



# Enhance The Self-Expressive Creativity And IQ In Adolescents Through The Positive Impact Of Balancing Asana's

<sup>1</sup>Dr. Dipsundar sahu, <sup>2</sup>Ms. Jagriti patra, <sup>3</sup>Dr. G.Babu

<sup>1</sup>Reserch officer Ayurveda , <sup>2</sup>yoga instructor , <sup>3</sup>Director of CARI Kolkata  
Department of Clinical Research  
Central Ayurveda Research Institute  
4 CN Block, Sector-V, Bidhannagar, Kolkata-700091

**Abstract:** Teenage is the turning point of human development where individuality starts from parenting. The ability of self-expressive skills and IQ get diverted easily in teenage. Hence there is a need for natural remedy to maintain self- expressive skills and IQ at teenage. Present study focusses on Yogic practices to maintain such psycho-physiological health. Aim: Balancing asana can improve self-expressive creativity and IQ in Adolescent's. Methods: Pre-Post study Sampling: The study population total of 10 adolescents (12-17 YR.) Convincing sampling. Parameters: The following instruments were used: Rosenberg Self-Esteem Scale (RSE), the Creativity personality test (25). Intervention: Yoga routine practice time 45 mints for 26 days. (D. 01.10.2021 – 30.10.2021) Result: The data will be analyzed in the MS-excel and the average and Standard deviations also calculated by the MS-excel. Conclusion: The visual ability, voice recognition as an indicator of IQ, self-expressive creativity and static balance is improve by inhibit the extra curriculum of the brain with the yogic practices.

Keywords: self-expressive creative, IQ, Adolescents, cognitive development, self- esteem, standing-asana, yoga

## I. INTRODUCTION

### Adolescent characterization & development:-

Adolescence is the pivotal stage of life when individuals transition from the dependence of childhood to the independence of adulthood. During this period, youths undergo maturity not only in physical health but also experience significant changes in mental and emotional well-being. Youngsters are profoundly influenced by positive guidance, encouragement, and support that fosters determination, self-sufficiency, self-esteem, willpower, and interpersonal skills, ultimately shaping their developmental path.[1]

Adolescence, a dynamic phase from teenage years to adulthood, is characterized by significant cognitive, emotional, and social changes. These transformations stem from extensive biological alterations, particularly in brain development. Puberty triggers neurobiological, cognitive, and psychosocial shifts. Despite common misconceptions, adolescence presents opportunities for growth, knowledge acquisition, and intelligence development. Through natural growth, teenagers can form strong relationships, develop self-awareness, and create lasting memories. This life stage connects childhood and adulthood, laying the foundation for positive development. Adolescence is a critical window of opportunity, offering benefits that can foster community well-being. By nurturing young people during this phase, we can promote healthy development and positive outcomes.[2] Research has explored the impact of metacognition training on adolescents. Effective programs enhance self-esteem by integrating concepts, social contexts, and spatial awareness during this critical developmental phase (e.g., Sebastian et al., 2008). Adolescence is characterized by rapid growth in self-knowledge, involving increased awareness of personal values, passions, aspirations, and individuality.

As cognitive abilities improve during adolescence, egocentricity, self-perception, and self-consciousness also increase. This heightened self-awareness enables teenagers to better navigate social roles and value others' judgments (Sebastian et al., 2008). Furthermore, as individuals transition from family dependence to independence, their sense of identity becomes more defined (Lapsley, 1991). [3] "The onset of adolescence is marked by a surge in gonadal steroid hormones, which likely influences the brain's neural networks due to its high density of steroid receptors (Sisk & Foster, 2004). We propose a second wave of brain reorganization occurs during adolescence, building upon sexual dimorphisms established during the perinatal period. Puberty hormones significantly impact the adolescent brain's structure, leading to permanent changes in neural networks sensitive to hormonal fluctuations. Notably, adult hormonal applications have distinct effects on the hypothalamic-pituitary-adrenal (HPA) axis in males and females:- Androgens in males appear to inhibit hypothalamic corticotrophin-releasing hormone (CRH) secretion.- Estrogen in females enhances HPA axis activity. These hormonal differences may influence stress responsiveness, with estrogen potentially increasing vulnerability in females and androgens promoting resilience in males." [1] Middle Adolescence (12-15 years) during this stage, puberty is typically completed for both males and females. However, physical growth slows down in females, while males continue to develop. Cognitively, young people refine their abstract thinking skills, enabling them to: Set long-term goals, Explore the meaning of life Develop moral reasoning. Socially, this stage is marked by significant changes, including: Increased self-awareness, growing desire for independence, expanded social interactions and relationships as adolescents navigate these developments, they face various challenges and opportunities for growth."

### Intelligence\ IQ & self-expressive creativity:-

The description of intelligence is a large quantity of our cognitive construction to enable effective alteration. Many cognitive processes, such as perception, learning, memory, reasoning, and problem solving, are needed in the correct way to learn, understand and handle new situations All intelligence examinations, from unified tasks to multi-faceted tasks, tend to generate a powerful general element that "general intelligence".[4]

Meta-intelligence facilitates the integration of creative, analytical, practical, and wisdom-driven approaches to tackle complex problems (Sternberg, n.d.). This comprehensive framework enables innovative, investigative, applied, and intelligent solutions, grounded in wisdom. Meta-intelligence involves the strategic application of cognitive skills to address one or multiple challenges.[5]

Brain Structure and Intelligence-Research suggests that gray matter variability contributes to individual differences in intelligence, particularly in cortical regions (Ramsden et al.). Neuroimaging studies reveal that changes in verbal intelligence among adolescents correlate with alterations in gray matter areas responsible for speech processing, whereas non-verbal intelligence variations relate to changes in regions activated by motor functions. Adolescent Brain Development-During adolescence, the brain undergoes significant changes. Gray matter development initially focuses on primary sensorimotor cortex and later shifts to prefrontal cortex maturation. Subcortical areas, including the limbic system, mature earlier, leading to an imbalance between developed subcortical and less developed prefrontal regions. This imbalance contributes to characteristic adolescent behaviors.[6]Brain Plasticity and Creativity Adolescent brain plasticity allows for significant cortical reorganization. Investment theory proposes that creativity requires six essential resources: a) Logical abilities b) Awareness c) Intellectual abilities d) Personality traits e) Motivation f) Environmental factors. By leveraging these resources, adolescents can develop creative potential. [7] The presented studies focus on the balancing asana can improved IQ & self-expressive creativity or not?

**Anatomy of Self Esteem and intelligence:** The mechanisms of memory, consciousness, and thought remain poorly understood. Despite significant damage to the cerebral cortex, individuals can still experience coherent thought processes.

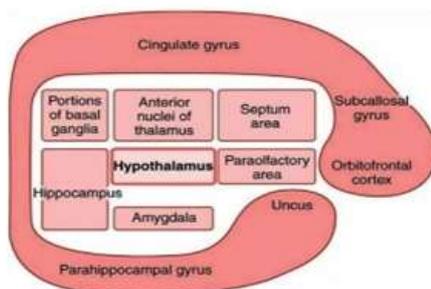


Image -1 limbic system viewing the important location of hypothalamus

Research suggests that various brain regions contribute to different aspects of thought: Lower brain structures (e.g., hypothalamus, amygdala, and mesencephalon) regulate basic emotions and sensations, such as pain and discomfort. The cerebral cortex, particularly association areas, plays a crucial role in complex thought patterns, like vision and spatial awareness. A tentative definition of thought, in neural terms, could be: 'The synchronized activity of multiple brain regions, including the cerebral cortex, thalamus, limbic system, and brainstem, giving rise to intentional, encouraged, and meaningful experiences. 'Key brain regions involved in thought processes include:– Limbic system: emotional tone, desire, and security ,Thalamus: sensory processing and integration, Reticular formation: attention and arousal, Cerebral cortex: specific aspects of thought.

1. Spatial awareness and tactile sensation
2. Visual recognition and pattern processing
3. Emotional regulation and expression

**Neuro-Endocrine Integration and Yoga-**The nervous and endocrine systems regulate bodily functions through intricate connections between the somatic and autonomic nervous systems. The limbic system, particularly the hypothalamus, plays a crucial role in integrating neuro-endocrine functions.

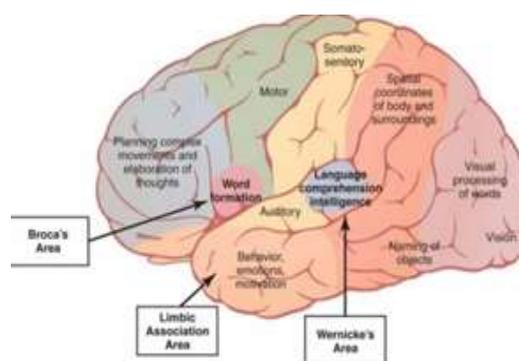
**Brain Functions and Integration-**The brain receives sensory information, interprets it, and integrates it with memory. Key brain functions include: Memory, Speech, and Emotions (regulated by the limbic system) Motor actions. Altered states of consciousness occur under various influences, such as psychedelic substances, brain lesions, meditative states, or yoga practices.

**Yoga's Impact on Brain Function-**Yogic practices (asana, bandhs, pranayama, and mudras) stimulate the brain through Vegetative system stimulation, Enhanced oxy-hemoglobin circulation, Pressure changes these effects favorably impact total consciousness.

**Sensory Feedback Phenomenon** Sensory nerves transmit external and internal stimuli to the brain. Two types of sensitivity to external stimuli exist: Proprioceptive (movement, body position, and muscular awareness) Visceroceptive (impulses from visceral organs) Yoga, Biofeedback, and Conscious Control- Yoga practices increase comprehensive awareness, enabling control over internal activities. Biofeedback techniques utilize conscious-sensory feedback to influence: Visceral organs, Forehead muscles, Smooth muscles in the heart and brain. **Hemispheric Integration** The left hemisphere processes linguistic information, while the right hemisphere dominates non-speech sounds, tactile sensations, abstract thinking, and perceptions. Yogic practices, such as Anuloma-Viloma Pranayama, facilitate inter-hemispheric integration.

**Psycho-Physiological Effects-**Hatha Yogic texts describe psycho-physiological effects resulting from comprehensive awareness, allowing practitioners to regulate internal organ functioning.

**Physiology of Self Esteem and intelligence:** The Limbic System and Cerebral Cortex-The limbic region, situated in the temporal lobe, frontal lobe, and medial surface of the cerebral hemisphere, plays a crucial role in higher brain functions. This area, highly developed in the dominant hemisphere (typically the left side in right-handed individuals),is responsible for: General interpretative processes, Intelligence, Knowledge acquisition, Tertiary association Known as Wernicke's cortex, this region is essential for: Language processing, Cognitive functions, Spatial awareness , Nonverbal visual experience ,Music interpretatio,Body language understanding Psychological studies on individuals with damage to the dominant hemisphere suggest its importance in various forms of intelligence.



**Meditation and Physiological Effects-Maintaining an upright spine during meditation:** Prevents visceral compression, Enhances blood circulation to the pelvic area ,Strengthens coccygeal and sacral nerves, Reduces carbon dioxide production due to slower metabolic activity, Consequently, mental activity decreases, and conscious and unconscious bodily actions no longer impact the mind. Changes in adolescents with corona Situation or Pandemic:COVID-19's Impact on Children's Mental Health The COVID-19 pandemic has taken a profound toll on children's mental well-being. According to recent data 24% of children aged 5-11 experienced emotional difficulties 31% of teenagers (12-17) faced emotional challenge Beginning in 2021, suspected suicide attempts and ER visits among females (12-17) increase by over 50% Children and adolescents may exhibit signs of distress through Persistent-irritability Feelings of despair or anger, Frequent conflicts with friends and family , Loss of interest in previously enjoyed activities, Sleep disturbances (insomnia or hypersomnia Changes in appetite, weight, or eating habits Memory or cognitive impairments Pandemic-related stress and trauma can have long-lasting effects on psychological development, leading to Behavioral changes Detachment from intimate relationships Increased risk-taking or excessive behavior (e.g., substance abuse) Thoughts of death or suicide It is essential to address these concerns in academic settings and beyond.

**Modern medical treatment:** \_The Benefits of Yoga on Cognitive and Mental Health Research among neurotypical populations demonstrates that yoga (SBYP) has numerous benefits, including improved depressive disorders, self-esteem, subjective and psychological well-being, attention, and academic performance reduced stress, enhanced self-concept, resilience, executive function, inhibition, and working memory A recent study found that three months of yoga practice positively impacted executive function (EF) in young orphans, suggesting yoga as a valuable tool for cognitive health. The long-term effects of yoga on EF may have significant implications for Enhanced learning capabilities, Improved classroom behavior, Better coping mechanisms for challenging situations, Mental health interventions.

#### **Deeper aspect of yogic branches:**

Yoga transforms lives by uniting body, mind and spirit, cultivating inner peace, balance and self-awareness. Through practice, individuals discover their true potential. By integrating ethics, meditation and physical practices, yoga cultivates inner peace, compassion and ultimate self-realization. Concentrative Meditation involves stimulus repetition, leading to stimulus habituation and inhibition of cognitive construing. This practice inhibits anticipatory stance, reducing cognitive constructs and hemispheric activity, potentially resulting in transcendence. Ancient texts like Hathapadipika (H.P.V. 9) and Ayurvedic scripture charak Samhita (IV.36) emphasize mindfulness' role in alleviating psychosomatic disorders. Modern research (Benson, 1970; Ornish, 1991) validates mind-body interdependence. Yoga's holistic approach enhances mind-body interaction studies through concepts like Triguna, Karmaphala, Cittibhumis and Panchakosa. Integrating yoga with psychoanalysis, Gestalt and cognitive-behavioral therapies fosters comprehensive well-being, addressing consciousness, morality and self-awareness. Yoga surpasses psychoanalysis by addressing Transcendental Consciousness (Atman Self) and Phenomenal Consciousness (mind/brain dynamics). Yoga's holistic practices promote psychosomatic harmony, emotional liberation and self-realization (Patanjala Yoga Sutra; Swami Visnu Tirtha, 1974).Yoga uniquely combines Transcendental Consciousness (Atman Self) and Phenomenal Consciousness (mind/brain dynamics), offering comprehensive psychosomatic remedies. Unlike psychoanalysis, Yoga encompasses varied practices (Asana, Pranayama, meditation) promoting emotional balance, mental clarity and spiritual growth.Yogic perspective of mind (chitta)\ intelligence (buddhi): The Mandukya Upanishad describes four states of consciousness: Jagrat (waking), Swapna (dreaming), Sushupti (dreamless sleep) and Turiya (transcendental). Turiya, attained through yoga, unifies Purusha (individual self) and Brahman (universal consciousness).

#### **Asanas for IQ & Self-expressive creativity form Patanjali yoga-sutra:**

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#### **sthira-sukham-āsanam || 2/46 (PYS)**

Meaning: The posture should be steady and at ease. Asana is often used to refer to yoga poses, although in this context it solely refers to a meditative stance. It is also advisable to perform the asanas that create an equilibrium of homeostasis in the body.

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#### **prayatna-śaithilya-ananta-samāpattibhyām ||2/47(PYS)**

Meaning :Both relaxation of continued effort and unity in the infinite.

### **Meaning of Asanas for IQ & self-expressive creativity from Hatha yoga Pradipika**



## SCIENTIFIC LITERATURE:

1.As per study by vishvanatha pise, balaram pradhan et.al.2018 improvement in static balance , agility , reaction time , with yogasana and pranayama for 12 weeks , in the present study focus only on balancing asanas with standing asanas it gives a clarification about psycho-motor function.

2. According to a 2019 study by Mara del Carmen Pérez-Fuentes, Mara del Mar Molero Jurado, et al., self-expression is developed for acquiring identity and self-efficacy through the positive effect of peers, which promotes feelings of empowerment and self-affirmation through constructive tasks that reinforce self-esteem and emotional intelligence. The current study focuses only on self-expressive creativity and IQ development through the standing balancing asanas.

3. Previous study concentrated on raise of follow of intelligence over period of time and they also explain factuality of environment structure .so, in May expected in the present study but conformed after these results. This technical review for present study because our aim is not focused in brain imaginary- techniques but we tried with subjected base on Intelligence ,creativity, self-esteem, self-confidence, duration of holding time of asanas. ( Luca Rinaldi<sup>1,2,\*</sup> and Annette Karmiloff-Smith 2017)

4.Based on research by Kerstin Konrad, Ph.D., RN,\* Peter J. Uhlhaas, PhD, and Christine Firk, PhD, 2013 Due to the adolescent brain's high level of plasticity, environmental factors can have a particularly profound impact on cortical circuitry. This allows for the possibility of intellectual and emotional growth, but it also lets potentially negative influences in. The focus of the current study is on the development of IQ and self-expressive creativity through standing balancing asanas.

## METHODOLOGY:

**Aim:** To improve self-expressive creativity and IQ in adolescents Balancing asanas.

### Hypothesis

Positive hypothesis (Hp) balancing asanas may improve self-expressive creativity and IQ in adolescents.

Null hypothesis (Ho) balancing asanas may or may not improve self-expressive creativity and IQ in adolescents. Negative hypothesis (Hn) balancing asanas may not improve self-expressive creativity and IQ in adolescents.

**Study design:** Pre-Post study.

**Sampling method:** The study population total of 1 adolescents (12-17 YR.) Convenient sampling, Place: Sishutritha school Santineketan.Class- 6-8 girls and boys

**Parameters:** The following instruments were used: Rosenberg Self-Esteem Scale (RSE), the Creativity personality test (25).

Scientist name- Rosenberg Self-Esteem Scale (RSE)Author Morris Rosenberg the Creativity personality test (25) Sperry

Year of intervention- Rosenberg Self-Esteem Scale (RSE)-1965

The Creativity personality test (25)- 1960

### Scoring method:

The RSE is a Guttman scale with complicated scoring methods. Low self-esteem responses are scored as "disagree" or "strongly disagree" on items 1, 3, 4, 7, 10, and "strongly agree" or "agree" on items 2, 5, 6, 8, 9. Correct responses to items 3, 7, 9, and 4 and 5 are considered single items. The scale can also be scored by totaling individual 4 point items after reverse-scoring negatively worded items.Reliability: RSE shows excellent internal consistency and stability with a.92 reproducibility coefficient. Validity: RSE correlates significantly with self-esteem, Coppersmith Inventory, depression, anxiety, and predicts depression and anxiety.

A high score of 90-125 indicates a high degree of creativity, indicating an active right brain. Creative individuals may have tried various pursuits throughout their lives and may have already achieved success in creative environments. High scores suggest that those who have not yet experimented with creative pursuits should follow their intuition and pursue them. However, those with an average score of 65-89 may lack the time or confidence to try new creative pursuits. To become more creative, individuals should develop more confidence and be more relaxed about intellectual risks.

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A score within the higher range indicates creative success and potential undeveloped talents. A score below 65 indicates a lower than average level of creative talents, possibly due to a preference for set principles and traditional conventions. Creativity and intellect are separate brain functions, and it's possible to be highly intellectual in some fields but not creative in others. Training oneself to bring out latent creative talents can broaden horizons and reveal previously unknown creative talents.

**Intervention:** Yoga routine practice time 45 mints for 21 days. (D. 01.10.2021 – 28.12.2021) 15 mints warm-up.5 mints 5 round sun-salutation.30 mints 5 balancing asanas- Ekapada paranamasana, garudasana, saral-natarajasana, EkaPadasana ,utthita hasta padangusthasana.5 mints yogic breathing practice.5 mints dhyana & om chanting\ mantra chanting.

**Practice Chart :-**

1	Opening prayer	“OmSahanavavatu Sahanaubhunaktu Sahaviryamkaravavahai Tejasvinavadhitamastu Mavidvisavahai Om Shantih, Shantih, Shantih.”
2	Sukshma vyama	I. Smarana Sakti Vikasaka, II. Medha Sakti Vikasaka III. Netra Shakti Vikasaka IV. Karna Shakti Vikasaka. V. Waram-Up-Loosing Practice
3	Sun-salutation	5 times with breathing
4	Asanas	I. Ekapada Pranamasana II. Garudasana III. Saral Natarajasana IV. Eka Padasana V. Utthita Hasta Padangusthasana
5	Pranayama	I. Natural Breathing II. Abdominal Breathing III. Thoracic Breathing IV. Clavicular Breathing V. Yogic Breathing
6	Mudra	Jnana and chin mudras
7	Dhyana	10 mints dhyana practice
8	Closing prayer	Om chanting A-3 times U-3 time M-3 times Aum-3 times

**Descriptions of Balancing Asanas in yogic view point:**

**RESULTS :**

Asanas name	Sanskrit name	English name	Chakra	Internal organ benefits
1.Ekapadapranamasana	□□□□□□□□□□ □□□	One-legged prayer pose	Ajna/anhata chakra	This asana develops nervous balance. It also strengthens the leg, ankle and foot muscles.
2. Garudasana	□□□□□□□□	Eagle pose	Mooladhara chakra	Garudasana improves concentration, strengthens the muscles and loosens the joints of the shoulders, arms and legs, and is good for the upper back.
3.Saral Natarajasana	□□□ □□□□□□□□	Preparatory Lord Shiva's pose	Anahata or manipura	It helps develop a sense of balance and coordination and improves concentration
4. Eka Padasana	□□□ □□□□□□	One foot pose	Swadhisthana or manipura chakra.	This asana to develop muscular coordination, nervous balance and concentration.
5.UtthitaHasta Padangusthasana	□□□ □□□ □□□ □□□ □□ □□ □□□□□□ □□□	Raised hand to big toe pose	Mooladhara or swadhisthana chakra	Improves concentration and coordinates muscular and nervous balance. The hips and leg muscles are strengthened and toned, and the hamstrings are stretched, helping the knee and ankle joints.

The data enter into excel sheet. The data is tabulated and made into graphs for better understanding by using mean values. Percentage change also given in tables for more understanding .table are shown in three major divisions.

**Table-1:** demographic data,

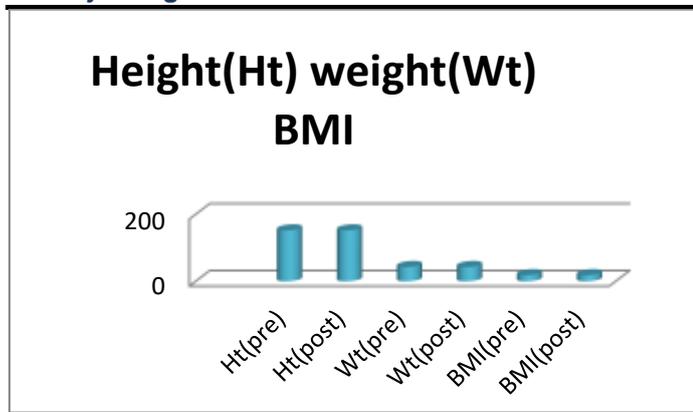
S.NO.	Demography	Data
1.	Gender	Male =6 Female =4
2	Age	12-17
3	Education	6-8class
4	Place	Sishutritha school

Table-2: general parameters,

SI.NO	Parameter	Pre (mean±sd)	Post (mean±sd)	% change
<b>1.1 physical body parameters</b>				
1.	Wt.	42.8±7.00476	42.8±7.00476	0
2.	Ht.	152.146±10.60532	152.146±10.60532	0
3.	BMI	18.445±2.449178	18.445±2.449178	0
<b>1.2 Respiratory parameters</b>				
4.	RR	17.4±4.742245	14.5±2.27303	-16.6
5.	IBRT	32±10.47749	34.2±9.472768	6.8
6.	EBRT	24.4±7.662318	25.1±7.202623	2.8
7.	PEFR	331.5±62.4522	331.5±65.88078	0
<b>1.3 cardiovascular parameters</b>				
8.	PR	55.375±11.90751	66.2±10.26104	19.7
9.	PO	96.6±1.837873	97.6±1.264911	1
10.	SBP	123±6.749486	120±0	-2.4
11.	DBP	82±4.21637	80±0	-2.4

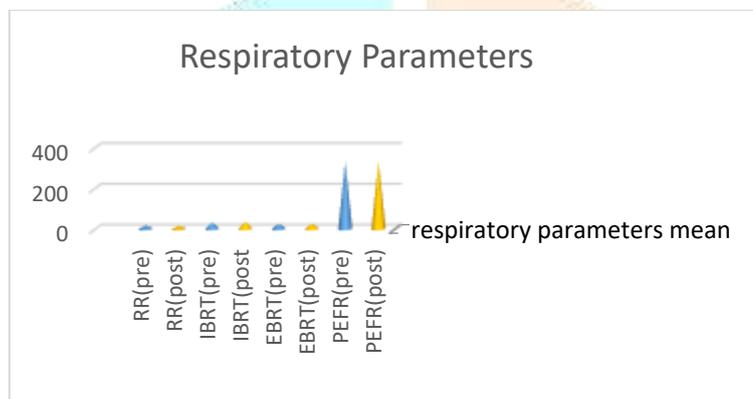
Table-2.1: physical body. Abbreviations : Height(Ht), weight(Wt),Body mass index (BMI),

SI.NO	Parameter	Pre (mean±sd)	Post (mean±sd)
1.	Wt.	42.8±7.00476	42.8±7.00476
2.	Ht.	152.146±10.60532	152.146±10.60532
3.	BMI	18.445±2.449178	18.445±2.449178



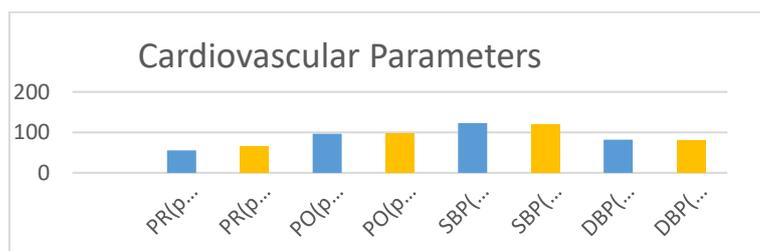
**Table-2.2: respiratory parameters** Abbreviation: Respiratory parameter, (RR),Internal breath retention Time(IBRT), External breath retention Time(EBRT),Peak expiratory flow rate(PEFR)

SI.NO	Parameters	Pre (mean±sd)	Post (mean±sd)
1	RR	17.4±4.742245	14.5±2.27303
2	IBRT	32±10.47749	34.2±9.472768
3	EBRT	24.4±7.662318	25.1±7.202623
4	PEFR	331.5±62.4522	331.5±65.88078



**Table-2.3 cardio-vascular parameters**, Abbreviation: Pulse rate(PR),Pulse oximeter(PO),Systolic blood pressure(SBP), Diastolic blood pressure(DBP)

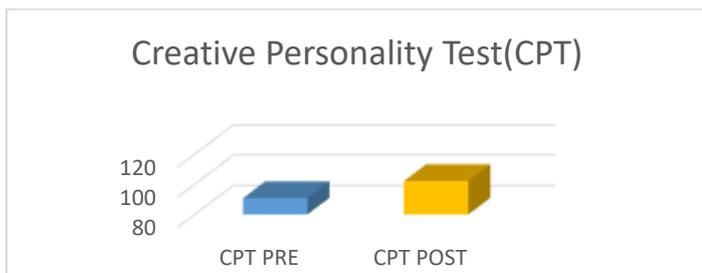
1.	PR	55.37±11.90	66.2±10.26
2.	PO	96.6±1.83	97.6±1.26
3.	SBP	123±6.74	120±0
4.	DBP	82±4.21	80±0



Specific parameters are shown in three separate divisions.

**Table-CPT**

CPT	PRE(mean±sd)	POST(mean±sd)	% CHANGE
SCORE	90.8±12.00741	102.1±7.908505	1.24



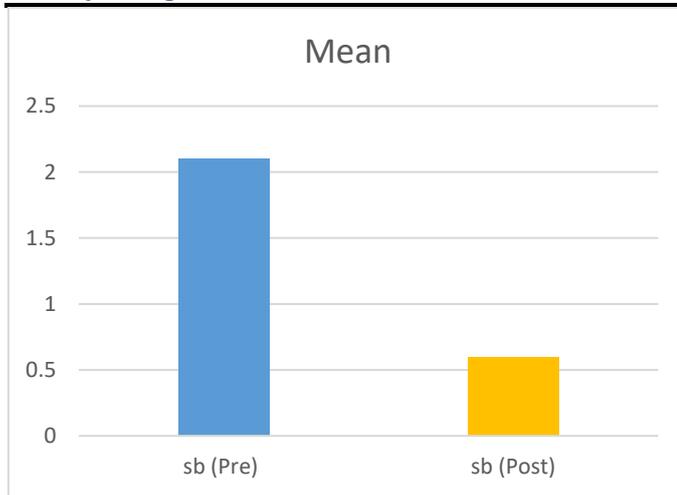
**Table- Rosenberg self-esteem scale (RSE). Abbreviations : Rosenberg Self-Esteem Scale(RSE), stander division (SD)**

RSE	PRE(mean±sd)	POST(mean±sd)	% CHANGE
Score	13.6±3.43	18.2±2.74	33.8



**Table -static balance :**

Static balance	SB (PRE)	SB (POST)	Changes %
MEAN	2.1±0.73	0.6±0.69	-71.4



Abbreviations are given below every table and graph. After noticing the results the positive hypothesis was proved and failed in null hypothesis ( $H_p$ ) and negative hypothesis ( $H_o$ ) so, the alternative hypothesis ( $H_n$ ) is “is there difference between IQ & self-expressive creative between whom gender differences”.

### DISCUSSIONS:

#### Physical body parameter:

The BMI parameter became neutral from  $18.445 \pm 2.44$  to  $18.445 \pm 2.44$  with 0% of changes.

#### Respiratory parameters:

The respiratory rate data shows improvement from  $17.4 \pm 4.74$  to  $14.5 \pm 2.27$  with -16.6% of changes. And the less standard deviation indicates the less scatter-ness in the data.

The IBRT data shows improvement from  $32 \pm 10.47$  to  $34.2 \pm 9.47$  with 6.8% of changes. And the less standard deviation indicates the data become closer to the mean value.

The EBRT data shows improvement from  $24.4 \pm 7.66$  to  $25.1 \pm 7.20$  with 2.8 % of changes. And the less standard deviation indicate the data become closer to the mean value.

The PEFR data remains neutral from  $331.5 \pm 62.45$  to  $331.5 \pm 65.88$  with 0% of changes. But the less standard deviation shows the data become closer to the mean value.

#### Cardiovascular parameter:

The pulse rate data shows improvement from  $55.37 \pm 11.90$  to  $66.2 \pm 10.26$  with 19.7 % of changes. And the less scatter-ness of standard deviation shows the pulse rate data become more one pointed.

The Pulse Oximeter data shows improvement from  $96.6 \pm 1.83$  to  $97.6 \pm 1.26$  with 1 % of changes. And the less standard deviation shows the oxygen saturation data become more closer mean value.

The SBP data shows improvement from  $123 \pm 6.74$  to  $120 \pm 0$  with -2.4% changes. And the less scatter- ness indicate the data are very much closer to mean.

The DBP data shows improvement from  $82 \pm 4.21$  to  $80 \pm 0$  with -2.4 % changes. And the zero-standard deviation of post data refers that the data become very much closer to mean value.

#### Specific parameters:

The RSE data shows significant improvements from  $13.6 \pm 3.43$  to  $18.2 \pm 2.74$  with 33.8 % of changes.

Also the standard deviation shows less scatter-ness in the post data.

The CPT data shows significant improvements from  $90.8 \pm 12$  to  $102.1 \pm 7.90$  with 1.24% of changes. So the standard deviation shows more one-pointiness among the post data.

The Static balance data shows significant improvement from  $2.1 \pm 0.73$  to  $0.6 \pm 0.69$  with -71.4% of changes. And the less standard deviation shows the less scatter-ness among the post data.

**LIMITATIONS:** The psychological parameters may have shown different changes instead of the actual changes in the brain cortex. This study is majorly based on the self-inspection module. So the participant may give the bias data in the questionnaires. The intervention time may be cause less and actual impact on IQ, self-expressive creativity and static balance. The non-homogeny participant in age may have a different outcome which I ignore in this study.

**STRENGTHS:** There have few research papers about the effect on IQ, self-expressive creativity and static balance with yogic perspectives, but in my study the yogic protocol is different. So, we can surely say that there has a positive impact with. My study opens up farther study with the support of machinery (EEG, ECG, and Muscle MR) data for IQ, self-expressive creativity and static balance, which will be more reliable. We can explore the extension method of IQ, self-expressive creativity and static balance with the yoga as a way of life.

**CONCLUSION:**

There are simultaneous signals in numerous areas of the cerebral cortex, thalamus, limbic system, reticular formation of the brain stem, and psychomotor abilities after just twenty-six days of practice. The fundamental ideas are almost entirely focused on the lower brain centers; the idea of pain is probably a good one to focus on because electrical stimulation of the human cortex typically only causes mild pain, whereas stimulation of specific regions of the hypothalamus, amygdala, and mesencephalon can result in excruciating pain that is alleviated by these yogic techniques. By limiting the extra curriculum of the brain with yogic practices, the visual capacity, speech recognition as an IQ indicator, self-expressive creativity, and static balance are improve

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