



Breath of Life
Science and Art of
Pranayama

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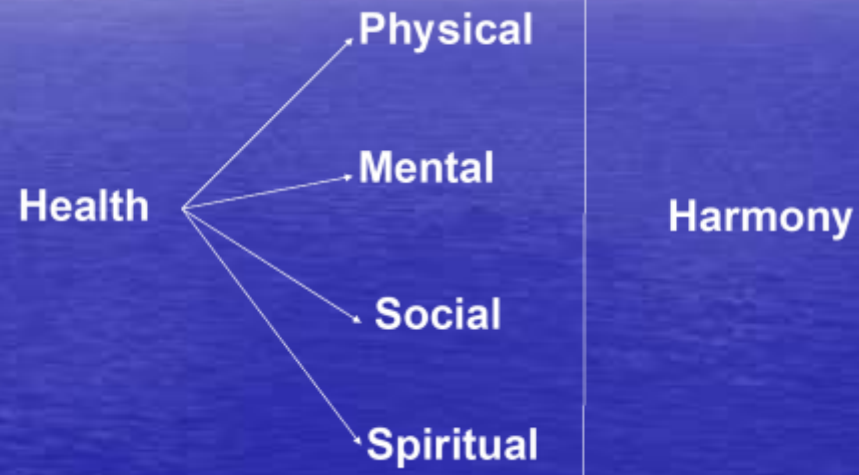


A Book of Life....

- Each one of us would have an easier life if we came on earth with a book that told us how to Live
- Which answered all of our questions about life and gave us all the support we needed in times of ups and downs....
- However, each one of us needs to find our own path and write our own book....
- Ayurveda and Yoga provides us the insights to write that book....
- Attending this session is the first step

***Integrative Approach can be defined as :**
Integration of various modalities and
approaches to Support :

- Mental
- Physical
- Emotional
- Spiritual



- **Integrity of an Individual and to Maintain and Improve Quality of Life!**
- **3 Dimension *Fitness *Diet & Nutrition * Mind Body**
- **Example - MEDS from SAHC**



- Apart from support on **four-dimensions** and focus on **improving quality of life**, it also encompasses - **Enhancement of, or Lessening of Recovery time** after illness
- Support **Long and Healthy Survivorship** with the goal of **Disability Limitations**

We can say, it works on model of **Three Tier Preventive Approach:**



- **Primary Prevention: Preventing Illness in First place**
- **Secondary Prevention: Supportive measures with Intervention when Illness happens**
- **Supportive measures with Intervention when Illness happens**
- **Tertiary Prevention:**
 - Improving Quality of Life
 - Sustaining Longevity
 - Survivorship with Disability Limitations

Mind - Body

- Core Principle is :

Calm Mind,
Calm Body, 

Mind over the Matter!

- Known to be Helpful to relieve Anxiety
- Reduced need for Pain Medications
- Quick recovery from Surgical interventions and procedures







Mind Body : Meditation, Yoga Commonly Cited Research -Benefits

- Reduced Stress and Anxiety
- Enhanced Brain Function
- Cardiovascular Health
- Depression
- Other - PTSD, Insomnia, Addiction, Pain Reduction, Workplace Efficiency and Productivity, Academic Performance, Intelligence Creativity and Learning Ability, Health Care Costs and Utilization, Integration of Personality , Longevity, Free Radicals, Metabolic Syndrome – Pre-Diabetes, Criminal Rehabilitation
- Source : NIH

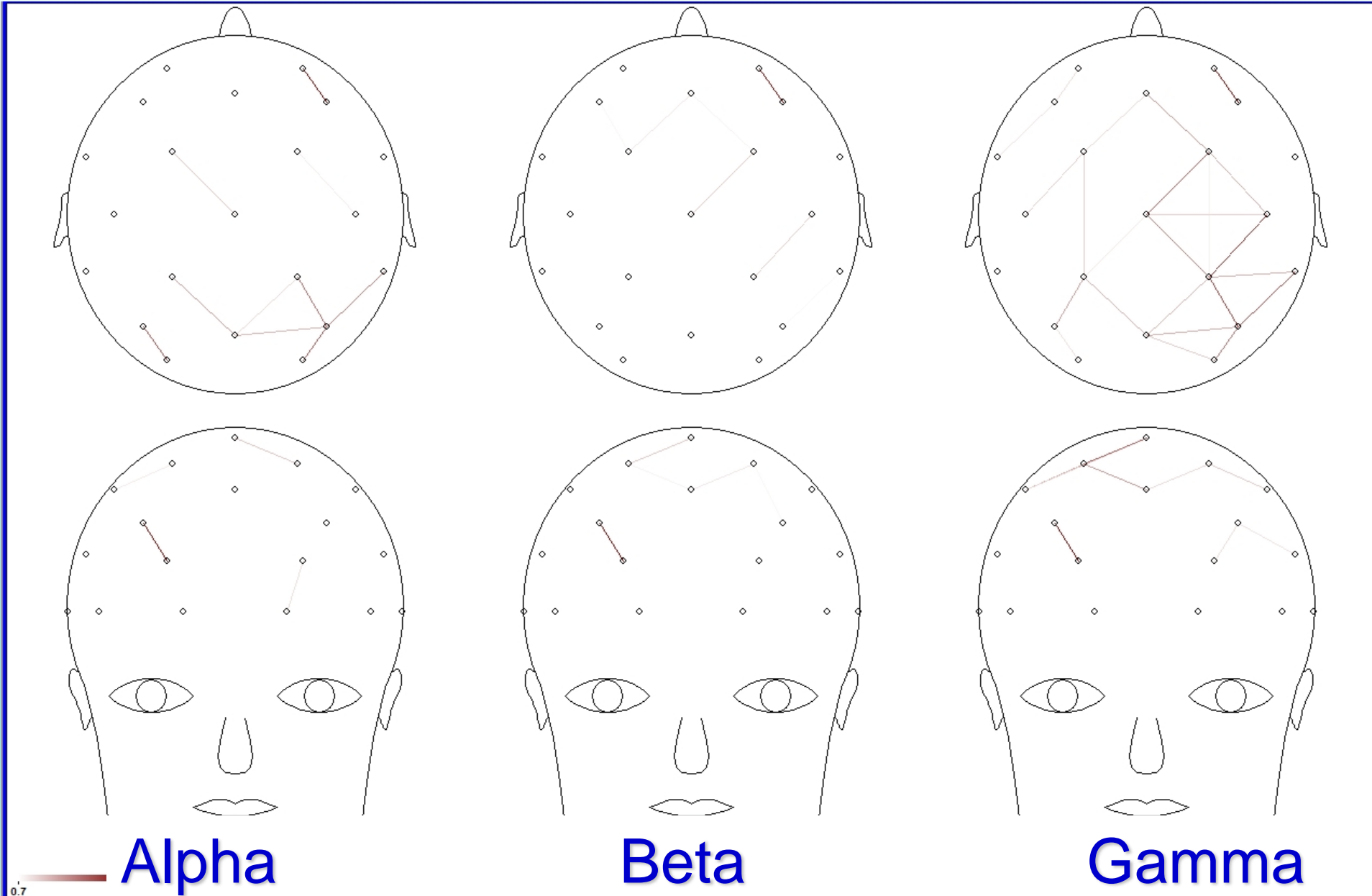


Meditation procedures differ and associated EEG patterns differ so
Effects of different Meditations should also differ ...

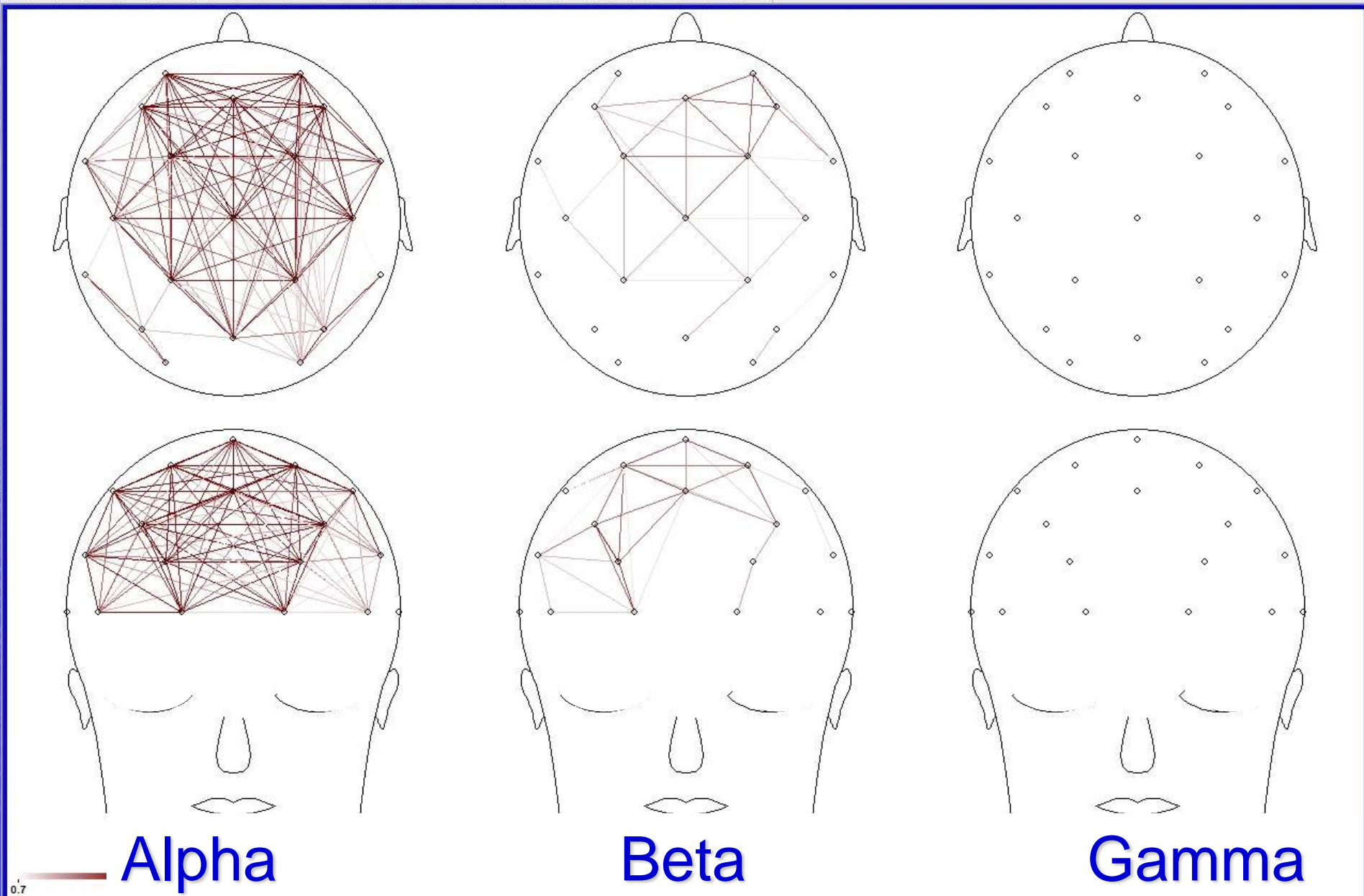
Comparison of Three Different types of Meditation

Form of meditation	Transcendental Meditation	Mindfulness (monitoring of thoughts)	Concentration or Focus
Mental effort	Effortless	Moderate effort	Strong effort
EEG image			
Brain wave activity	Alpha	Theta	Beta
Brain wave description	"Relaxed, happy, focused" — Mayo Clinic	"Dream-like" — Mayo Clinic	"Logical-thinking, problem-solving" — Mayo Clinic

Task: 5 sec – 0 sec



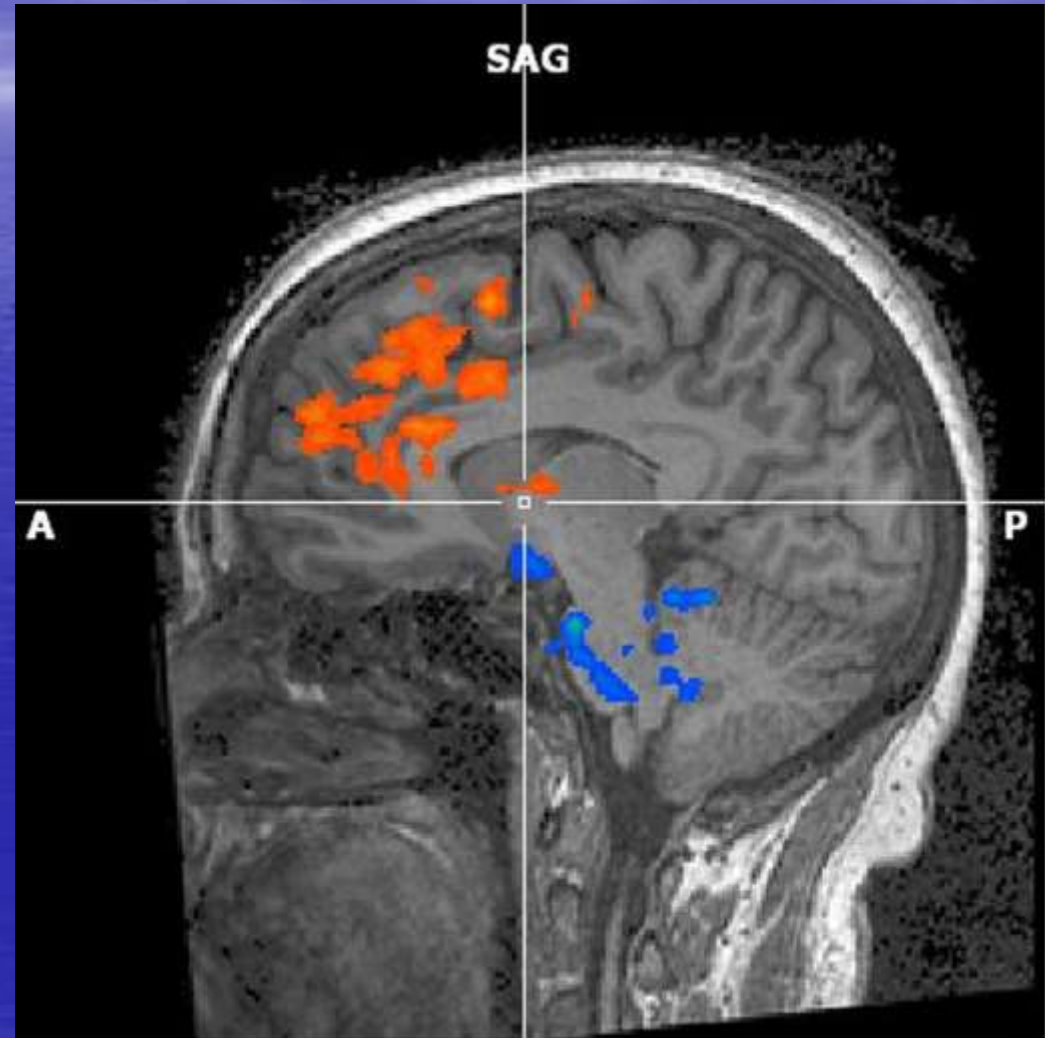
TM® : 30 sec – 35 sec



fMRI (Blood Flow) during TM

Red =
Higher
Blood Flow

Blue =
Lower
Blood Flow



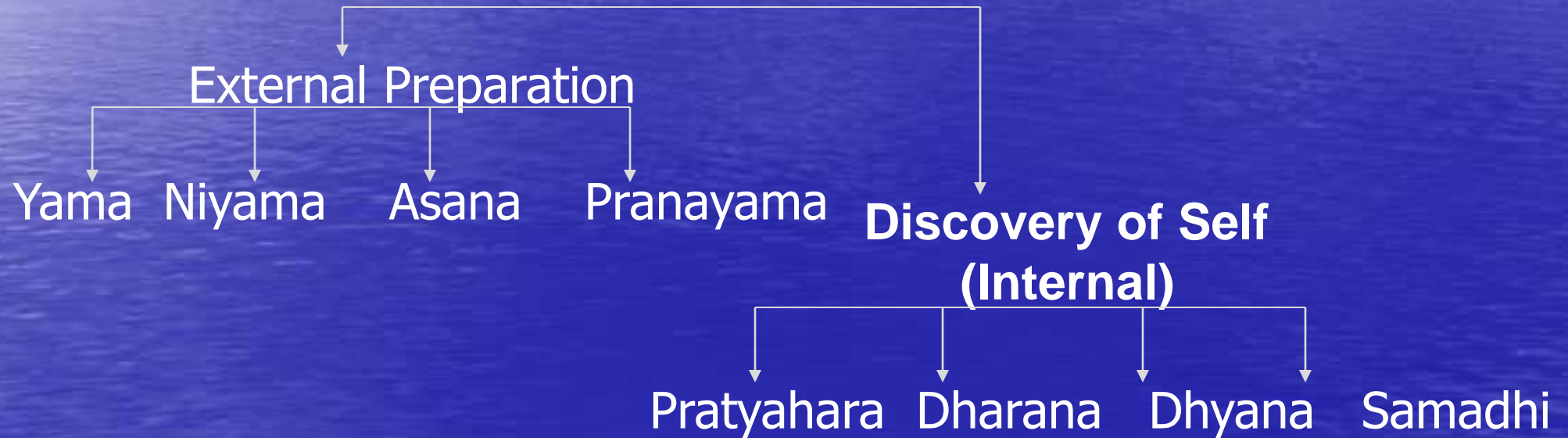
YOGA

(A way of life)

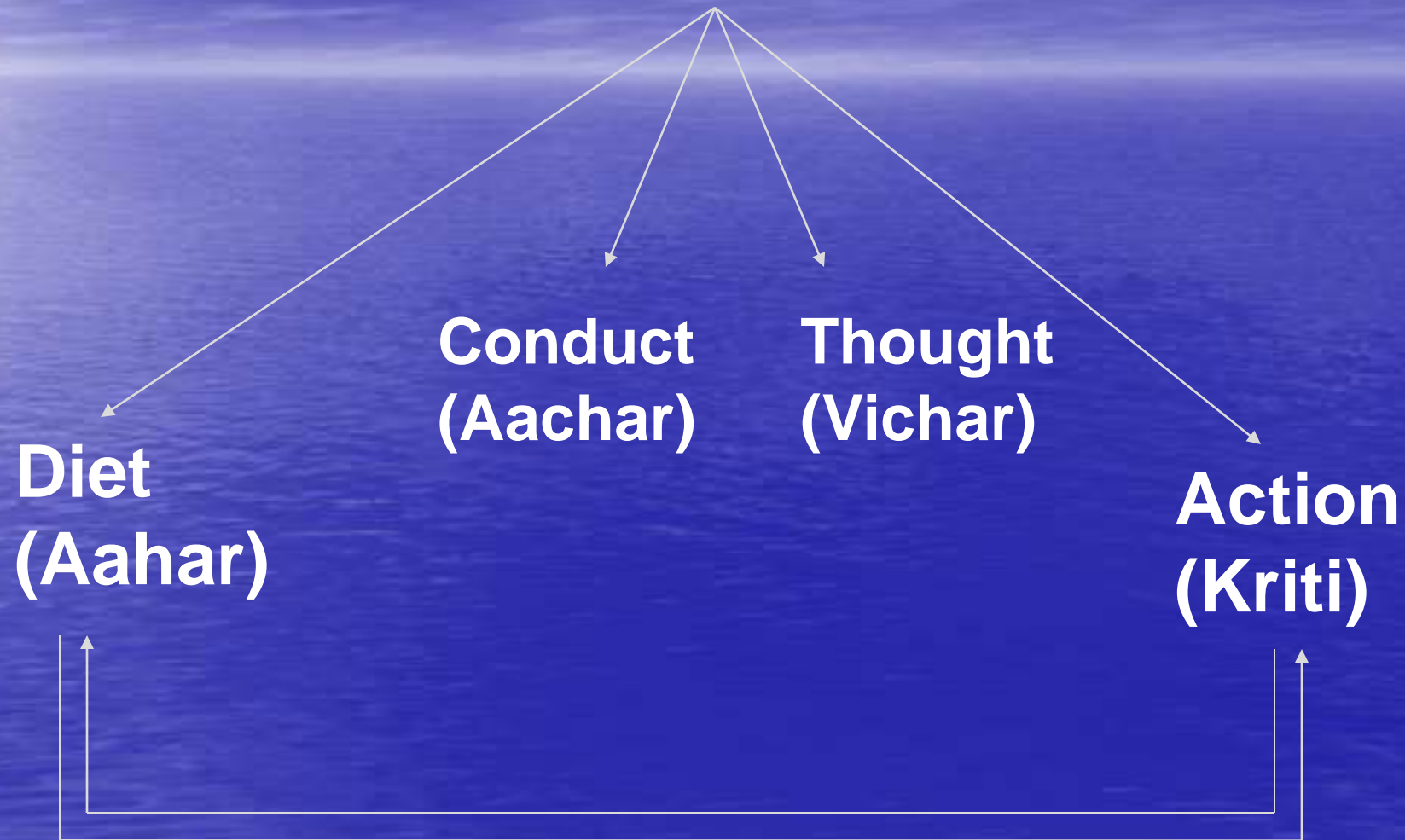
YUJA
(Sanskrit Word)

Union → Lower self
with
Higher self

8 Limbs



4 Essential Components of Life From Yogic perspective



Prana = Life Force = Consciousness

- Life Force - Basic life principle that governs this Universe
- Bridge between Body and Mind
- All forms of energy are Prana - Kinetic and Potential (Light on Pranayam -BKS Iyengar)
- Prana governs this Universe - (Pranasyedam vashet sarvam)
- Prana is from where all beings are born (Yato va imani bhutani jaayante -Taittiriya Upanishad)
- Prana is Higher Consciousness (Brahman) (Prano brahmeti vyajanaat - Taiitteriya)

Main Prana (Varishtha) has Five Categories:

- Prana - Main energy Thoracic region – (Breathing)
- Apana - Downward force (Elimination, Sexual functions)
- Vyana - Distributed, mainly in Limbs – (Arteries, Nerves, Veins)
- Udana - Upward force (Vomiting, Belching, Sneezing, Coughing, Eyelids, Vocal chords)
- Samana - Whole body Integration – (Gastric and Abdominal functions)

Experiential Activity

What is Pranayama?

Prana = Life Energy

Aayama - Optimal mastery over prana

Controlling inhalation and exhalation

(Shvasa prashvasayor gati vichchedah pranayama)

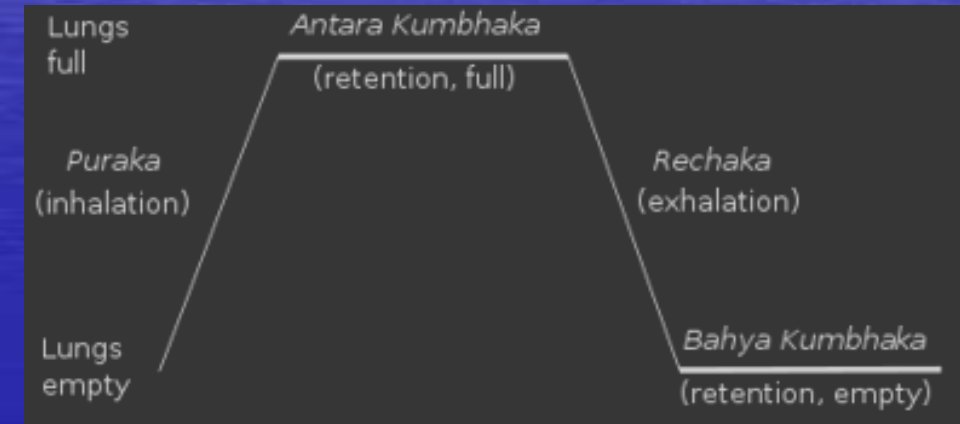
Pranayam encompasses three major dimensions

- * Inhalation - Puraka
- * Exhalation - Rechaka
- * Retention of breath - Kumbhaka :

Which can be divided in to 2 subparts

- * Retention of breath after Inhale - Antar Kumbhaka
- * Retention of breath after Exhale - Bahya Kumbhaka
- * Kevala Kumbhaka - "Pure Breath-Retention"
(without inhalation or exhalation)

Once unaccompanied [kevala] breath-retention, free from exhalation and inhalation, is mastered, there is nothing in the three worlds that is unattainable.
- Dattatreya yogaśāstra



What Ancient Scriptures say about Pranayama ...

- *Hatha Yoga Pradipika* :

- Mentions that when our *Life energy* (Prana) is Still,
- It translates to our Mind being still (Chitta) and
- Matter becomes Energy.



We go beyond matter (Body Awareness) to Energy (Universal Consciousness)

- *Shiva Samhita* :

Mentions about Four dimensions of Pranayama

1. When one becomes Conscious and is Awakened with breath (Arambha)
2. When one is Immersed and Purified with the fire of pranayama (Ghata)
3. Deep (inert) Connection and Knowledge of breath patterns resulting in intimate connection to, and getting to know to oneself (Parichaya)
4. Internalization or Sublimation (Nishpatti)
 - Where seeds of our Karmic Actions are burnt;
 - Reset of Karmic baggage,
 - One goes beyond Attributes (Guna-tita)

Breath is one of the ways the body gets Energy

- **Yogis and Athletes have higher lung capacity**
- **In Pranayama there is more air transaction than just normal breathing, as there is an Intimate connection and deep awareness to the breath**
- **Pranayama is known to enhance efficiency of the lungs**
- **Two Modes of practical application of Yogic practices:**
 - **One goes by Force or Discipline (Hatha)**
 - **One goes by Freeform (with Ease and Self pace) in tune with the Laws of Nature (Vasishtha)**



**There is a saying - No force, No Endurance or Energy
(Na Hathat Na Balat)**

**By practice, one can cross all the obstacles...
(Abhyasena niraabaadhamAbhyaasaadhruDataam yato)**

Breath and Respiratory System

Our respiratory system encompasses both

Voluntary and involuntary muscles for respiration

- Nose - Filtering, Warming, Humidifying, , Sneezing Reflex, Sense of Smell
- Pharynx, larynx, trachea, bronchi, bronchioles, lungs, alveoli, pleura
- Breathing apparatus - Diaphragm, Intercoastal muscles, lungs
- Forced Exhalation involves abdominal muscles
- Apical or clavicular breathing : Neck muscles and upper parts of the lungs
- Mid sectional breathing or Inter-costal : Central part of lungs
- Basal or diaphragmatic breathing : Lower parts of lungs
- Yogic breathing - All of the above combined (use of entire lungs)
- Breath Rate variability with age groups , New born vs Toddler vs Adult
- Physiological breathing variability among gender Male vs Female
- Abdomino - thoracic vs Thoraco - abdominal ...
- Yogic Breath is essentially Abdominal
- Q : What's your average breathing rate? (Average 16-22/min) Silicon valley everyone breaths 32 /min ☺
- Yogic breath to reduce under 8/min to gain the optimal relaxation and Physiological Benefits
- So regulated breathing has lot of benefits as there is enhanced purposeful deep rest

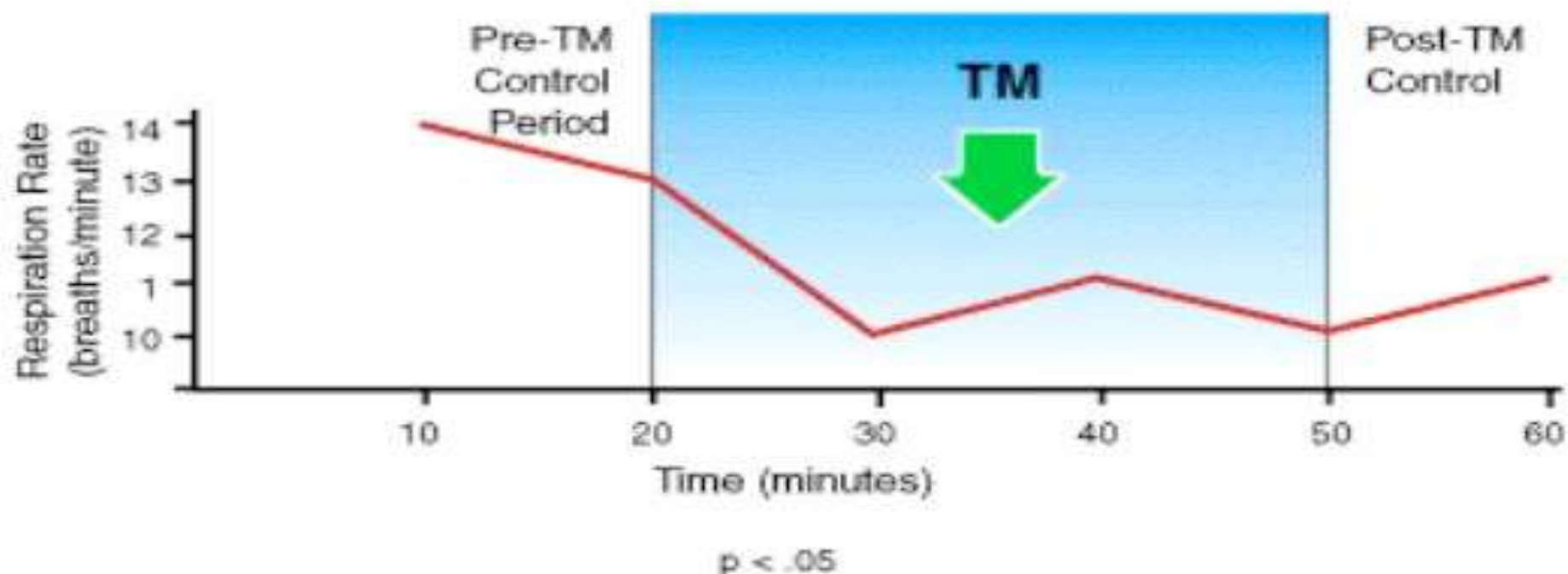


Physiological Benefits of Pranayama



- Pranayama is a connecting bridge between Mind and Body
- Pranayama enhances Neuro-muscular integration - Relaxation
- Enhanced Oxygen supply
- Enhanced Nourishment of body cells
- Enhancement of the functions of various body systems such as: Respiratory and Circulatory systems
- Controlled modifications of the breath with awareness like extended holding leads to slower heart rate with increased rest to the heart muscle
- Based upon the techniques practiced the metabolism can be slowed down or accelerated in controlled manner which has many therapeutic potentials
- Eg: Fire Breath - High Aerobic activity vs Alternate Nostril - Calming
- Improved Digestion and elimination
- Uplifting effect on the Mood and Emotions
- Deep sense of Relaxation, Calmness and Positivity
- Sense of Energization and Lightness at Physical, Mental & Emotional level

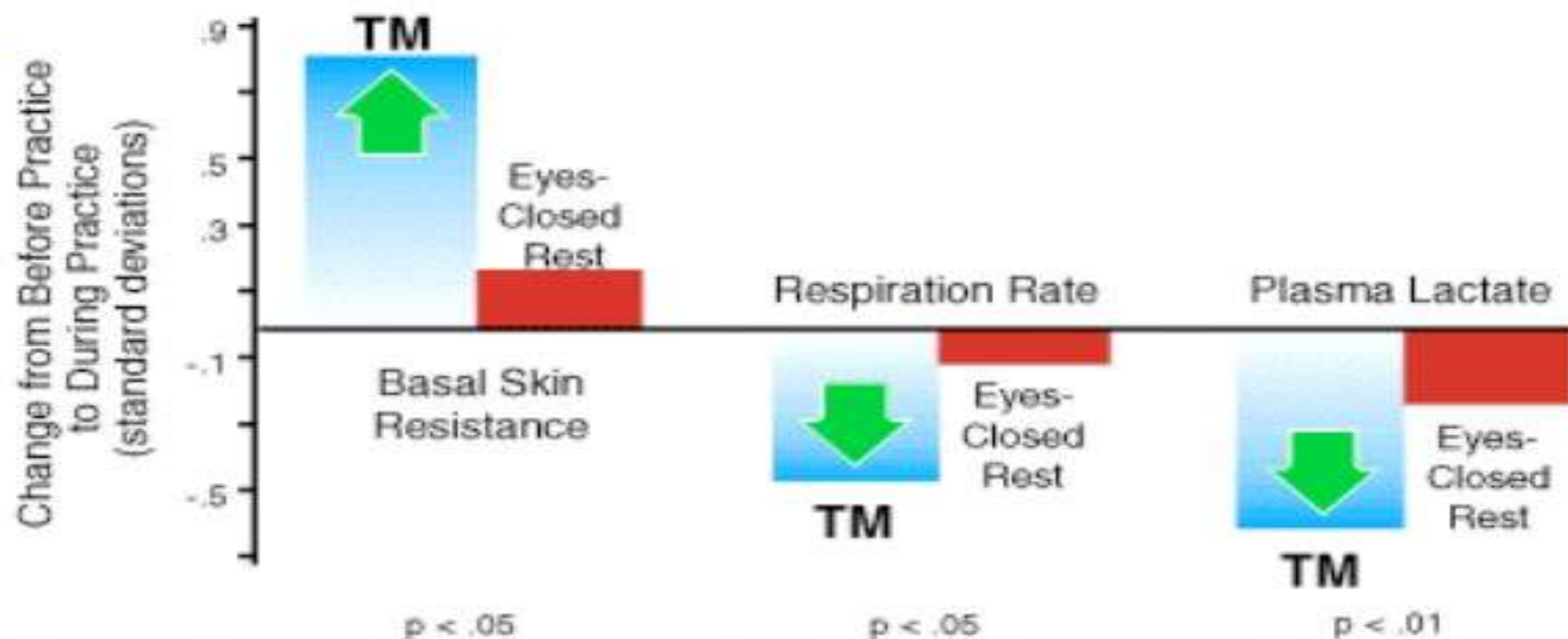
Natural Lowering of Breath Rate



Subjects were measured for changes in breathing rate during the practice of the Transcendental Meditation technique. Breath rate fell from about 14 breaths per minute to about 11 breaths per minute, indicating the Transcendental Meditation technique produces a state of rest and relaxation. The change in breath rate is natural, effortless, and comfortable.

A wakeful hypometabolic physiologic state, *American Journal of Physiology* 22: 795-799, 1971.

Physiological Indicators of Deep Rest During TM



A meta-analysis, the preferred scientific procedure for drawing definitive conclusions from large bodies of research, found Transcendental Meditation produced a significant increase in basal skin resistance compared to eyes-closed rest, indicating profound relaxation. Deep rest and relaxation were also indicated by greater decreases in respiration rates and plasma lactate levels compared to ordinary rest. These physiological changes occur spontaneously as the mind effortlessly settles to the state of restful alertness, pure consciousness.

Pranayama from Spiritual Perspective

- Gives will power to become a master of oneself
- Enhancement of flow of Life Energy - Prana or Chi
- Removal of obstructions which impede the flow of Prana
- Regulation of Thoughts, Desires, Actions
- Cultivation of Purpose of Life
- This is what the Scriptures say:
- Pranayama removes the Veil of Illusion (Maya) from the Mind and helps Self Illumination
(Patanjala Yoga Sutras)
- Pranayama is Extraordinary Austerity (Maha-Tapas)
- Having mastered pranayama in Padmasana, one is ready to become a Liberated Soul
(Hatha Yoga Pradipika)
- Pranayama removes Fear of Death
(Shiva Samhita)

Nadis and Chakras

- Nadis are Subtle energy channels : Ida, Pingala and Sushumna - important
- Chakras are subtle Energy centers Muladhara, Swadhishtana, Manipura, Anahata, Vishuddhi, Ajna, Sahasrara
- HYP - 72,000 nadis; Shiva Samhita - 350,000 nadis 14 important



Kapalabhati

- It's a Preparatory practice of Pranayama
- Highlight of this technique is:
- Forceful Exhalation ↑ Passive Inhalation ↓
- This technique involves hyperventilation
- In the initial phase there is an increased Sympathetic tone which is followed by Parasympathetic predominance leading to Deep Relaxation
- It also helps to clear sinuses and respiratory tract - so can be beneficial with Asthmatics , Chronic Allergies etc
- Massage to abdominal organs – helps GI conditions
- Precautions: Exercise induced Asthma, Hypertension, Severe Stress, Acute Headache, Migraines, Epilepsy, Avoid during menstruation



Bhastrika

- This is an Advanced breathing practice
- Is also high aerobic hyperventilation technique
- It Involves Rhythmic Forceful Inhalation and Exhalation



In cycles like 3, 5, 8, 11 and followed by Ujjayi breath or Kumbhaka; usually is repeated in sets of 3 or more cycles

Which Creates initial sympathetic tone followed by Parasympathetic response resulting in deep relaxation

Invigorates and Energizes Mind Body

- When practicing this technique many of the Yogic traditions highly recommend following strict dietary guidelines and other yogic disciplines
- Take it easy till get seasoned as can cause Light headedness when practiced vigorously
- Precautions: Exercise induced Asthma, Hypertension, Severe Stress, Migraines, Epilepsy, Acute Headache, Avoid during menstruation

Alternate Nostril

Synonyms :Anulom Vilom, Nadi Shuddhi, Nadi Shodhana

This technique is known to create the equilibrium of Sympathetic and parasympathetic

- Exhale and Inhale through left nostril and then switch nostrils;
- Exhale and Inhale through Right nostril - one round
- While practicing the technique the Exhalation is longer than inhalation

Benefits:

- Improves vitality
- Soothing and Relaxing the Mind/Body
- Stress and Anxiety reduction
- Useful practice for spiritual progress as it creates Tranquility, Clarity, Concentration etc
- Balance of Energy Channels (ida and Pingala Nadi)

Precautions:

Can be little tricky in the beginning to master the alternation of nostrils

- Avoid any forceful inhalations as can irritate Sinuses or can trigger headaches in people with chronic heavy stress
- Some Seniors may find it difficult as they might forget the sequence,
- Possible Difficulty with blocked nostrils or deviated septum (DNS)
- Possible Difficulty in practicing with Shoulder pain and hand issues 5/



Single Nostril Breathing

This practice uses either Left or Right Nostril to Inhale

Left Nostril : Chandra Bhedana / Anuloma Viloma

Right Nostril : Surya Bhedana/ Anuloma Viloma

Left nostril Breathing : Feminine - Moon Energy

- Known to reduce Anxiety and can be possibly helpful with Hypertension
- Suppose to be helpful for Underweight and Anorexia

Right nostril Breathing : Masculine - Sun Energy

- Invigoration and Energization of Mind and Body
- Helps boost metabolism and weight reduction



Sectional Breathing

(Vibhagiya Pranayama)

- **Clavicular Breathing - (Jyeshtha) Adi Mudra - U kara**
- **Thoracic Breathing - (Madhyama) Chinmaya Mudra - U kara**
- **Abdominal Breathing - (Kanishtha) Chin Mudra - A kara**
- **Full Yogic Breathing - Brahma Mudra - AUM kara**
- **5 Dimensional Breathing : Inward, Outward, Sideways, Forward and Backward (Physical and Mental Practice)**

Benefits

- **Simple Preparatory practice**
- **It helps create Awareness about three lobes of lungs**
- **Its effect is more enhanced with Mudras and chanting**
- **Enhancement with variations of energy with hand gestures or mudras as mental practice**

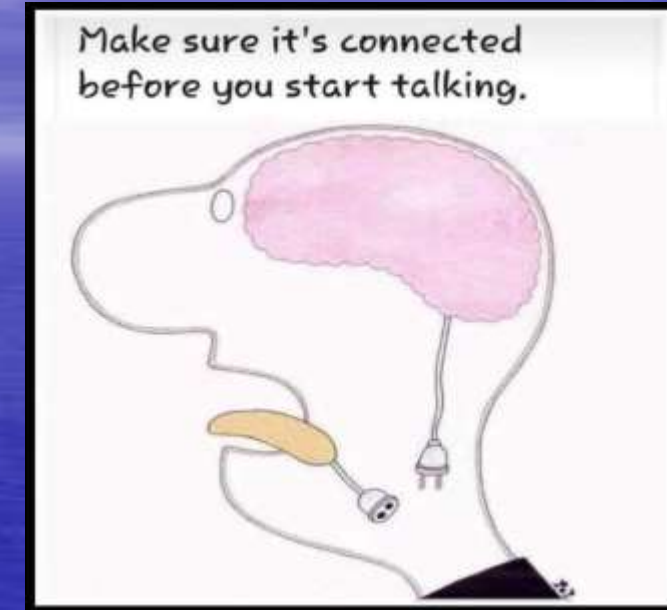


Cooling Pranayama

- Shitali - Tongue folded lengthwise
- Shitakari - Tongue folded breath-wise
- Sadanta - Teeth clenched

Tongue and Health are connected

- Mental tranquility; Pacify Anger, Irritations and Reactiveness
- Slows down Metabolism Cools down Agni (Pitta)
Known to reduce excessive heat = reduce Inflammation
- Deep calming effect can be beneficial for Hypertension
- Useful practice for people with Seasonal allergies, especially Summer season





Bhramari Pranayama

- This technique uses creating a Humming sound like a bumble bee; while the tongue is touching to the upper palate; teeth apart;
- During practice one can modify the pitch –high pitch, low pitch
- When it is practiced with larger groups together it has even enhanced effect, with Creativity one can practice it as a group first and then different variations in the group etc
- Soothing vibrations relax the Mind

It is a simple practice for Voice culture; Improves the tonal quality of the voice and depth so can be useful for Actors, Singers, Speakers, Enhances the lungs

- Good for clearing sinuses, soothe Headaches, Migrane, Asthma, Hypertension
- Helps with Insomnia and Anxiety

Bhramari Pranayama

(Spiritual Perspective)

- Heightened and Pervasive Awareness of Self and Universe
- Lot of scope to visualizations like - imagining different types of subtler sounds & vibrations - birds etc.
- Visions of different types. (Jyoti Darshana)
- Experience at different Mental States and Levels.
- Dissolution (Laya) Merger of the Mind in Higher Consciousness
- Triputi (threefold process of Seer, Seeing and the Seen)
- Samadhi.



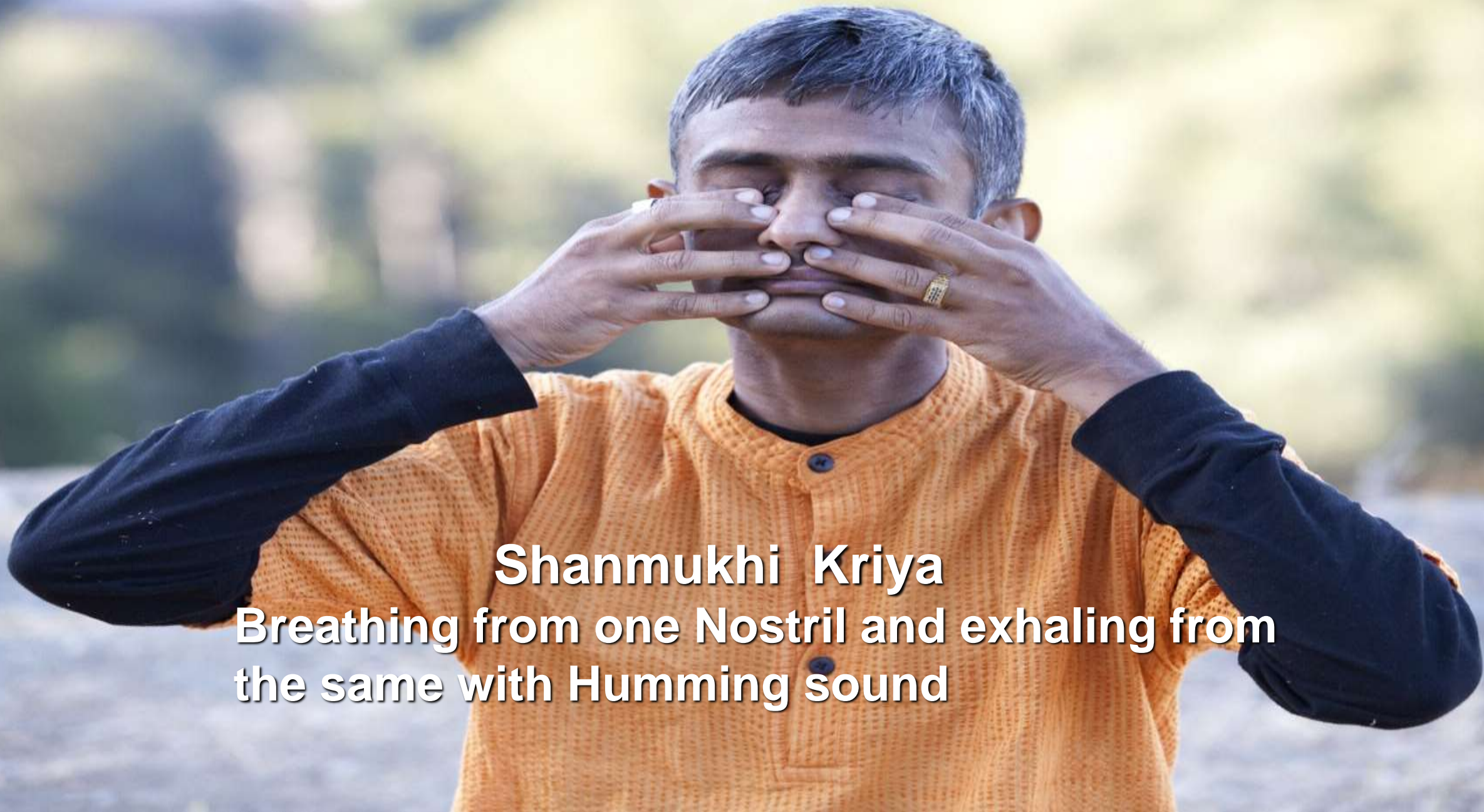
Voice and Chanting : Nadanusandhana

- Chanting
- A-kara in Chin Mudra (3-9 rounds)
- U-kara in Chinmaya Mudra (3-9 rounds)
- M-kara in Adi Mudra (3-9 rounds)
- AUM-Kara in Brahma Mudra (3-9 rounds)

Advanced Pranayama

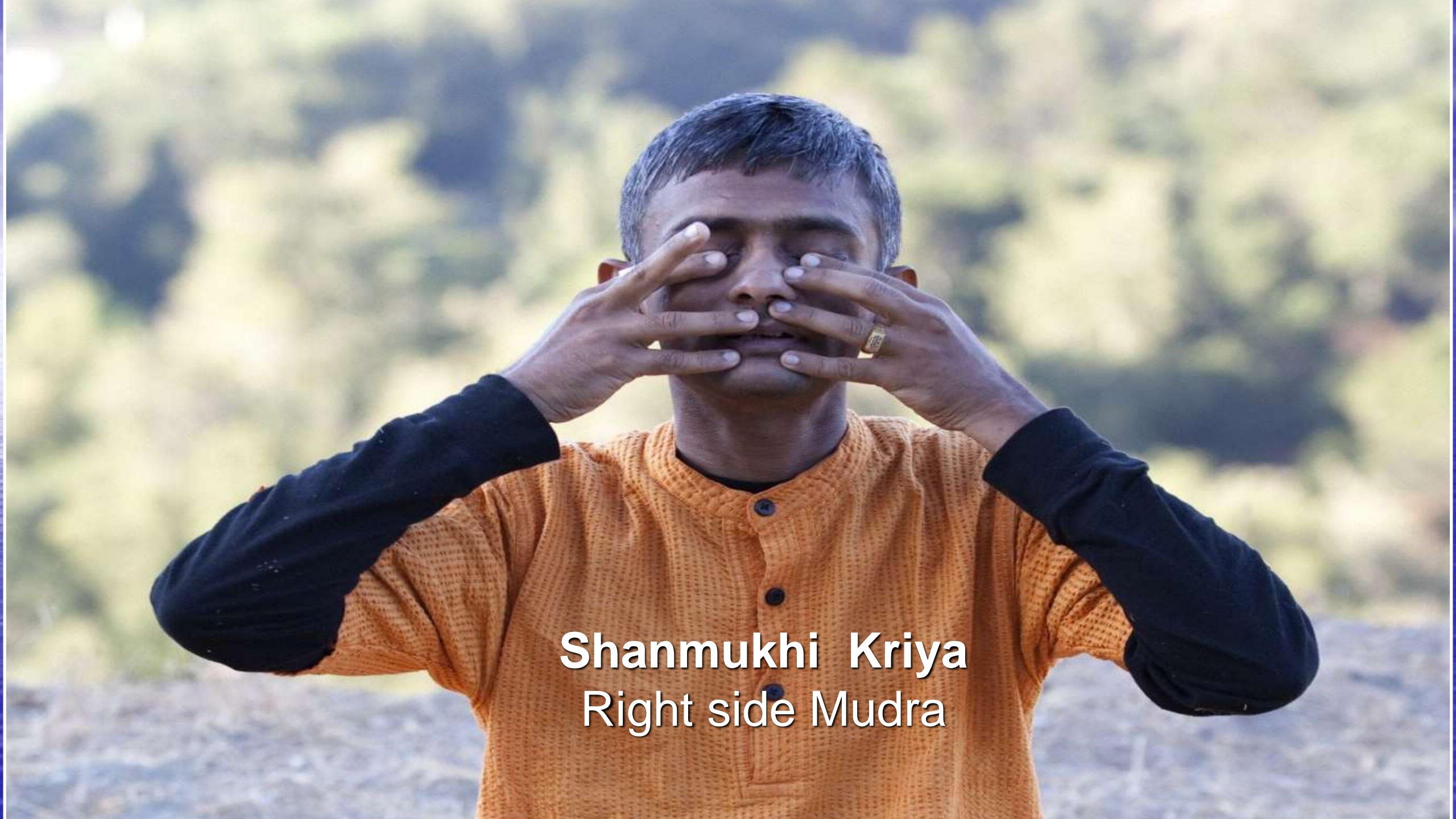
- Ujjayi - Slow inhalation and exhalation with hissing at the throat level
- Inhalation Ujjayi
- Exhalation Ujjayi (more common)
- Both Inhalation and Exhalation Ujjayi
- Murcha Pranayama
- Plavani - Floating



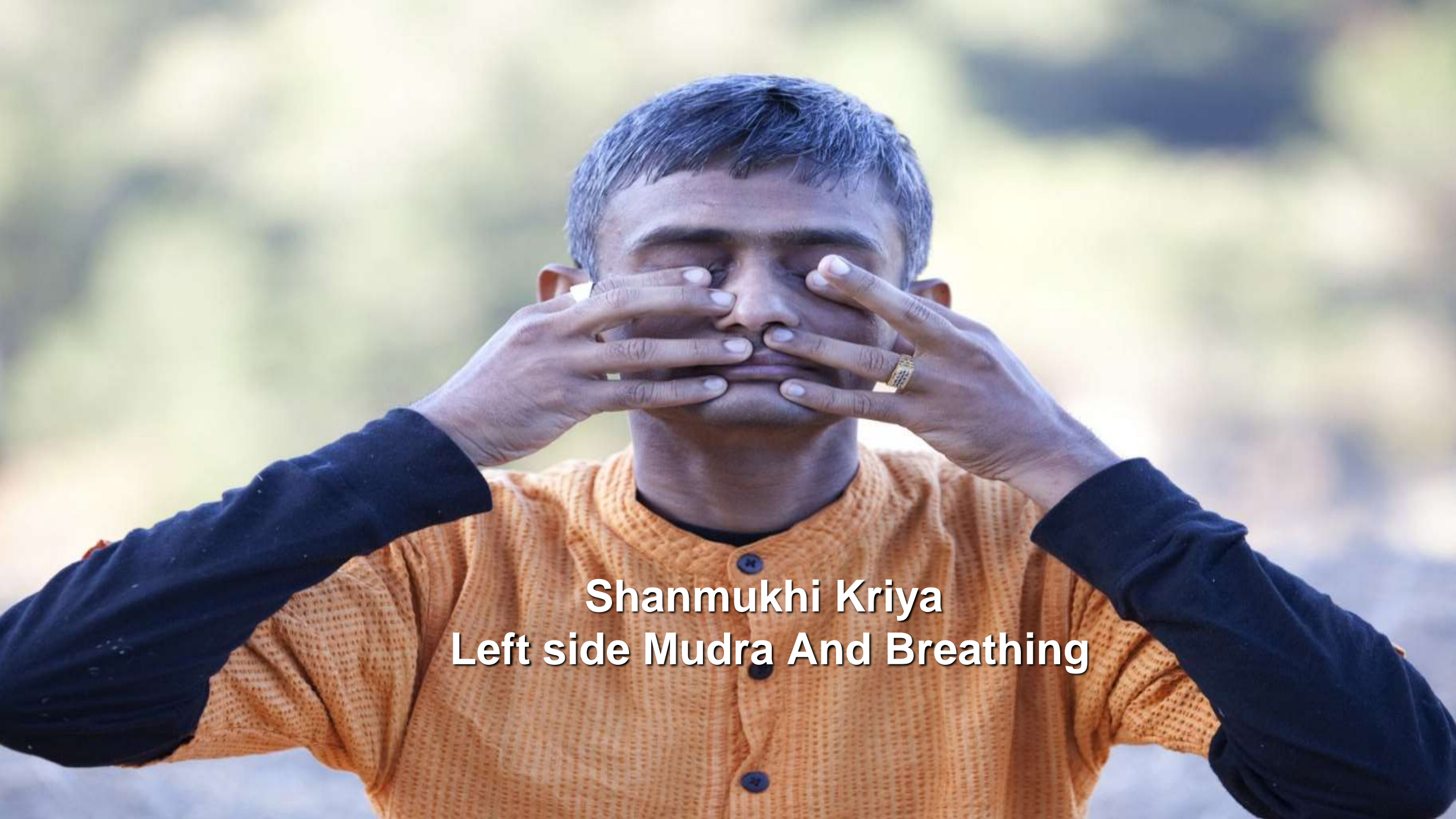


Shanmukhi Kriya

Breathing from one Nostril and exhaling from the same with Humming sound



Shanmukhi Kriya
Right side Mudra



Shanmukhi Kriya
Left side Mudra And Breathing

Pranayama as Deep Spiritual Practice

(Sadhana)

- **Self and Universal Awareness**
- **Creative Intelligence**
- **Expansion of Awareness**
- **Creativity**
- **Law of Nature (Creation : Maintain : Destruction)**
- **Tamas → Rajas → Satva**
- **Prepares one for Samadhi by acting as a bridge between Mind and body.**



Ayurveda and Yoga Daily Routine (Dincharya)

2:00 AM to 6:00 AM Vata active Awake before 6:00 AM
Good for meditation

6:00 AM to 10:AM Kapha active Good for exercise
Avoid sleeping into this period

10:00 AM to 2:00 PM Pitta active Digestion is strongest
Largest meal at lunch (12:30)

2:00 PM to 6:00 PM Vata active Tendency for tiredness
Herbal tea & spices in water or milk
Rejuvenate with meditation

6:00 PM to 10:00 PM Kapha active Evening walk
To bed before 10 PM

10:00 PM to 2:00 AM Pitta active Metabolic housecleaning strong
Sleep for best purification



***Practicing Yoga poses just as an
Exercise
or
Meditation just for Relaxation
Is
Like Building a new, beautiful home
and
Living on the Porch....***

Ananda Newsletter

Thank You! dr_sachin@hotmail.com



Yoga Ayurveda Insight...

- When we see **"Strength in Problems"**
- We **Stop Resisting Stress** and **Use it** as an **Impetus for Eustress** or a **Positive Stress..**
 - When we learn to evoke the
 - **'Stay and Play'**
rather than the
 - **'Fight or Flight'** response -
 - One can live **Optimal Healthy Life!..**
 - **That's the Beginning of the First Chapter of Your Book of Life!!!**



Disclaimer

The statements in this booklet have not been evaluated by the Food and Drug Administration.

Any ideas or insights are not intended to diagnose, treat, cure or prevent any disease.

If you have a medical question, consult your physician. The information in this booklet is intended for educational purposes only and is not intended to be medical advice or a substitute for consultation with a qualified healthcare profession

Thank You!!!

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