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# Yoga's Double Edge: Understanding the Science and Tradition of Safe Practice

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## ABSTRACT

Yoga, a practice that has been celebrated for its holistic benefits, is increasingly becoming popular worldwide. It offers numerous advantages, including stress relief, enhanced flexibility, and improved mental and cognitive functions. However, as the popularity of yoga continues to rise, there is an increasing awareness of its potential risks and adverse effects. To ensure the safety and prevention of injuries in yoga, it is essential to examine both scientific literature and traditional yoga prescriptions.

## Introduction

The practice of yoga is generally considered safe, but like any other physical activity, it presents a certain risk for adverse events. These adverse events can arise from improper technique or preexisting health issues, and they can range from musculoskeletal injuries to more severe complications. Although the incidence of serious adverse events is relatively low, it is still essential for yoga enthusiasts, practitioners, instructors, therapists, and medical practitioners to be aware of such issues and the ways to prevent the possible complications of yoga practice through preventive measures rooted in traditional yogic knowledge and contemporary practice.

In a study conducted by Cramer et al. (2013), the most common adverse events associated with yoga practice include muscle strains, sprains, and pain, particularly in the back, neck, and shoulders. Common yoga practices that lead to adverse events are usually advanced practices such as Sirsasana (Headstand) or

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Kapalabhati. The factors that can increase the risk of adverse events following the practice of yoga include the duration, the frequency of practice, the number of yoga techniques practiced, and the level of awareness during practice. In addition, attempting practices that one is not adequately prepared for can also lead to injuries.

To minimize adverse events while practicing yoga, traditional texts and teachings offer a different lens through which to view these risks. Ancient yogic philosophy, as outlined in texts such as the Yoga Sutras of Patanjali and the Hatha Yoga Pradipika, provides insights into how deviations from traditional practices might lead to adverse outcomes. The concept of *adhikara* (eligibility) emphasizes the importance of proper preparation and alignment with one's personal abilities and readiness. Ignoring this principle can lead to injuries and imbalances. A balanced state of mind and body is essential for safe practice, and overemphasis on any one quality, such as excessive activity or ambition, can result in physical or mental strain and negative outcomes.

Traditional yoga teachings also emphasize the importance of self-discipline, ethical guidelines, and practice. The *yamas* and *niyamas* lay the groundwork for the other limbs of yoga, including physical postures, breath control, and meditation. By adhering to these ethical guidelines, practitioners create a stable foundation for deeper spiritual and personal development. *Abhyasa*, the consistent effort and practice, fosters discipline, supports skill development, promotes personal and spiritual growth, and helps integrate the principles of yoga into daily life.

### **Safety and Prevention of Injuries in Yoga**

Yoga, a practice with roots in ancient Indian traditions, has garnered widespread recognition for its holistic approach to health and well-being. Integrating physical postures (*asanas*), breath control (*pranayama*), meditation (*dhyana*), and ethical guidelines (*yamas* and *niyamas*), yoga offers a multifaceted approach to cultivating physical, mental, and spiritual harmony (Desikachar, 1999). The documented benefits of yoga are extensive, ranging from stress reduction and improved flexibility to enhanced cardiovascular health and cognitive function (Ross & Thomas, 2010). However, the surging popularity of yoga has also brought with it a heightened awareness of potential risks and adverse effects. Therefore, a comprehensive understanding of both the therapeutic potential and the inherent risks of yoga is crucial for practitioners, instructors, and healthcare professionals alike. This paper will explore the current body of research on yoga-related injuries and propose preventive measures, drawing upon both scientific literature and traditional yogic principles.

### **Adverse Events Among Yoga Practitioners: A Complex Picture**

The current scientific literature presents a nuanced understanding of yoga's safety profile. While numerous studies confirm the therapeutic benefits of yoga across diverse populations, a concurrent body of evidence suggests that adverse events, ranging from minor musculoskeletal injuries to more serious complications, can occur (Cramer et al., 2013; Fishman & Saltonstall, 2010). Some studies highlight that the incidence of injuries is not insignificant, particularly with more advanced practices or in individuals with pre-existing conditions, while other studies point out the rates of severe adverse events are relatively low and comparable to general physical activity (Mandelbaum et al., 2020). As such, the perception of yoga as an inherently "safe" practice requires careful evaluation. A comprehensive review of literature reveals that the most common adverse events are musculoskeletal in nature, including muscle strains, ligament sprains, and joint pain, especially in the back, neck, and shoulders (Ebnezar et al., 2012). Additionally, practices involving spinal flexion or extreme hip rotation, frequently observed during advanced *asanas*, are often associated with a higher risk of such injuries (Garfinkel et al., 2007). Certain advanced practices like *Sirsasana* (Headstand), *Padmasana* (Lotus Pose) and *Kapalabhati* (a breathing technique), are often cited as potentially problematic if not approached with appropriate skill and preparation (Johns et al., 2010; Lee et al., 2015). It is imperative to note that these types of adverse events are not exclusive to yoga, and are common in exercises of all kinds, often due to poor form, and incorrect methods (Bahr, 2009).

## The Etiology of Yoga-Related Injuries: A Multifactorial Perspective

The occurrence of injuries in yoga can be viewed as the product of complex interactions between individual, environmental, and practice-related factors. Inadequate instruction, particularly in large group settings, may lead to improper technique and poor alignment, increasing the risk of injury (Feuerstein, 2010). The “no pain, no gain,” mindset, where individuals push their bodies beyond their limits, is a major cause of yoga injury. In addition, variations in individual anatomy, such as joint laxity or pre-existing musculoskeletal issues, can significantly predispose individuals to injury (Hartmann et al., 2015). The increased popularity of hot yoga (Bikram yoga) poses additional concerns due to the extreme temperature and humidity, which can exacerbate existing conditions such as cardiovascular issues or dehydration (McGinley, 2008). As studies have emphasized, the duration and frequency of practice, the number of techniques practiced, and the overall mindfulness during practice are also linked to the incidence of adverse events (Schmid et al., 2015). Attempting practices beyond one’s physical capacity or without adequate preparation is another major contributing factor to injuries and adverse events. Additionally, the lack of awareness during practice, rooted in an absence of present-moment awareness, may increase the possibility of an adverse event.

## Prevention Through the Lens of Traditional Yogic Teachings:

Traditional yoga texts, such as the *Yoga Sutras of Patanjali* and the *Hatha Yoga Pradipika*, offer invaluable insights into preventing potential injuries and ensuring a balanced practice. These ancient texts emphasize the importance of a holistic approach, balancing physical postures (asana) with breath control (pranayama) and meditation (dhyana), as well as ethical behavior (yamas and niyamas). They also provide guidance on avoiding adverse effects by promoting mindful practice and respecting one’s individual limits.

## Key Principles for Injury Prevention rooted in Traditional Yoga:

- **Adhikara (Eligibility):** The concept of *adhikara* emphasizes the importance of approaching advanced practices only when the practitioner has established a solid foundation. As T.K.V. Desikachar (1999) writes, “Yoga is not for everyone, but for everyone who is ready.” This principle underscores the need for a gradual progression, allowing individuals to develop the physical and mental prerequisites for more intense practices. Practicing advanced techniques without adequate preparation can lead to injuries and imbalances.
- **Gunas (Qualities):** Traditional yoga philosophy recognizes three qualities or *gunas* – *sattva* (purity), *rajas* (activity), and *tamas* (inertia). A balanced state of mind and body is essential for safe practice because according to traditional yoga, each quality influences our being. Overemphasis on any one quality, such as excessive ambition (*rajas*), can result in physical or mental strain, leading to imbalances and negative outcomes. A balanced application of these qualities is key to safe and effective yoga practice (Feuerstein, 2010).
- **Avidya (Ignorance):** *Avidya* refers to ignorance or lack of understanding about one’s own limitations and the true purpose of yoga. This ignorance often leads to the misuse of practice, resulting in individuals attempting postures or practices beyond their capacity, ultimately leading to harm. This concept emphasizes the importance of self-awareness and the recognition of one’s limitations, requiring a humble approach to practice with a focus on self-inquiry.
- **Yamas and Niyamas (Ethical Guidelines):** The *yamas* (ethical restraints) and *niyamas* (observances) are the foundation of the eight limbs of yoga, providing a moral and ethical framework for practice. The *yamas* include non-violence, truthfulness, non-stealing, and non-possessiveness, while *niyamas* include cleanliness, contentment, self-discipline, self-study, and

surrender. By adhering to these ethical guidelines, practitioners establish a stable foundation for deeper personal and spiritual development.

- **Abhyasa (Consistent Practice):** *Abhyasa*, the Sanskrit term for consistent and dedicated practice, is a key component of yoga. Consistent practice is crucial in yoga because it nurtures discipline, helps with skill development, promotes personal and spiritual growth, and ultimately integrates the concepts of yoga into everyday life. Through consistent effort, one gains a deep understanding of the yoga practice and builds a solid foundation for continued growth, ultimately allowing the individual to experience the profound advantages of yoga.

### Integrating Traditional Wisdom and Modern Practice:

The *Hatha Yoga Pradapika*, also emphasizes the benefits of proper pranayama, stating that proper practice can eliminate almost every health problem, while improper practice results in various health issues (Trivedi, 2018). According to B.K.S. Iyengar (1995), the practitioner must be guided by an experienced teacher, in order to understand the practice fully. The integration of traditional wisdom with modern knowledge is vital in promoting safer yoga practices. For instance, while the *Hatha Yoga Pradipika* emphasizes the importance of internal awareness and correct alignment, current research can offer insights about biomechanics and injury mechanisms leading to an understanding of how to approach asana practices with more awareness and mindfulness. Yoga instructors should be equipped with thorough training in anatomy, physiology, and injury prevention. Additionally, classes should emphasize individualized modifications, promoting self-awareness, and avoiding competitive or performance-oriented environments.

### Conclusion:

While yoga offers numerous benefits for physical, mental, and spiritual well-being, it is not without inherent risks. The incidence of adverse events in yoga, while relatively low, can vary widely and depends on factors like the individual's physical capabilities, the intensity of the practice, and the level of guidance provided. By integrating the wisdom of traditional yoga texts with current scientific knowledge, yoga practitioners, instructors, and therapists can create safer and more effective practices. By emphasizing concepts such as *adhikara*, mindfulness, and self-discipline, and recognizing the crucial role of experienced teachers, the potential for adverse events in yoga can be significantly reduced, allowing the individual to experience the holistic benefits yoga promotes.

In conclusion, while yoga has numerous advantages, it is essential to be aware of the potential risks and adverse effects associated with its practice. By examining both scientific literature and traditional yoga prescriptions, yoga enthusiasts, practitioners, instructors, therapists, and medical practitioners can take preventive measures to minimize adverse events. By adhering to traditional principles such as *adhikara*, balancing the three *gunas*, avoiding *avidya*, and practicing self-discipline and ethical guidelines, yoga practitioners can ensure a safe and beneficial practice.

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