F	0	1	0	1	1	0	3
297	Sheheera	10	F	1	1	1	0	1	0	4
298	Raheema.K.K	10	F	1	0	1	1	0	1	4
299	Ramla	10	F	0	1	1	1	1	0	4
300	Zeenath	10	F	1	1	1	1	1	1	6
301	Anoop.S	12	M	1	0	1	0	1	0	3
302	Adersh.P	12	M	1	1	1	0	1	1	5
303	Abhilash Kumar	12	M	1	1	1	0	1	0	4
304	Anubhav	12	M	1	1	1	1	1	1	6
305	Abhijith.K.R	12	M	1	1	1	1	1	1	6
306	Ajith	12	M	1	1	1	1	1	1	6
307	Aalbin Jacob	12	M	1	1	1	1	1	1	6
308	Anand	12	M	1	1	1	1	1	1	6
309	Abhishek	12	M	1	1	1	0	1	1	5
310	Athul	12	M	1	1	1	0	1	1	5
311	Akash kumar	12	M	1	1	1	1	1	1	6
312	Binu mukalath	12	M	1	1	1	1	1	1	6
313	Bibin Thomas	12	M	1	1	1	1	1	1	6
314	Balakrishnan	12	M	1	1	1	0	1	1	5
315	Chandran K	12	M	1	1	1	1	1	1	6
316	Anannya	12	F	1	1	1	1	1	1	6
317	akhila gopal	12	F	1	1	1	1	1	1	6
318	Navya	12	F	1	1	1	1	1	1	6
319	Kavya madhavan	12	F	A	A	A	A	A	A	0
320	Meera nandhan	12	F	1	0	1	0	1	0	3
321	Nandhana	12	F	1	1	1	0	1	1	5
322	Mridhula	12	F	1	1	1	1	1	1	6
323	Midha	12	F	1	0	1	0	1	0	3
324	Srikutty	12	F	1	1	1	0	1	0	4

325	Ragna ragav	12	F	1	1	1	1	1	1	6
326	Ramya Nambiar	12	F	1	1	1	1	1	1	6
327	Raheema hassan	12	F	1	0	1	0	1	0	3
328	Aasha Jayakumar	12	F	1	1	1	1	1	1	6
329	Shafna	12	F	1	1	1	0	1	0	4
330	Nithya menon	12	M	1	1	1	0	0	0	3
331	Lijo	11	M	1	1	1	1	1	1	6
332	Sravan	11	M	1	1	1	1	1	1	6
333	Ranjith Nair	11	M	1	1	1	0	1	1	5
334	Ajith Nair	11	M	0	1	1	0	1	0	3
335	Ranjith panikar	11	M	1	1	1	0	1	1	5
336	Damodhar .k	11	M	1	1	1	1	1	1	6
337	Gokul Das	11	M	1	1	1	1	1	0	5
338	Maneesh	11	M	1	1	1	1	1	1	6
339	Sri Ram	11	M	1	1	1	1	1	1	6
340	Abhiram.P	11	M	0	1	1	0	1	0	3
341	Arjun Das.A	11	M	1	1	1	1	1	1	6
342	Jipin	11	M	1	1	1	1	1	1	6
343	Jayesh Kumar	11	M	1	1	1	1	1	1	6
344	Jibu John	11	M	1	1	1	0	1	0	4
345	Danush. R	11	M	1	1	1	1	1	1	6
346	Pranav	11	M	1	1	1	1	1	1	6
347	Pratheesh.S	11	M	1	1	1	0	1	1	5
348	Vijay.D	11	M	1	1	1	0	1	0	4
349	Sharan	11	M	0	1	1	0	1	1	4
350	Vinay Chandran	11	F	1	1	1	1	1	1	6
351	Minnu	11	F	1	1	1	0	1	0	4
352	Ganga Govind	11	F	1	1	1	1	1	1	6
353	Meena	11	F	1	1	1	1	1	1	6
354	Prathana	11	F	1	1	1	1	1	1	6
355	Aparna.A	11	F	1	1	1	1	1	1	6
356	Ammu	11	F	1	0	1	0	1	1	4
357	Malavika	11	F	1	1	1	1	1	1	6
358	Neena	11	F	1	1	1	1	1	1	6
359	Niveedha satheesh	11	F	1	1	1	1	1	1	6
360	Sajini	11	F	1	1	1	1	1	1	6
361	Leena	11	F	1	1	1	1	1	1	6
362	Priyanka	11	F	1	1	1	1	1	1	6
363	Seena murali	11	F	1	1	1	1	1	1	6
364	Sayanora	11	F	1	1	1	1	1	1	6
365	Deksitha P	11	F	0	1	0	0	1	0	2

366	Nazreena nazar	11	F	0	0	1	0	1	1	3
367	Sonali	11	F	1	1	1	1	1	1	6
368	Swarna	11	F	1	1	1	1	1	1	6
369	Shivkami	11	F	0	0	1	0	1	0	2
370	Kiran Jayakumar	10	M	1	0	1	0	1	1	4
371	Adhithya krishna	10	M	1	1	1	0	1	1	5
372	Rahul Ramana	10	M	1	1	1	0	1	1	5
373	Abhishek Nair	10	M	1	1	1	1	1	1	6
374	Adhithyan.A.K	10	M	1	1	1	1	1	1	6
375	Niranjan K.Raman	10	M	1	1	1	0	1	1	5
376	Amar.P.Nair	10	M	0	1	1	0	1	0	3
377	Shine	10	M	1	1	1	0	1	1	5
378	Jayaram.P	10	M	1	1	1	1	1	1	6
379	Prem Kumar	10	M	1	1	1	1	1	1	6
380	Rajan.P.Dev	10	M	1	1	1	1	1	1	6
381	rajagopal	10	M	1	1	1	1	1	1	6
382	Vijayakrishnan	10	M	1	1	1	1	1	1	6
383	Mani	10	M	0	1	1	0	1	1	4
384	Shajahan	10	M	1	1	1	1	1	1	6
385	Shamseena	10	F	1	1	1	1	1	1	6
386	Muhseena muhamed	10	F	1	1	1	1	1	1	6
387	Jenny John	10	F	1	1	1	1	1	1	6
388	Aryanandha.R	10	F	1	1	1	1	1	1	6
389	Reena Jayakumar	10	F	1	1	1	1	1	1	6
390	Anjali vinod	10	F	1	1	1	0	1	1	5
391	Fathima	10	F	1	1	1	1	1	1	6
392	Saifunisa	10	F	1	1	1	1	1	1	6
393	Remya Antony	10	F	1	1	1	0	1	1	5
394	Vini.k	10	F	0	0	1	0	1	0	2
395	Mini.K	10	F	0	1	1	0	1	0	3
396	Praseetha.P	10	F	1	1	1	1	1	1	6
397	Divya Nair	10	F	1	1	1	1	1	1	6
398	Ramla	10	F	1	1	1	0	1	1	5
399	Prasanna Kumari	10	F	1	1	1	0	1	0	4
400	Radha .K	10	F	1	1	1	1	1	1	6
401	Deepa nambiar	10	F	1	1	1	1	1	1	6
402	Rajalakshmi	10	F	1	1	1	1	1	1	6
403	Ebin	10	F	1	1	1	0	1	1	5

A3.PLATES

