

1. TITLE:

Effect of Rajyoga Meditation on Psychological Wellbeing and Physical Well-being Of Hypertensive, Diabetic, and Coronary Artery Disease Patients.

2. INTRODUCTION:

RAJYOGA MEDITATION:

1. **Raj-Yoga Meditation** is awareness of the metaphysical self and absorption of one's mind in loveful and purposeful consciousness of God and his divine attributes. The word 'Yoga' means 'to unite'; Yoga is, therefore, the practice or art of uniting or linking the mind with God by focusing attention on him as an incorporeal being-of-light and thinking of nothing but his divine qualities. This takes one into a state of absorption in bliss and peace through positive thinking. It recharges one's self or soul with light and might and fills one with creative energy.


In the name 'Raj-Yoga' the word 'Raja' means the king, the sovereign or the supreme. This yoga is called Raj-Yoga because it is the supreme or the highest yoga, being true and most effective. Another reason for calling it 'Raj-Yoga' is that it is related mainly to mind and mind is considered as the 'King that rules the sense-organs and the body. Moreover, the term Raj-Yoga also implies that even such a person as a king, who is very busy and has so much to do, can practice it, there is no need to practice breath-control, physical postures, or use a mantra, or an image nor does it require one to stop all thoughts, but stop only, worldly or negative thoughts and concentrate our mind on God.

The word 'Meditation' means 'to think'. As we all know, man's mind is, ordinary, occupied with hundreds of thoughts of the world; in Raj-Yoga meditation, one withdraws one's mind from all the worldly thoughts, including the thoughts of one's own body, and one collects oneself, consciousness, at least for sometime, and thinks of the shining and peaceful self as a point of divine and conscient light and, then, focuses one's attention on god as supreme soul, who also is a point of conscient light and is the ocean of peace. The inhibition of worldly thoughts and the recollection or recapitulation of thoughts of the luminous self is attained by directing the flow of thoughts towards god i.e. the supreme soul in his supreme abode or Paramdham which is the world of divine light. In this sense, this meditation is withdrawal or reversal of one's consciousness, from the body and its world to the soul and its silent world, or from the dark lanes of negative thoughts on the bright path of contemplation on god. Raj-Yoga meditation may therefore, be defined as a disciplined exercise of awareness, utilizing such processes as creatively thinking, intuitively perceiving and silently reflecting and concentrating on the metaphysical truths of self and god which lead to comprehension and realization of the subject. This practice involves the turning of one's mind and the flow of his love in the direction of god, giving him the hot-link to communicate with him.

2. **Benefits of Rajyoga Meditation:** The teachings of Raja Yoga are extremely beneficial for developing positive attitude. In various situations one thinks; "I am just an actor in the world drama. I must try to play the role given to me in the best possible manner. I should not become anxious, depressed or worry about the activities of others because they are also playing their roles in the huge world dram. I remain detached and peaceful because I am just an observer of various scenes of the drama. I even observe my own activities. More so because my original nature is peaceful. I am a peaceful soul. I am a child of the ocean of peace—the Supreme Being."


Easy Meditation

- Internal dialogue.
- Visualization.
- Silent reflection.



What is Rajyoga

Communion of inner light with Supreme light..





SOUL-MIND-BODY MEDICINE

ULTIMATE SOURCE OF SPIRITUAL ENERGY

SPIRITUAL ENERGY (INNATE QUALITIES)

MENTAL ENERGY (POSITIVE T.E.A.M.)

PHYSICAL ENERGY

SUPREME SOUL

Soul-conscious ↓ Lifestyle

SOUL

MIND

PHYSICAL BODY

(OCEAN OF KNOWLEDGE, PURITY, PEACE, LOVE, HAPPINESS, BLISS & POWERS)

KNOWLEDGE, PURITY, PEACE, LOVE, HAPPINESS, BLISS & POWERS)

Positive Thoughts, Emotions, Attitude, Memories

JEWELS OF KNOWLEDGE (MURLI)

PROPER DIET, PROPER EXERCISE, PROPER SLEEP & PROPER USE OF MEDICINES

HARMONY IN FLOW OF SPIRITUAL, MENTAL & PHYSICAL ENERGY

EVERHEALTHY, EVERWEALTHY, EVERHAPPY MIND, HEART & BODY

Definition of Rajyoga:

Rajyoga is the science & art of harmonizing spiritual, mental & physical energy through connection with the ultimate source of spiritual energy (supreme -soul) for enjoying everhealthy, everwealthy & everhappy life.

GHRC, Mt. Abu

The spiritual knowledge also helps one to see the hidden benefits in every situation however stressful it may seem at its outset. He always thinks about the positive side of the coin. Hans Selye, Canada's most honored scientist also laid importance on attitudes as "Rather than relying on drugs or other techniques, I think there is a better way to handle stress, pleasant or unpleasant. "Raja Yoga taught by BrahmaKumaris world spiritual university contains ample knowledge helping one to develop this attitude. More than thinking about it, talking about it, what is needed is to practice the method to develop the positive habit for the effective management of stress.

Meditation gives us mental relaxation as well as physical relaxation and constant peace and improves the quality of being. We ask one who has not felt pressed, at times, by the turmoil of events or the inanity of physical and natural environment, to seek inner calm and peace and fresh resources of vitality, within himself? Meditation is the sure way to experience new zeal, powerful energy and real and lasting peace and to have in it a fountain of bliss.

One also gets his past errors of moral judgment and past acts, vitiated by ignoble tendencies, washed off the soul, for Yoga-Meditation is the detergent of mind. Thus meditation is of great value because it brings a great change in personality-traits and negative habits. This eliminates one's tendencies of aggressiveness, exploitation, sensual indulgence, attachment, suspicion and hate. One, thereby, becomes a peaceful person, spreading vibrations of peace, having good will, doing positive thoughts. Rajyoga meditation is thus the science of peace in one's personal and social life.

Understanding of the spiritual knowledge helps one to do positive thinking and transform his attitudes towards the stressful situation. Hence meditation and spiritual knowledge help one to maintain stability of mind in the adverse circumstances. He accepts criticism and tries to correct himself. He will not be influenced by anger, Hopelessness, Attachment, Fear etc. He remains away from the unhealthy habits which provide only a temporary pleasure and makes ones mind weak. Thus spirituality based positive thinking helps one to attain the highest level of emotional equilibrium.

In recent years, the various health benefits of meditation have become more and more acknowledged by the scientific community as well as the public. While initially, research concentrated more on the physiological benefits of meditation, there have recently been an increasing number of studies on the various psychological benefits, too. Apart from the pioneers of meditation research such as Harvard's Dr. Herbert Benson ("The Relaxation Response") and Jon Kabat-Zinn, there are now scientists such as Richard Davidson and Sara Lazar using the tools of modern brain research to explore the effects of meditation on your mind and health. Meditation can have various health benefits. Apart from its physiological benefits, it can also improve your psychological and spiritual well-being. More and more doctors are prescribing meditation in health centres all around the world and it certainly deserves your contemplation and consideration. Research has scientifically proven that practicing meditation in health and fitness programmes is a safe and simple way to balance your physical condition, emotional state and mental wellbeing and its countless values have been known and practiced for thousands of years. Listed below are just a few of the benefits sports professionals, celebrities and people all over the world are endorsing after practicing meditation in health and fitness programmes.

- Enhances energy, strength, vigor and fitness.
- Helps keep blood pressure normal.
- Amazing stress buster.

- Creates a state of deep relaxation and general feeling of wellbeing.
- Increases concentration and strengthens the mind.
- Helps reduce heart disease
- Helps with weight loss.
- Builds self confidence.
- Reduces anxiety attacks as it lowers the levels of blood lactate.
- Increases serotonin which influences moods and behaviour. (Low levels of serotonin are associated with depression, headaches, obesity and insomnia.)
- Helps weight loss
- Helps cure addictions

Physiological Benefits of Meditation:

- Meditation decreases the metabolic rate and lowers the heart rate, thus indicating a state of deep rest and regeneration.
- Meditation reduces stress which is indicated by lower levels of stress-hormones such as cortisol.
- Meditation reduces high blood pressure.
- Meditation has been found to help asthma patients, making breathing easier for them.
- Meditation seems to slow down the aging process of the brain and thicken the grey matter of the brain, thus increasing the brain.
- Medical scientists would be keen to know the psychophysiological explanation about the benefits of Raja Yoga in promoting positive state of one's mind.
- Enkephalin and Endorphins (Endogenous Morphine) are secreted due to yogic life style which helps in detaching oneself from the various kinds of pains. They produced harmonious Alpha or Theta waves not only while meditating but even when various mental and intellectual works was done.

Psychological Benefits of Meditation:

On the psychological level, studies have shown the following benefits of meditation: A normal person's mind is extremely susceptible to the changing environments. A mentally healthy person retains the stability of mind under adverse circumstances.

One's mind having been liberated from wasteful habits such as smoking, taking alcoholic drinks or intoxicating drugs, spending time and money on obscene films, etc. and one's concentration and efficiency having increased and relations and capacity of adjustment, tolerance and endurance having improved, one's social, economic and over all development now takes place.

- There is the resulting change in one's belief system, value system, one's purpose, attitude and behaviour.
- Meditation increases the coherence of brain wave patterns in the brain, which suggests it improves creativity and learning and changes the way the brain works. Meditation helps to decrease anxiety, depression, irritability and moodiness.
- Meditation improves memory.
- Meditation increases the subjective feeling of happiness and contentment.
- Meditation increases emotional stability.

Spiritual Benefits of Meditation:

Meditation has traditionally been seen as a tool for spiritual realization and fulfillment. While the physiological and psychological benefits have so far been concentrated on in the West, modern brain science helps to understand and explore the spiritual aspects of meditation more and more. Another scientific tool is to question people on the subjectively perceived effects which meditation has on them. Such methods have been used in recognized scientific disciplines such as psychology or sociology.

- Studies show that people who meditate are likely to report a shift in their outlook and goals in life towards personal growth and spiritual fulfillment rather than more materialistic goals.
- Brain research shows how meditation can train the higher capacities of the mind, such as perception, awareness and compassion. The progress of brain research opens up ways of getting a clear, scientific understanding and evidence of the spiritual dimension of meditation.

While for the sake of clarity, the positive effects of meditation have been categorized into physiology, psychology and spirituality, all these areas are somehow connected. For example, feeling physically healthy will have a positive effect on one's mind, too, as well as the other way round.

HYPERTENSION:

High blood pressure is a common condition in which the force of the blood against your artery walls is high enough that it may eventually cause health problems, such as heart disease. Blood pressure is determined by the amount of blood your heart pumps and the amount of resistance to blood flow in your arteries. The more blood your heart pumps and the narrower your arteries, the higher your blood pressure. You can have high blood pressure (hypertension) for years without any symptoms. Uncontrolled high blood pressure increases your risk of serious health problems, including heart attack and stroke.

DIABETES:

Type-II diabetes, often called non-insulin dependent diabetes, is the most common form of diabetes, affecting 90% - 95% of the 21 million people with diabetes. Unlike people with type 1 diabetes, people with type 2 diabetes produce insulin; however, either their pancreas does not produce enough insulin or the body cannot use the insulin adequately. This is called insulin resistance. When there isn't enough insulin or the insulin is not used as it should be, glucose (sugar) can't get into the body's cells. When glucose builds up in the blood instead of going into cells, the body's cells are not able to function properly. Other problems associated with the buildup of glucose in the blood include: Anyone can get type 2 diabetes. However, those at highest risk for the disease are those who are obese or overweight, women who have had gestational diabetes, people with family members who have type 2 diabetes and people who have metabolic syndrome (a cluster of problems that include high cholesterol, high triglycerides, low good 'HDL' cholesterol and a high bad 'LDL' cholesterol, and high blood pressure). In addition, older people are more susceptible to developing the disease since aging makes the body less tolerant of sugars. In addition, people who smoke, have inactive and stressful lifestyles, or have certain dietary patterns have an increased risk of developing type-II diabetes.

CORONARY ARTERY DISEASE:

Your coronary arteries are blood vessels on the heart. They are smooth and elastic, allowing blood to flow freely. Before your teen years, fat can start to deposit in the blood vessel walls. As you get older, the fat builds up. This causes injury to your blood vessel walls. In an attempt to heal itself, the fatty tissues release chemicals that promote the process of healing but make the inner walls of the blood vessel sticky.

Then, other substances, such as inflammatory cells, proteins, and calcium that travel in your bloodstream start sticking to the inside of the vessel walls. The fat and other substances combine to form a material called plaque, which can narrow the flow of blood in the artery (atherosclerosis). When plaques build up, they narrow your coronary arteries, causing your heart to receive less blood. Eventually, diminished blood flow may cause chest pain (angina), shortness of breath or other coronary artery disease symptoms. Some plaque deposits are hard on the outside and soft and mushy on the inside. Some plaque is fragile, cracking or tearing, exposing the soft, fatty inside. When this happens, platelets (disc-shaped particles in the blood that aid clotting) come to the area, and blood clots accumulate on the injured vessel wall. This causes the artery to narrow even more. Sometimes, the blood clot breaks apart by itself, and blood supply is restored. Over time, the inside of the arteries develop plaques of different sizes. Eventually, a narrowed coronary artery may develop new blood vessels that go around the blockage to get blood to the heart. However, during times of increased exertion or stress, the new arteries may not be able to supply enough oxygen-rich blood to the heart muscle.

PSYCHOLOGICAL WELL-BEING:

It is not just the absence of mental disorder. It is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community. (WHO) From Wikipedia, the free encyclopedia

Psychological well-being describes either a level of [cognitive](#) or [emotional well-being](#) or an absence of a [mental disorder](#).^{[1][2]} From perspectives of the discipline of [positive psychology](#) or [holism](#) mental health may include an individual's ability to enjoy life and procure a balance between life activities and efforts to achieve [psychological resilience](#).^[1] Mental health is an expression of our emotions and signifies a successful adaptation to a range of demands.

PHYSICAL WELL-BEING:

WHO'S DEFINATION OF HEALTH: HEALTH IS A STATE OF PHYSICAL, MENTAL, SOCIAL & SPIRITUAL WELL BEING & NOT JUST THE ABSENCE OF DISEASES OR INFIRMITY.

3. REVIEW OF PAST STUDIES ON THIS TOPIC:

1. Selye Hans(1950), "effect of stress on body"

Dr. Hans Selye has done many researches & He proved that the incidence of Headache, acidity, ulcer, hypertension, diabetes, skin diseases increases because of stress.

2. Scientist at Langley Porter Psychiatric Institute, SAN FRANCISCO, CALIFORNIA, U.S.A), (1978), "effect of Rajyoga Meditation on brain waves(EEG)"

Even the scientific investigations by recording E.E.G. of raja yogis have shown the totally relaxation and mental harmony they have achieved. Most of the ten Raja yogis examined produced Alpha or Theta waves not only while meditating but even while performing complicated mental arithmetic. In one of the most eye opening study, EEG, EMG, Lung CO2 levels, Abdominal & thoracic respiratory movements, In 1978, EEG measured in 10 members of Brahmakumaris at Langley Porter Psychiatric Institute. Dadi Jankiji, chief of Brahmakumaris registered Delta Waves (1-3 Hz.) in all channels under all conditions. While engaged in conversation or performing mental arithmetic, While attempts were made to elicit various emotional responses.

Note: Normally Delta Waves produced in the deepest state of sleep. Eye movements were subtracted from the graph, other double-checks were also made. No sign of brain disease Also she had been tested at medical science research institute of Texas(U.S.A.) similar brain waves rhythms were observed and she was called “the most stable mind in the world”

3. Kaplan, Lonsdorf, Travis,(1981), “effect of TM on EEG Coherence”
Increased EEG Coherence: After two weeks of practice of the TM program, individuals showed significantly increased EEG coherence during the practice, in contrast to their own eyes-closed control condition before they learned the TM technique.

4. Patel Girish (1984), “Effect of Rajyoga Meditation on vital parameters”

A preliminary study on 25 Raja Yogis, including both males and females, practicing meditation regularly, in October 1984, by the medical wing of Raja Yoga education and research foundation to observe the effect of meditation to the vital parameters. This showed an overall decrease in the mean values of heart rate, systolic & diastolic blood pressure and respiratory rate within 6 months.

5. Team, Medical wing, Mt. Abu (1985), “effect of Rajyoga Medtation on patients of sleeplessness”

In 1985, medical wing of Raja Yoga education and research centre has done one research study on sleeplessness. In this study 824 patients examined and taught Raja Yoga meditation for one month 507 of them got complete benefit.

6. Patel Girish(1986), “effect of Rajyoga Medtation on patients of addiction”

Medical wing has done one more research on smoking & alchohol addiction patients for one month. 183 patients were taught Raja Yoga meditation. 74% patients became completely free of smoking addiction. After one year 93% smokers left smoking.

7. Patel Girish(1989), “effect of Rajyoga Meditation on patients of Hyperacidity”

For 3 months, 66 patients of hyperacidity were studied. After doing Raja Yoga meditation for 3 months, 56.1% patients got complete relief. 34.8% patients got good relief and 9.1% little relief.

8. Ushakiran(1989), “effect of Rajyoga Meditation on patients of headache”

In 1988, in one research study 121 patients who were suffering from headache have been taken & taught them Raja Yoga meditation for 3 months. After 3 months 53.9% patients got very good relief, 91.2% patients got very good relief and 9.4% patients got little relief.

9. Shirley Telles and T. Desiraju, (4 May 1993) “AUTONOMIC CHANGES IN BRAHMAKUMARIS RAJA YOGA MEDITATION”,

Abstract: This report presents the changes in various autonomic and respiratory variables during the practice of Brahmakumaris Raja yoga meditation. This practice requires considerable commitment and involves concentrated thinking. 18 males in the age range of 20 to 52 years (mean 34.1 ± 8.1), with 5-25 years experience in meditation (mean 10.1 ± 6.2), participated in the study. Each subject was assessed in three test sessions which included a period of meditation, and also in three control (non-meditation) sessions, which included a period of random thinking. Group analysis showed that the heart rate during the meditation period was increased compared to the preceding baseline period, as well as compared to the value during the non-meditation period of control sessions. In contrast to the change in the heart rate, there was no significant change during meditation, for the group as a whole, in palmer GSR, finger plethysmogram amplitude, and respiratory rate. On an individual basis, changes which met the following criteria were noted: (1) changes which were greater during meditation (compared to its preceding baseline) than changes during post meditation or non-meditation periods (also compared to their preceding baseline); (2) Changes which occurred consistently during the three repeat sessions of a subject and (3) changes which exceeded arbitrarily chosen cut- off points (described at length below). This individual level analysis revealed that changes in autonomic variables suggestive of both activation and relaxation occurred simultaneously in different subdivisions of the autonomic nervous system in a subject. Apart from this, there were differences in patterns of change among the subjects who practiced the same meditation. Hence, a single model of sympathetic activation or overall relaxation may be inadequate to describe the physiological effects of a meditation technique.

10. Patel Nikhil (1995), "assess the efficacy of Rajyoga Meditation to overcome psychoactive abuse/dependence"

Dr. Nikhil Patel from neuropsychiatry department, Global Hospital, Mount Abu, carried out a retrospective study for overseas meditation practitioners who visited the international headquarters of the Brahma Kumaris spiritual institution in 1994-95, to assess the efficacy of Rajayoga meditation to overcome psychoactive substance abuse/dependence. A group of three hundred and eighty foreigners including two hundred and sixteen Europeans, having a maximum of eight kinds of substance abuse/dependence for a duration ranging from two months to forty years were interviewed. Data was collected using a structured questionnaire. The majority of the meditation practitioners (93%) abstained completely from all the substances within one month period of practice of Rajyoga Meditation, without taking concurrent psychiatric treatment. This emphasizes the use of Rajyoga Meditation as an effective method to overcome substance abuse/dependence.

11. Kaplan, Lonsdorf, Travis, ("1996), effect of TM on blood flow to the brain"

Increased Blood Flow to the Brain: Individuals who practiced the TM technique displayed significantly increased cerebral blood flow during the practice, in contrast to controls. Increased cerebral blood flow was found during the practice of the TM technique both in the occipital area of the brain, and also in the frontal area.

12. Patel Nikhil (1996), "effect of Rajyoga Meditation in treating neurotic illnesses and changes in physiological parameters"

Other research studies conducted by the department of neuropsychiatry are Effects of Rajyoga meditation in treating neurotic illnesses and Changes in Physiological Parameters - EEG, muscle tension, etc. - after Rajyoga practice

13. Surya, Balakishore(2000),), "effect of Rajyoga Medtation on patients of depression"

One research study was done by B.K Suryji (M.T ABU) & B.K Balakishoreji on depression management through Raja Yoga meditation (power of thought) in 2000. They used TAT test & symptom list . He also found good results in many cases.

14. Gupta Satish(2004), “effect of 3D Heart Care on CAD patients”

To combat the menace of epidemic of CAD J. Watumull Global Hospital & Research centre, Brahma kumaris, Mount Abu joined hands with defense institute of physiology and allied sciences (DRDO), New Delhi and various other prestigious heart institutes in collaboration with CCRYN, ministry of health and family welfare, Govt. of India in early 1998, During last six years more than 800 angiographically documented CAD patients referred from all over India have participated in an unique user friendly HEALTHY LIFE STYLE program for CAD Regression (Mount Abu Open Heart Trail) in groups of 20 to 30 patients with their spouses at Brahma Kumaris, Shantivan, Complex, Abu Road. Almost all the patients who have sincerely followed the program experienced highly impressive improvement in symptoms eg: angina, breathlessness etc. Various tests Carried out have shown highly significant decrease in bad cholesterol (LDL), increase in good Cholesterol (HDL) levels, better control of diabetes, high blood pressure, impressive decrease in weight, freedom from smoking, alcohol etc. Repeat coronary angiography have shown opening of coronary blockages. Some patients who followed the program strictly have been able to open even calcified 100 % blockages. Highly significant decrease in number of anginal episodes and heart attacks was observed in patients, who adapted this program as compared to control group in this randomized controlled study.

15. Shamatha Project Team (8 sep 2009), “study of intensive meditation effect on telomerase activity”

The **Shamatha Project** is the most comprehensive longitudinal study of intensive meditation ever to be undertaken. As part of the study, an extensive meditation retreat took place at the Shambhala Mountain Center in Red Feather Lakes, Colo. The 30 participants each in the retreat and control groups received ongoing instruction in meditation techniques from Buddhist scholar, author and teacher B. Alan Wallace of the Santa Barbara Institute for Consciousness Studies. They attended group meditation sessions twice a day and engaged in individual practice for about six hours a day. The research team measured telomerase activity in participants at the end of a three-month intensive meditation retreat and found that Telomerase activity was about one-third higher in the white blood cells of participants who had completed the retreat than in a matched group of controls. There were other beneficial psychological qualities that were also observed and these included perceived control (over one's life and surroundings), mindfulness (being able to observe one's experience in a nonreactive manner) and purpose in life (viewing one's life as meaningful, worthwhile and aligned with long-term goals and values). In addition, the participants also witnessed a decrease in negative emotionality.

16. Jayenti and team(2010), “effect of Rajyoga Meditation on relieving pain”

One research study has done on relieving pain through Raja Yoga at Spiritual application research centre Mt. Abu by Jayenti and team on 10 different patients for 4 days. Patients temporarily report good feeling (relief from pain) complete healing of pain not reported.

17. Team, SpARC, Mount Abu(2010), “effect of positive thoughts positive vibrations on cancer patients”

The **service through positive thoughts and positive vibrations** were tested on group of patients in a state government run cancer hospital in Karnataka by spiritual applications

research centre of Brahmakumaris. Many topics on self-respect and effect of positive vibrations were experimented. It was found that Raja Yoga brought about many positive changes among the patients and others who attended classes. Each participant had a new and unique experience: Each felt that there was a self progress, increase in will power and concentration, weightlessness and flying stage. Patients and their accompanys were automatically attracted to the meditation rooms where meditations were being conducted. They readily expressed their feelings to attend the free Raja Yoga course. So far up to 125 patients and 400 accompanys who came with the patients have attended the course.

The hospital staffs have expressed their feelings that the disturbances of evil souls have reduced. The hospital authorities desired to conduct training to their staff too. Raja Yoga has brought about many positive changes among the patients. The patients and the hospital staff who practiced Raja Yoga feel that the meditation and the philosophy is very much essential to overcome anxiety, tension and worries that engross the man.

18. Scientists from Project Meditation(2010),“study of effect of brain waves activity on mental state and vice-versa”

Here are some comments from just a few scientific reports:-
Dr. Elmer Green, prominent biofeedback pioneer, reports: Increased learning ability, creativity, mental clarity, intelligence, and intuition... and positive changes in mental and emotional health. *With the creation of new neural pathways, more choices are available. Herein lies the theoretical explanation for the amazing personality changes researchers have reported in subjects using technology to change brainwave patterns.*"

Increased Relaxation

Dr. Margaret Patterson has shown that certain frequencies in the brain dramatically speed up production of a variety of neurotransmitters. A 10 Hz (alpha) signal boosts the production and turnover rate of serotonin, a chemical messenger that increases relaxation and eases pain, and catecholamines, vital for memory and learning, respond at around 4 Hz(theta).

Delayed and Reversed Aging Researcher Robert Cosgrove, Jr., Ph.D., M.D., a biomedical engineer, notes that technologies altering brainwave patterns have great potential for promoting optimal cerebral performance ... (and) long-term use may delay aging and deterioration of the brain traditionally associated with aging.

NASA has been using EEG biofeedback for years to increase its pilots' ability to concentrate.

Researchers Drs E. Green and K.S. Ozawkie report that, "theta feedback can be used for becoming aware of subconscious and superconscious aspects of mind in the same way that vipassana, a form of Buddhist meditation, is used. Vipassana is a meditation method in which the 'witness', or 'observer' aspect of mind develops. When mindfulness is achieved, the 'I' of a person is capable of watching what is happening in body, emotions, and mind without reacting. Experimentally, theta feedback and vipassana lead to states of 'mindfulness' that are so much alike that theta training might, without exaggeration, be called 'instrumental vipassana'."

"There's a revolution going on. The present era in neuro-science is comparable to the time when Louis Pasteur first found out that germs cause disease" Candice Pert, Neuroscientist

Physical Vitality

Vincent Giampapa, M.D. of Longevity Institute International and vice president of the American Society of Anti-Aging Medicine, reveals that placing a listener in the alpha, theta, and delta brain wave patterns dramatically affect production of three important hormones related to both increased longevity and physical well-being: Cortisol, DHEA, and melatonin. Cortisol is the major age-accelerating hormone within the brain. It also interferes with learning and memory and is, in general, bad news for your health and your well-being. DHEA levels are a key determinant of physiological age and resistance to disease. When DHEA levels are low, you're more susceptible to aging and disease; when they're high, the body is at its peak -- vibrant, healthy, and able to combat disease effectively.

The study takes a more holistic look at the process of aging and provides the first ever link between positive well-being and higher telomerase, the enzyme important for the long-term health of cells in the body. The effect can be attributed to psychological changes that increase a person's ability to cope with stress and maintain feelings of well-being.

19. Patel Neelam(2010), "effect of spirituality on various diseases"

Dr. Neelam Patel, assistant professor, NHL municipal medical college, Ahmedabad has presented her research study cases on spirituality on various diseases like Trigeminal Neuralgia, Backache & mild parasthesia, periapical dental abscess, post extraction healing, fractures (hairline cracks), Muscle twitching, laparotomy pain.

4. RATIONAL (JUSTIFICATION):

WHO'S DEFINATION OF HEALTH: HEALTH IS A STATE OF PHYSICAL, MENTAL, SOCIAL & SPIRITUAL WELL BEING & NOT JUST THE ABSENCE OF DISEASES OR INFIRMITY.

TODAY MORE THAN 90% DISEASES ARE *STRESS - RELATED OR PSYCHOSOMATIC DISEASES*
WHAT IS THE SOLUTION???

STRESS (MIND) AFFECTS BADLY ON EVERY DIAMENTION:

Psychological stress can affect the individual and in turn the society in a number of ways.

SUBJECTIVE EFFECTS: Are anxiety, aggression, apathy, boredom, depression, fatigue, frustration, guilt, shame, inability, bad temper, moodiness, low self-esteem, threat, tension, nervousness, loneliness etc.

COGNITIVE EFFECTS: Are inability to make decisions and concentrate. Frequent forgetfulness, hypersensitive to criticism and mental blocks.

BEHAVIOURAL EFFECTS: are accident proneness, drug taking, emotional outburst, excessive eating or loss of appetite, excessive drinking and smoking, excitability, impulsive behaviour, impaired speech, nervous laughter, restlessness and trembling.

After painstaking experimentation done by Hans Selye, the world's premier stress researcher, stress was defined as any diverse stimulus that produced the nonspecific effects and is characterized by an enlargement and increased functioning of the adrenal cortex, a decrease in the size of the thymus and lymphatic organs. In other words, any event that alerts the steady state or challenges the adoptive mechanism of the body is known as stress. Although not perfect, the definition is reasonably true. Fear, anger, suspicion, jealousy, worries, anxiety etc., are the forms of psychological stress and they can affect any system in the body. Our stomach, heart, kidneys, brain etc., suffer and we develop temporary symptoms of the state which if exist over a period of time can result in permanent damage to the organs of the

body.

Anxiety through sympathetic system can reduce the diameter of arterioles which increases blood pressure and in turn can lead to angina pectoris, heart attack and myocardial effect of stress and negativity infraction.

Diseases starting from diarrhea to heart attack or cancer can result from mental turmoil. When one worries or becomes anxious the intestines work faster and one can develop diarrhea.

ROUTES OF ACTION: Stress primarily acts on hypothalamus which is related to mental and emotional functions. And through various pathways it affects the bodily organs.

Stress activates a preoptic hypothalamic centre to increase the output of ACTH releasing substance. This is carried via hypothalamo pituitary blood vessels to the anterior pituitary where it triggers the secretion of adrenocorticotrophic hormone (ACTH). ACTH is transported in the blood stream to the adrenal cortex where it stimulates the secretion of corticosteroids on stomach secretion. Over prolonged period of time this obviously could lead to peptic ulcer which is a well known effect of hypersecretion of the adrenal cortex.

Likewise, activity in the anterior hypothalamus increases the pituitary secretion of thyrotropin, which in turn increases the output of thyroxin and leads to an elevated basal metabolic rate. From these examples, therefore, it is evident that many psychosomatic diseases can be caused by abnormal stimulation of hypothalamus.

AUTONOMIC NERVOUS SYSTEM: Many diseases result due to the hyper activity of either sympathetic system. Over activity of either sympathetic or parasympathetic system. Over activity of sympathetic system leads to increased heart rate, increased arterial pressure, constipation and high metabolic rate, stimulation of vagus nerve causes increased peristalsis in the upper gastrointestinal tract, increased hyperactivity of stomach which leads to development of peptic ulcer. Stimulation of sacral region of parasympathetic system is likely to cause extreme colonic glandular secretion and peristalsis with resulting diarrhea. Emotions affect sympathetic and parasympathetic centre in hypothalamus leading to variety of somatic disorders.

RETICULAR ACTIVATING SYSTEM: Abnormal psychological state can greatly affect the degree of nervous stimulation of the skeletal musculature throughout the body by deranging the function of reticular activating system. In neurotic and psychotic states such as anxiety, tension and mania, generalized over activity of both the muscles and sympathetic system often occur throughout the body. This in turn results in instant feedback from the muscle proprioceptors to the reticular activating system, and the epinephrine circulating in the blood as a result of sympathetic activity directly excites the reticular activating system both of which undoubtedly cause an extreme degree of wakefulness and alertness that characterizes these emotional states. Unfortunately, the wakefulness prevents adequate sleep and also lead to progressive bodily fatigue, further enhancing the inability to go to sleep.

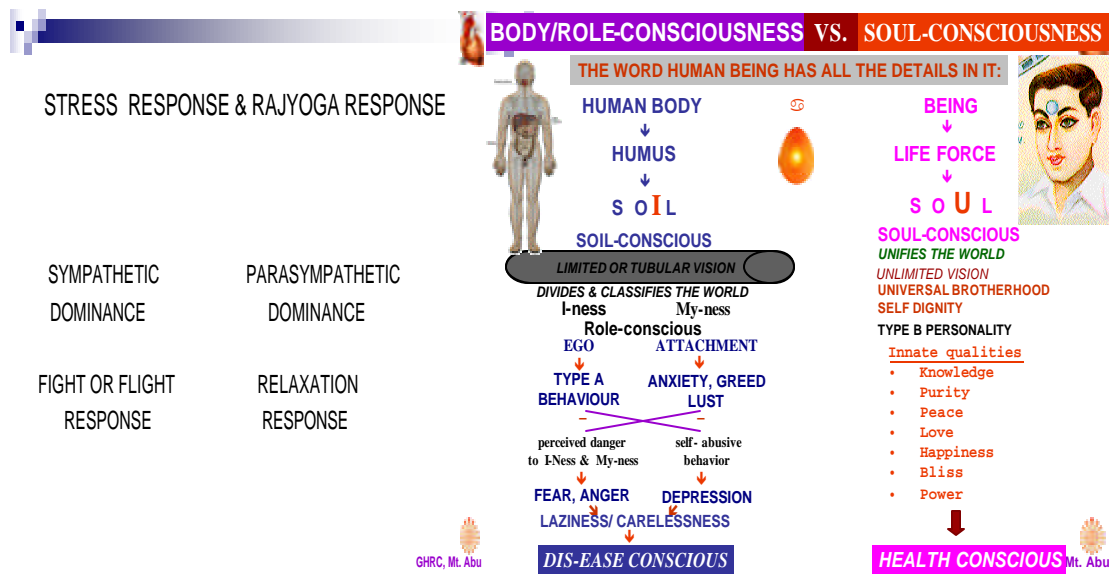
Effects of stress are increased blood and urine amines and steroid hormones to increase blood glucose levels, increased heart rate and blood pressure, dryness of mouth, sweating, dilatation of pupils, difficulty in breathing, hot and cold spells, lump in the throat, numbness and tingling in parts of the limbs.

Anger, agitation, excitement etc. increases the activity of the sympathetic nervous system, which in turn increases pressure in the small blood vessels of the brain which may rupture in such states of mind, leading to brain hemorrhage. Various chemicals are secreted in the brain in small quantities. They are known as neuro-transmitters. The state of mind has direct influence on the secretions of these chemicals.

These three routes of action can damage all the systems of our body. Increased level of steroids suppresses the humeral and cellular immunity reducing the resistance of the body to fight against infections as well as increases the chances of malignancy.

Modern man no longer faces the epidemic of plague but stress related diseases are becoming number one killer. Negative thoughts and attitudes are at the root of these diseases.

When we are feeling anxious, worried or stressed, higher or faster beta waves occur, producing heaps of cortisol which is known as the “stress hormone” and this is extremely bad for your health. What’s more, the more cortisol you produce, the more stressed you feel...the more vulnerable to disease you are and the faster you age! This overload of stress can cause us to experience headaches, irritability, tension and suffer sleepless nights. Sometimes we experience panic attacks, feelings of dread or we constantly feel tired, run down and completely overwhelmed.



We all at times experience symptoms like feeling tensed, nervous, restless, frightened, having difficulty to go to sleep, forgetting important information, palpitation, undue sweating in hands etc There is enough evidence to show that the many everyday discomforts, diseases and tensions arise from the fact that we are alienated from our bodies. The mind can be an important cause of sickness in the body. As a corollary, it naturally follows it can also provide the cure.

Practice of Rajyoga meditation alone can be of tremendous help in overcoming these minor psychological problems known as “neurotic illness”.

“HOW YOUR BRAINWAVES AFFECT YOUR MENTAL STATES”

Many scientific reports have proven that "OUR BRAINWAVES EFFECT OUR MENTAL STATES" And while our mental state affects our brainwaves, the opposite is also true. Medical scientists would be keen to know the psychophysiological explanation about the benefits of Raja Yoga in promoting positive state of one’s mind.

Meditation has been found to have the following physiological health benefits:

- Meditation decreases the metabolic rate and lowers the heart rate, thus indicating a state of deep rest and regeneration.

- Meditation reduces stress which is indicated by lower levels of stress-hormones such as cortisol.
- Meditation reduces high blood pressure.
- Meditation has been found to help asthma patients, making breathing easier for them.
- Meditation seems to slow down the aging process of the brain and thicken the grey matter of the brain, thus increasing the brain.
- Enkephalines and Endorphines (Endogenous Morphine) are secreted due to yogic life style which helps in detaching one self from the various kinds of pains. They produced harmonious Alpha or Theta waves not only while meditating but even when various mental and intellectual works was done. Meditation:
 - Enhances energy, strength, vigor and fitness.
 - Helps keep blood pressure normal.
 - Amazing stress buster.
 - Creates a state of deep relaxation and general feeling of wellbeing.
 - Increases concentration and strengthens the mind.
 - Helps reduce heart disease
 - Helps with weight loss.
 - Builds self confidence.
 - Reduces anxiety attacks as it lowers the levels of blood lactate.
 - Increases serotonin which influences moods and behavior. (Low levels of serotonin are associated with depression, headaches, obesity and insomnia.)
 - Helps weight loss
 - Helps cure addictions

Understanding of the spiritual knowledge helps one to do positive thinking and transform his attitudes towards the stressful situation. Hence meditation and spiritual knowledge help one to maintain stability of mind in the adverse circumstances. He accepts criticism and tries to correct himself. He will not be influenced by anger, Hopelessness, Attachment, Fear etc. He remains away from the unhealthy habits which provide only a temporary pleasure and makes ones mind weak. Thus spirituality based positive thinking helps one to attain the highest level of emotional equilibrium.

In recent years, the various health benefits of meditation have become more and more acknowledged by the scientific community as well as the public. While initially, research concentrated more on the physiological benefits of meditation, there have recently been an increasing number of studies on the various psychological benefits, too. Apart from the pioneers of meditation research such as Harvard's Dr. Herbert Benson ("The Relaxation Response") and Jon Kabat-Zinn, there are now scientists such as Richard Davidson and Sara Lazar using the tools of modern brain research to explore the effects of meditation on your mind and health. Meditation can have various health benefits. Apart from its physiological benefits, it can also improve your psychological and spiritual well-being.

More and more doctors are prescribing meditation in health centres all around the world and it certainly deserves your contemplation and consideration. Research has scientifically proven that practicing meditation in health and fitness programmes is a safe and simple way to balance your physical condition, emotional state and mental wellbeing and its countless values have been known and practiced for thousands of years. Dr. David H. Fink, a neuro-psychiatrist of California described the benefit of relaxation in his book: "Relaxation from nervous tension" as "Relaxation stops the emotions that prods the inter brain and forebrain in to misbehavior. Skill as well as good health depend up on relaxation" from my experience of

practicing Raja Yoga meditation for the last 18 years I am deeply convinced that Raja Yoga is a natural mental and physical relaxation. By its practice one can even overcome unconscious anxieties, fears etc. It also improves one's resistance power to deal with stress. Reduction in the levels of steroid hormones helps humeral as well as cellular immunity. Even the scientific investigations by recording E.E.G. of raja yogis have shown the totally relaxation and mental harmony they have achieved. Most of the ten Raja yogis examined produced Alpha or Theta waves not only while meditating but even while performing complicated mental arithmetic.

A block cracks or ulcerates leading to clot formation thereby causing sudden 100% blockage of the coronary artery, leading to heart attack. About 25 to 30% patients die in the first heart attack even before reaching the hospital. If the person, who has suffered a heart attack once, does not change his lifestyle (psychological behavior, diet, exercise, sleep habits) he or she gets recurrent heart attacks that lead to many heart-related illnesses and untimely death. CAD has assumed epidemic proportions the world over and more so in India. Heart disease is considered the number one killer as it is responsible for about 40% of the deaths all over the world It is estimated by WHO and other World Health Agencies that by the year 2010, 60% of all the heart patients in the world will be Indians. **Psychological factors: The major risk factor for CAD:** Medical scientists throughout the world have been working day in and day out to find the real cause of CAD. Recently, many well designed studies have shown that psychological behavior patterns play a very important role in causation and progression of coronary blockages & formation of clots which in turn lead to angina and heart attacks. These behaviors are categorized as Type A behavior which include attitudes like 'hurry' sickness, feeling pressurized by time and work, strong likes and dislikes, perfectionist, idealistic, punctual, aggressive, competitive, polyphasic i.e. trying to accomplish various tasks at the same time, or feeling anxiety, depression, anger, cynicism, hostility, job and family stress. Other sensitive behaviors include feeling of isolation, dependence on social support or emotional support, etc. These psychological behavioral patterns lead to wrong dietary, exercise or sleeping habits and thus reduce control over hypertension, diabetes, smoking, high cholesterol levels, obesity and lack of physical activity etc which are conventional risk factors of CAD. This leads to further increase in the coronary blockages at an early age. Some of the well-designed studies (Dean Ornish et al, Manchanda et al etc.) have shown that management of stress through Yoga/ Meditation and change to healthy diet & exercise habits can halt the progress of the above mentioned blockages and thereby reduce the frequency of angina and heart attacks. Till today, medical scientists consider CAD to be a progressive disease. This means that if one is able to stop the progression of the disease, it is reversal of the disease process.

The medical team at J. W. Global Hospital & Research Centre, Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya, Mount Abu have been able to document a highly significant opening of coronary blockages in groups of patients who sincerely followed the 'Healthy & Happy Lifestyle Program' in more than 300 repeat angiographies. The angiographies were analyzed by an independent panel of angiographers. It has been observed that in certain cases, even the 100% calcified blockages opened up significantly. These results have given an eye-opening message to medical scientists

So I want to do more studies on this topic which is so much beneficial in health care. I want to suggest that Raja Yoga meditation can serve as an auxiliary tool to the conventional medicine. We should replace our mechanistic approach to study of health and disease with the humanistic one. Aspects of human nature such as caring, sharing, loving, hoping, play as important part in our endeavors to help the sick as the study of alpha fetoprotein and F

suppressor cells. We should replace the REDUCTIONISTIC approach to the care of the sick with a **HOLISTIC** one. The present health care system has become illness-centered rather than patient-centered. Rajyoga meditation should serve as an **auxiliary tool** to the conventional medicine for various diseases and also as a preventive tool.

5. OBJECTIVES:

- a) To study the effect of Rajyoga meditation on psychological and physical well-being of Hypertensive (essential hypertension) patients.
- b) To study the effect of Rajyoga meditation on psychological and physical well-being of Type-II Diabetes patients.
- c) To study the effect of Rajyoga meditation on psychological and physical well-being of Coronary Artery Disease patients.

6. HYPOTHESIS:

H₁) There will be significant effect of Rajyoga meditation on psychological and physical well-being of Hypertensive (essential hypertension) patients.

H₂) There will be significant effect of Rajyoga meditation on psychological and physical well-being of Type-II Diabetic patients.

H₃) There will be significant effect of Rajyoga meditation on psychological and physical well-being of Coronary Artery Disease patients.

7. METHODOLOGY:

Two groups design will be taken for this study. 1) Experimental group 2) Control group
Two group design (pre and post). A schematic presentation of the sample and design is given below:

Table-1 SAMPLE-

Representative sample of the study.

GROUP	DISEASE			
	HYPERTENSION	TYPE- II DIABETES	CORONARY ARTERY DISEASE	TOTAL
EG	20	20	20	60
CG	20	20	20	60
TOTAL	40	40	40	120

Table-2 DESIGN

Two groups before after design

EG	YB	X	YA
CG	YB	—	YA

EG- experimental group, CG- control group, YB- before observation, YA- after observation, X-intervention, —: no intervention

*Before and after observation – psychological and physical well-being.

TOOLS:

1) Psychological well-being scale –Carol Ryff’s Scale 1989

Carol Ryff has conceptualized psychological well-being as consisting of 6 dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self acceptance. She has designed self-report scales to assess individual’s well-being at a particular moment in time within each of these 6 dimensions. 3 to 12 items per scale validated versions exist of the measure for use in survey research or other data collection. Individuals respond to various statements and indicate on a 6-point Likert scale how true each statement is of them. Higher scores on each on scale indicate greater well-being on that dimension.

2) Physical well-being – clinical parameters

	<u>Hypertension</u>	<u>Type-II Diabetes</u>	<u>Coronary Artery Disease</u>
<u>Parameter</u>	B.P., H.R., Height, weight, B.M.I., HB, Urine-R, BSL,	B.P., H.R., Height, Urine-R, BSL-F, PP weight, BMI, HB,	B.P., H.R., Height, Urine-R, BSL-F,PP weight, BMI, HB,
<u>/ Tool</u>	Kidney function test, ECG, X-ray chest.	Kidney function test, ECG, X-ray chest HbA ₁ C	Lipid profile, TMT ECG, X-ray chest

*(Or any other tool suitable for research will be employed.)

PROCEDURE:

In this two group design study, we will be taking sample randomly and equal number of all 3 type of patients(H.T., D.M. AND C.A.D.) who will be coming in Global Hospital, Abu Road, Rajasthan. Average age will be 30 to 60 years in two groups: 1) 30-45 2) 45-60. Sample will be only male patients. We will be selecting patients of Essential Hypertension with no documented CAD, Type-II Diabetes(mod. level) with no documented CAD and Coronary Artery Disease (documented angina / infarct) who will not suffer from arrhythmic disorders, LMCA disease, recent / serious heart problem. We will be not taking patients who suffer from illness more than 15 years duration, patients with kidney disease, liver disease or any serious illness, and who could not walk, see and hear. We will be giving intervention to EG daily for 1 and ½ hr in the morning (7.30 to 9am) for 4 months. We will not give intervention to CG. We will collect the data of all tests results of both the group which will be employed before and after intervention

STATISTICAL ANALYSIS:

MEAN SD, 't' test, ANOVA test, Tukey test or any other test suitable for statistical analysis will be employed to collected data.

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