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Establishing a Comprehensive Yoga Therapy Protocol for Addressing Hip Disorders in Women

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Abstract

Hip is the largest and most pivotal joint, connecting upper and lower body forming the core of physical and emotional well-being. Hip disorders are associated with poor posture, body pain and emotional instability due to their role in regulating fight-or-flight response. However, less research and funding on women's hip health compared to men, while women's hip influences more on whole body health. Furthermore, existing treatments and prevention often fall short in integrating both physical and mental aspects, highlighting the need for comprehensive approaches. Among all the features of treatment and prevention from literature review, yoga stands out as a highly suitable and integrative approach. A protocol has been arranged to help understand the processes of yoga asanas including emphasis on breathing and meditation for potential use in prevention and treatment of hip-disorders.

Keywords: Hip; Women Health; Treatment and Prevention; Body and Mind; Yoga; Protocol

Abbreviations: OA: Osteoarthritis; BMD: Bone Mineral Density; SIJ: Sacroiliac Joints; SIJD: Sacroiliac Joint Dysfunction; DKV: Dynamic Knee Valgus

Introduction

Why Yoga for Hip Health?

Yoga has been practiced as a holistic tool to regulate the functions of the mind and body since around 1400 BC. In the 20th century, its effectiveness for physical and mental health was recognized and it began to be used as a therapeutic tool for various ailments in humans [1-2]. The hip is the body's largest and most central joint, linking the upper and lower body and playing a key role in both physical and emotional well-being. Hip disorders are often linked to poor posture, chronic pain, and emotional instability, as the hips are closely involved in regulating the fight-or-flight response. Yoga effectively reduces the stress response by influencing the adrenal glands, which in turn can affect the iliopsoas muscle, a key structure in hip function. Consequently, hip-opening yoga poses can help alleviate stress-related tension stored in the body.

Yoga Asana and Body Alignment: A Therapeutic Approach

Yogasanas improve endurance, flexibility, and strength while promoting proper alignment, reducing discomfort, pain, and injury risk [3]. High-intensity, acute, and prolonged exercise can sometimes lead to injuries and negatively impact health. Proper body alignment is essential for optimal movement efficiency. Misalignment creates restrictions in movement and increases the risk of injury, particularly when stretching or shifting weight improperly. Yoga is not solely about achieving the final pose; it encompasses breath control, meditative movement, and a quiet mind. Research supports the integration of yoga into exercise and sports sciences to prevent and manage musculoskeletal injuries and associated mental health conditions [4].

Body and Mind as One: A Holistic Perspective

Research shows that posture and breathing are closely link to emotional well-being. For example, women often struggled with deep abdominal breathing, a pattern associated with increased anxiety and poor postural stability, while men show greater benefits from it [5]. Body psychotherapy uses movement-based to address both physical and psychological distress. Integrating yoga into its interaction cycle supports self-expression, motivation, and

connection, highlighting how bodily experiences shape mental states [6-8]. These findings suggest that yoga, by targeting both posture and breath, can be an effective tool for addressing the root causes of health issues, especially in women. This supports the development of tailored yoga protocol for women-specific needs, and as proposed in a commentary article in 2025 [9].

Yoga Specifically for Hip Health

(Figure 1) Review in Hip-/Women-/Yoga-Related History. Yoga has a 5,000-year history and has been widely studied for its benefits in both physical and mental health. The 1970s marked a growing focus on women's hip health, largely influenced by the rise of the feminist movement [10,11]. Funding for women's health research increased by the 2000s with a wider range of topics and around the same time, studies on yoga's impact on women's hip health also began to emerge. Since 2010, interest on hips, women's health, and the role of yoga in these areas has continued to increase. However, research specifically addressing women's hip health through yoga remain limited, revealing a significant gap in the existing literature.

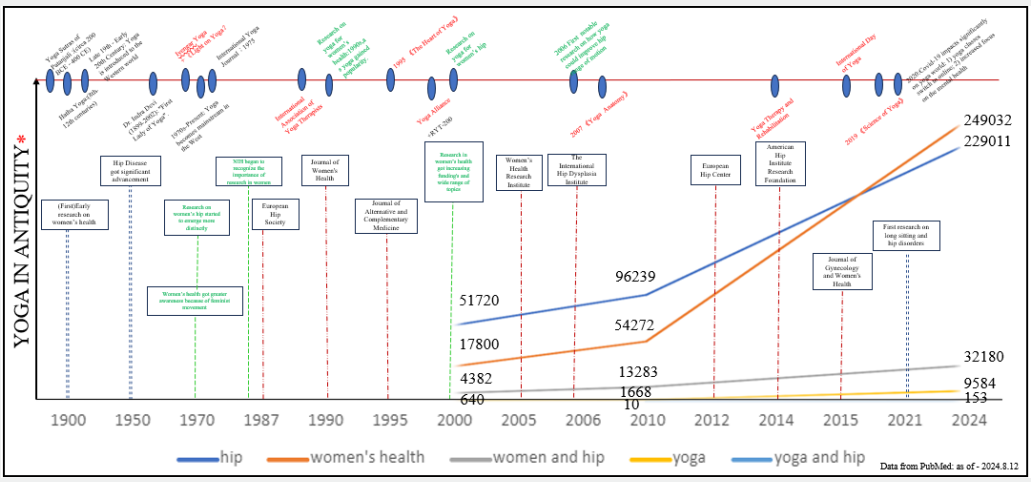

Figure 1: Presents a timeline of yoga in relation to women's hip health.

Yoga has been shown to be beneficial for individuals with osteoarthritis (OA), helping to alleviate joint pain and stiffness while improving flexibility and overall quality of life. Exercise is widely recommended for managing OA and among various exercise modalities, yoga, particularly its isometric postures, has been found effective in strengthening major muscle groups [12,13]. Additionally, yoga may contribute to increased bone mineral density (BMD) in the hip, femur, and spine. However, some studies do not provide detailed analysis regarding the selection of specific yoga poses for these benefits. To optimize the effectiveness and safety of yoga interventions for hip health, it is crucial to establish evidence-based yoga protocols by reviewing existing research and consulting with yoga experts [14].

Challenges and Strategies to Enhance the Practicality of Yoga Research

Yoga research lacks standardized protocols, teaching methods, and scientific rigor, limiting its integration into modern healthcare [15]. This study contributes by designing a structured yoga protocol for women with hip disorders and related mental health issues. To enhance yoga's practical value in health sciences, key strategies include [16]:

1) Analyzing yoga components individually
2) Developing a theoretical framework for its mechanisms
3) Aligning yoga with medical and rehabilitation goals
4) Creating simple, universal prototypes
5) Studying long-term adherence
6) Moving beyond proof-of-concept studies
7) Evaluating yoga as a health tool apart from its cultural roots. Addressing these gaps can help establish yoga as a credible, evidence-based therapeutic approach.

Review On Protocol Design

Foundation

Breathing

Yoga addresses musculoskeletal issues by considering both physical and internal factors, with an emphasis on treating root causes rather than symptoms. Breathing exercises are often more effective than purely muscular training [17], especially in managing stress, a key contributor to muscle tension, poor posture, and limited mobility in the hips and lower back. Breathwork activates deep core muscles like the diaphragm and transversus abdominis, enhancing spinal stability and relieving lower back pain, which is closely linked to hip dysfunction [18,19]. Many people exhibit dysfunctional breathing patterns [20], which can lead to postural imbalances, motor control deficits, a higher risk of musculoskeletal injuries, and negative psychological effects [21,22]. Proper breathing mechanics are essential for physical performance and musculoskeletal health. Diaphragmatic breathing which is consid-

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ered the most efficient, enhances deep core strength, spinal stability, and pulmonary function [23-25]. In yoga, nasal breathing with prolonged exhalation is used to activate the parasympathetic nervous system, fostering relaxation and restoring balance [26-30]. Controlled, slow exhalations improve nervous system regulation, mental clarity, and overall well-being. Ultimately, effective breathing should be three-dimensional, expanding through the belly, ribs, and back, rather than confined to a single area.

Pelvic Floor Muscles

The pelvic floor muscles are closely associated with the hip adductors and play a vital role in women's health. Awareness of these muscles is particularly important in a yoga protocol for hip function, as pelvic floor engagement can support hip stability and overall core function [31].

Core Stability

Core stability is primarily crucial for maintaining load balance within the pelvis, spine, and kinetic chain. Strengthening the core has been shown to improve physical function and activity levels [32]. Fostering awareness of core stability helps overall body alignment. Tadasana (Mountain Pose) serves as a fundamental posture for establishing postural awareness and alignment, making it an essential component of the protocol.

Sacroiliac Joints (SIJ)

Sacroiliac joint dysfunction (SIJD) is often overlooked and may serves as an early indicator of hip disorders [33]. A key emphasis in yoga for SIJD should be on cultivating body awareness and postural alignment rather than relying on external adjustments. When individuals develop an understanding of their own body mechanics, they can manage their practice more effectively and prevent potential dysfunction.

Spine Flexibility

Research indicates that in the sagittal and horizontal planes, spinal and hip movements occur in phase, whereas in the coronal plane, spinal movement typically precedes hip movement [34]. This indicates that spinal movements directly influence hip function, addressing spinal mobility is a prerequisite for restoring optimal hip function [35]. Furthermore, the spine is a crucial component of the central nervous system (CNS), serving as a direct connection to the brainstem. A healthy CNS is essential for optimal training quality and physical performance [36]. This highlights the importance of integrating spinal flexibility exercises into a yoga protocol for hip health [37].

Whole Body Alignment

Pelvic Alignment

Pelvic alignment plays a key role in hip function and lower-body mechanics. Neuromuscular training has proven more effective than standard exercises in improving hip flexibility and stability, highlighting the need to assess hip dysfunction in relation to pelvic posture [38]. Effective yoga therapy should consider the sequence of muscle activation to restore neuromuscular awareness. Clinical tests like the side-lying femoral-acetabular adduction test and Ober's test can help assess pelvic alignment.

Lower Limb Alignment

Since the femur connects the hip, knee, and ankle, misalignment in one joint can affect overall gait mechanics. A hip-focused yoga protocol should address:

1) Hip-knee-ankle alignment and
2) Ankle flexibility and strength [39].

Patients with total knee arthroplasty often show greater alignment deviations and deformities compared to those at risk for osteoarthritis [40], highlighting the need for early intervention [41]. For lasting impact, static yoga alignment must translate into dynamic movements like walking, otherwise, issues such as dynamic knee valgus (DKV) may persist.

Ankle Strength

Ankle flexibility and strength should also be considered in yoga for hip protocol, as the ankle plays a crucial role in influencing hip stability. Proper hip strength and stability contribute to optimal gait mechanics and correct foot positioning during heel strike. Research shows that individuals with unilateral chronic ankle sprains tend to have weaker hip abduction strength and reduced plantarflexion range of motion on the affected side. Therefore, rehabilitation programs for ankle sprains should incorporate exercises aimed at strengthening the hip abductors [42].

Restore Hip Function

Restoring hip function requires improving both mobility and strength by positioning the femoral head as close to its natural alignment as possible, especially during key movement patterns: flexion, extension, abduction, adduction, external rotation, and internal rotation. Among these, hip abductor strength plays a crucial role in maintaining balance. Many women have weak hip abductors, which can lead to improper positioning of the femoral head and contribute to hip pain [43,44]. The gluteus medius, a primary hip abductor, is essential for stabilizing the pelvis and supporting the trunk. Proper hip muscle activation requires engaging the feet, as force and torque are transmitted from the ground up to the hips. For instance, engaging the small toe can help activate the gluteus medius effectively.

Abdominal and Back Balance

Core stability, which includes abdominal and back muscle balance, is essential for maintaining proper posture, spinal alignment, and overall movement efficiency.

Injuries

While yoga can alleviate musculoskeletal pain, it may also cause pain due to ego-driven practice and inexperienced instruction. Certain yoga poses involve extreme hip rotations, potentially leading to hip displacement if they place excessive stress on the

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hip joint. There is a documented risk of late hip dislocation associated with yoga, particularly in individuals with total hip replacements [45]. Nevertheless, yoga remains safer than many other forms of physical exercise [46]. A significant proportion of yoga practitioners experience mild and transient injuries, with risks comparable to those seen in non-yoga practitioners. Therefore, yoga should not be discouraged for healthy individuals. It is essential for participants to disclose their yoga practice to healthcare professionals and inform instructors of pre-existing injuries. Individuals with serious acute or chronic illnesses should seek medical advice before practicing yoga [47]. Yoga teachers should actively discuss injury risks with students [48].

Post-Protocol Guidance

1) Individuals with hip disorders may experience mental health challenges and struggle to follow yoga guidance [49]. Understanding their unique circumstances is crucial. Yoga practices that enhance body awareness and emotional well-being can be highly beneficial.

2) Practitioners who have a difficulty in doing specific yoga postures are encouraged to use tools for alignment correction [50,51].

3) In addition to yoga practice, patients should engage in gait training, as walking is a fundamental daily movement. Studies show that improving mobility post-hip fracture is beneficial in both hospital and post-hospital settings compared to conventional care. Effective rehabilitation interventions focus on gait restoration, balance improvement, and functional recovery [52-54].

Gap In Research

Research on women's health remains underfunded and less studied compared to men's health [55,56]. There is a strong need for increased investment in hip health research for women [57]. Additionally, the lack of standardization in the yoga field including protocols, teaching methods, and research frameworks, creates a need for clearer guidelines to support both practitioners and scientific studies [58].

Methodology

Study Design

This study employs a mixed-methods approach:

1) Incorporating a scoping review to delineate previous research

2) Qualitative insights from the author's practical experience and expert's consultation

Method-1: Scoping Review

A scoping review of 164 research papers (GOOGLE; https://www.google.com/) was conducted to identify hip and hip-related disorders and injuries in women, analyze the current treatment and prevention approaches, and assess the role and value of alternative approaches such as yoga (Unpublished data, to be published elsewhere).

Method-2: Practical Insights and Expert Consultation

This study also integrated insights gained through the author's 7-year experience as a yoga instructor. Observations were made regarding the needs of women attending yoga classes with direct interactions helping to identify their concerns beyond visible physical symptoms (Figure 2). The study acknowledges that:

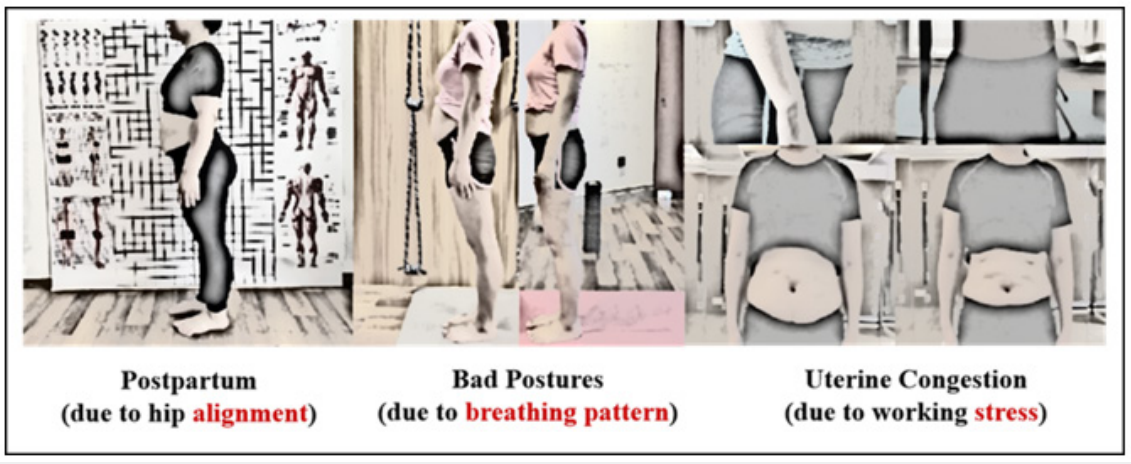

Figure 2: The Author's Practical Experiences: Causes of Women's Health.

1) A holistic approach integrating body, breath and mind is crucial for effective intervention.

2) Yoga, as part of the 'Complementary and Alternative Medicine', helps prevent the need for hospital visits by fostering awareness of the body's signals from the very beginning.

Additionally, expert consultation was conducted with a senior yoga specialist with 60-years of experience in both physical and mental aspects of yoga. This expert contributed to the development of an appropriate yoga protocol for hip-related injuries.

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Findings

Framework of Yoga Protocol for Hip. A 60-minutes session was designed (Figure 3).

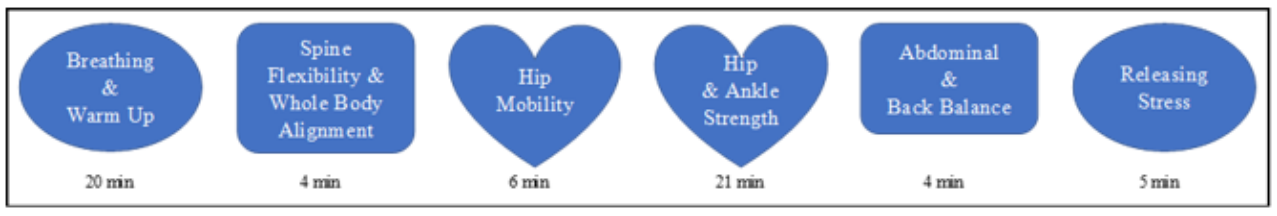

Figure 3: The Hip Yoga Protocol Framework.

The Aim of Each Step in the Protocol

Breathing & Warm-up (20 min) - Preparing the body and mind

Spine Flexibility & Whole-Body Alignment (4 min) - Establishing postural awareness

Hip Mobility (6 min) - Enhancing range of motion

Hip & Ankle Strength (21 min) - Building stability and support

Abdominal & Back Balance (4 min) - Core integration for hip function

Releasing Stress (5 min) - Relaxation and recovery

Rationale for Structure & Time Allocation

Breathing & Warm-up (20 min)

1. This extended warm-up period allows for a gradual/mindful preparation of the body, focusing on breath awareness, joint lubrication, and gentle activation of key muscles.

2. The hips are closely linked to the breath and diaphragm, making pranayama or controlled breathing beneficial for both mobility and relaxation.

Spine Flexibility & Whole-Body Alignment (4 min)

1. The spine and pelvis work in coordination, so before directly targeting the hips, spinal mobility and postural alignment are addressed.

2. This segment ensures that the body is properly stacked before moving into deeper hip work, preventing compensation patterns.

Hip Mobility (6 min)

1. Focuses on active and passive hip movements to increase joint range of motion.

2. Controlled dynamic stretches and slow, mindful movements help reduce stiffness and prepare the joints for more load-bearing postures.

Hip & Ankle Strength (21 min)

1. The longest and most intense part, as hip stability relies on hip and ankle strength.

2. Strengthening exercises target the glutes, hip flexors, and adductors, promoting balanced muscular engagement.

3. Ankle strength is integrated to support weight-bearing postures and dynamic movements, ensuring functional lower-body strength.+

Abdominal & Back Balance (4 min)

1. The core and lower back stabilize the pelvis, essential for hip function and injury prevention.

2. This segment ensures that the core muscles are engaged to support the lumbo-pelvic complex, enhancing movement efficiency.

Releasing Stress (5 min)

1. The session concludes with restorative poses and deep relaxation, allowing the nervous system to shift from activation to recovery.

2. Helps prevent post-practice tension, ensuring the hip muscles fully release and integrate the work done in the session.

The Prevention Protocol

(Table 1)

The Treatment Protocol

(Table 2)

Discussion

This research designed a yoga protocol specifically for preventing and addressing hip-related issues in women based on literature review and expert consultation. This research contributes significantly to the development of a yoga protocol specifically for hip health, offering a model that could be applied to generalized yoga therapy protocols for other physical areas. These guidelines will benefit yoga therapists and instructors in providing targeted interventions for specific area issues. With further research, yoga has the potential to play an even more significant role in offering applicable, affordable, accessible approach for hip-related diseases and holistic health.

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Table 1: Explanatory and Diagramatic Description of the Steps in the Yoga Protocol for Prevention of Hip-Disorders. Self-photos of the Author (Credit: Divya Agrawal).

Time	Asana	Purpose	Image
10 min	**Breathing Meditation** (the lying down pose). Abdominal breathing is our most natural form of respiration from birth, yet many individuals have lost this habit over time. Restoring this breathing pattern can significantly enhance both physical and mental well-being. Prolonged stress often leads to a reliance on thoracic (chest) breathing, resulting in an elevated sternum and an outwardly expanded rib cage. During this breathing practice, it is important to consciously guide the sternum and rib cage back to their natural, relaxed positions. Ultimately, the breath should be felt throughout the entire body, expanding from top to bottom, side to side, and front to back.	Correct the Breathing Pattern, Strengthen the Deepest Core, and Adjust the Sacroiliac Joints	
10 min	**The Sukshma Vyayama** (the full joints movement). Sit cross-legged. Start by rotating your neck gently in both directions. Then, place fingertips on shoulders and do shoulder circles, 10 times forward and back. Extend arms for elbow and wrist rotations. Move to waist twists, gently turning side to side. Perform hip circles seated. Straighten legs briefly for knee lifts and ankle rotations. Return to cross-leg position, place hands on knees. Throughout, move slowly with your breath.	Open Up All the Major Joints, Relax the Muscles of the Body, and Stimulate the Nervous System	
2 min	**The Chakraasana** (the cat-cow pose). Start in a tabletop position, pressing each point of hands into the floor. On inhalation, move into sacrum nutation, with hip adduction, ankle plantarflexion, glenohumeral joint external rotation, and elbow extension (watch for hyperextension). On exhalation, transition into sacrum counternutation while maintaining the same arm engagement. Move with the breath, flowing between these two positions.	Spine Primary & Secondary Curve, Activate Inner Thigh, and Release Front & Back Muscles	

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2 min	**The Tadasana** (the mountain pose). Stand upright with the top of the head aligned over the pelvic floor, maintaining a straight vertical spine. Keep the shoulder blade, rib cage, lower abdomen, and pelvic floor stacked and balanced. The cervical spine has mild axial extension, and the joints, including shoulders, hips, knees, and ankles, remain in neutral positions, midway between flexion and extension. The knees are extended (avoid hyperextension), and the arches are lifted while grounding through the three parts of the foot.	Restore Body Center of Gravity Ankle- Knee-Hip Alignment and Spinopelvic Alignment	
2 min	**The Upavistha Konasana** (the leg spread pose). With major hip abduction and flexion and external rotation sit in a wide-legged position The sacrum nutates the knees extend and the ankles dorsiflex the spine experiences mild flexion moving toward axial extension as the torso folds forward.	Mobility Hip Abduction and Mobility External Rotation	
2 min	**The Ardha Matsyendrasana** (the spinal twist pose). Rotate the spine toward the top leg with neutral extension. The top leg is in deep hip flexion, adduction, internal rotation, and knee flexion. The bottom leg straight forward. The front arm rests on the top leg with scapula neutral, glenohumeral external rotation, slight abduction, flexion moving toward extension, elbow flexion, and wrist in neutral extension. The back arm is placed behind with scapula neutral, glenohumeral external rotation and extension, elbow extension, and wrist dorsiflexion.	Mobility Hip Adduction and Mobility Internal Rotation	

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2 min	**The Hanumanasana** (the split pose). Keep the spine in neutral extension throughout the pose. The front leg moves into external rotation with hip flexion internal rotation adduction knee extension and ankle in neutral extension. The back leg follows a counter rotation with hip extension internal rotation adduction knee extension and ankle plantarflexion. Put hand on the floor.	Mobility: Hip Flexion and Mobility Extension	
7 min	**The Virabhadrasana** II (the warrior 2 pose). Keep the spine in neutral extension and rotate the head on the axis. Let the scapulae upward and the upper arm abduct and externally rotate with forearms in pronation creating no opposing spiraling in the arms. In the front leg allows external rotation with hip flexion internal rotation adduction knee flexion and ankle dorsiflexion. In the back leg maintain a counter rotation with hip extension internal rotation adduction knee extension with external rotation at the tibia and ankle dorsiflexion. The back foot shows splaying on at the heel and pronation at the forefoot keeping the arch lifted and the big toe grounded.	Strength: Hip Abduction and Strength: External Rotation	
7 min	**The Virabhadrasana I** (the warrior 1 pose). Maintain spinal extension with the shoulder flexion and slight abduction of the scapulae. The front leg moves into a counter rotation with hip flexion knee flexion and ankle dorsiflexion. The back leg follows a counter rotation with hip extension (internal rotation) knee extension and ankle dorsiflexion with supination to keep the heel grounded and the arch lifted.	Strength: Hip Flexion and Strength: Extension	

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7 min	**Parivrtta Trikonasana** (the triangle pose). Keep the spine in neutral extension with axial rotation. The arms are in abduction and external rotation with shoulders extended. In the front hip move into hip flexion adduction external rotation knee extension and slight plantarflexion at the ankle. In the back leg maintain mid hip flexion and internal rotation with knee extension and ankle dorsiflexion while the foot is pronated at the heel and pronated at the forefoot.	Strength: Hip Adduction and Strength: Internal Rotation	
2 min	**The Bhujangasana** (the cobra pose). Extend the spine while allowing a counter rotation. The hips are in extension internal rotation and adduction with the knees extended and ankle in plantarflexion. Keep the scapula neutral possibly with slight upward rotation as the shoulders externally rotate elbows extend and forearms pronate.	Strengthen Back Muscles and Stretch Abdominal Muscles	
2 min	**The Viparita Karani** (the inverted pose). Allow cervical and upper thoracic flexion while the lower thoracic and lumbar spine extend the hips are in flexion adduction and internal rotation with the knees extended and ankles in neutral extension The scapulae adduct rotate downward and elevate the shoulders are in external rotation extension and adduction with elbows flexed forearm supinated and wrists in extension (dorsiflexion).	Massage the Internal Organs and Stretch Back Muscles	

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5 min	**The Savasana** (the corpse pose). The corpse pose is the easiest but also hardest to master because many people never fully and truly relax in Savasana During Savasana focus on truly relaxing and accepting your body as it is rather than worrying about body alignment.	Release Physical Muscles and Release Mental Stress	

Table 2: Explanatory and Diagrammatic Description of the Steps in the Yoga Protocol for Treatment of Hip Disorders. The treatment protocol follows the same structure as the prevention protocol, with additional tools and modifications tailored to the patient's physical condition. Self-photos of the Author (Credit: Divya Agrawal).

Time	Asana	Purpose	Image
10 min	**Breathing Meditation** (the lying down pose). Lying down breathing is highly beneficial for individuals with visceroptosis. Folded blanket should be placed under the knees, lower back, and neck to maintain the natural curves of the spine. Practicing breath awareness while lying down can be more challenging than in a seated position, particularly due to weak abdominal muscles or restricted diaphragmatic mobility. If lying down makes breathing difficult, it is recommended to start in a seated posture. For individuals with lower back pain, a side-lying position may offer greater comfort and support.	Correct the Breathing Pattern Strengthen the Deepest Core and Adjust the Sacoilue Joints	
10 min	**The Sukshma Vyayama** (the full joints movement). Sit cross-legged. Start by rotating your neck gently in both directions. Then, place fingertips on shoulders and do shoulder circles, 10 times forward and back. Extend arms for elbow and wrist rotations. Move to waist twists, gently turning side to side. Perform hip circles seated. Straighten legs briefly for knee lifts and ankle rotations. Return to cross-leg position, place hands on knees. Throughout, move slowly with your breath.	Open Up All the Major Joins Relix the Muscles of the Body and Stimulate Nervous System	

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2 min	**The Chakraasana** (the cat-cow pose). Place a folded blanket under the knees for individuals experiencing knee pain. If discomfort persists, switch to a lying down position. This pose involves controlled spinal flexion and extension. Individuals with lower back pain and anterior disc protrusion should avoid excessive spinal extension, while those with posterior disc protrusion should refrain from excessive spinal flexion. Modifications should be made to ensure safety and comfort.	Spine Primary & Secondary Curve Activate Inner Thigh and Release Front & Back Muscles	
2 min	**The Tadasana** (the mountain pose). A chair can assist in checking and improving alignment. Pod on the chair in front of the body to lift the chest and check lateral alignment.	estore Body Center of Gravity Ankle-Knee-Hip Alignment and Spino-pelvic Alignment	
2 min	**The Upavistha Konasana** (the leg spread pose). Position a chair behind the body to help lift the chest and stabilize the pose.	Mobility: Hip Abduction and Mobility: External Rotation	
2 min	**The Ardha Matsyendrasana** (the spinal twist pose). Place a folded blanket under the pelvis to align the sacrum and pubic bone in a parallel line. A chair behind the body can provide hand support and enhance stability.	Mobility: Hip Adduction and Mobility: Internal Rotation	

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2 min	**The Hanumanasana** (the hip split pose). Place a folded blanket under the knees for those with knee discomfort. Use blocks under the hands to support individuals who can't straighten the legs.	Mobility: Hip Flexion and Mobility: Extension	
7 min	**The Virabhadrasana II** (the warrior 2 pose). Place a chair under the leg to reduce load, support proper knee alignment at 90 degree (use a block under the left foot if needed) and assist in rolling the knee outward. The setup also helps focus on stretching the right leg widening the pelvis lifting the inner abdomens and resting the chest from right to left.	Strength: Hip Abduction and Strength: External Rotation	
7 min	**The Virabhadrasana I** (the warrior 1 pose). Place a chair under the front hip to support the buttock, lighten the pose, and allow focus on the back leg. Use the chair for hand support to help lift the chest. Placing a block under the front foot raise with the knee above the hip for greater hip joint stability (a fold blanket under the pelvis can adjust height if the hips are tight.) Pressing the back heel against a wall can enhance grounding and alignment.	Strength: Hip Flexion and Strength: Extension	
7 min	**Parivrtta Trikonasana** (the triangle pose). Place a chair in front of the body provides a stable fulcrum for twisting. One hand can rest on the chair to support and deepen the twist safely. Another hand could rest on a block.	Strength: Hip Adduction and Strength: Internal Rotation	

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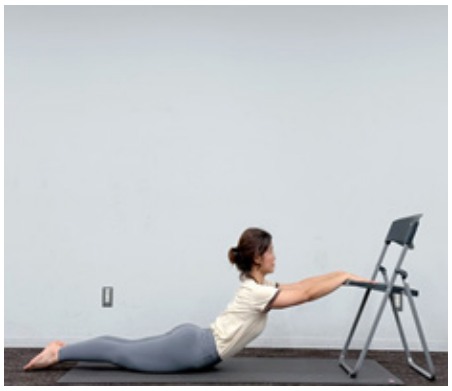
2 min	**The Bhujangasana** (the cobra pose). Place a chair in front of the body and press the palms into the seat to lift the chest and stretch the arms. This helps open the chest, elongate the lower back and strengthen the back muscle with moderate load on the lumbar spine beneficial for individuals with low back pain. As this pose involves spinal extension, those with anterior disc protrusion or certain lower back conditions should practice with caution. Modifications more alternative pose may be necessary.	Strengthen Back Muscles and Stretch Abdominal Muscles	
2 min	**The Viparita Karani** (the inverted pose). Stack 4 to 6 folded blankets to create a raised platform for the shoulders and arms. Press the elbows down, stretch the arms, and interlock the fingers. Place a chair to support the toes and reduce strain on the spine.	Massage the Internal Organs and Stretch Back Muscles	
5 min	**The Savasana** (the corpse pose). Folded blanket should be placed under the knees, lower back, and neck to maintain the natural curves of the spine.	Release Physical Muscles and Release Mental Stress	

Limitations

This protocol does not distinguish between specific types of hip disorders. In yoga therapy, conditions are often approached holistically rather than as isolated issues, as many physical dysfunctions share common underlying patterns. Therefore, the protocol was designed to support general hip health rather than targeting specific diagnoses. However, future users of this protocol are encouraged to adapt it based on individual patient needs, for example, by modifying, omitting, or emphasizing certain postures to suit specific conditions. Additionally, while scientific frameworks offer valuable guidance, they may not fully encompass the experiential and integrative nature of yoga, which includes emotional and spiritual dimensions often overlooked in conventional research [59].

Comparison with Previous Research (Protocols)

Although no such study was identified in which a detailed protocol has been presented, the author would like to acknowledge two notable studies as comparable studies. The first is "Āsana for Back, Hips and Legs to Prevent Musculoskeletal Disorders among Dental Professionals: In-Office Yóga Protocol" by Gandolfi and co-workers [60]. This study developed a yoga protocol for both prevention and treatment of physical stress, addressing issues such as lower back, hip, and leg pain. It was created based on the author's ten years of experience teaching posturology and was approved by a regional ethics committee. The study incorporated biomechanical rationales and detailed anatomical explanations. Compared to this research, our study lacks a detailed theoretical framework, while on the other hand, it demonstrates strong prac-

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tical relevance, especially combining the author's practical experiences on one-on-one yoga therapy experiences in yoga studio and guided by a skilled yoga expert Genboku Takahashi. This suggested that embodied experiences, paired with expert mentoring, can be equally valuable in designing functional interventions.

The second study, "Twelve-Minute Daily Yoga Regimen Reverses Osteoporotic Bone Loss" by Lu Yi-Hsueh and co-workers, focused on increasing bone mineral density in the spine, hips, and femur [12]. The protocol consisted of a 12-minute DVD featuring 12 yoga poses. In contrast, our study involved longer sessions and the more in-depth explanation of asana selection, and included breathing and meditation components, which potentially enhances not only physical but also emotional well-being.

Future Works

Future studies should aim to refine this protocol by incorporating a more detailed biomechanical framework and validated assessment tools to measure changes in hip function. Key considerations include:

1) Larger sample sizes

2) Longer intervention durations (e.g., 3-6 months)

3) Diverse participant groups, including both healthy individuals and those with diagnosed hip disorders.

Including a control group and testing in varied populations, such as older adults or sedentary individuals will help evaluate long-term effects. Applying the protocol in clinical or occupational settings (e.g., rehab centers, workplaces, hospitals) would further demonstrate its practical value. To advance the field of yoga therapy, future efforts should focus on:

1) Establishing regulatory bodies for therapist accreditation

2) Integrating yoga into clinical care

3) Promoting AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) system exposure in medical education [61].

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