

The Science of Psychological Therapy From an Ayurvedic and Clinical Perspective: A Review of the Literature

According to the National Institute of Mental Health (NIMH), anxiety disorders are among the most prevalent, costly, and disabling mental illness. One central, yet often underestimated, abnormality in anxiety disorders is the heightened tendency to react with fear to what would commonly be considered safe events.¹

People with anxiety disorders — which include social anxiety disorder and generalized anxiety disorder — spend much of their lives battling the symptoms listed under Table 1 below. Note that “constant, irrational fear and worry” is presented as the top symptom in the list.²

Table 1: List of Symptoms Indicating Generalized Anxiety Disorder

1	Constant, irrational fear and worry
2	Physical symptoms like rapid heartbeat, fatigue, headaches, hot flashes, sweating, abdominal pain, and difficulty breathing
3	Insomnia or excessive sleep almost every day
4	Changes in eating, either too much or too little
5	Difficulty with memory, decision making, and concentration
6	Constant feelings of sadness or worthlessness
7	Loss of interest in day to day activities
8	Inability to relax
9	Panic attacks

Inevitably, this takes an enormous emotional toll on the individual, and this most often results in depression. The Anxiety and Depression of America (ADAA) states that half of all patients with major depression were also diagnosed with generalized anxiety disorder (GAD). It is essential that both conditions be treated simultaneously. Anxiety and depression can be the root causes of terrifying fear. Many people with anxiety disorders understand that their fears are irrational, but they simply can't stop them.³

The ADAA further tells us that “the most commonly diagnosed form of depression is *Major Depressive Disorder*.” In 2015, around 16.1 million adults aged 18 years or

older in the U.S. had experienced at least one major depressive episode in the last year, which represented 6.7 percent of all American adults."⁴

Depression

Anxiety and depression are not the same disorder, but many of the symptoms experienced in depression are similar to what those that are experienced with anxiety disorder. To be diagnosed with depression the patient must present with at least five of the symptoms listed in *Table 2* below, with the presence of symptoms number one and/or two presented daily, for a duration of two or more weeks.

Table 2: Symptoms Indicating Major Depression Disorder

1	Sadness or depressed mood most of the day or almost every day
2	Loss of enjoyment in things that were once pleasurable
3	Major change in weight (gain or loss of more than 5% of weight within a month) or appetite
4	Insomnia or excessive sleep almost every day
5	Physical restlessness or sense of being rundown that is noticeable by others
6	Fatigue or loss of energy almost every day
7	Feelings of hopelessness or worthlessness or excessive guilt almost every day
8	Problems with concentration or making decisions almost every day
9	Recurring thoughts of death or suicide, suicide plan, or suicide attempt

Untreated depression causes serious long-term implications. Increased chances of risky behavior, substance abuse, relationship disorders, and eating and sleeping disorders list but of few of the problems that could result if depression is not properly treated.⁶ According to WebMD “The annual cost of untreated depression is more than \$43.7 billion in absenteeism from work, lost productivity, and direct treatment costs.”⁷

To further underscore the severity of the situation, a study published by the Journal of the American Medical Association concluded that patients with depression are three times more likely to be non-compliant with medical treatment recommendations than patients who are not depressed.⁸ At best, this non-compliance results in longer recovery times. If it continues, it can result in deeper depression and feelings of hopelessness.

The Call 211 website, a community helpline and crisis hotline that provides suicide prevention, crisis intervention, information, assessment, and referral to community services, states that roughly two out of every three people who commit

suicide are depressed at the time of their death. They go on to state that for every 16 adults with depression, one will eventually go on to end their life through suicide.⁹

Role of the Amygdala in Fear, Anxiety and Depression

At the very outset of his book, Life Unlocked, Dr. Srinivasan S. Pillay sets forth his premise that the source of our inability to lead a life free of anxiety is based squarely on the fear alerting system set deeply in our unconscious mind. He identifies the amygdala as the alerting mechanism, which ‘buzzes’ us when danger is detected by the parts of our brain we inherited from our predecessors. This ‘more primitive’ part of the brain is our fast-detecting, fast-acting processor, which keeps us alive when danger is perceived. Dr. Pillay tells us, “The unconscious brain is never truly silent, always purring in the background. The unconscious brain lights up at the mere hint of danger... even when we are not aware of it.”¹⁰

In his book The Emotional Brain, Joseph LeDoux PhD, a renowned fear researcher, came to the same conclusion. He called the amygdala the “guard dog of the human brain.”¹¹ Dr. Pillay states that when the amygdala is activated, it sends electrical impulses down the spinal cord, this in turn activates the fight-or-flight response, resulting in an increase in heart rate and respiration, which in turn effects other organs in the body. At his point we are trapped in the emotions of fear, anxiety and fatigue.¹²

To illustrate just how powerful these unconscious emotions are, Dr. Pillay draws on a study conducted by researcher Ulf Dimberg PhD, which showed that we react to external stimulation at a very unconscious level. His research revealed that people, when exposed to different facial expressions, would unconsciously recognize these expressions correctly. This reaction was the expected outcome of the study. However, what was completely unexpected was the way in which the test subjects reacted. From a mere 30-ms exposure of happy, neutral and angry face targets, the subjects reacted at a muscular level, that is, they changed their own facial muscles to match that of the target face. The reaction was determined to be completely unconscious. This study clearly showed how the brain unconsciously reacts, or adapts, to external stimulation, and becomes influenced to the point where one’s own emotional state is altered to reflect the incoming information.^{13,14}

Dr. Pillay’s recommendation is to focus our thoughts on connecting the brain with feelings of positivity. This in turn leads the mind to make new neural connections,

thereby disengaging the unconscious flowing of fear and anxiety and engaging conscious thought patterns that lift the individual out of negative mental states. He offer's a three-step approach which he call's "MAP-CHANGE". The three steps are:¹⁵

- Meditation – *a formal method of mental concentration to effectively get the different parts of the frontal brain to work harmoniously;*
- Attention – *whereby one develops positive emotional reactions to replace the onset of fear; and,*
- Psychological Tools – *to overcome the negativity that often blocks our progress, replacing this with optimism.*

Rich Hanson, PhD and Richard Mendius, MD agree. In their book Buddha's Brain – The Practical Neuroscience of Happiness, Love and Wisdom, they advocate this same approach. The authors state "What happens in your mind, changes your brain," using the catch phrase, "neurons that fire together wire together," Hanson and Mendius lay out a course for correcting the mind's way of processing unconscious information by "rewiring" our neurons connections. This is done by 'internalizing the positive, that is, turning positive facts into positive experiences.¹⁶

Dr. Pillay echo's the concept of positively influencing our thought patterns; he tells us "Our brains are much more cooperative then we think," and urges his patients to provide the brain with a clear intension for what it is we desire. He further tells us we must address the unconscious with a clear commitment to change. ¹⁷ This new approach to what is considered a psychological disorder is a non-traditional one, it's based on a new understanding of the relationship between our consciousness and our body.

Through the contributions of quantum physics, science has finally come to understand that nothing in the universe is made up of 'solid matter,' and everything is an expression of vibrating energy. The relationship of the mind to the universe can only be understood when we grasp that mind and matter are intrinsically entangled. The theoretical physicist who is credited with originating the quantum theory, Max Planck regarded "consciousness as fundamental" and matter as "derivative from consciousness." Eugene Wigner, another famous theoretical physicist and

mathematician, also stressed “it was not possible to formulate the laws of quantum mechanics in a fully consistent way without reference to consciousness.”

A groundbreaking book by Richard Gordon, called The Secret Nature of Matter brilliantly leads us to the understanding that it is far more likely that “matter arose from mind then the other way around.” In the authors own words, this is an investigation “into the rarely explored intersection of science and spirituality.”¹⁸ Presenting a comprehensive overview of new theoretical breakthroughs in quantum physics is far beyond the scope of this paper, it will have to suffice it to say that it’s becoming increasingly obvious that “matter responds to consciousness,” and through this new framework, all healing modalities are finding different ways of extending our internal consciousness to heal ourselves. It is only in this enlightened approach to the interaction between our conscious mind and the reality it creates, that the power of Ayurveda’s approach to healing fear, anxiety and depression can be understood.¹⁹

The Ayurvedic Approach to Fear, Anxiety and Depression

In his book Ayurveda and the Mind, the Healing of Consciousness, Dr. David Frawley presents the foundation of Ayurveda’s psychological approach to understanding the structure of consciousness. He states, “Conditioned consciousness is the storehouse of all memories and attachments, from which psychological problems must ever arise.” He goes on to say that this conditioned mind “distorts our perception and disturbs our emotions,” equating many cases of mental illness as being based in the individual’s inability to rise above their internal consciousness to the point where they can no longer function in the external world. He tells us that exploring the contents of our consciousness “is the most important part of mental and spiritual development.”²⁰

The Sanskrit word Chitta is used to denote our core consciousness. It encompasses all aspects of consciousness, unconscious, subconscious, self-conscious, and superconsciousness.²¹ Dr. Frawley tells us that getting control of our consciousness is the most important part of all mental and spiritual development. In line with modern research, Dr. Frawley further tells us that our feelings “underline all mental functions,” as they determine our relationship with the external world and form the bases of our own nature. Our deeper consciousness holds our deepest sorrows, fears and anxieties. It is the conditioned consciousness, that is primarily *Sattvic* (Pure) in nature, yet still possesses all three *Gunas* in their seed form.^{22,23}

Ayurvedic Principles of Treating Mental Disorders – The Three Gunas

In his Book Principles of Ayurvedic Medicine, Textbook for the Ayurvedic Professional, Dr. Marc Halpern tell us, “All mental disease originates in a lack of clarity (*Sattva*) in the mind, and that the true cause of disease is Rajas and Tamas. These three energies are the three forces at the very core of Nature, the subtle energies that determine the balance of all consciousness. It is the balance between *Sattva*, *Rajas* and *Tamas* that determines the nature of everything in the cosmos, and gives its attributes.

Table 3: Attributes of the three Gunas²⁴

<i>Guna</i>	<i>Attribute</i>
<i>Tamas</i>	<i>The unconscious, which dominates during sleep; dullness and depression; the habits and tendencies that we know are wrong but unable to change. Prajnaparadha.²⁵</i>
<i>Rajas</i>	<i>The waking consciousness; action and expression; keeps us moving, disturbed and distracted.</i>
<i>Sattva</i>	<i>The higher consciousness; superconscious functions; the quality of purity or clarity.</i>

Dr. Frawley calls these three *Gunas* “the most subtle qualities of nature.”²⁶ It is here in the *Manasika Prakrit* (our mental nature), focusing on these three Gunas, where Ayurveda strives to cultivate *Sattva* in the treatment of anxiety and depression disorders using *Yoga Therapies*.²⁷

Ayurvedic Approach To Achieving Balance

Ayurveda takes a holistic approach to wellbeing, treating every aspect of the body, mind and spirit. Further, Ayurveda understand that each person is unique and treating the individual is the key to curing disease.

It’s unlikely that much progress can be made unless the body is healthy and the mind is brought under control. To this end diet and lifestyle changes are essential. This aspect of the treatment has been well covered in a paper by Laura Perlin, called *Ayurvedic Approaches to the Treatment of Depression*.²⁸ Here we will focus specifically on the mind, and the Ayurvedic approach for treating fear, anxiety and depression disorders by balancing the three Gunas. Only in a universe where consciousness has influence on matter can the importance of the *Sattva*, *Raja* and *Tama Guna* be understood. In fact, the very way Ayurveda

expresses the general state of a person's consciousness is through the language of the *Gunas*.

- When the mind remains clear and unaffected by distracting emotions like fear and anxiety, Ayurveda identifies that transcendental state of *Sattvic*; it denotes a mental clarity of non-attachment to the influences of the physical world.²⁹
- If the mind becomes entangled in external activity, such distractions may be rooted in thoughts of the past or in the fear and anxiety of the future and we lose our rooting in the present. This is a *Rajasic* state of mind.³⁰
- A mind immersed in the darkness of depression becomes dull and identifies itself as being trapped in the grip of hopelessness. This mind-state renders the patient incapable of recognizing even the possibility of a way out from this hopeless condition; this is the state of *Tama Guna*.³¹

Ayurveda enlightens us with the understanding of how the three *Gunas* interact and how we can influence the balance between them. It is this balance that determines the person's psychological, and by extension physiological, wellbeing. It is when *Sattva* reaches a state of proper balance that true health and healing can be reached. Hence, it is due to the imbalance of *Rajas* and *Tamas* that psychological problems arise. This is the state where we forget our true nature as pure spirit. Ayurveda employs *Sattvic* healing, the life force of nature and the creative force of the universe, to put the individual back in balance. This is accomplished through the process of applying the mobile force of *Rajas* to brake up *Tamas* in order to return to a balanced state of *Sattva*. This is the natural flow of all things in the universe.³²

Aromatherapy's Role in Treating Anxiety and Depression

The process of achieving a *Sattvic* state of mind must begin by working with all five senses.³⁹ Understanding that the conditioned mind hungers after sensory perception, *Ayurveda* utilized these gateways to make changes in our mental and emotional condition. Aromatherapy is a time-proven therapy which can be employed to subtly bring the mind into a receptive state, ready to begin the healing process. While Essential Oils (EO) have been used for therapeutic purposes since roughly 4500 BC, most people are quite unaware of the extensive testing and documentation surrounding

the subject, as well as its rich history. Today, many researchers and health-care professionals have come to understand the broad spectrum of therapeutic applications available using EO. In general, it is used to relieve pain, improve mood, and promote a sense of relaxation. In fact, several essential oils -- including lavender, rose, orange, bergamot, lemon, sandalwood, and others -- have been shown to relieve anxiety, stress, and depression.³⁴

Several clinical studies suggest that when essential oils (particularly rose, lavender, and frankincense) were used by qualified midwives, pregnant women felt less anxiety and fear, had a stronger sense of wellbeing, and had less need for pain medications during delivery. Many women also report that peppermint oil relieves nausea and vomiting during labor. Massage therapy with essential oils may benefit people with depression. The scents are thought by some to stimulate positive emotions in the area of the brain responsible for memories and emotions. In one study, Neroli oil helped reduce blood pressure and pre-procedure anxiety among people undergoing a colonoscopy.⁵⁰ Ayurveda uses EO therapeutically with the intention of increasing positive emotions. Essential Oils aid in calming the mind and produce a focused state of awareness. It is a subtle way of gently moving the mind from fear and negativity to a place of objective possibilities.³⁵

Aroma Therapy: How Does It Work

It is believed that the olfactory receptors in the nose communicate directly with parts of the brain (the amygdala, hippocampus and other parts of the limbic system). These areas of the brain serve as storehouses for emotions and memories. Upon inhalation, essential oil molecules stimulate these areas of the brain and influence physical, emotional, and mental health. An example of an essential oil that has proven itself to be effective in the treatment of anxiety and depression is lavender. It stimulates the activity of brain cells in the amygdala in a way that is similar to some sedative medications.³⁶

Aromatherapy massage is another widely used method of utilizing essential oils. The additional beneficial properties related to human touch have been widely acknowledged and have been proven to have a therapeutic effect on the emotional state of the mind.

Note: *Essential Oils should never be taken internally, as they are extremely powerful and can cause severe damage to internal organs. As the name of the theory implies, we want to use them aromatically, they can be used topically when blended with base oils such as coconut or sesame oil. Even then, the oil should be applied to a small area first, to insure there isn't an unfavorable reaction. Following the directions of a professional healthcare specialist trained in the use of EOs is essential.*

“The way to health is to have an aromatic bath and a scented massage every day.”

- Hippocrates (Approx. 400 BC)

In addition to the sense of smell, *Ayurveda* works with sight, sound, taste and touch. For sight, color is the most familiar therapy, for sound, *mantra* – chanting “OM” – is a good example of this. All of the sense therapies are used for their subtle effects on the mind, bringing the patient to a state of calm. However, they are a stepping stone to the main practices utilized in the treatment of anxiety and depression, *Yoga*.³⁷

Applications of Ayurvedic Psychology: Ashtanga Yoga

The Sanskrit word ‘*Ashtanga*’ means eight. *Ashtanga Yoga* denotes the eightfold path of *Yoga*.³⁸ Reiterating Dr. Frawley’s statement that “getting control of our consciousness is the most important part of all mental and spiritual development,” we can deduce that all psychological problems must be centered in an inability to get our consciousness under control. The methods *Ayurvedic Psychology* employees to accomplish this rooted in the Eightfold Method of *Yoga*. Dr. Frawley states, “The practice of *Yoga*, or inner integration, reverses all psychological problems.”³⁹ and, “All the eight limbs of *Yoga* cultivate *Sattva*.”⁴⁰ *Ayurveda* is following the aforementioned goal of bringing the *Gunas* into balance by cultivating *Sattva*. Thus, *Yoga* is an integral part of *Ayurveda* particularly for the application of psychological disorders.⁴¹

Positive Therapeutic Effects of Yoga

Just how effective is Yoga in the treatment of Fear, Anxiety and Depression? In a recent study done by Harvard University researchers at Massachusetts General Hospital (MGH) the brain’s grey matter is rebuilt in as little as 8 weeks.⁴² The study’s senior author Sara Lazar, of the MGH Psychiatric Neuroimaging Research Program and a Harvard Medical School Instructor in Psychology, explains:

Although the practice of meditation is associated with a sense of peacefulness and physical relaxation, practitioners have long claimed that meditation also provides cognitive and psychological benefits that persist throughout the day. This study demonstrates that changes in brain structure may underlie some of these reported improvements and that people are not just feeling better because they are spending time relaxing.⁴³

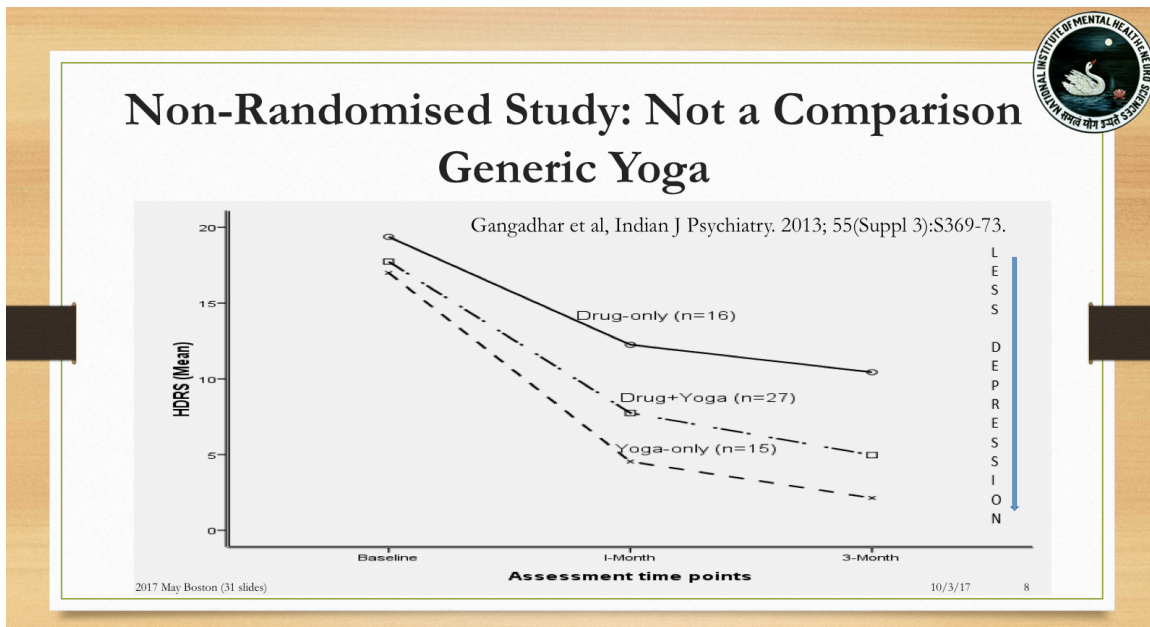
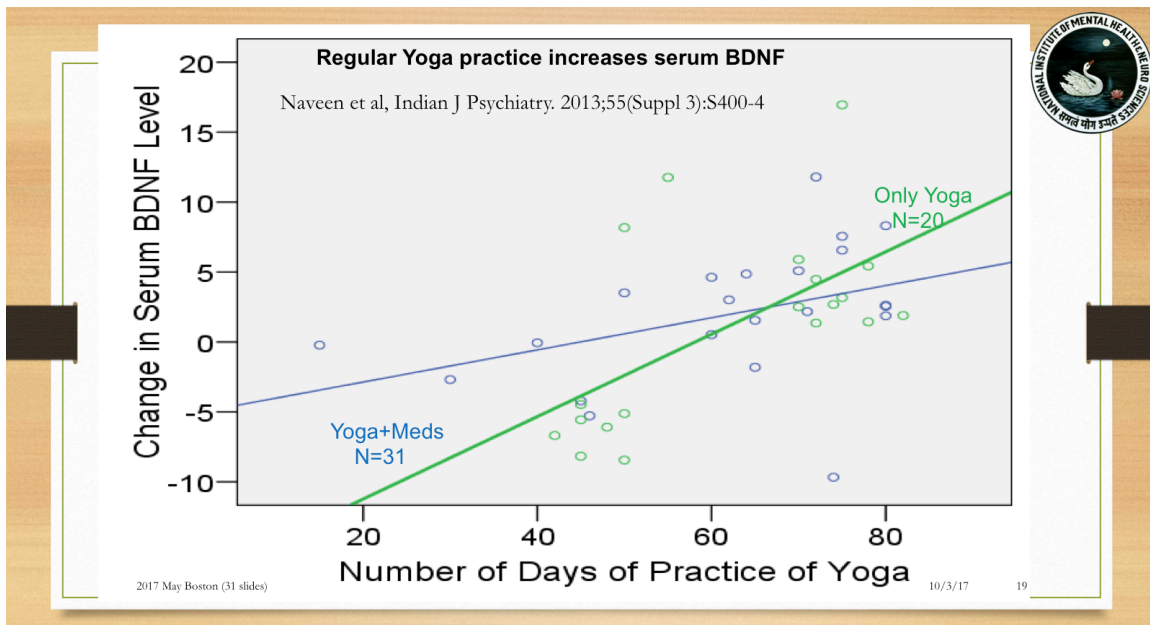
Break-through technological advances like magnetic resonance images (MRI) and genome testing have aided researchers in verifying the positive effects that these ancient techniques produce in our physiology. A clear example that shows the differences between the Western and *Ayurvedic* approaches to treating psychological disorders is exemplified in the research done by Dr. B. N. Gangadhar and his team. Through the work of ongoing research like this, we are learning just how powerful *Yogic* practices can be in the treatment of fear, anxiety and depression. *(Special thanks to Dr. Gangadhar for granting me permission to use Images from his work below).*⁴⁴

In a three month study of patients diagnosed with depression, determined by an 11 or higher rating on the Hamilton Depression Rating Scale (HAM-D)TM, Dr. Gangadhar and his team treated non-suicidal outpatients with *Yoga* techniques, either alone or with antidepressants. Patients were aged between 18 and 55 years. A third group, formed from the same patient pool, was treated with antidepressants alone. The study showed that both *Yoga* groups (using *Yoga* alone, or using a combination of *Yoga* and antidepressants) were better than the antidepressant-only group with respect to reduction in HAM-D scores:

With respect to the results, there was a significant positive correlation between fall in HAM-D and rise in serum brain-derived neurotrophic factor (BDNF) levels in the yoga-only group ($r = 0.702$; $P = 0.001$), but surprisingly not in those receiving yoga and antidepressants or antidepressants alone.⁴⁵

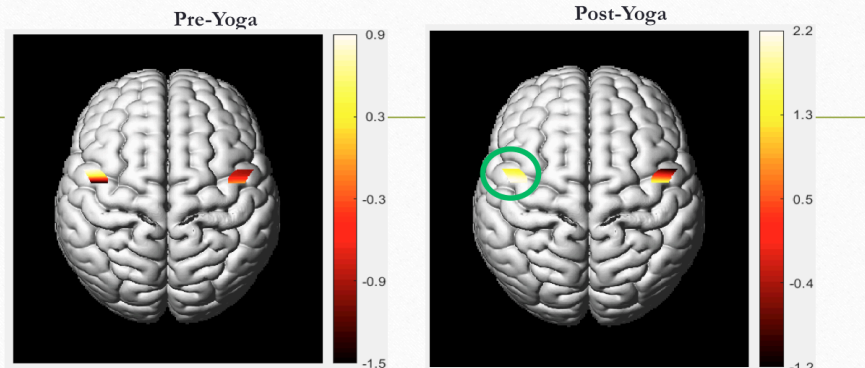
Dr. N. Gangadhar, MD, is a professor of psychiatry at the National Institute of Mental Health and Neurosciences (NIMHANS), where he heads the Advanced Center for Yoga. He is also a fellow in the National Academy of Medical Sciences in India.

The following slides were presented by Dr. Gangadhar at the 2nd International Conference on Integrative Medicine: Role of Yoga and Ayurveda, conducted at the Joseph B. Martin Conference Center, Harvard Medical School on May 20-21, 2017. The slides illustrate the result from the study. They are reproduced here with the kind permission of Dr. Gangadhar.



Mirror Neuron Activation Paradigm: fNIRS Results

Increased Activation after the Yoga Session (Active Minus Static)



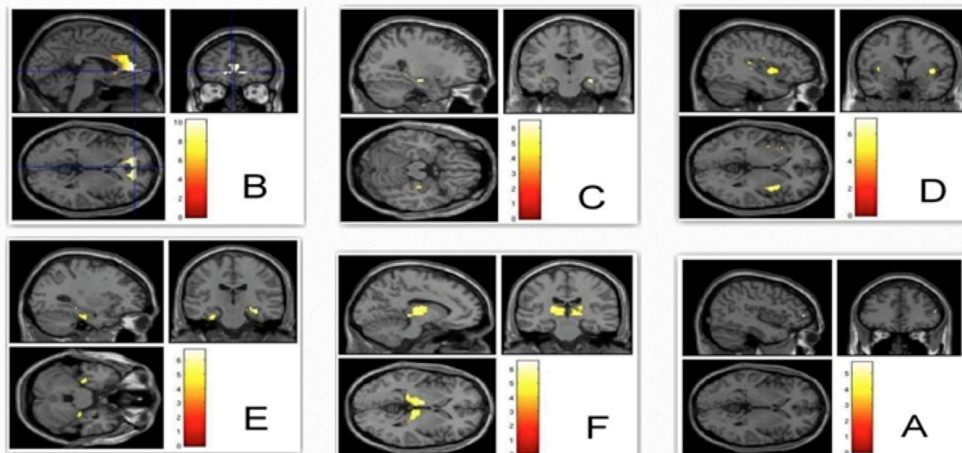
Significantly increased activation in Left Ventral Pre-Motor Cortex following Yoga in subjects (N=36) during the contrast dynamic pincer grasp condition minus static control (Left [S4-D2] $t=2.50$; $p=0.018$)

2017 May Boston (31 slides)

10/3/17

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OM Chanting 'queitens' brain centers of stress



Compared to REST, OM Chanting produced deactivation of limbic structures, anterior cingulum (B), hippocampi (C), insula (D), parahippocampi (E) and thalami (F). Control 'chanting': no effect (A)

2017 May Boston (31 slides)

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Conclusion

The Goal of *Ayurvedic* psychological therapy is to cultivate *Sattva* in an effort to bring the three *Gunas* into balance, thereby reaching a state of health in all aspects of the patient, physically, emotionally and spiritually. That the mind is in a state of constant evolution is nowhere disputed in either Western or *Ayurvedic* ideologies. We now have enough empirical evidence demonstrating that, through the protocols of *Ayurveda*, *Yoga* and Meditation, we have the ability to aid our mind in this evolutionary process. Nowhere is it more essential to integrate these ancient methodologies then in our approach to the treatment of mental disorders.

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- [22] Ibid. 19, p. 81
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- [36] Ibid. 19, p. 216
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Abstracts:

1.

- **Journal:** The American Journal of Psychiatry, Volume 147, Issue 2, February 1990, pp. 190-195
- **Title:** Relationship between hopelessness and ultimate suicide: a replication with psychiatric outpatients
- **Author:**
- **Abstract:** A prospective study of 1,958 outpatients found that hopelessness, as measured by the Beck Hopelessness Scale, was significantly related to eventual suicide. A scale cutoff score of 9 or above identified 16 (94.2%) of the 17 patients who eventually committed suicide, thus replicating a previous study with hospitalized patients. The high-risk group identified by this cutoff score was 11 times more likely to commit suicide than the rest of the outpatients. The Beck Hopelessness Scale thus may be used as a sensitive indicator of suicide potential.
<https://doi.org/10.1176/ajp.147.2.190>

2.

- **Journal:** JAMA, July 24, 2000
- **Title:** Depression Is a Risk Factor for Noncompliance With Medical Treatment
- **Author:** M. Robin DiMatteo, PhD; Heidi S. Lepper, PhD; Thomas W. Croghan, MD
- **Abstract:** Depression and anxiety are common in medical patients and are associated with diminished health status and increased health care utilization. This article presents a quantitative review and synthesis of studies correlating medical patients' treatment noncompliance with their anxiety and depression.
Arch Intern Med. 2000;160(14):2101-2107. doi:10.1001/archinte.160.14.2101

3.

- **Journal:** US National Library of Medicine, August 2017 by University of Minnesota
- **Title:** Neurobiology of Generalized Fear-Conditioning & Avoidance in Anxiety Disorders
- **Author:** University of Minnesota - Clinical and Translational Science Institute

- **Abstract:** Anxiety disorders are among the most prevalent, costly, and disabling mental illnesses. One central, yet largely understudied, abnormality in anxiety disorders is the heightened tendency to display fear and avoidance in reaction to benign or safe events that resemble feared situations. The current project maps brain circuits associated with this abnormality in order to contribute to future brain-based diagnosis and treatments for clinical anxiety.

ClinicalTrials.gov Identifier: NCT03033056

4.

- **Journal:** Indian Journal of Psychiatry. 2013 Jul; 55(Suppl 3): S400–S404.
 - **Title:** Positive therapeutic and neurotropic effects of yoga in depression: A comparative study
 - **Author:** G. H. Naveen, J. Thirthalli, M. G. Rao, S. Varambally, R. Christopher, and B. N. Gangadhar
 - **Abstract:** Therapeutic effect of yoga in depression is recognized. Neuroplastic effects of antidepressant therapies are inferred by elevations in brain derived neurotrophic factor (BDNF). Role of yoga in both these effects has not been studied.
- doi: 10.4103/00195545.116313

5.

- **Journal:** Journal of Personality and Social Psychology, 1995, Vol. 69, No. 4 719-727
- **Title:** The Structure of Psychological Well-Being Revisited
- **Author:** Carol D. Ryff and Corey Lee M. Keyes
- **Abstract:** A theoretical model of psychological well-being that encompasses 6 distinct dimensions of wellness (Autonomy, Environmental Mastery, Personal Growth, Positive Relations With Others, Purpose in Life, Self-Acceptance) was tested with data from a nationally representative sample of adults (N=1,108), aged 25 and older, who participated in telephone interviews. Confirmatory factor analyses provided support for the proposed 6-factor model, with a single second-order super factor. The model was superior in fit over single-factor and other artifactual models. Age and sex differences on the various well-being dimensions replicated prior findings. Comparisons with other frequently used indicators (positive and negative affect, life satisfaction) demonstrated

that the latter neglect key aspects of positive functioning emphasized in theories of health and well-being.

6.

- **Journal:** Journal of Affective Disorders,
- **Title:** Irritability in ADHD: Associations with depression liability
- **Author:** Olga Eyrea,, Kate Langleya, Argyris Stringarisc, Ellen Leibenluftd, Stephan Collishaw, Anita Thapara
- **Abstract:** Irritability and the new DSM-5 diagnostic category of Disruptive Mood Dysregulation Disorder (DMDD) have been conceptualised as related to mood disorder. Irritability is common in Attention Deficit Hyperactivity Disorder (ADHD) but little is known about its association with depression risk in this group. This study aims to establish levels of irritability and prevalence of DMDD in a clinical sample of children with ADHD, and examine their association with anxiety, depression and family history of depression.

7.

- **Journal:** The Journal of Positive Psychology,
- **Title:** Meditation buffers medical student compassion from the deleterious effects of depression
- **Author:** Jennifer S. Mascaro, Sean Kelley, Alana Darcher, Lobsang Tenzin Negi, Carol Worthman, Andrew Miller & Charles Raison
- **Abstract:** Increasing data suggest that for medical school students the stress of academic and psychological demands can impair social emotions that are a core aspect of compassion and ultimately physician competence. Few interventions have proven successful for enhancing physician compassion in ways that persist in the face of suffering and that enable sustained caretaker well-being. To address this issue, the current study was designed to (1) investigate the feasibility of cognitively-based compassion training (CBCT) for second-year medical students, and (2) test whether CBCT decreases depression, enhances compassion, and improves daily functioning in medical students. Compared to the wait-list group, students randomized to CBCT reported increased compassion, and decreased loneliness and depression. Changes in compassion were most robust in individuals reporting high levels of depression at

baseline, suggesting that CBCT may benefit those most in need by breaking the link between personal suffering and a concomitant drop in compassion.

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8.

• **Journal:** The Journal of Positive Psychology,

• **Title:** Compassion-Based Meditation in African Americans: Self-Criticism Mediates Changes in Depression

• **Author:** SUZANNE B. JOHNSON, MA, BRADLEY L. GOODNIGHT, PHD, HUAIYU ZHANG, PHD, IRENE DABOIN, MA, BOBBI PATTERSON, PHD, AND NADINE J. KASLOW, PHD

• **Abstract:** This study examines self-criticism as a mechanism through which compassion meditation reduces depressive symptoms in low-income African American men and women (N = 59) who had recently attempted suicide. After completing several measures, including the Levels of Self-Criticism Scale and Beck Depression Inventory-II, participants were randomly assigned to receive either a six-session compassion meditation (CM) group (Grady Compassion and Meditation Program) or a six-session support group. As predicted, path analysis results showed that treatment condition led to changes in self-criticism from pre- to post-treatment, with those receiving CM showing greater reductions in levels of self-criticism than those randomized to the support group. Path analyses also revealed that changes in self-criticism fully mediated the link between condition and changes in depressive symptoms. These findings highlight the importance and value of targeting levels of self-criticism in compassion-based interventions to reduce the depressive symptoms of suicidal African Americans.

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