APPENDIX I

Weekly Yoga Modules

Program Content

1st week

_Concepts_

1. Philosophy and didactic and interactive lecture of yoga
2. Rules and regulations of yoga based stress reduction program
3. Stretching and loosening exercises and body awareness
4. Full relaxed breathing and breath awareness
5. Breathing exercises
6. Guided awareness of body sensation in supine posture

_Practices_

1. Hands stretch breathing, hands in and out, ankle stretch breathing, sectional breathing and full yogic breathing
2. Loosening exercises
3. Quick Relaxation Technique, guided awareness of body sensations and proprioception
4. Ardhakati chakrasana
5. Padahastasana
6. Ardhachakrasana
7. Instant Relaxation Technique (IRT)
8. Nadi Shuddhi Praṇayama

2nd week

Concepts

1. Stress response and physiological and behavioral adaptation to stressor
2. Identification of inner self to these responses
3. Awareness of nature of inner self and its association with cognition, emotion and sensory perceptions through past memories, reactions to situations.
4. The process of building awareness of self

Practices

1. Loosening exercises
2. Ardhakati chakrasana
3. Padahastasana
4. Ardhachakrasana
5. Instant Relaxation Technique (IRT)
6. Supine - uttana padasana
7. Pavanamuktasana
8. Quick Relaxation Technique (QRT)
9. Meditation - breath awareness
10. Ndanusandhana - Sound awareness

3rd week

Practices

1. loosening exercises
2. Ardhakati chakrasana
3. Padahastasana
4. Ardhachakrasana
5. Instant Relaxation Technique (IRT)
7. Bhujangasana breathing.
8. Shashankasana breathing.
10. Deep Relaxation Technique with imagery.
11. Meditation - Breath awareness,
13. Instant Relaxation Technique (IRT)
4th week

Practices

1. Loosening exercises - 5 Min
2. Ardhakati chakrasana.
3. Padahastasana.
4. Ardhachakrasana.
5. Quick Relaxation Technique (QRT)
7. Bhujangasana breathing.
10. Meditation - Breath awareness,
11. Mind Sound Resonance Technique.

5th week

Practices

1. Loosening exercises - 5 Min
2. Cyclic meditation.
3. Praṇayama - Alternate Nostril, Uni-nostril breathing

4. Meditation _ Breath awareness,

6\textsuperscript{th} week

\textit{Practices}

1. Loosening exercises - 5 Min.

2. Cyclic Meditation With imagery.

3. Review of all practices, developing his/her own module of the practices, which suits them best.

\textbf{YOGA PRACTICES USED IN THE INTERVENTION}

\textbf{NAME OF PRACTICES:}

Breathing Exercises

1. Hands in and out breathing

2. Hands stretch breathing

3. Ankle stretch breathing

4. Straight leg raising (Alternate legs)
Sūkṣma Vyāyāma (Strengthening Exercises)

5. Maṇibandha Śakti Vikāsaka (Wrists)
6. Karapriṣṭha Śakti Vikāsaka (Back of hand)
7. Kaphoni Śakti Vikāsaka (Elbows)
8. Grīva Śakti Vikāsaka -I (Neck)
9. Grīva Śakti Vikāsaka -II (Neck)
10. Kaṭi Śakti Vikāsaka -I (Back)
11. Kaṭi Śakti Vikāsaka -II (Back)
12. Netra Śakti Vikāsaka (Eyes)

Yogāsana

13. Uṣṭrāsana
14. Bhujangāsana
15. Viparīta Karaṇi with wall support
16. Deep Relaxation technique

Prāṇāyāma

17. Kapālabhāti
18. Vibhāga Prāṇāyāma (Sectional Breathing)
6. Sūrya Anuloma Prāṇāyāma
7. Candra Anuloma Prāṇāyāma
4. Nādi Śuddhi

22. Śītalī / Sītkārī / Sadanta Prāṇāyāma

23. Bhrāmarī

**Meditation (Dharana, Dhyana)**

24. OM Meditation

25. *Cyclic Meditation*

26. Mind Sound Resonance Technique (M S R T)

27. *Prānic Energisation Technique (P E T)*

**Kriyas**

28. Jala Neti

29. Sūtra Neti

30. Vaman Dhouti
BREATHING PRACTICES

1. HANDS IN AND OUT BREATHING

a) STARTING POSITION:

- Sthiti: Tādāsana

b) PRACTICE:

- Stretch out your arms in front, in level with your shoulders & bring the palms together.
- While inhaling, spread your arms sideways in the horizontal plane.
- While exhaling bring the arms forward with palms touching each other.
- Repeat five rounds, making your arm movements continuous, breath flowing in and out rhythmically.
- Relax in Tādāsana. Feel the changes in the breath and the body, especially the arms, shoulders and the back of the neck.
2. HANDS STRETCH BREATHING

a) STARTING POSITION:

- Stand erect with feet together (heels together and toes four to five inches apart) relaxed by the side of the body.
- Gently bring your hands in front of the chest.
- Interlock the fingers and place the palms on the chest
- Collapse and relax your shoulders
- Close your eyes.

b) PRACTICE:

- **STAGE-I** (Horizontal)
  - While inhaling, stretch the arms straight out in front of your body so that the arms are at shoulder level.
  - At the same time twist the hands so that the palms face outwards.
  - Fully stretch the arms, but do not strain.
  - Now, while exhaling reverse the process and bring the palms back on to the chest.
  - Collapse the shoulders again.
  - This is one round. Repeat five rounds.
STAGE-II (At $45^0$)

- Repeat the same movements now stretching the arms above the forehead at an angle of $45^0$.
- Repeat the entire thing five rounds.

STAGE-III (Vertical)

- Again repeat the same movements, this time stretching the arms vertically above the head.
- While moving up and down the hands may gently touch the nose tip.
- Repeat five rounds.

c) NOTE:

- Collapse the shoulders at the beginning and end of each cycle.
- Maintain perfect awareness of the breathing.
- Exhalation should be longer than the inhalation.
- If required, it can be practiced sitting on a chair too.
- Properly synchronize the breathing with hand movements.
3. ANKLE STRETCH BREATHING

a) STARTING POSITION:
- **Sthiti:** Tādāsana

b) PRACTICE:
- Open the eyes and fix your gaze on a point on the wall ahead. Keep the palms on front of your thighs.
- While inhaling, raise your hands and stretch the ankles. Feel yourself growing taller and firm.
- As you exhale, bring your hands and heels down.
- Repeat five rounds keeping the movement of hands and ankles continuous breathing in synchronization. Feel the stretch from your ankles to your fingers as you reach upwards.
- Relax in standing position, hands by the side of the thighs. Observe your breath and enjoy the stability for a few seconds.
Breathing exercises in sitting position:

- The initial stance for all these practices is the Legs-stretched relaxed posture i.e., sitting with legs spread out in front. Palms behind the buttocks, fingers facing away from the body, neck hanging loosely backwards.
- Feel the weight of the body on the buttocks and the palms.

4. STRAIGHT LEG RAISING (Alternate legs)

a) STARTING POSITION:

- Sthiti: Supine.

b) PRACTICE:

- While inhaling slowly raise the right leg without bending at the knee, as far as comfortable (up to 90°, if possible).
- While exhaling return the leg to the floor as slowly as possible.
- Repeat the practice with the left leg.
- This is one round. Perform ten rounds.
c) **NOTE:**

- If you need, you can keep the arms by the side of your body with the palms facing the floor at any convenient position or at shoulder level even.
- Do not bend the knee at any cost.
- Do not disturb the leg lying straight on the ground in order to be able to raise the other leg further.
- Even if you can, do not raise the leg beyond 90° because that will create an undesirable pressure on the abdomen.
- Perfectly synchronize breathing with the leg movements.
- Maintain perfect breath awareness during the practice.
SUUKSM STUDY (Strengthening Exercises)

5. MAŅI BANDHA ŚAKTI VIKĀSAKA (Wrists)

a) STARTING POSITION:
- Sthiti: Tādāsana

b) PRACTICE:
STAGE-I (Arms stretched in front)
- Stretch your arms straight in front of the chest at shoulder level, keeping them parallel to the ground.
- Make loose fists of your hands (palms facing down).
- Now, move the fists up and down from the wrists with force.
- Repeat ten rounds.

STAGE-II (Arms bent)
- Stretch your arms sideways at shoulder level, keeping them parallel to the ground.
- Now, bend them at the elbows and bring the hands near the chest, palms facing downward.
• Make loose fists of your hands and move them up and down from the wrist with force.

c) NOTE: (For both Stages)
• The movement should be from the wrists and forceful and vigorous.
• While bringing your fists up and down, try to touch the forearm.
• Keep the arms as stiff as possible.

d) BREATHING: Normal breathing

6. KARA - PṚṢṬHA ŚAKTI VIKĀSAKA (Back of hand)

a) STARTING POSITION:
• Sthiti: Tādāsana

b) PRACTICE:
STAGE-I (Arms stretched in front).
• Stretch the arms in front of the chest at shoulder level.
• Palms open and facing downwards, fingers close together.
• Now, move the palms up and down forcefully from the wrist.
• Repeat ten rounds.

STAGE-II (Arms bent).

• Bring the palms near the chest as in Stage-II of I.
• Here, keep the palms open and palms facing downward, and all the fingers together.
• Now, move the palms up and down forcefully from the wrist.
• Repeat ten rounds.

c) NOTE:

• The movement should be from the wrists and forceful and vigorous.
• While bringing the palms up and down try to touch the forearm (without bending the fingers)
• Keep the arms as stiff as possible.
d) BREATHING: Normal

7. KAPHONI ŚAKTI VIKĀSAKA (Elbows)

a) STARTING POSITION:

- **Sthiti:** Tādāsana

b) PRACTICE:

**STAGE-I** (with fists)

- Stretch the arms straight downwards beside the body and make fists.
- Bend the arms at the elbows and raise your clenched fists forward to the level of the shoulder with a jerk.
- Then stretch them downwards again with a jerk.
- Repeat twenty rounds.

**STAGE-II** (with open palms)

- Here, keep your palms open (facing forward) and with the fingers close together.
- Repeat jerking your arms up and down from the elbows as before.
- Repeat twenty rounds.
c) NOTE: (For both Stages)

- The elbows should remain stationary.
- The fists / palms must come up to the level of the shoulders and then down straight.
- The fists / palms must not touch the shoulders when going up, nor touch the thighs when coming down.

8. GRĪVA ŚAKTI VIKĀSAKA - I (Neck)

a) STARTING POSITION:

- **Sthiti:** Tādāsana
- Relax your neck completely, keep your eyes wide open.

b) PRACTICE:

**STAGE-I** (Turning or Twisting).

- Relaxing your neck, turn your head with a jerk first towards your right shoulder, then towards your left shoulder.
- Repeat this ten rounds.
STAGE-II (Forward and Backward)

- Relaxing your neck, jerk your head, first forward and then backward.
- When it is forward, the chin should touch the sternal notch (chest).
- When it goes back, it should touch the nape of your neck.
- Repeat this ten rounds.

c) NOTE: (For both Stages)

- Movements are done with a jerk to have appropriate effect.
- Neck must be completely relaxed.
- Keep the mouth closed and eyes wide open throughout the practice.

d) BREATHING: Normal.

9. GRĪVA ŚAKTI VIKĀSAKA - II (Neck)

a) STARTING POSITION:

- Sthiti: Tādāsana
- Relax your neck completely, keep your eyes wide open.
b) PRACTICE:

- Keep your chin in and rotate the head from left to right and then right
to left alternately.
- Repeat this ten rounds.

c) NOTE:

- Try to make your ear touch the shoulder.
- Take particular care to avoid raising the shoulder.
- Keep the chin in throughout the practice to have good benefit.

d) BREATHING: Normal

9. KAṬI ŚAKTI VIKĀSAKA -I (Back)

(Forward & backward bending)
STAGE-I

a) STARTING POSITION:

- **Sthiti**: Tādāsana
- Clench your right hand to form a fist with the thumb tucked in and take it behind the back.
- Now, hold the right wrist with the left hand.
- Both hands remain in contact with the back.

b) PRACTICE:

- While inhaling deeply bend backwards as far as you can by keeping the hands in contact with the back.
- Maintain this posture for a few moments.
- Then, while exhaling, bend forward trying to touch the knees with your head.
- Repeat ten rounds.

STAGE-II

a) STARTING POSITION:

- As above except that the left hand should be formal into a fist and right hand holding the left wrist.
b) PRACTICE:

- Same as in Stage-I.

c) NOTE: (For both Stages)

- The hands at the back must always be in contact with the body.
- Hold the positions (forward & backward) for a moment.

10. KAȚI ṢAKTI VIKĀSAKA - II (back)

(Forward & backward bending)

a) STARTING POSITION:

- Stand with your legs separated as far as possible.
- Place your hands on the hips with the thumbs pointing forward and the fingers pointing backward.

b) PRACTICE:

- While inhaling bend backward from the waist as far as you can go.
  
  Maintain this posture for sometime.
• Then while exhaling bend forward trying to touch the ground with the head (without bending the knees).
• Repeat this ten rounds.

c) NOTE:
• Hands continue to be on the hips all through.
• Do not bend the knees at any time during the practice.
• Make the movements within your capacity.

12. NETRA ŚAKTI VIKĀSAKA (Improving the Eye Sight)

a) STARTING POSITION:
• Sthiti: Tādāsana.

b) PRACTICE:
• Tilt your head backwards as far as it will go.
• Look at the spot between the two eyebrows without blinking and with full concentration.
• The eyes must squint in doing so.
• When the eyes feel tired or start watering, stop it and do palming.
• You can repeat it a few times but with rest in between.
c) **NOTE:**

- You must relax the eye muscles between two consecutive practices.
- You can practice this with Nāsāgra Dṛṣṭi also (i.e. gazing at the tip of the nose).
- If it is difficult, you can keep your head in normal position and practice it.
- You can do it even sitting in Vajrāsana etc.

d) **BREATHING:** Normal

**BENEFITS**

- The entire neuro-muscular apparatus of the eye-ball is toned up for better performance and endurance.
- It also has an important effect on improving concentration of the mind.
13. UŚṬRĀSANA

a) STARTING POSITION:

- **Sthiti:** Dandāsana.

b) PRACTICE:

- Sit in Vajrāsana.
- Stand on your knees.
- Place the palms on the waist and fingers pointing forwards.
- Inhale and bend the body backwards and place the palms on the heels.
- Exhale while coming back to Sthiti.

14. BHUJANGĀSANA

a) STARTING POSITION:

- **Sthiti:** Prone
b) PRACTICE:

- Bring the palms to the level of the last rib bone and place them on the ground. Keep the hands bent at elbows; least pressure to be exerted on the hands. Maintain the elbows touching the body; let it not spread out.

- Raise the head first and then the upper portion of the trunk slowly, till the navel portion, just as the cobra raises its hood. Arch the dorsal spine well. Keep the body below the navel straight and in touch with the ground. Maintain this position for a minute.

- Come back to Sthiti position & relax in Makarásana.

15. VIPARĪTA KARĀṆI

a) STARTING POSITION:

- Lie flat on your back with the legs and feet together in a straight line. Place the hands and arms close to the body with the palms facing down.

- Raise the legs to 90\(^\circ\), keeping the knees straight, less stretching inwards slightly.
• Raise the buttocks and the trunk off the floor by supporting the body with the hands at the waist to transfer the weights to the arms and elbows. Keep the elbows as close to each other as possible.

• Slowly move into the final position of Viparītakaraṇi by raising the straight legs to the vertical position and keeping the trunk at an angle of 45° to the ground.

• In the final position the weight of the body rests on the shoulders, neck and the elbows the trunk is at 45° angle to the floor, the legs straight and vertical to the floor & note that the chin should not press against the chest.

• Close the eyes and feel comfortable.

• Focus the awareness on the perineum i.e., the area between the anus and the genitals.

b) PRACTICE:

• Now slowly in a rolling motion, pull the buttocks inwards.

• Then contract the anal sphincter muscles and pull the anus inwards and upward.

• Hold it as long as possible with normal breathing.
• Release the bandha and then retrace the steps to come down to the supine sthiti and rest in Śavāsana for a while.

e) NOTE:

• Apart from Mūlabandha the following practices can also be done in the final position of Viparītakaraṇī.

• Deep abdominal breathing.

• Kapalābhāti

• Aśvini Mudra

• Mūlabandha can be performed also with antarkumbhaka (holding the breath after inhalation).

• It can be practiced for a few rounds.

• Aśvini Mudra, in fact, is a good preparatory practice for Mulabandha & can be practiced in the following way:

• "Contract the anal sphincter muscles and pull the anus inward and upward. Hold for 2 to 3 seconds. Then relax. Repeat this as many times as you can with normal breathing. Continues to briefly contract and relax thus as rhythmically and evenly as possible. Once this is mastered, Mūlabandha can be performed quite effectively."
16. DEEP RELAXATION TECHNIQUE

a) STARTING POSITION:

- **Sthiti:** Śavasana.
- Gently move your whole body, make yourself comfortable and relax completely.

b) PRACTICE:

**Phase-I**

**Phase-I**

- Bring your awareness to the tip of the toes, gently move your toes and relax. Sensitize the soles of your feet, loosen the ankle joints, relax the calf muscles, gently pull up the knee caps release and relax, relax your thigh muscles, buttock muscles, loosen hip the joints, relax the pelvic region and the waist region. Totally relax your lower part of the body. **R..e..l..a..x……..** Chant A-kāra and feel the vibration in your lower parts of the body.
Phase-II

- Gently bring your awareness to the abdominal region and observe the abdominal movement for a while, relax your abdominal muscles and relax the chest muscles. Gently bring your awareness to your lower back, relax your lower back, loosen all the vertebral joints one by one. Relax the muscles and nerves around the back bones. Relax your middle back, shoulder blades and upper back muscles, totally relax. Shift our awareness to the tip of the fingers, gently move them a little and sensitize. Relax your fingers one by one. Relax your palms, loosen the wrist joints, relax the forearms, loosen the elbow joints, relax the hind arms-triceps, biceps and relax your shoulders. Shift your awareness to your neck, slowly turn your head to the right and left, again bring back to the center. Relax the muscles and nerves of the neck. Relax your middle part of the body, totally relax. Relax…Chant U-kāra and feel the vibration in the middle part of your body.

Phase-III

- Gently bring your awareness to your head region. Relax your chin, lower jaw and upper jaw, lower and upper gums, lower and upper teeth and relax your tongue. Relax your palates-hard and soft, relax your
throat and vocal chords. Gently shift your awareness to your lips, relax your lower and upper lips. Shift your awareness to your nose, observe your nostrils, and feel the warm air touching the walls of the nostrils as you exhale and feel the cool air touching the walls of the nostrils as you inhale. Observe for a few seconds and relax your nostrils. Relax your cheek muscles, feel the heaviness of the cheeks and have a beautiful smile on your cheeks. Relax your eye balls muscles, feel the heaviness of eye balls, relax your eye lids, eye brows and in between the eye brows. Relax your forehead, temple muscles, ears, the sides of the head, back of the head and crown of the head. Relax your head region, totally relax.  

Phase-IV

- Observe your whole body from toes to head and relax, chant an Om-kāra. Feel the resonance throughout the body.

Phase-V

- Slowly come out of the body consciousness and visualize your body lying on the ground completely collapsed.
Phase-VI

- Imagine the vast beautiful blue sky. The limitless blue sky. Expand your awareness as vast as the blue sky. Merge yourself into the blue sky. You are becoming the blue sky. You are the blue sky. Enjoy the infinite bliss. E..N..J..O..Y… the blissful state of silence and all pervasive awareness.

Phase-VII

- Slowly come back to body consciousness. Inhale deeply. Chant an “Om-kāra”. Feel the resonance throughout the body. The soothing and massaging effect from toes to head.

Phase-VIII

- Gently move your whole body a little. Feel the lightness, alertness and movement of energy throughout the body. Slowly bring your legs together and the hands by the side of the body. Turn over to the left or the right side and come up when you are ready.
17. KAPĀLA BHĀTI (Preparatory Exercise for Prānāyāma)

a) STARTING POSITION:
   - Sit in any meditative posture.
   - Keep your spine, neck erect and perfectly vertical to the ground.
   - Eyes closed, shoulders collapsed and the whole body completely relaxed.

b) PRACTICE:
   - In this practice, exhalations will be very active and forceful whereas the inhalations will be totally passive and happening on its own.
   - In fact, it is done by blasting out the air and is accomplished by vigorous flapping movement of the abdomen in quick succession.
   - Inhale passively by relaxing the abdominal muscles at the end of each expulsion.
   - Repeat at the expulsion as quickly as possible starting with 60 strokes or expulsions per minute and increasing with practice up to 120 expulsions per minute.
• At the end of one minute, stop the practice.

• Now you will observe an automatic suspension of breath. In fact, there will be no urge for breathing.

• Simultaneously the mind achieves a deep silence. Enjoy this state of silence.

• Then gradually, breathing resumes when you start breathing in and out slowly and then after few rounds it becomes normal.

NOTE:

• Through out the entire practice the spine must be erect. Otherwise, there is a possibility of injuring the spine because of the vigorous flapping of the abdomen.

• In the beginning it may not be possible for one to do the practice continuously for one minute and for so many expulsions or strokes. Therefore, one can start with 10 to 20 strokes or expulsions in one round without bothering for the time it takes and do it for 2 to 3 rounds. Once he gets the technique of doing properly, he can do it rapidly coming to the level of required speed emphasizing on these points.
• Emphasis on the limitation aspect. People with High BP, IHD problems, vertigo, epilepsy, Hernia, Gastric Ulcer, Slipped disc, Spondylosis should not do. Women during menses and advance pregnancy should also avoid.

• In fact, you need not bother about the inhalations. It will happen automatically when the abdominal muscles are relaxed at the end of each expulsion.

• You finally concentrate on the expulsions and do it properly.

• Kapālabhāti can be practiced through alternative nostrils also.

18. VIBHĀGA PRĀNĀYĀMA (SECTIONAL BREATHING)

• This is a preparatory breathing practice for Prānāyāma. It corrects the breathing pattern and increases the vital capacity of the lungs. It has three sections:
ABDOMINAL BREATHING OR DIAPHRAGMATIC

BREATHING       (ADHAMA)

a) STARTING POSITION:

- Sit in any meditative posture.

b) PRACTICE:

- Inhale deeply, slowly and continuously. This is called pūraka, the abdomen is made to bulge continuously with the air entering specially in the lower section of the lungs.

- Before exhaling stop the breath (antaryā kumbhaka) for a second.

- While exhaling (recaka) the abdomen is drawn inwards continuously and slowly.

- Before the breath is reversed, stop the breath (bāhya kumbhaka) for a second and then inhale.

- Repeat the breathing cycle. There should be no jerks in the whole process. It should be smooth, continuous and relaxing.

- The diaphragm separating the thorax from the abdomen descends during inhalation with the bulging of the abdomen. This increases
the airflow into the lower sections of the lungs. The rhythmic movement of the diaphragm massages the contents of the abdomen gently, and helps the organs to function normally. It promotes the general circulation also.

THORACIC (CHEST) BREATHING OR INTERCOSTAL BREATHING (MADHYAMA)

a) STARTING POSITION:
   - Sit in any meditative posture.

b) PRACTICE:
   - In this practice expanding and contracting the chest only performs inhalation and exhalation. Air flows through both nostrils, slowly and continuously. The abdomen is controlled to avoid its bulging.
   - The middle lobes are opened up fully by this type of breathing.
UPPER LOBAR BREATHING OR CLAVICULAR BREATHING

(ĀDYA)

a) STARTING POSITION:

- Sit in any meditative posture.

- PRACTICE:

  - Raise the collarbones while inhaling.
  
  - Keep the abdominal muscles contracted.
  
  - The air is forced into the upper most region of the lungs thus ventilating the upper lobes. The sparingly used upper lobes of the lungs will be properly aerated by this breathing.

FULL YOGIC BREATHING

a) STARTING POSITION:

- Sit in any meditative posture.
b) PRACTICE:

- *In full yogic breathing technique all the other three types will be combined.*
- *During inhalation, the adhama, madhyama and ādhyā occur sequentially and during exhalation the same sequence namely abdominal, chest and clavicular breathing occur.*
- *The whole process should be relaxing and comfortable, without any tension in the face.*

**Four Mudrās** are generally associated with these sectional breathing practices. They are:

- Cin mudrā – abdominal breathing or adhama
- Cinmaya mudrā – thoracic or chest or madhyama
- Ādi mudrā – clavicular or ādya
- Brahma mudrā – complete yogic breathing
19. SŪRYA ANULOMA PRĀNĀYĀMA

a) STARTING POSITION:

- Sit in any meditative posture.
- Adopt Nāsika mudrā with your right hand (folding index & middle fingers towards the palm).

b) PRACTICE:

- Inhalation & exhalation are carried out through the right nostril (sūrya nadi) only.
- Keep the left nostril closed all the time during the practice.
- Practice nine rounds.

20. CANDRANULOMA PRĀṆĀYĀMA

a) STARTING POSITION:

- Sit in any meditative posture.
- Adopt Nāsika mudra with your right hand (folding index & middle fingers towards the palm).
b) PRACTICE:

- Inhalation & exhalation are carried out through the left nostril (candra nādi) only.
- Keep the right nostril closed all the time during the practice.
- Practice nine rounds.

21. NĀDI ŚUDDHI PRĀNĀYĀMA

a) STARTING POSITION:

- Sit in any meditative posture.

b) PRACTICE:

- Close the right nostril with the right thumb by adopting Nāsika mudrā and exhale completely through the left nostril, then inhale deeply through the same left nostril.
- Close the left nostril with your ring & small fingers of the right hand, then open the right nostril and exhale through the right nostril, again inhale through the same right nostril.
- Then close the right nostril and exhale through the left nostril. This is one round of Nādisuddhi prānāyāma.
- This practice also helps to maintain balance between nādis.
- Repeat nine rounds.

22. ŚĪTKĀRĪ/ŚĪTALĪ/SADANTA

Śītalī

a) STARTING POSITION:
- Sit in any meditative posture.

a) PRACTICE:
- Stretch the tongue forward out of the mouth and fold it so as to resemble the back of a crow.
- Slowly suck the air through the beak and feel the jet of cool air passing down the trachea into the lungs.
- Enjoy the turnover and Kevala- Kumbhaka(automatic cessation of breath).
- Slowly exhale through the nostrils, carefully feeling the movement of warm air all the way up from the lungs through the trachea and the nasal passage.
• Enjoy the stoppage of breath and promote this blissful kevala kumbhaka before the breath starts moving in again through the beak of the tongue.

• This completes one round of Śītalī Prānāyāma. Repeat 9 rounds.

ŚĪTKĀRĪ

a) **STARTING POSITION:**

• Sit in any meditative posture.

b) **PRACTICE**

• Fold the tip of the tongue inwards and press the root of the upper palate with the tip of the tongue. The folded tongue slightly comes out between the two rows of teeth and provides a narrow opening on both the sides.

• Slowly suck the air, which enters in through the two sides of the tongue, diffuse throughout the mouth and move down the trachea into the lungs.

• Promote kevala kumbhaka and feel its effects.

• The warm air is exhaled out slowly through the trachea, and the nostrils and the breath stops automatically.
• The deep relaxation obtained due to cooling, extends the kevala kumbhaka.

• This completes one round of Śītkārī. Repeat 9 rounds.

ŚĪTALĪ

a) STARTING POSITION:

• Sit in any meditative posture.

b) PRACTICE:

• Stretch the tongue forward out of the mouth and fold it so as to resemble the back of a crow.

• Slowly suck the air through the beak and feel the jet of cool air passing down the trachea into the lungs.

• Enjoy the turnover and Kevala- Kumbhaka (automatic cessation of breath).

• Slowly exhale through the nostrils, carefully feeling the movement of warm air all the way up from the lungs through the trachea and the nasal passage.
• Enjoy the stoppage of breath and promote this blissful kevala kumbhaka before the breath starts moving in again through the beak of the tongue.
• This completes one round of Śītalī Prānāyāma. Repeat 9 rounds.

SADANTA

a) STARTING POSITION
• Sit in any comfortable posture.

b) PRACTICE
• Let the upper teeth touch the lower teeth.
• The tip of the tongue kept behind the teeth and air is sucked in.
• Inhale through the crevices of the teeth and the air moves over the gums slowly and continuously into the mouth and passes down the trachea into the lungs.
• The warm air is exhaled out slowly through the trachea, and the nostrils and the breath stops automatically.
• The deep relaxation obtained due to cooling, extends the kevala kumbhaka (automatic cessation of breath).
• This completes one round of Sadanta. Repeat 9 rounds.
23. BHRĀMARĪ PRĀNĀYĀMA

UNDERSTANDING M-kāra, N-kāra & BHRĀMARĪ

(M-kāra)

- Chant 'Mā' a few times and you will see that while chanting it
  - Your lips are closed
  - Rows of teeth are separated &
  - The tongue is just behind the lower row of teeth in normal position

- So, in order to chant M-kār, you can chant any word ending with 'M'
  such as 'Om', 'Mum', 'Swim', 'Phālam' etc. but stretch the 'M' part only.
  This will result in 'M-kār' chanting.

- While chanting M-kār, you will notice that the sound is nasal and is
  produced near the upper (soft) palette.
Chant 'Nā' a few times and you will notice that while chanting it:
- Your lips are separated
- Rows of teeth are separated also
- Tongue moves upward and touches the upper (hard) palette &
- Most importantly, there is a partial closure of the epiglottis because of the lifting up of the soft palette.

While doing Brahmari, in fact, the sound of 'N' occurs as it happens in the pronunciation of words such as 'King', 'Ring', 'Sing' etc.

**BHRĀMARĪ**

_Vegad Ghošam Pūrakam Bhringanādam_
_Bhringanādam Recakam Mandammandam_
_Yogīndrānam Evamābhyāsayogat_
_Citte Jāta Kacidānandalīla_

[**Meaning:** By quick forced inspiration one should produce a high humming sound like that of a male bee and by very slow expiration a low sound should be produced resembling that of a female bee]
By a continuous practice of this type there easily supervene a condition of bliss in the minds of Yogin that defies all description.

- So, in order to produce the sound of a female bee (i.e., Bhrāmarī) utter any word ending with 'ng' such as 'Sing', 'Ring' etc. and stretch the 'n' part which will give rise to Bhrāmarī.

**NOTE:**

- While doing Bhrāmarī, if you observe, you will notice that the sound vibration is more at the throat region.
- During practice of Bhrāmarī, touch the tongue to upper (hard) palate
- While practicing Bhrāmarī, feel the strong vibrations particularly in the head region. Also feel its resonating effect. Before going for the next round Bhrāmarī, allow the vibrations to settle down thoroughly
MEDITATION (DHĀRAṆA, DHYĀNA)

24. OM MEDITATION

a) STARTING POSITION:

- Sit in any comfortable meditative posture feeling completely relaxed.

b) PRACTICE:

PHASE-I

- Close your eyes and start chanting OM mentally. Allow the mind to repeat OM continuously without break. If there are distractions, you chant OM faster, not giving a chance to distractions. After a while the chanting slows down. Consciously slow it down further. If the mind jumps to distractions, again increase the speed of japa of OM kara. Thus, by increasing and allowing the speed to slow down, you should be able to have an unbroken stream of the japa in your mind.
PHASE-II

- *Make the chanting softer and softer and gentler and gentler, and more and more effortless. As you progress on the path of meditation, you will reach the second phase of japa in which you start feeling the vibration of the japa in the particular part of the body and later throughout the body.*

PHASE-III

- As you slow down the japa of OM kāra observe the gap between OM . Further you slow down the gap widen and widen to diffuse into silence.

PHASE-IV

- The very deep experience of silence helps to expand from the 3dimensional awareness of the body to all pervasive awareness. The bed of silence becomes deeper and more expansive – an ocean of silence with waves on it – merge into complete silence – AJAPA. This silence is the source of Creativity, Power, Knowledge and Bliss.
25. CYCLIC MEDITATION (C M)

STEP-I: STARTING PRAYER

- Lie on your back. Relax and collapse the whole body on the ground legs apart, hands apart, palms facing the roof, smiling face, let go all parts of the body. As you repeat the prayer feel the resonance throughout the body.

*Laye Sambodhayet Cittam Vikśiptam Śamayet Punah/

*Sa Kaśāyam Vijāniyāt Samaprāptam Na Cālayet//

**Meaning:** In the state of oblivion awaken the mind, when agitated pacify it, in between the mind is full of desires. If the mind has reached the state of perfect equilibrium, then do not disturb it again.

STEP–II(A): INSTANT RELAXATION TECHNIQUE (I R T)

- Bring your legs together, join the heels, toes together, palms by the side of the thighs. Keep your face smiling till the end. Gently bring your awareness to the tip of the toes. Stretch the toes, tighten the ankle joints, tighten the calf muscles. Pull up the kneecaps. Tighten the thigh muscles. Compress and squeeze the
buttocks. Exhale and suck in the abdomen. Make the fists of the palms and tighten the arms. Inhale and expand the chest. Tighten the shoulders, neck muscles and compress the face. Tighten the whole body from the toes to the head. Tighten......tighten......tighten...... Release and relax. Legs go apart, arms go apart, palms facing the roof. Assume the most comfortable position, let the whole body sink down. Let all the groups of muscles beautifully relax. Collapse the whole body. Enjoy the relaxation.

**STEP-II(B): LINEAR AWARENESS**

- Now slowly bring the left hand over head along the ground. Slowly turn over the left side. Place the head on the left biceps. The right leg on the left leg. Right palm on the right thigh. Let the whole body relax. The entire weight of the body coming down to the ground through the left side. Fine linear awareness. Slowly start coming up to Tādāsana. Let all the movements slow down. Let the breathing be deep, slow, and continuous. Eyes are kept closed. Carefully feel the changes in your body as you reach the vertical position. Feel the flow of blood down the heart. Feel the
heartbeat and the pulse. Let us chant Bhramari to generate 3D awareness. MMM……….. Feel the whole body resonating. Feel the fine massaging effect.

**STEP-III: CENTERING**

- Now centering. Slowly lean forward. Feel the weight of the entire body on the toes. Pointed awareness. Slowly lean backwards. Feel the weight on the heels. Surface awareness. Come to the center. Lean to the right. The weight of the entire body is on the right edge of the right foot. Linear awareness. Lean to the left. Come to the center. Fine surface awareness. Now the whole body is centered, the weight of the body is equally distributed throughout the soles of the feet. Collapse the shoulders, arms hanging freely down. Smiling face. Feel all the changes taking place throughout the body.
STEP-IV: STANDING ĀSANA

ARDHA KATI CAKRĀSANA (AKC)

- Now we pass on to the first set of stimulation and relaxation.
- Ardha Kati Cakrāsana the half wheel posture.
- Slowly start raising the right arm sideways upwards, 45º raise the arm further slowly and continuously to horizontal position, enjoy the movement. As the right arm reaches the 90º position twist the palms at the wrist. Pointed awareness and glide the right arm up to 135º position. Beautiful pointed awareness on the deltoid muscles on the right arm. As the right arm reaches up the vertical position feel the nice stimulation in the shoulder muscles. The right biceps touching the right ear, feel the beautiful surface awareness. Feel the blood gushing down the arm. Smiling face. Stretch the right arm from the tip of the fingers of the right palm. The entire right portion of the body gets stretched, but not the face. Face always smiling and relaxed. Slowly start bending down to the left. Left palm sliding down along the left thigh. Fine movement of surface awareness. Enjoy the fine stretch of the waist muscles on the right side and compression on the left side. Observe all the changes
taking place in your body. Slowly start coming back to vertical position. Feel the blood flowing down, the nerve impulses throughout the body. Again stretch and pull up the right arm and the entire right portion of the body stretched from the toes to the tip of the fingers. Slowly start bringing the right arm down to 135º gliding down smoothly. Feel the pointed awareness at the shoulder as you reach horizontal position and at the wrist as you slowly turn the palm downwards. Further bring down the right arm to 45º. Feel the tingling sensation at the tips of the fingers. Continuously glide down the hand by the side of the thigh and hang it freely. Have a glance of the whole body again from toes to head. Entire right portion of the body is beautifully charged with nerve impulses, light and energized.

- Now let us perform AKC from the left side. Slowly start raising the left arm sideways upwards. 45º. Gliding smoothly upwards to horizontal position, palm twisted upwards. Beautiful pointed awareness at the wrist. Left arm beautifully moving up to 135º. Then to vertical position. Left biceps touching the left ear. Now stretch up the left arm from the tip of the left fingers. Entire left portion of the body gets stretched up but not the face, face smiling
and relaxed. Slowly start bending to the right. Right palm sliding down the right thigh. Movement of surface awareness, beautiful stretch of the left waist muscles. Enjoy the changes going on. Feel the heart beat, the nerve impulses spreading throughout the body. Slowly start coming up to the vertical position. Feel the nerve impulses from the tips of the fingers of the left palm. Pull up the left palm. Entire left portion of the body gets stretched up. Slowly bring the left arm down to 135°, then further down to horizontal position. Twist the wrist downwards and enjoy the pointed awareness. Glide your arm down further to 45°. Continuously glide down the hand by the side of the thigh and hang it freely. Collapse the shoulders. Have a glance of the whole body again from toes to head. Entire left portion of the body is charged with nerve impulses, energized and light. Enjoy the sense of well being. Check the centrifugal. Both the sides of the body are equally energized.

STEP-V: QUICK RELAXATION TECHNIQUE (Q RT)

- Now slowly sit down and then lie down to Śavāsana from the right side. Let all the movements be slow and continuous. The entire right arm stretched, head on the right biceps, left leg on the
right leg, left palm on the left thigh, the weight getting transferred to the ground from the right side, beautiful sharp linear awareness. Slowly turn over, the muscles of the back collapsing on the ground, bring down the right arm along the ground. Legs apart, arms apart, palms facing the roof. Assume the most comfortable position.

Phase I – Observing the abdominal movements

- Bring your awareness to the movements of the abdominal muscles moving up and down as you breathe in and out. Recognize the haphazardness and jerky movement of the abdominal muscles. Do not manipulate the breathing, let it be natural, simply observe the abdominal movement. Count yourself five rounds mentally, one inhalation and one exhalation forming one round.

Phase II – Associate with breathing

- Synchronize the abdominal movements with the breathing. While inhaling the abdomen bulging up and while exhaling the abdomen-sinking down. Inhale…… deeply and exhale….. completely. Continue upto five rounds.
Phase III – Breathing with feeling

- As you inhale, the abdominal muscles are coming up feel the whole body getting energized and feel the lightness. As you exhale, feel the whole body collapses and sinks down nicely, releasing all the stresses and tensions completely. Inhale…… deeply and exhale…… completely. Continue upto five rounds.

- Bring your legs together and hands by the side of the body. Come up straight with the support of the elbows to the sitting legs stretched relaxation position Śīthili Dandāsana. Let all the movements be slow and continuous without jerk. Legs apart take the support of the palms backwards. Relax the neck muscles. The head hanging freely down backwards or resting either one of the shoulders. Feel the changes throughout the body.

STEP-VI: SITTING ĀSANA

- Now we pass on to the next set of stimulation and relaxation. Vajrāsana, Śaśānkāsana and Ardhauṣtrāsana/Uṣtrāsana combination.
A. VAJRĀSANA

- Slowly fold the right leg backward and then the left leg, sitting on the heels, coming to the Vajrāsana position. Palms on the thighs and keep the spine erect. Enjoy the effect of harmonizing, the beautiful balance. Recognize all the changes in the body.

B. ŚAŚĀNKĀSANA

- Now slowly start taking the arms behind. Hold the right wrist with the left palm. Start feeling the pulse at the right wrist, feel the heart beat. Now slowly start bending down forward for Śaśānkāsana. The abdominal and chest muscles pressing on the thigh, beautiful surface awareness. Now collapse the forehead on the ground. Fine surface awareness. Collapse the shoulders. Observe all the changes going on, the increased flow of blood into the head and feel the heaviness in the head region. Inhale and chant M-kara, MMM……… Feel the resonance throughout the head, 3D awareness. Slowly come up to Vajrāsana. Carefully follow all the changes in the head region. Feel the lightness in the head. Feel the heart beat, fine 3d awareness throughout the body. Slowly release the arms, place them on the thighs near the knees.
C. UŚTRĀSANA

- Slowly rise up to stand on the knees for Ardhauśtrāsana, the back bending camel posture. Standing on the knees, observe all the changes in the head region. Slowly slide the palms up along the thighs, fingers together and support the waist with the palms, fingers pointing forwards. Slowly start bending backwards from the waist. Relax the neck muscles; head hanging freely down. Beautiful stretching of the abdominal and thoracic muscles. This is Ardhauśtrāsana. Those who can, go further down to Uśtrāsana by placing both the palms on the soles of the feet. Have a beautiful smile on the face. Inhale and chant an A-kāra, AAA............. Slowly return by releasing the arms and placing them on the waist. Feel the avalanche of nerve impulses throughout the body. Feel the heartbeat. Slowly come back to Vajrāsana and place the palms on the thighs. Feel all the changes and let the changes continue. Fine 3 dimensional awareness throughout the body. Unfold the right leg and the left leg. Assume the leg stretched position. Head hanging freely backward or resting on either of the shoulders.
STEP–VII: DEEP RELAXATION TECHNIQUE (DRT)

- Slowly slide down to Śavāsana with the support of the elbows. Legs apart, hands apart, palms facing the roof. Let the whole body collapse on the ground. Let us make ourselves comfortable and relax completely. We will now go for DRT:

Phase-I

- Bring your awareness to the tip of the toes, gently move your toes and relax. Sensitize the soles and relax, relax your feet, loosen the ankle joints, relax the calf muscles, pull up the knee caps, release and relax, relax your thigh muscles, buttock muscles, loosen the hip joints, relax the pelvic region and the waist region. Totally relax your lower part of the body. R.e.l.a.x………. Chant A-kāra, AAA……. Feel the vibration in your lower parts of the body.

Phase-II

- Gently bring your awareness to the abdominal region and observe the abdominal movements for a while, relax your abdominal muscles, relax the chest muscles. Gently bring your awareness on your lower back, relax your lower back and loosen all the
vertebral joints one by one. Relax the muscles and nerves around the backbones. Relax your middle back, shoulder blades and upper back muscles, totally relax. Shift your awareness to the tip of the fingers, gently move them a little and sensitize. Relax your fingers one by one. Relax your palms, loosen the wrist joints, relax the forearms, loosen the elbow joints, relax the hind arm-triceps, biceps and relax your shoulders. Shift your awareness to your neck, slowly turn your head to the right and left, again bring back to the center. Relax the muscles and nerves of the neck. Relax your middle part of the body, totally relax.

R..e..l..a..x……..Chant U-kāra, UUU……. Feel the vibration in the middle part of your body.

Phase-III

- Gently bring your awareness to your head region. Relax your chin, loosen your lower jaw and upper jaw, relax your lower and upper gums, lower and upper teeth and relax your tongue. Relax your palates-hard and soft, relax your throat and vocal chords. Gently shift your awareness to your lips, relax your lower and upper lips. Shift your awareness to your nose, observe your nostrils, and feel the warm air touching the walls of the nostrils as you exhale and feel the cool air touching the walls of the nostrils
as you inhale. Observe for a few seconds and relax your nostrils. Relax your cheek muscles, feel the heaviness of the cheeks and have a beautiful smile on your cheeks. Relax your eye balls muscles, feel the heaviness of eye balls, relax your eye lids, eye brows and the space between the eye brows. Relax your forehead, temple muscles, ears, the sides of the head, back of the head and crown of the head. Relax your head region totally relax. Relax…… and chant M-kāra, MMM……. Feel the vibration in your head region.

Phase-IV

- Observe your whole body from toes to head and relax, chant AUM in a single breath A……U……M……. Feel the resonance throughout the body.

Phase-V

- Slowly come out of the body consciousness and visualize your body lying on the ground completely collapsed.

Phase-VI

- Imagine the vast beautiful blue sky. The limitless blue sky. Expand your awareness as vast as the blue sky. Merge yourself into the blue sky. You are becoming the blue sky. You are the

**Phase-VII**

- Slowly come back to body consciousness. Inhale deeply. Chant an Om-kāra. Feel the resonance throughout the body. The soothing and massaging effect from toes to head.

**Phase-VIII**

- Gently move your whole body a little. Feel the lightness, alertness and energy throughout the body. Slowly bring your legs together and the hands by the side of the body. Turn over to the left or the right side and come up when you are ready.

**STEP–VIII: CLOSING PRAYER**

*Sarve bhavantu sukhinah Sarve santu nirāmayāh*

*Sarve bhadrāni paśyantu Mā kaścit duhkha bhāghavet*

*Om Śāntih Śāntih Śāntih.*

**Meaning:** May all be happy. May all be free from disease. May all see only things auspicious. May none be subject to misery.
26. MIND SOUND RESONANCE TECHNIQUE (M S R T)

STARTING POSITION:

- Sit in any meditative comfortable position or lie down in Śavāsana with legs apart, hands away from the body, head and neck in a very convenient position. The whole body is completely collapsed on the ground.
- Let us start the session with the prayer ‘Mrtyunjaya Mantra.

* Om Trayambakam yajamahe

* Sugandhim Pustivaradhanam

* Urvarkamivabndhanat

* Mrtyormukshiya mamrtat

. Om Shanti, Shanti, Shanti.

STEP-I : A-KĀRA Chanting (9-Rounds)

Maintain calmness of your mind and let us slowly proceed to the practice of M S R T, recognizing all the subtle changes during chanting. Let us being with chanting 9 rounds of A-kāra Synchronizing with the whole
group and chanting very smoothly and try to feel the vibration in the lower parts of the body. Inhale A……… very carefully observe the changes, all the vibrations smoothly settling down. Very slowly and leisurely awaken the energies and chant another A-kāra. Inhale A……… Once again recognize all the vibrations settling down, gradually merging into the inner calmness, taking you very naturally into that inner quietude. Recognize the sublime state of energies. Learn to effortlessly remain in that peaceful state for longer and longer duration. Inhale A…………very carefully observe all the changes within Inhal again A…………, Inhale A…………, Fine vibrations of A kāra engulfing your whole being and smoothly taking you into inner calmness, recognize the subtle and sublime state of energies at all levels. Once again inhale deeply A…………, Every chanting taking you into deeper and deeper level of calmness, softer and softer states of your being. Try to produce a very rich sound and every chanting giving full expression to your energies. Inhale A………Recognize, the energies very smoothly subsiding, taking you into inner quietude. Inhale A………… Let go all inhibitions of your energies. Recognize a very tranquil flow. Final round of A-kāra. Inhale A………… learn the subtle technique of producing resonance by perfectly matching the sound vibrations and that of the body vibrations followed by quietude.
STEP –II : U-KĀRA Chanting( 9-rounds)

Let us now move on to U-kāra chanting. Inhale U……. Try to produce very powerful sound, the flutter, the buzzing sound as you exhale. Inhale U……. Feel the pleasant resonance in the chest cavity very peacefully subsiding. Again inhale U……. Maintaining all the alertness of the mind and keen sensitivity. Recognize all the subtle changes. Inhale U……., Inhale U……., Breathe In for the sixth round U…….. Again inhale U…….. Recognize the smooth and relaxed state of energies. Inhale U……., Inhale U…….. Last round Inhale U…….. Appreciate the inner calmness.

STEP –III : M-KĀRA Chanting( 9-rounds)

Let us move on to produce the finest vibration of M-kāra. Inhale M……. Feel the blossoming of energies particularly in the head region, giving you the wonderful feeling of expansion. Again inhale M……., Inhale M……., inhale M……., Inhale M……., inhale M……., Inhale M……., inhale M…….. Last round Inhale M……. allow the resonance to diffuse in the head region.
STEP –IV : OM-KĀRA Chanting( 9-rounds)

Let us now proceed to chant OM-kāra by combining all the three syllables, A U M, giving a sublime release of energies. Feel the flow of energy during chanting starting from A-kāra and ending with M-kāra, wonderful feeling of expansion in the whole body. Inhale A…U…M……. in the ration of 1: 1: 2. Inhale A…U…M……. Recognize the blissful feeling of lightness and expansion of your energies, the wonderful calmness and tranquility of the mind. Again inhale A…U…M……. Check your position. Allow all the vibrations to completely quieten down. Inhale A…U…M……., Inhale A…U…M……. Merge into the divine vibration of OM. Inhale A…U…M……., Inhale A…U…M……., Inhale A…U…M……. Last round inhale A…U…M……. Allow the resonance and the subtle vibrations to diffuse and merge into silence.

27. PRANIC ENRGISATION TECHNIQUE (P E T)

*Please refer to the book “Pranic Energisation Technique”, Published by SVYASA*
KRIYĀS

NETI (Clearing the nasal passage)

28. JALA NETI

a) STARTING POSITION

• Stand in Tādāsana

b) PRACTICE

• Spread the legs apart.

• Hold the neti pot in your right hand.

• Insert the nozzle of the Neti pot into the right nostril.

• Keep the mouth open to allow free breathing through the mouth.

• Tilt the head first slightly backward, then forwards and sideways to the left so that the water from the pot enters the right nostril and comes out through the left by gravity. Allow the flow till the pot is empty.

• Repeat the same on the left side.

• Blow out the water accumulated in both the nostrils by active exhalation through alternate nostrils as in Kapālabhāti to clean the nasal passage of the remaining water.
C) NOTE:

- Add about half a teaspoon of salt to a neti pot full of lukewarm water

29. SŪTRA NETI OR RUBBER CATHETER NETI

- Insert the blunt end of a thin soft rubber catheter from the front horizontally in the right nostril.
- Push it along the floor of the nose until the tip is felt in the back of the throat.
- Insert the right index and the middle fingers through the mouth and catch the tip of the catheter at the back of the throat.
- Pull it out through the mouth and gently massage the nasal passage by catching the two ends of the tube.
- Remove the catheter through the nose
- Repeat on the left side.

30. VAMAN DHOUTI

- Sit on heels, and drink luke-warm saline water till you can take no more, or till you feel like vomiting it out.
- Churn the stomach by twisting exercises.
• Stand with feet together and bend the trunk forward forming an angle of about 90° and vomit.

• Now with the help of the middle three fingers tickle the back of the throat to vomit out (vaman) all the water.

• Repeat the process of tickling, till no more water is forthcoming, which means that all water has been vomited.

• With continued practice one can stimulate the vomiting sensation and vomit out the water without using the fingers at the throat. Further practice can lead to a continuous vomiting of all the water through mouth as if it is coming in a jet.

c) **NOTE:**

• This is to be done early morning on an empty stomach.

• Relax completely in Šavāsana for about half an hour(D R T )

• Eat kichadi (rice and dhal boiled together preferably without salt) with about four to six spoonful of pure ghee for breakfast. Lunch can be a normal diet.
APPENDIX II

PSYCHOLOGICAL QUESTIONNAIRES AND CONSENT FORMS
SWAMI VIVEKANANDA YOGA ANUSANDHANA SAMSTHANA

Perceived Stress Scale

Name: ………………………… Date: ……………………

Patient No: ………………… Visit No: …………………

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

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2. In the last month, how often have you felt that you were unable to control the important things in your life?

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3. In the last month, how often have you felt nervous and "stressed"?

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4. In the last month, how often have you felt confident about your ability to handle your personal problems?

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5. In the last month, how often have you felt that things were going your way?

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6. In the last month, how often have you found that you could not cope with all the things that you had to do?

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7. In the last month, how often have you been able to control irritations in your life?

0 1 2 3 4
Never  Almost  Sometimes  Fairly  Often  Very Often

8. In the last month, how often have you felt that you were on top of things?

0 1 2 3 4
Never  Almost  Sometimes  Fairly  Often  Very Often

9. In the last month, how often have you been angered because of things that were outside of your control?

0 1 2 3 4
Never  Almost  Sometimes  Fairly  Often  Very Often

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0 1 2 3 4
Never  Almost  Sometimes  Fairly  Often  Very Often
Psychometric Properties Of Questionnaires

**Perceived stress** will be measured with the 10-item version of the *Perceived Stress Scale* (Cohen, 1988). The Perceived Stress Scale, which was designed for use with community samples, is now the most widely used self-report measure of psychological stress. Participants respond how often during the past month they experienced thoughts and feelings such as “felt that you were unable to control the important things in your life,” “felt that things were going your way,” “been unable to control irritations in your life.”

**HOSPITAL ANXIETY AND DEPRESSION SCALE**

Name: date:

PID No:
Doctors are aware that emotions play an important part in most illnesses if your doctor knows about this feelings he will be able to help you more. This questionnaire is designed to help your doctor to know how you feel. Read each item and place a tick in the box opposite the reply which comes closest to how you have been feeling in the past week.
Don’t take too long over your replies. Your immediate reaction to each item will probably be more accurate than a long thought of response.

Tick only one box in each section.

1. I feel tensed or wound up:
   - Most of the time.
   - A Lot of the time.
   - Time to time, Occasionally
   - Not at all.

2. I still enjoy the things I used to enjoy:
   - Definitely as much.
   - Not quite so much.
   - Only a little.
   - Hardly at all.

3. I get a sort of frightened feelings as if some thing awful is about to happen:
   - Very Definitely and quite badly.
   - Yes but not too badly.
   - A little but it does not worry me.
   - Not at all.

4. I can laugh and see funny side of things:
   - As much as I always could.
   - Not quite so much now.
   - Definitely not so much now.
   - Not at all.

5. Worrying thoughts go through my mind:
   - A great deal of the time.
   - A lot of the time.
   - From time to time but not too often.
   - Only occasionally.
6. I feel cheerful:
   Not at all.
   Not often.
   Sometimes.
   Most of the time.

7. I can sit at ease and feel relaxed:
   Definitely.
   Usually.
   Not often.
   Not at all.

8. I feel as if I am slowed down.
   Nearly all the time.
   Very often.
   Sometimes.
   Not at all.

9. I get a sort of frightened feelings like ‘butterflies’ in the stomach.
   Not at all.
   Occasionally.
   Quite often.
   Very often.

10. I have lost interest in my appearance:
    Definitely.
    Quite a lot.
    I may not take quite as much care.
    I take just as much care as ever.

11. I feel restless as if I have to be on the move:
    Very much indeed.
    Quite a lot.
    Not very much.
    Not at all.
12. I look forward with enjoyment to things:
   As much as ever I did.
   Rather less than I used to.
   Definitely less than I used to.
   Hardly at all.

13. I get sudden feelings of panic:
   Very often indeed.
   Quite often.
   Not very often.
   Not at all.

14. I can enjoy a good book or radio or TV Programme.
   Often.
   Sometimes.
   Not often.
   Very seldom.

Keys: Questions for Anxiety score: 1, 4, and 6, 7, 8, 11, 13
Responses graded from 0 to 3.
MAX- 21
MIN- 0 for anxiety subscale.

Questions for depression Score: 2, 3, 5, 9, 10, 12, 14.
Responses graded from 0 to 3.
MAX- 21.
MIN- 0 for depression subscale.
Psychometric Properties Of Questionnaires

Hospital Anxiety and Depression Scale: Is a 14 item questionnaire developed by Snaith and Zigmond and used for screening for depression and anxiety in hospital patients. This has a high reliability 0.62 to 0.8 and correlates strongly with DSM IV criteria for depression and anxiety.
INFORMED CONSENT FORM

**Project**
Evaluation of yoga intervention in modulating genotoxic stress in patients with carcinoma of Breast undergoing radiation and chemotherapy.

**IRB Approval:** Date:

**Contact Information:**
Drs GopinathK.S/ B.S Ramesh
Bangalore Institute of Oncology
Sampangirammnagar
Bangalore.
Phone- 22225644 / 98.

Dr Vadiraja H.S
Dr Jayashree
Yoga Wellness Center
No-41/14, 2nd cross
Rajarammohanroy extn
Bangalore.Ph: 55313368.

**Description of Study:** In this research study, we will be looking at effects of radiation induced alterations in the immune cells and also study the relationship between stress and these changes. We also plan to study the effect of yoga on stress and radiation induced alterations in the immune cells. The objective of this study is to assess whether stress such as depression enhances these alterations and if therapies like yoga can reduce them. A better understanding of the relationship between stress, radiation induced alterations in immune cells and yoga will help to improve quality of treatment, quality of life and may improve patient responses to radiation.

You have been selected as a participant based on your cancer diagnosis and because you are receiving radiation and chemotherapy. The total duration of study is eight weeks where you will be asked to attend yoga classes five days a week. If you agree to participate, you will be interviewed at our clinic, and then
asked to complete six surveys to determine your mood, symptoms, level of depression and quality of life.

You will have a 50/50 chance (like flipping a coin) of being placed in one of two groups. Neither your doctor nor you will make the choice, so that bias in the study is reduced. The two groups are (a) the Intervention Group or (b) the Control Group. The Intervention group will get the yoga classes at the beginning of the study. The second group will also get the yoga classes, but after 3 months in the study.

You will also be asked to give an 8ml blood sample at the start of the study and after eight weeks of practicing yoga/ receiving radiation to assess your genotoxic damage and repair. The blood samples will be collected by a trained laboratory technician after breakfast between 8.00am to 10.00 am by using a sterile needle. You will also be asked to provide saliva samples 3 times/day on 3 consecutive days before and after the study. The samples can be stored in the vials provided and you will have to give the stored vials after 3 days of collection. Collecting the blood sample will take about 10 minutes and filling out the surveys will take about 40 minutes. Therefore, participation in this research study will require approximately 5 hours of your time every week for 3 months. At the end of this research study, you can request a copy of the findings by contacting Dr Vadiraja H.S.

**Risks/Benefits to the Participant:** There are no significant risks involved with participation in this study. The information you will be asked to discuss will be personal and will require you to reveal information about your mental well being, moods, and how you are coping with cancer. However, you will only be asked to respond with a number or a single word, and will not be asked to elaborate upon responses. You will also be asked to provide a blood sample, which will be collected by trained personnel. The risks of drawing blood include temporary discomfort from the needle stick, bruising, and, rarely, infection. The investigations pertaining to the study and yoga therapy charges will be free during this study. Since these blood tests are expensive, you may benefit financially from participation in this study. You will also have the opportunity to gain knowledge that might improve treatment options available to patients with cancer.
Yoga practices will be introduced in a gentle and slow pace to help you relax. These practices will have no religious connotation nor affect the religious sentimentality of any participant. If you have any concerns about the risks or benefits of participating in this study, you can contact Dr Ramesh/Gopinath, Dr Vadiraja H.S or Dr Jayashree at the numbers listed on the previous page. The place of intervention will be in the premises of BIO.

**Incase of Injury to the subject:**
If you are injured as a result of being in this study due blood draws or yoga postures, you will be provided all the necessary treatment for injuries arising due to these circumstances. You should contact the study staff or report to the clinical supervisor and in the event of such claim.

**Cost and Payments to the Participant:** There is no cost for participation in this study. Participation is completely voluntary and no payment will be provided. Also any patient requiring any other form of therapy will be informed of the same and no cost will be born for these from our end. However such participants will be permitted to continue with the treatment program already commenced unless they wish otherwise.

**Confidentiality:** Information obtained in this study is strictly confidential unless disclosure is required by law. You will be assigned a research number, rather than your name, which will be recorded on the assessments you receive. All data will be secured in a locked filing cabinet. Your name will not be used in the reporting of information in publications or presentations.

**Participants Right to withdraw from the Study:** You have the right to refuse to participate in this study, the right to withdraw from the study and the right to have your data destroyed at any point during or after the study, without penalty, except in situations that violate state and/or federal law and regulations.
Termination of Participation: My participation in the study may be terminated by the Investigator under such circumstances wherein:

i) The subject fails to adhere to the requirement and regulations put forth in the study.

ii) The subjects default on the treatment or intervention or investigations frequently.

VOLUNTARY CONSENT BY THE PARTICIPANT
Participation in this research project is completely voluntary, and your consent is required before you can participate in this research. If significant new information related to this study becomes available and this information may affect your willingness to participate in this study, Dr Gopinath/Dr Ramesh or Dr Vadiraja H.S will alert you immediately.

I have read this consent form (or it has been read to me) and I fully understand the contents of this document and voluntarily consent to participate or consent to have my child participate. All of my questions concerning this research have been answered. If I have any questions in the future about this study, they will be answered by the investigator listed above or his/her staff. I understand that this consent ends at the conclusion of this study. A copy of this form has been given to me.

Participant’s Signature _________________ Date: __________

Witnesses Signature _________________ Date: __________

Counter signed by;

Signature of the staff    Clinical Supervisor
APPENDIX III

EXPERIMENTAL PHOTOGRAPHS

**Figure 1:** Electrophoresis tank used for single cell gel electrophoresis

**Figure 2:** Micro centrifuge used for separation of lymphocytes

**Figure 3:** Laminar Air Flow ensures a sterile environment and indirect incandescent lighting conditions
Figure 4: Trinocular Microscope with fluorescent filters used for counting cells stained with Propidium Iodide

Figure 5: Minus twenty refrigerator for micro gel preparation

Figure 6: results of comet assay showing all two types of cells Apoptotic cells Comet cell
**Figure 7:** Results of Comet assay showing two normal cells and one comet

**Figure 8:** results of Comet Assay showing comet cell with a high DNA damage
APPENDIX IV

PROTOCOLS

COMET ASSAY PROTOCOL

The use of alkaline comet assay with lymphocytes in human bio-monitoring studies Floriane faust et al, mutation research 566,(2004) 209-229

1. Lymphocytes isolated by ficol method
2. Lymphocyte mixed with 1% low melting agar (3:1 mixture)
3. Layered on pre-agar-coated slides
4. Slides are immersed in SDS lysing buffer for two hours
5. Slides are electrophoresed for 45 minutes at 20V
6. Neutralized in neutralizing buffer for 20 minutes
7. Stained with propidium iodide and covered with a cover slip
8. Analyzed under fluorescent microscope
9. The tail of the comets measured using KOMET software
10. The measure of the tail length is directly co-related with the DNA damage
TELOMERIC FISH
*Fluorescent in situ hybridization with comets*, Santos et al, experimental cell research 232 (1997), (407-411)

1. Lymphocytes isolated by ficol method
2. Lymphocyte mixed with 1% low melting agar (3:1 mixture)
3. Layered on pre-agar-coated slides
4. Slides are immersed in SDS lysing buffer for two hours
5. Slides are electrophoresed for 45 minutes at 20V
6. Neutralized in neutralizing buffer for 20 minutes
7. The telomeric probes for all chromosomes with fluorescent dyes are added to the micro-gels
8. Specific telomeric damages are looked for under the microscope and the image is captured using a FISH image processor.
### Neutral Comet Assay

**Lysis Buffer**

1. H₂O - 150ml
2. EDTA - 1.674g
3. SDS - 750mg
4. Proteinase K - 250μl 1mg/ml

- [PH = 8]

**TBE Buffer**

1. H₂O - 350ml
2. EDTA - 260.4mg
3. Tris HCl - 4.956g
4. Boric Acid - 2.082g

- [PH = 8]

**Neutralisation Buffer**

1. Tris HCl - 1.21g in 25ml of H₂O

### Alkaline Comet Assay

**Lysis Buffer**

1. H₂O - 100ml
2. NaCl - 14.6g
3. Na₂EDTA - 3.6g
4. Tris - 0.12g
5. NaOH - 0.12g
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## APPENDIX - V RAW DATA TABLES

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CONTROL GROUP HOSPITAL ANXIETY AND DEPRESSION

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Deep Relaxation Technique (DRT)

Prashanthi Kuteeram, sVYASA, Bangalore

Cancer Patients at Prashanthi
VYASA, Bangalore, India
• Patient at ease with Module
» NEVER FORCED – OR – OVER DO
YOGA SESSION IN PROGRESS
Patient at ease with Module
NEVER FORCED
OR
OVER DO
Collaborating Organizations

- Department of Surgical & Radiation Oncology, Bangalore Institute of Oncology, Bangalore, India
- Division of Life Sciences, Swami Vivekananda Yoga Anusandhana Samsthana, Bangalore, India
- Department of Medical Genetics, Manipal Hospital Bangalore, India
- Department of Surgical & Radiation Oncology, Bangalore Institute of Oncology, Bangalore, India
- Bharath Cancer Hospital, Mysore, India
- VYASA, Bangalore, India