



*International Journal of  
Physical Education and  
Sports Sciences*

*Vol. VIII, Issue No. XV,  
July-2015, ISSN 2231-3745*

**AN ANALYSIS ON VARIOUS IMPACTS OF YOGA  
ON STRESS, ANXIETY, PHYSICAL HEALTH  
MANAGEMENT: A SHORT REVIEWS**

AN  
INTERNATIONALLY  
INDEXED PEER  
REVIEWED &  
REFEREED JOURNAL

# An Analysis on Various Impacts of Yoga on Stress, Anxiety, Physical Health Management: A Short Reviews

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**Abstract – Stress and anxiety have been implicated as contributors to many chronic diseases and to decreased quality of life, even with pharmacologic treatment. Efforts are underway to find non-pharmacologic therapies to relieve stress and anxiety, and yoga is one option for which results are promising. The focus of this review is on the results of human trials assessing the role of yoga in improving the signs and symptoms of stress and anxiety.**

**Evaluation of the current primary literature is suggestive of benefits of yoga in relieving stress and anxiety, but further investigation into this relationship using large, well-defined populations, adequate controls, randomization and long duration should be explored before recommending yoga as a treatment option.**

**The productivity of the work force is the most decisive factor as far as the success of an organization is concerned. The productivity in turn is dependent on the psychosocial well-being of the employees. Stress can affect one's health, work performance, social life and the relationship with family members. The stress response is a complex emotion that produces physiological changes to prepare us for —fight or flight. — to defend ourselves from the threat or flee from it. The stressors and its consequences are to be understood at individual and organizational level. Stress in the workplace has emerged as a major issue for businesses and has reached alarming proportions. Organizations must develop stress prevention as well as stress reduction techniques.**

**Stress is a common condition, a response to a physical threat or psychological distress that generates a host of chemical and hormonal reactions in the body. In essence, the body prepares to fight or flee, pumping more blood to the heart and muscles and shutting down all nonessential functions. As a temporary state, this reaction serves the body well to defend itself when the stress reaction is prolonged; however, the normal physical functions that have in response either been exaggerated or shut down become dysfunctional. Many have noted the benefits of exercise in diminishing the stress response, and a host of studies points to these benefits. Yoga, too, has been recommended and studied in relationship to stress, although the studies are less scientifically replicable. Nonetheless, several researchers claim highly beneficial results from Yoga practice in alleviating stress and its effects.**

## INTRODUCTION:-

Stress is a negative consequence of modern living. In an age of highly dynamic and competitive world, man is exposed to all kinds of stressors that can affect him on all realms of life. Hans Selye (1936) first introduced the term stress into life science. The term stress is derived from the Latin word "Stringere" which means to be drawn tight. Stress is a complex, dynamic process of interaction between a person and his or her life.

Eminent behavioral scientist Stephen P Robbins (2006) defines it as: —stress arises from an opportunity, demand, constraint, threat or challenge, when the outcomes of the event are important and uncertain. Organisations do not have any formal process for handling concerns or grievances relating to stress. We also hear too often that we should learn to —deal with or —cope with stress at work. This implies that workplace stress is normal and that we need to —manage or —handle stress and just get on with the job. This view of stress is wrong. Negligence towards the stress of employees at workplace would lose the organization a lot in term of efficiency,

productivity, Medical bills, compensation etc. The events produce distress-the degree of physiological, psychological, and behavioral deviation from healthy functioning. There is also positive side of stress, called eustress, which refers to the healthy, positive, constructive outcome of stressful events and the stress response. Eustress is the stress experience in moderation, enough to activate and motivate people so that they can achieve goals, change their environments and succeed in life's challenges. Employees frequently experience enough stress to hurt their job performance and increase their risk of mental and physical health problems. So, the main focus is more on distress than eustress. Job stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury.

Stress is a Sudden Biological Change. It has become the curse of 21st century and is silent killer in the modern world. Stress is the greatest danger to the information era. Stress is the priceless poison for human life in the universe. It can disturb any one's physical, mental, emotional and behavioral balance. Stress can damage different parts of human body from muscles from tissues to organs and blood vessels.

It can speed up pulse rate and respiration. It can raise blood pressure and body temperature. It can also interfere with the body metabolism, digestion, appetite, sleep, sexuality and even fertility. Occupational stress includes the environmental factors or stressors such as work overload, role ambiguity, role conflict and poor working conditions associated with a particular job.

There are three stages a person goes through while suffering from stress. Know more about them.

**Alarm stage** - This stage experiences an over acting of the sympathetic nervous system wherein adrenaline and cortisol increase and blood flows away from the brain to the muscles. As a result, dendrites shrink back in the brain to moderate the flow of information, slowing or closing down the nonessential body functions. The whole body starts preparing itself to fight against the reason of stress. The fear, excitement or pressure is evident on the sufferer's face.

**Resistance stage** - In this stage, the body keeps making continuous efforts to cope with stress and therefore feels run down and the person starts feeling irritated, over reacts to minor situations and gets mentally and physically weak. Psychological, physical and behavioral changes are also clearly visible.

**Exhaustion stage** - If a student is preparing for his exam and despite of every possible effort, he is not able to relate to his studies, he is bound to get stressed.

The stress could reach a height where he/she may feel completely exhausted and helpless to the extent of committing suicide. This is the exhaustion stage. This stage is further divided into two phases: The nature of stress is broadly of two types- Eustress (Positive stress, Distress (Negative stress).

**The positive effects of pressure:** Sometimes, however, the pressures and demands that may cause stress can be positive in their effect. One example of this is where sportsmen and women flood their bodies with fight-or-flight adrenaline to power an explosive performance. Another example is where deadlines are used to motivate people who seem bored or unmotivated. We will discuss this briefly here, but throughout the rest of this site we see stress as a problem that needs to be solved.

**The negative effects of pressure:** In most work situations jobs, our stress responses cause our performance to suffer. A calm, rational, controlled and sensitive approach is usually called for in dealing with most difficult problems at work: Our social inter-relationships are just too complex not to be damaged by an aggressive approach, while a passive and withdrawn response to stress means that we can fail to assert our rights when we should.

Helping behaviors occur when people decide to provide assistance and then carry out an action. The decision and process of helping behaviors involves complex social cognition and rational decision making. In current society, the assistance in which mental health professionals provide patients with problems of daily living is increasing in importance. However, mental health professionals are subjected to persistent and repeated emotional stress due to intensive and lengthy interactions with patients, resulting in the phenomenon of professional burnout. Findings from a study by Sahraian, Fazelzadeh, Mehdizadeh, and Toobaee (2008) indicated that mental health professionals showed significantly higher levels of emotional exhaustion and depersonalization in comparison with those working in other specialties. In the highly specialized field of mental health, professionals who are often under time constraints experience stress when dealing with complex patients who are potentially violent or are at risk for suicide. Mental health professionals including psychiatrists, nurses, psychologists, social workers, advanced practice nurses, and occupational therapists are often called upon to maintain a positive attitude and enthusiasm, especially in the face of multiple accreditation inspections and high work demands. Work-related stress develops gradually and affects both the physical and mental health of those experiencing it, which can eventually lead to burnout. Work-related stress symptoms include insomnia, sleep disturbances, menstrual disorders, body weight fluctuations, irritation, and depression (Bauer et al., 2003).

Burnard (1991) described how work-related stress directly affects the physical and mental health of mental health professionals and indirectly affects the organization and even the patients.

If work-related stress and stress adaptation of mental health professionals was better understood, more assistance could be provided to them to assist them in handling their stress, maintaining their enthusiasm, and engaging in their work.

Yoga is a body-mind exercise which promotes physical, mental, and spiritual relaxation by way of Asanas. Through yoga practice, individuals may be able to work better in highly stressful situations. Knobben (2013) carried out a literature review of 32 studies that examined the effects of yoga on quality of life and improvement of mental health in healthy people and patients. They found that yoga had an effect of .49 (49%) improvement on depression. They concluded that yoga was an effective exercise program for all populations, including healthy people and patients with mental illness or somatic illness. Lavey et al. (2005) also demonstrated that yoga exercise significantly improved the symptoms in psychiatric patients.

Studies of yoga effects on work-related stress in the medical field focus primarily on nursing staff. Few studies have measured effects of yoga on work-related stress and stress adaptation in different mental health professionals, particularly those in Chinese societies where Daoism religion is popular. Daoism emphasizes living a harmonious life with compassion, moderation and humility. These tenets of Daoism may enhance the effects of yoga practice. We conducted a pilot study of a yoga program for mental health professionals in our institution. The participants perceived positive feelings after the yoga practices and expressed "the mood is more relaxed" and "yoga helps to modify long-lasting poor standing or sitting postures." For this reason, we hypothesized that yoga could effectively reduce the work-related stress of mental health professionals by well designed and implemented yoga classes, which could provide a suitable means of stress adaptation for health professionals.

Based on this hypothesis, our aim was to investigate the effects of yoga on work-related stress, stress adaptation, and balance of autonomic nerve activity among mental health professionals including psychiatrists, nurses, psychologists, social workers, and occupational therapists. It also was hoped that the improvement of work-related stress would be correlated with balance of heart rate variability (HRV) for better stress adaptation.

Although yoga has been practiced for over 5,000 years, it has only recently gained popularity in the

United States and Europe. In America, the yoga market emerged as a 5.7 billion dollar industry in 2008, an increase of 87% from 2004.\* The practice originated in India and has been implemented to alleviate both mental and physical ailments, including bronchitis,<sup>2</sup> chronic pain,<sup>3</sup> and symptoms of menopause.<sup>4</sup> Nonetheless, health care providers in the United States have not endorsed yoga as an alternative therapy. This was typified in a recent news item, published by the American Medical

Association (AMA), in which yoga practice is included in a list of alternative therapies referred to as "unproven treatments".<sup>5</sup> In it, a call is made for "rigorous research to study safety and efficacy" of these therapies."

Research into the role of yoga in certain disease states and in improving overall health is ongoing. The specific focus of this review is the use of yogic principles and exercises for reducing anxiety and stress. A review of human trials on the relationship between yoga and reduction in stress and anxiety was performed, and the validity of these findings is presented in an effort to determine whether the existing primary literature supports the incorporation of yoga into the cognitive behavior therapy plan for stress and anxiety, or whether additional research in the held is warranted. Moreover, compliance with yoga practice is evaluated. If deemed beneficial, yoga could be a potential alternative or adjunctive option to pharmacologic therapy for patients with stress and anxiety disorders.

## REVIEW OF LITERATURE

Stress in the workplace had emerged as a major issue for businesses and it has reached alarming proportions. According to the National Institute for Occupational Safety and Health, 80 percent of workers experience job stress. According to David Fontana: Stress is a demand made upon the adaptive capacities of the mind & body. The stress response is a complex emotion that produces physiological changes to prepare us for —fight or flight. II— to defend ourselves from the threat or flee from it was quoted by Walter-Cannon (1932). Keeley and Harcourt (2001) in their study on —Occupational Stress: A Study of the New Zealand and Reserve Bank II Revealed that stress is caused by heavy work demands in the job itself, which the unskilled employee with little control over how the work is done, cannot adapt to or modify. Kulkarni GK (2006) in an article Burnout published in Indian Journal of Occupational and Environmental Medicine 2006 said that rapid change of the modern working life is associated with increasing demands of learning new skills, need to adopt to new types of work, pressure of higher productivity and quality of work, time pressure and hectic jobs are increasing stress among the



workforce. Further he added that privatization and globalization has ignited mergers, acquisitions, and precarious employment has critically affected the domestic industry. Stress that an employee encounters affects the productivity of organization (Bhattacharjee, 2009). Team morale and company productivity is also adversely affected. Thus, stress is both a friend and a foe. (Batliwala, 1990). Studies of stress in the work environment tend to focus on psychosocial influences in the environment. This paper asserts that another important influence on work performance results from physical features of the work environment. Evidence is accumulating that the physical environment in which people work affects both job performance and job satisfaction. The tasks workers perform in modern office buildings are increasingly complex and depend on sophisticated technology.

## YOGA FOR STRESS RELIEF

Yoga is most Recognized form of Exercise, Stretching, Aerobic exercise and Meditation. The definition of yoga is “to yoke or joint together” it integrates the mind and body focusing on balance posture, deep breathing, stretching and relaxation. Yoga evolved from of the Hindu, Jaina, and Buddhist religious traditions in India. Yoga alters stress response and person's attitude, towards stress along with improving self-confidence, increasing one's sense of well-being, and creating a feeling of relaxation and calmness.

Yoga is an ancient art that is defined as the union of the soul with God. It is “a path of personal spiritual development that utilizes meditation to bring enlightenment, self-realization, and, ultimately, the attainment of God and bliss”. Originally, the ultimate goal of yoga was called Samadhi, or self-realization. Patanjali is father of yoga around the sixth century B.C. appeared in the massive epic The Mahabharata written by sage Vyasa and containing The Bhagavad Gita. Krishna explains to Arjuna about the essence of Yoga as practiced in daily lives (‘Song of the Lord’), uses the term “yoga” extensively in a variety of ways. In addition to an entire paper dedicated to traditional yoga practice, including meditation, it introduces three prominent types of yoga:

Karma yoga: The yoga of action

Bhakti yoga: The yoga of devotion, note Krishna had also specified devotion itself was action similar to above.

Jnana yoga: The yoga of knowledge.

Patanjali introduced -Ashtanga or Power yoga - a more demanding workout where you constantly move from one posture to another (“flow”). The dimensions of yoga are

- Pranayama (breathing)

- Asana (postures)
- Yama (restraint)
- Niyama (healthy observances)
- Pratyahara (sensory withdrawal)
- Dharana (concentration)
- Dhyana (meditation)
- Samadhi (higher consciousness)

## STRESS MANAGEMENT THROUGH YOGA

According to Holt (1990), effective management of job stress can only be achieved under two conditions. First, the individual worker must be able to recognize stressors and understand their consequences and second, organisations must develop stress prevention, as well as stress reduction techniques. Any employee can suffer from stress regardless of age, status, gender, ethnicity or disability. It is important that managers, HR personnel, safety officers and welfare staff have a clear understanding of the main issues involved with workplace stress prevention and management. Organisations have to arrange a Stress Management Program that focuses on different categories of employee's at all hierarchical level. Many situational observations of employee employer interaction identified within the organization can lead to stress at work. Stress Management is important for both individual and from the point of view of the organization. It is generally assumed that there are two basic approaches to cope with stress i.e. individual oriented approach and organizational oriented approach.

Yoga is one of the six foundations of Indian philosophy and has been used for millennia to study, explain, and experience the complexities of the mind and human existence. Patanjali's Yoga sutras outline a skillful way of conducting life that fosters moderation and harmony (Becker, 2000). Bhole(1997) in his conceptual paper, explained different aspect of Yoga. The Yoga way of life encompasses the philosophy of Karma Yoga (path of detached action), Jnana Yoga (knowledge of self), Bhakti Yoga (trust in the supreme order) and Raja Yoga (asana, pranayama, meditation, etc). According to Bhole (1997), hatha-yoga practices like asanas (i.e. posture), pranayama (i.e. breathing practices intended to influence vital forces), kriyas (i.e., cleaning process), mudras (i.e., certain internal attitudes) and bandhas (i.e., neuro –muscular locks) are mostly taught as physical practices. While various meditation techniques work at the mental level, all these practices are intended to develop a certain type of awareness within oneself. This in turn is expected to bring about a change in the emotional and visceral functions and through them, a change in the intellectual and somatic functions of the individual.

Many researchers have noted the benefits of exercise in diminishing the stress response, and a host of studies points to these benefits. Yoga, too, has been recommended and studied in relationship to stress, although the studies are less scientifically replicable. Nonetheless, several researchers claim highly beneficial results from Yoga practice in alleviating stress and its effects.

Stress has become a common catchword in our society to indicate a host of difficulties, both as cause and effect. The American Academy of Family Physicians has noted that stress-related symptoms prompt two-thirds of the office visits to family physicians.<sup>1</sup> Exercise and alternative therapies are now commonly prescribed for stress-related complaints and illness. Even a recent issue of *Consumer Reports* suggests Yoga for stress relief.<sup>2</sup> Many books and articles claim, as does Dr. Susan Lark, that practicing Yoga will "provide effective relief of anxiety and stress."

A review of the current thinking on stress reveals that the process is both biochemical and psychological. A very good summary of research on the stress response is contained in Robert Sapolsky's *Why Zebras Don't Get Ulcers*.

He first outlines the physiological experience of stress, explaining that the sympathetic nervous system is responsible for reacting to emergencies, employing the fright and flight reflexes. "Originating in the brain, sympathetic projections exit your spine and branch out to nearly every organ, every blood vessel, and every sweat gland in your body," Sapolsky writes. "The sympathetic nervous system kicks into action during emergencies, or what you think are emergencies. The nerve endings of this system release adrenaline. Sympathetic nerve endings also release the closely related substance noradrenaline."

### **Anxiety and Stress**

Anxiety and stress have unfavorable effects on the body that may progress into chronic conditions if left untreated. For example, psychological stress has been linked to deleterious effects on the immune system,<sup>3</sup> while anxiety has been connected to coronary heart disease, decreased quality of life, and suicidal behavior.

Anxiety disorders are subdivided into panic disorder, obsessive-compulsive disorder, post-traumatic stress disorder, social anxiety disorder, phobias, and generalized anxiety disorder.

Although the clinical presentation of anxiety disorders ranges from chest pain and tachycardia to insomnia, all of these disorders center on an intense, unwarranted fear for a defined period of time and affect approximately 18% of Americans in any given

year. Pharmacotherapy used to treat anxiety disorders, as outlined by the U.S. National Institute of Mental Health (NIMH), consists of benzodiazepines, beta-blockers, monoamine oxidase inhibitors, and antidepressants.

In contrast, psychological stress is perceived and is less defined than anxiety disorders. As a result, no recognized pharmacologic treatment algorithm exists for stress. Additionally, it should be recognized that some people experience stress and anxiety without having been diagnosed with a specific disorder by health care professionals; such individuals may also benefit from yoga exercises.

### **EFFECTS OF YOGA ON MENTAL AND PHYSICAL HEALTH**

The conceptual background of yoga has its origins in ancient Indian philosophy. There are numerous modern schools or types of yoga (i.e., Iyengar, Viniyoga, Sivananda, etc.), each having its own distinct emphasis regarding the relative content of physical postures and exercises (*asanas*), breathing techniques (*pranayama*), deep relaxation, and meditation practices that cultivate awareness and ultimately more profound states of consciousness. The application of yoga as a therapeutic intervention, which began early in the twentieth century, takes advantage of the various psychophysiological benefits of the component practices. The physical exercises (*asanas*) may increase patient's physical flexibility, coordination, and strength, while the breathing practices and meditation may calm and focus the mind to develop greater awareness and diminish anxiety, and thus result in higher quality of life. Other beneficial effects might involve a reduction of distress, blood pressure, and improvements in resilience, mood, and metabolic regulation.

Khalsa stated that a majority of the research on yoga as a therapeutic intervention was conducted in India and a significant fraction of these were published in Indian journals, some of which are difficult to acquire for Western clinicians and researchers. In their bibliometric analysis from 2004, they found that 48% of the enrolled studies were uncontrolled, while 40% were randomized clinical trials (RCT), and 12% non-RCT (N-RCT). Main categories which were addressed were psychiatric, cardiovascular, and respiratory disorders.

Despite a growing body of clinical research studies and some systematic reviews on the therapeutic effects of yoga, there is still a lack of solid evidence regarding its clinical relevance for many symptoms and medical conditions. For many specific indications and conditions, there is inconsistent evidence with

several studies reporting positive effects of the yoga interventions, but other studies are less conclusive.

In some instances, these discrepancies may result from differences between the study populations (e.g., age, gender, and health status), the details of the yoga interventions, and follow-up rates.

### Yoga and Mental Health-

**Depression** - We found four relevant publications, including two reviews on the effects of yoga on depression, a description of studies on yogic breathing for depression, and one "summary". The reviewing authors have reported that the studies reviewed showed a large variety of diagnoses ranging from "major depression or some other type of diagnosed depression" to "elevated depressive symptoms". Although several randomized controlled trials (RCTs) reported beneficial effects of yoga interventions for treating depressive symptoms, the quality and quantity of the data from these studies appear insufficient to conclude whether there is substantial clinical justification to consider yoga as a treatment of depression. Compared to passive controls, the yoga interventions seem to be effective; when compared with active controls, not surprisingly, the effects are less conclusive. The study results are so far not sufficient in quantity and quality to determine whether studies with a focus on the *asanas* are more effective as compared to studies with meditation-focussed or *pranayama*-focussed styles.

Thus, there is a strong need to conduct more conclusive studies with high methodological quality and larger patient samples. Whether motivation of depressed patients could be a problem or not remains to be clarified. There has been an attempt to explore mechanisms of action and to understand the complete picture of the effects of yoga in depression looking at electrophysiological markers of attention, and neurotransmitters which were found to change with yoga.

**Fatigue**- We found one systematic review/meta-analysis evaluating the effects of yoga on fatigue in a variety of medical conditions. The review included 19 RCTs and included healthy persons as well as patients with cancer, multiple sclerosis, dialysis, chronic pancreatitis, fibromyalgia, and asthma.

**Anxiety and Anxiety Disorders**-There is one systematic review examining the effects of yoga on anxiety and anxiety disorders, a Cochrane review on meditation therapy for anxiety disorders (citing one yoga study), a description of studies on yogic breathing (which are also addressed in the systematic review), and one summary.

**Stress**- One systematic review describes the effects of yoga on stress-associated symptoms. Chong et al. identified 8 controlled trials, 4 of which were

randomized, which fulfilled their selection criteria. Most studies described beneficial effects of yoga interventions. Although not all studies used adequate and/or consistent instruments to measure stress, they nevertheless indicate that yoga may reduce perceived stress as effective as other active control interventions such as relaxation, cognitive behavioural therapy, or dance.

### Yoga and Physical Fitness -

**Physical Fitness**-There was one critical review which evaluated whether yoga can engender fitness in older adults. Ten studies with 544 participants (mean age  $69.9 \pm 6.3$ ) were included; 5 of these studies were RCTs, and 5 studies had a single-arm pre/post-design. With respect to physical fitness and function, the studies reported moderate effect sizes for gait, balance, body flexibility, body strength, and weight loss. However, there is still a need for additional research trials with adequate control interventions (active and specific) to verify these promising findings.

**Sympathetic/Parasympathetic Activation**-There were 42 studies on the yoga effects on sympathetic/parasympathetic activation and cardiovagal function, that is, 9 RCTs, 16 non-RCTs, 15 uncontrolled trials, and 2 cross-sectional trials.

Most studies offered "some evidence that yoga promotes a reduction in sympathetic activation, enhancement of cardiovagal function, and a shift in autonomic nervous system balance from primarily sympathetic to parasympathetic". However, some of the studies included in the review showed less clear-cut or even contrasting effects. Because most of these effects are short-term phenomena, more rigorous work is needed.

**Cardiovascular Endurance**-Raub's literature review, which included 7 controlled studies, reported "significant improvements in overall cardiovascular endurance of young subjects who were given varying periods of yoga training (months to years)". Outcome measures included oxygen consumption, work output, anaerobic threshold, and blood lactate during exercise testing. As expected, physical fitness increased in adolescents or young adults (athletes and untrained individuals) compared to other forms of exercise, with a longer duration of yoga practice resulted in better cardiopulmonary endurance.

### CONCLUSION

Actually yoga combines several techniques to combat stress. Yoga provides a combination of benefits such as breathing exercises, stretching exercises, fitness program, and meditation practice and guided meditations all in one technique. That is powerful, that is very powerful! Even for people who have physical limitations yoga can be very beneficial just by

practicing the breathing techniques, the meditation and the guided meditation. Just by doing this you can have great benefits with the practice of yoga. So in conclusion yes yoga can be a great remedy for stress and can offer some stress relief. Yoga has combined set of principles and exercises that can greatly benefit you and help you to deal with stress.

The growing importance of interventional strategies is felt more at organizational level. This particular research was intended to study the importance OF Yoga, meditation and soothing humor to cope up with the workplace stress. Stress can be minimized if companies take the right steps. Stress –free employees perform better, work harder, feel happier and have a long term commitment to the organization as compared to their counterparts. It can be concluded from the present research work that there is a positive and significant relationship between stress and Yoga, Meditation and Soothing humor.

While a direct relationship between yogic practices and declines in stress and anxiety is not yet supported by statistically sound randomized controlled trials, the studies described suggest that yoga as a supplement to pharmacologic therapy may improve stress and anxiety symptoms.

Because the data are conflicting and many experiments thus far conducted have not been well designed, yoga should not replace conventional medical practice until further work has been conducted and strong statistical evidence of its benefit exists.

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