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A Salutogenic Program for Menopause -
Enhancing Well-Being with Yoga Therapy

by

Donna Rachlin

A thesis presented to the

Faculty of the Department of
Yoga Studies
Loyola Marymount University

In partial fulfillment of the
Requirements for the Degree
in Master of Arts in Yoga Studies

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This thesis has been examined and approved in partial fulfillment of the requirements for the
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Introduction

Menopause is a natural phase in a woman's life that brings about physical, psychological, and emotional changes. It can be accompanied by various challenges and afflictions, which can significantly impact a woman's well-being. The present population of the world is over 7.5 billion, and 50% of the population are female. The United States alone had 50 million women over the age of 51 in 2020. Over two million U.S. women enter menopause annually, and more than six million women worldwide (OlaOlorum & Shen, 2020). Women's health is finally receiving the long-overdue attention it deserves, with menopause emerging as a critical public health concern (Coughlin, 2017). Increased life expectancy means women now spend a significant portion of their lives in a post-menopausal state. As Coughlin (2017) highlights, this translates to a new reality: women over 50 are not nearing the end of their lives, but rather embarking on a vibrant new chapter filled with purpose and potential. They are actively engaged in the workforce, driving innovation across various sectors, and demonstrating a passion for continued contribution. However, this extended lifespan also presents new challenges. Menopause, once occurring closer to retirement, now often coincides with prime working years (Forder, 2023). Advancements in medicine are leading to even longer lifespans, with a growing number of menopausal women remaining in the workforce. This shift necessitates open conversations about menopause in the workplace and the development of supportive systems to address the specific needs of this population (Forder, 2023).

More Than Physical: Challenges and Opportunities During Menopause

Menopause is not merely a physiological event but also a significant transitional period that affects women on multiple levels—physically, psychologically, and socially. It represents a shift from the reproductive phase of life to a new stage characterized by aging and the potential for personal growth and self-discovery. The physical and emotional changes

associated with menopause can disrupt daily routines, relationships, and self-perception, leading to a sense of loss, vulnerability, and uncertainty; therefore, it is important to recognize and address the challenges and afflictions that women may face during this transitional period. While alternative approaches exist, most women navigating menopausal symptoms report physicians primarily offering them hormone replacement therapy (HRT), leaving many feeling limited in their healthcare options.

Beyond Hormone Replacement Therapy: Exploring Yoga as a Complementary Approach

Common symptoms of this midlife transition manifest both physiologically and emotionally and may include: decrease in memory and concentration, mood swings, dry skin, bone loss, hot flashes, erratic menstrual cycles, vaginal dryness, urinary incontinence, weight gain, depression, irritability and other emotional problems (Undiyaundeye, 2013). Despite the effectiveness of HRT (hormone replacement therapy) in mitigating some menopausal symptoms, its risk profile and individual preferences sometimes lead women to seek alternative solutions. Among these, yoga has emerged as a popular complementary therapy (Cramer et al., 2012). For some women, HRT might not be the ideal solution due to personal preferences, potential side effects, or individual health factors. This has led many to explore complementary therapies like yoga, an ancient Indian practice with the potential to be both an adjunct and a standalone treatment for menopausal symptoms. Yoga utilizes breathing exercises, meditation, and physical postures to create a holistic approach to sustainable relaxation and mind-body equilibrium. This unique combination offers a non-invasive and potentially empowering pathway for women seeking to manage their menopausal experiences (Crow et al., 2015).

Knowledge, Agency, Wellness: Bridging the Gap in Menopause Support with Yoga

The motivation in creating a *Salutogenic Yoga Therapy Program for Menopause-Enhancing Women's Well-Being with Yoga Therapy* stems from the belief that understanding the nature and transformative potential of menopause, and fostering open and compassionate dialogue around it, can empower women to manage their well-being effectively (Duralde et al., 2023). This includes seeking information, exploring coping strategies, and making informed decisions. While healthcare access is a fundamental human right, many women lack sufficient education during crucial life phases such as menopause (Allen et al., 2023). This gap is further highlighted by limited research on effective educational approaches, particularly considering the complex physical and emotional changes associated with menopause (Allen et al., 2023). Additionally, the information available to women experiencing menopause can often be contradictory and unreliable, presenting a significant challenge (Allen et al., 2023). Recent research shows that a majority of residency programs lack a dedicated menopause curriculum, further contributing to this issue (Allen et al., 2023).

Equipping women with knowledge about menopause's diverse symptoms is crucial, as its presentation can vary greatly. With various treatment options available, such as hormone therapy, lifestyle modifications, and complementary therapies, healthcare providers should proactively guide and discuss concerns with women early and regularly to ensure optimal management. Despite the potential of personalized, symptom-based treatment to improve well-being for midlife women experiencing menopause, a significant gap exists in how healthcare providers address these issues (Duralde et al., 2023). Many women continue to experience untreated symptoms, highlighting the need for improved education and support.

Building upon the identified need for reliable and empowering educational resources, the *Salutogenic Yoga Program for Menopause-Enhancing Well-Being with Yoga Therapy* offers a structured and evidence-based platform specifically tailored to this transition. This

innovative program seeks to equip women with knowledge and agency through diverse learning approaches, directly addressing the crucial gap in accessible, trustworthy information often missing during menopause. By seamlessly integrating yoga practices, the program fosters a holistic and empowering approach to learning and self-management, supporting women as they navigate this important life stage.

A Salutogenic Program for Menopause: Enhancing Well-Being with Yoga Therapy

“A Salutogenic Program for Menopause: Enhancing Well-Being with Yoga Therapy”- This program is an Institutional Review Board (IRB) approved study that has successfully concluded three cohorts, each designed to foster an intimate and supportive environment for participants. With a maximum capacity of six participants per cohort, the program welcomed four individuals in its first iteration, followed by three participants in each of the subsequent cohorts, totalling ten participants across all three groups. Utilizing data collected across these cohorts, this research aims to investigate the program's impact on women's well-being and quality of life. The data encompasses validated measures including the MRS-Menopause Rating Scale and the BRCS-Brief Resilient Coping Scale, alongside a subjective, narrative questionnaire designed to capture additional insights. The findings will be presented and analyzed in my research thesis paper.

The purpose of the program is:

- 1) To foster a professional, safe, and supportive group environment (*Sangha*/community) led by a qualified yoga therapist specializing in menopause, facilitating open dialogue and facilitating the acquisition of accurate and up-to-date knowledge about menopausal symptoms and solutions (VMS-vaso motor symptoms, neuropsychiatric symptoms, urogenital changes, and late-stage consequences like increased risk for heart disease, osteoporosis, osteoarthritis, dementia, and more).

- 2) To introduce and train participants in yoga therapy practices -*āsana* (postures), *prāṇāyāma* (breath and energy regulation), *pratyāhāra* (withdrawal of the senses), *mudrās* (hand gestures and energetic seals), *mantra* (chanting,), *dinacaryā* (daily routines), and *svādhyāya* (self-inquiry)- specifically tailored to address and alleviate common menopausal symptoms.
- 3) To promote healing and self-empowerment through the cultivation of a positive attitude (*pratipakṣa bhāvanā*) and the integration of beneficial lifestyle changes.

Ultimately, empowering participants to manage their well-being and quality of life throughout this significant life transition.

This eight-week program cultivates a supportive space for women to gather in person each week for focused two-hour sessions. The program fosters personalized attention and meaningful group interaction. Conveniently offered in both Hebrew and English, it welcomes women from diverse backgrounds. Each week embarks on a new exploration of a key menopause-related topic, followed by carefully crafted yoga therapy practices designed to address specific concerns and enhance overall well-being.

Transcending its initial setting, this program fills a critical gap in accessible and empowering menopause education. It equips women with relatable information and practical tools to manage symptoms and enhance their well-being, adhering to the principle of *ahimsā* (do no harm) and welcoming all women regardless of background. For those seeking individualized support for specific needs, additional options are available.

Beyond its impact on individual participants, the program has sparked significant interest in Israel, garnering attention from healthcare systems and public institutions eager to integrate it into their wellness services for diverse populations. Notably, the public healthcare system in Israel has expressed enthusiasm for offering this program as a complimentary service to menopausal patients. Additionally, efforts are underway to introduce the

Salutogenic Program for Menopause- Enhancing Well-being with Yoga Therapy to the Arab population living in Israel. Recognizing the program's benefits for women's well-being, municipalities in different cities across Israel are taking steps to offer it to their residents at subsidized costs as part of their educational and health initiatives.

A Holistic Approach to Well-being: Unveiling the Unique Value of The Salutogenic Program for Menopause: Enhancing Well-Being with Yoga Therapy

This thesis delves into the impact of the *Salutogenic Program for Menopause - Enhancing Well-Being with Yoga Therapy* on women experiencing this life transition. The program primarily promotes transformational change and experiential learning, extending its impact beyond mere symptom management. Utilizing validated rating scales and a narrative questionnaire, the research meticulously examines the program's effectiveness as a unique and empowering tool in enhancing their well-being and overall quality of life. The program's core philosophy revolves around equipping participants with the knowledge and skills to navigate their individual menopausal journey with confidence. Participants are empowered to gain clarity through insightful education, shifting their perspectives from apprehension to acceptance, and actively engaging in their well-being through self-care practices and exploring diverse approaches to manage symptoms.

The Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy stands out by offering a unique and holistic approach to menopause management within a yoga therapy framework. While existing research explores the use of yoga or specific practices (for example: breathing or meditation practices) for individual symptoms, none address menopause holistically through diverse yoga practices and philosophy within a single program catering to various symptoms. This research, guided by the question "*can yoga therapy enhance well-being and quality of life in menopause?*" aims to demonstrate the efficacy of this holistic approach. By empowering women to experiment and identify

practices most beneficial for their unique needs, the program offers personalized support alongside valuable insights into diverse experiences of menopause, including biological/natural, surgical, and traumatic journeys.

Literature Review

It is estimated that over two million women transition into menopause each year in the United States (Crowe et al., 2015). According to recent data from the Israeli Central Bureau of Statistics, there are currently around 600,000 women aged 45-55 in Israel, representing 12% of the female population, who are going through menopause (CBS, 2022).

Beyond Natural Menopause: Exploring Premature, Surgical, and Traumatic Journeys

With increased life expectancy, women now spend a significant portion of their lives in a post-menopausal state. This extended lifespan necessitates a focus on managing menopausal symptoms to ensure women's overall well-being (Joshi & Vaze, 2010).

Menopause is defined as the permanent cessation of ovarian function, thus the end of a woman's reproductive phase (Cramer et al., 2012). Menopause is a normal physiologic event, defined as the final menstrual period (FMP) and reflecting loss of ovarian follicular function.

Spontaneous or natural/biological menopause is recognized retrospectively after 12 months of amenorrhea (the absence of menstruation during the reproductive years). It occurs at an average age of 52 years, but the age of natural menopause can vary widely from 40 to 58 years (Shifren & Gass, 2014).

Premature Menopause is defined as premature ovarian failure before the age of 40. It can be spontaneous or induced. Induced premature menopause could be as a result of medical interventions such as chemotherapy, or surgical interventions such as bilateral oophorectomy (removal of two ovaries). Regardless of cause, women who experience estrogen deficiency at an early age before the natural menopause are now recognized to be at increased risk for premature morbidity and mortality (Okeke et al., 2013). **Surgical**

menopause is when surgery, rather than the natural aging process, causes a woman to go through menopause. Women who undergo surgical menopause from an oophorectomy reduce their risk of developing reproductive cancers. However, they are at an increased risk of developing other health issues. This is especially significant for women who have their ovaries removed before menopause naturally occurs (Nwadike, 2020). According to research by the North American Menopause Society (NAMS), psychosocial stressors in a woman's life—from childhood through reproductive age—may lead to poorer well-being and worse menopause symptoms at midlife (Carr, 2022).

A study presented at the North American Menopause Society (NAMS) annual meeting found that traumatic life experiences were linked with lower levels of estrogen in menopause, particularly in women who got fewer hours of sleep (Thurston, 2024). Studies have underscored the importance of **trauma** to the occurrence of menopausal symptoms, to cardiovascular health, and to women's brain health at midlife and beyond. Furthermore, women with greater trauma exposure have more objectively assessed and self-reported vasomotor symptoms that are associated with menopause (Thurston, 2024). For example, the physical and psychological trauma of war can increase the risk of infertility in men and women. Research suggests that war leads to menstrual dysfunction in females (Bolouki & Zal, 2020).

Menopausal Symptoms

Symptoms of this midlife transition manifest both physiologically and emotionally. These symptoms may include a decrease in memory and concentration, mood swings, dry skin, bone loss, hot flashes, erratic menstrual cycles, vaginal dryness, urinary incontinence, weight gain, depression, irritability and other emotional problems (Undiyaundeye, 2013). Furthermore, women in menopause often complain about insomnia (Baker et al., 2018). The significant changes in estrogen levels can affect the brain systems that are involved in mood

and cognition (Santoro et al., 2016). The experience of menopause varies greatly among women, with a wide range of symptoms affecting each individual to different degrees.

Exploring Yoga as a Complementary Therapy for Effective Menopause Management

Hormone replacement therapy (HRT) can effectively reduce menopausal symptoms with a relatively low risk of severe adverse events within the first 10 years of menopausal onset. HRT effectively reduces symptoms, but some women are cautious due to potential long-term cancer risks. Open discussions with healthcare providers are crucial to weigh HRT's benefits and risks, exploring alternative options if needed (Micha et al., 2022). Nevertheless, many women still seek and use complementary therapies to cope with their symptoms, and yoga is among the most commonly used complementary therapies for menopausal symptoms (Cramer et al., 2012).

Yoga, a complementary treatment and potentially an alternative treatment to hormone therapy, is an ancient Indian practice that facilitates sustainable relaxation and equilibrium of the mind and body through the purposeful use of breathing, meditation and physical postures (Crow et al., 2015). Research shows that higher mindfulness and lower stress among mid-life women correlate with lower menopausal symptoms (Sood et al., 2019).

Yoga's physical postures called *āsana* are an excellent system for restoration of psychosomatic harmony and balance and can change one's perspective of life (Telles, 2018). This is important for woman in mid-life whose negative viewpoint about menopause can alter for the better as a result of practicing *āsana*. The physical postures can also improve other physical symptoms such as osteoporosis (Fishman, 2009), muscle loss (Colleto et al., 2018), pelvic floor weakness (Li, 2022) and heart disease (Guddeti et al., 2019). Some postures that develop strength, especially in the larger muscles of the legs, can improve memory and cognition associated with frontal lobe executive functions (Scisciola et al., 2012). Exercise-induced skeletal muscle contractions lead to the production and secretion of proteins called

myokines that play a key role in preventing or attenuating aging-related diseases, such as dementia, obesity, diabetes, cardiovascular diseases, and metabolic diseases (Kwon et al., 2020).

Yoga promotes positive psychophysiological changes in post-menopausal women and may be applied as a complementary therapy for this population (Jorge et al., 2016).

Investigating whether *Haṭha Yoga* practice decreases menopause symptoms and improves quality of life, Jorge et al. (2016) concluded that regular *Haṭha Yoga* practice in post-menopausal women showed lower scores for menopausal symptoms, stress levels, and depression symptoms, as well as higher scores for quality of life, compared to the other two groups.

A peer reviewed article by Joshi and Vaze (2010) of the Indian Menopause Society concludes that yoga is effective in managing some menopausal symptoms and has the potential to provide physical, mental and emotional health benefits with proper guidance. Yoga practice may reduce insomnia symptoms (Newton et al., 2013).

Yoga improves a women's quality of life and helps in symptom management during menopausal transition. Practicing yoga that includes postures (balancing and stretching), breathing, and relaxation methods, helps in reducing hot flashes, improvements in moods, reduction in irritability, reduction in anxiety, enhanced overall quality of life, and enhanced physical health (Crow et al., 2015). In this study, the researchers testify to their unique approach which used a "holistic lens" to focus on both physiological and psychosocial well-being (Crow et al., 2015). Women in their study reported that they believed yoga directly reduced symptoms of menopause or help them manage them.

Exploring Limitations: Balancing the Potential and Challenges of Yoga for Menopause

Conversely, another review found little evidence for yoga's effectiveness on physical symptoms (somatic, vasomotor, urogenital) or overall menopause symptoms, but some

evidence for short-term relief of psychological symptoms (Cramer et al., 2012). This difference might be due to the inclusion of non-randomized studies in previous reviews and the availability of newer research suggesting potential benefits of yoga. Bias needs to be taken into consideration when comparing different reviews about the efficacy of yoga in alleviating menopausal symptoms. Many of the subjects in these trials already enjoy practicing yoga, and believe in its overall benefits. Naturally, the people who are conducting the reviews are also at risk for bias; some come from an Indian background with already strong roots in the yoga tradition.

Shifting Perceptions: How Attitude Shapes the Menopause Experience

Much of how a woman's life is affected by menopause depends on how she views herself (Undiyaundeye, 2013). Understanding and accepting menopause as a natural integrative part of life with a positive perception of menopause plays an important role in alleviating emotional symptoms of stress, depression, and low self-esteem. In her study, Lorence Undiyaundeye used the instrument of ATM (Attitude Towards Menopause) checklist. Almost all of the participants had feelings of low self-esteem at the onset of menopause and concerns with how their husbands will feel about them after menopause. Many of them considered menopause as an unpleasant experience and concluded that every woman is depressed about menopause. Most of the respondents indicated that seeing a doctor at menopause will help them in understanding what menopause entails (symptoms and discomforts). These findings show that attitudes influence menopausal experience, and that negative perception of menopause will likely lead to negative experiences. Undiyaundeye's findings bring her to the conclusion that adequate counseling is crucial in assisting women in receiving education about menopause and tools to be able to make informed decisions about their health. Thus, enhancing women's confidence, self-esteem and self-reliance. Greater knowledge of menopause was found to be associated with improved ability to manage

menopausal symptoms, and women with positive attitudes toward menopause were more likely to report effective self-management (Kwak et al., 2014). Yoga therapy can provide powerful practices to facilitate experiences of meaning, purpose, and steadfast joy where clients can change their understanding of and relationship to suffering by finding meaning, purpose, and right action. Regardless of condition, illness, or pain—the primary focus is the cultivation of eudaimonic well-being rather than simply hedonia, alleviation of pain, or improvement of function (Sullivan & Hyland Robertson, 2020).

The Power of Connection: Finding Support Through Social Engagement During Menopause

Menopause is a time for women to receive personal and tailored healthcare according to individual needs, preferences and expectations. Women should be prepared and have their needs supported according to their perspectives (Hoga et al., 2015).

Studies suggest that support groups for women can improve quality of life during and after menopause, potentially by reducing bothersome symptoms like vasomotor symptoms, physical symptoms, psychosocial symptoms, and sexual symptoms (Yazdhasti et al., 2012). Social engagement may enhance our sense of safety, potentially creating a positive feedback loop that leads to further calming (Porges, 1995). Research suggests that connecting with others activates neural circuits promoting calmness (Porges, 1995). Engaging socially, smiling, and participating in calm conversations may contribute to overall well-being (Porges, 1995). Additionally, research suggests that having a supportive social network and feeling connected to others can cultivate a robust sense of coherence (SOC) in life, characterized by meaningfulness, comprehensibility, and manageability (Antonovsky, 1979). Social relationships may contribute to meaningfulness by providing purpose and self-worth (Antonovsky, 1979).

Embracing Salutogenesis for Holistic Well-Being

Healing transcends mere physical mending; it embodies the restoration of one's complete being. A person's wholeness involves physical, emotional, intellectual, social, and spiritual aspects of human experience. **Salutogenesis** is an emphasis on patient care that identifies and addresses the causes of health and well-being. It encompasses interventions focused on health promotion and those that help optimize wellness. Suggested approaches include training in relaxation, meditation, or stress management, counselling or talk therapy, healthcare education sessions, social support in a group setting, and exercise (Bhavanani, 2020).

By equipping women with appropriate counselling, access to health information, and a deeper understanding of menopause in all its complexities (Muliira, 2013), this natural shift can be reframed from marking the end of reproductive years to becoming a springboard for a meaningful and fulfilling new chapter.

The studies in this literature review give evidence of how a holistic approach of integrative yoga therapy and its various disciplines of breathing, postures, meditation, relaxation, and education can be useful for women in their menopausal time in life. Furthermore, creating community and an educational platform for women in menopause is significant in reducing stress and prompting self-efficacy. Although the studies are not all conclusive and require more research, all of them agree that yoga is an inexpensive, accessible, complementary practice and therapy which can assist in reduction and management of one or more symptoms. Education and access to counseling is an important factor in women's self-reliance leading to informed decisions on how to improve their conditions. Women interpret menopausal signs in terms of the impact on their individual life story. Women need information to interpret their changing bodies and make appropriate choices. Education and support are needed so that women can be aware of different

perspectives and use the opportunity to construct a positive post-menopausal narrative (Rizq, 2017).

Methods

A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy

In this section, the primary practices of the eight-week *Salutogenic Program for Menopause-Enhancing Well-Being with Yoga Therapy* (here after SMP- Salutogenic Menopause Program) are described in detail. This program was meticulously designed drawing upon both clinical and traditional sources. An exploration of how traditional yoga practices and philosophy, interwoven with modern scientific research, support the various components of the program will be undertaken.

Before delving into the program's specific components, goals, and outcomes, it is essential to examine how three key concepts - Polyvagal Theory, social engagement, and salutogenesis - intertwine with menopause and align with the program's core principles. Notably, exploring how the fundamental principle of group support manifests in this context holds particular significance. This program actively cultivates a safe space for women in menopause to gather, engage in reciprocal learning, and share their personal experiences, ultimately fostering their health and well-being.

Polyvagal Theory and Social Engagement in Relation to Menopause

Dr. Stephen Porges (Porges, 2011), a leading researcher on the autonomic nervous system (ANS) and social interactions, emphasizes the fundamental importance of feeling safe and connected within a community for well-being. His Polyvagal Theory suggests that fostering a sense of safety is crucial for optimal social engagement, stress regulation, and even enhanced well-being. Therefore, this core principle deeply aligns with the *Salutogenic Program for Menopause-Enhancing Well-Being with Yoga Therapy* mentioned earlier, which

aims to create a supportive and secure environment for women in menopause. Cultivating this intimate atmosphere is essential for participants to fully benefit from the program's offerings.

The Autonomic Nervous System (ANS) and its Branches

The nervous system is a complex communication network that integrates and coordinates the functions of all bodily systems. It comprises two major divisions: the central nervous system (CNS) and the peripheral nervous system (PNS). The PNS further subdivides into the somatic and autonomic nervous systems (ANS). The somatic nervous system allows for conscious control of voluntary movements. The ANS is an involuntary control system that governs major organ systems, maintaining homeostasis by unconsciously adjusting physiological activities based on internal and external cues. It regulates vital functions like heart rate, respiration, blood pressure, temperature, and digestion without conscious input. It achieves this by influencing heart rate variability, breathing patterns, vasoconstriction, sweating, and gastric motility. These constant adjustments ensure optimal function and balance within the body. The ANS consists of two antagonistic branches: the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS). The former increases heart rate, breathing, and energy release to prepare the body for physical action during stressful situations or when quick responses are needed, while the latter promotes relaxation and restorative functions.

The vagus nerve is the tenth and longest cranial nerve in the human body, playing a crucial role in connecting various organs and systems to the brain. It acts as a two-way communication highway, carrying information both to and from the brain. It is mostly afferent, i.e. 80% of its fibers carry sensory information from organs and tissues throughout the body, including the heart, lungs, digestive system, and even immune system, back to the brain. This information helps the brain monitor and regulate various processes, like heart rate, digestion, and inflammation. 20% of its fibers are efferent (motor) and carry motor signals

from the brain to organs, influencing their activity. For example, the vagus nerve can slow down your heart rate, stimulate digestion, or trigger relaxation responses. Overall, the vagus nerve plays a significant role in maintaining optimal functioning and health. Its large proportion of afferent fibers emphasizes its crucial role in gathering sensory information and informing the brain's response to internal states. The traditional perspective on the ANS often depicts it as a binary system. The SNS triggers the "fight-or-flight" response, while the PSNS promotes relaxation and rest. However, Stephen Porges, through his Polyvagal Theory, proposes a more nuanced understanding of the ANS and the vagus nerve.

Polyvagal Theory and the Vagus Nerve

Porges argues that the vagus nerve has two distinct branches with different functions:

- 1) Ventral Vagal Complex (VVC): This branch is associated with social engagement, positive communication, and feelings of safety. When activated, it promotes calmness, relaxation, and feelings of connection.
- 2) Dorsal Vagal Complex (DVC): This branch is associated with immobilization in response to perceived threats. When activated, it can lead to "shutting down" or freezing responses, potentially leading to dissociation or disengagement.

Porges's Polyvagal Theory identifies three distinct responses the ANS generates: safety, danger, and life threat. When we feel safe (ventral vagal activation or VVC), we experience relaxation, improved communication, and readiness for social engagement. However, the theory goes beyond simply feeling safe. In social settings, where we feel comfortable, accepted, and engaged, a remarkable state of well-being emerges. This state, often referred to as social engagement system activation, involves the coordinated activity of both the VVC and the sympathetic nervous system. The VVC promotes feelings of calm, connection, and trust, while the SNS provides the energy and focus needed for active participation. This harmonious interplay allows us to be present, relaxed, and engaged

simultaneously, representing the pinnacle of well-being according to Polyvagal Theory. Conversely, danger disengages the VVC, leading to one of two scenarios: 1) The SNS is triggered, prompting the "fight-or-flight" response 2) The PSNS is triggered causing us to "freeze" in a state of overwhelming stress. These responses form a hierarchy influencing how the body reacts to stressors and social interactions.

Understanding Polyvagal Theory underscores the importance of social engagement in a safe environment, particularly for women experiencing the challenges of menopause. The SMP addresses this need by creating a supportive community where women can freely connect, learn about menopause, and share their experiences in a secure and respectful space. By providing opportunities for group discussions, shared learning, collaborative activities, and respectful interactions, the program actively fosters a safe and supportive environment. This aligns with the social engagement system activation described in Polyvagal Theory, promoting positive mood, resilience, and social affiliation during this transitional period. Ultimately, this supports women in navigating menopause with greater confidence, well-being, and a stronger sense of community.

Yoga has the potential to regulate the vagal system, particularly by activating the ventral vagus nerve associated with feelings of safety and trust (Sullivan & Hyland Robertson, 2020). Furthermore, emerging theoretical frameworks within neuroscience, such as polyvagal theory, offer insights into the applications of yogic practices. These frameworks suggest that yoga facilitates a heightened awareness of subconscious, habitual reactions, which may enable individuals to develop more adaptive responses to their environment. This seamlessly aligns with the core tenets of the SMP where empowering women to cultivate resilience and well-being is paramount. Several yoga practices included in this program, which will be discussed in detail later in this chapter, have the potential to serve as powerful tools for managing anxiety and hypervigilance often experienced during menopause. By

incorporating these practices, the program actively equips women with skills to regulate their nervous system responses, fostering feelings of calm and safety – crucial elements for navigating the often-stressful menopausal transition.

Social Support's Impact on Stress: A Look at the HPA Axis Connection

Numerous studies emphasize the significance of social support for both physical and psychological health maintenance. Research has shown the negative repercussions of insufficient social support and the positive effects of strong social networks, particularly in mental health contexts (Ozbay et al., 2007). It has been well documented that social support may mitigate genetic and environmental vulnerabilities and enhance resilience to stress. This influence may occur through its impact on various physiological systems, including the hypothalamic-pituitary-adrenocortical (HPA) system, the noradrenergic system, and central oxytocin pathways (Ozbay et al., 2007).

The hypothalamic-pituitary-adrenal (HPA) axis is a complex system within the body that regulates the response to stress. It involves several key components working together to maintain equilibrium during challenging situations, enabling individuals to cope effectively while preserving overall well-being. At the core of the HPA axis is the hypothalamus, a region in the brain responsible for coordinating various bodily functions. When an individual is faced with stress, the hypothalamus releases corticotropin-releasing hormone (CRH), which signals the pituitary gland to release adrenocorticotropic hormone (ACTH). ACTH then stimulates the adrenal glands, located atop the kidneys, to release stress hormones such as cortisol and adrenaline. These hormones prepare the body for the "fight or flight" response by mobilizing energy and increasing alertness. Once the stressor diminishes, a feedback mechanism is triggered to restore balance. Elevated cortisol levels signal the hypothalamus and pituitary gland to decrease hormone production, thus reducing cortisol release from the adrenal glands. While the HPA axis is essential for adapting to stressful situations, chronic

activation due to prolonged stress can have adverse effects on health. This can manifest as conditions like anxiety, depression, and sleep disturbances.

Shifting Perspectives: How Support Groups and *Pratīpakṣha Bhāvana* Empower Women in Menopause

Support groups effectively reduce bothersome menopausal symptoms, improving quality of life (Yazdhaski et al., 2012). This research suggests their impact extends to broader dimensions, potentially shaping women's attitudes towards menopause itself. This is particularly relevant for the growing population of postmenopausal women, who often face unique challenges as their bodies change and persistent symptoms may not always respond to available treatments (Ayers et al., 2010). In this context, cultivating a positive attitude towards menopause may support mental well-being and peace of mind. Studies using instruments such as the Menopause Attitudes Scale (MAS) and Attitudes Towards Menopause (ATM) show that women experience menopause differently, and that women with more negative attitudes towards menopause in general report more symptoms during the menopausal transition (Ayers et al., 2010).

Richard Miller, in the foreword to *Understanding Yoga Therapy- Applied Philosophy and Science for Health and Well-Being* (Sullivan & Hyland Robertson, 2020) highlights the potential of yoga therapy to cultivate inner peace even amidst life's challenges. He emphasizes that "we can reduce the suffering we experience as a result of our misperceptions, ignorances, and ill-advised behaviors" (Miller, 2020, p.14). This resonates with positive attitudes towards menopause, which acknowledge the physical and emotional changes but focus on managing them with acceptance and inner harmony. Recognizing that menopause, like other life transitions, presents both challenges and opportunities can shift our perspective and reduce unnecessary suffering.

The SMP embraces this concept by incorporating the yogic practice of *pratīpakṣha bhāvana* (YS 2.33), meaning "cultivation of opposites". This practice encourages individuals to counter negative thoughts and patterns with positive ones, offering a powerful tool for shifting perspectives. For example, instead of “menopause is the end of my fertility and femininity,” reframing it with: "menopause is a natural transition marking a new chapter in my life, free from the constraints of menstruation and open to new possibilities”.

These strategies may empower women during menopause by fostering connection, resilience, and a more positive outlook on this transitional phase.

Salutogenesis and Social Support for Menopause

Research indicates social support substantially influences psychological wellbeing and physical health outcomes. It can reduce distress, loneliness, care burden, anxiety, and depression while improving quality of life, hope, meaning, and self-transcendence (Drageset, 2021). Studies also show social support acts as a buffer, lessening the impact of illness on physical impairment. Overall, strong social bonds promote coping, resilience, and recovery across mental and physical domains. The evidence portrays social support as a key health-promoting asset that enables people to thrive, especially during challenging times.

Connecting meaningfully with others demonstrates a significant salutogenic and protective effect across populations (Drageset, 2021).

The term salutogenesis has varied connected meanings introduced by Aaron Antonovsky in his book *Health, Stress and Coping* (Antonovsky, 1979). Most broadly, it refers to an orientation focused on studying and understanding the origins of health, rather than the origins of dis-ease. More specifically, Antonovsky described a model of salutogenesis detailing how life experiences shape one's SOC (sense of coherence) -the degree life feels comprehensible, meaningful, and manageable. Having a stronger sense of coherence means someone is better able to mobilize resources to deal with stress and tension.

This ability determines where they fall on the spectrum of health versus illness. Antonovsky's salutogenesis theory proposes that having a supportive social network and feeling connected to others can cultivate a robust SOC in life. A strong SOC consists of developing meaningfulness, comprehensibility and manageability. Through social relationships, people can derive purpose and self-worth, contributing to meaningfulness. Connections also facilitate learning and understanding, promoting comprehensibility. Additionally, social support provides practical help and emotional encouragement to cope with difficulties, enabling manageability. Understanding that close social ties help individuals gain meaning, knowledge and resources to persevere, thereby nurturing an overarching sense that life is coherent, leads to the natural conclusion that a yoga therapy group program, where women in menopause come together and offer each other communal support, is beneficial and useful. The bonds that women make with one another allow them to comprehend life's challenges during menopause, find meaning amidst complexity, and build resilience.

Dr. Ananda Bhavanani, chairman of the International Centre for Yoga Education and Research (ICYER) and director and professor of Yoga Therapy at the Institute of Salutogenesis and Complementary Medicine (ISCM) of Sri Balaji Vidyapeeth Medical College argues that health care providers today are lacking a humanistic, patient-centered approach and are overly focused on diseases and pathogens. In the quest to address disease, doctors have lost sight of the bigger picture of promoting wellness (Bhavanani, 2020). Bhavanani suggests that salutogenesis represents a potential solution, shifting the focus towards understanding and enhancing the causes of health, rather than just eradicating illness. This approach encompasses health promotion interventions and optimizing patient wellness more broadly. Rather than myopically searching for pathogens, health care givers should re-orient their mindsets and patient care practices towards nurturing wellness. This requires embracing salutogenesis -centering care around the origins of health and intervening to

actively strengthen patients' resources for resilience and flourishing. Bhavanani compellingly argues for this philosophical re-alignment in contemporary medicine from merely fighting disease to empowering human health and potential. The world view of salutogenesis applies to conventional medical care givers as well as to complimentary care givers such as yoga therapists who are required to be empathetic, intelligent, open minded, caring, hardworking and humble (Bhavanani, 2022). Recognizing the limitations of solely disease-focused healthcare, the SMP reflects Bhavanani's call for a more holistic approach, integrating yoga therapy with conventional medicine to address the multifaceted experiences of women in menopause.

Components of the Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy and Evidence-Based Rationale

The SMP comprises eight weekly two-hour sessions during which various topics related to menopause are discussed, and specific yoga therapy techniques are taught and practiced.

Program's Itinerary:

- Week 1- "*Where is my estrogen?*": Hormonal rollercoaster and mood swings in ordinary times, in times of illness and during traumatic events.
- Week 2- "*How do I cool off and find rest?*": Vaso motor symptoms (VMS), hot flushes, night sweats and sleeping disorders.
- Week 3- "*Can I rely on my strength?*": Musculoskeletal changes- the connection between sarcopenia (age-related progressive loss of muscle mass and strength), cognition and pelvic floor disorders.
- Week 4- "*Can my building blocks support me?*": Osteoporosis (a disease which makes bones weak and fragile).

- Week 5- “*What happened to my fountain of youth?*”: Tissue dryness and vaginal dryness.
- Week 6- “*Who can I rely on?*”: Decrease in memory.
- Week 7- “*Where is the woman in me?*”: Decrease in sex drive.
- Week 8- “*Can I come out of this better and stronger?*”: FSH (Follicle-Stimulating Hormone) and the golden age of new opportunity and personal growth.

Subject Recruitment and Procedures

This program was conducted in the investigator's home country, Israel, following similar research ethics regulations as those in the USA. Women ages 45-65 were recruited for three separate cohorts: first cohort- four participants, second cohort- three participants, and third cohort- three participants. The participants were recruited from the investigator’s personal and professional network, and were initially screened in person or through telephone. Script of what participants were told by investigator (Appendix C).

Participants who expressed interest in the program were scheduled for a 60-90- minute screening interview in the investigator’s yoga studio where the program took place. Subjects completed an Informed Consent Form (Appendix D), Yoga Therapy Consent Form (Appendix E), Confidentiality Agreement (Appendix F), Subjective Intake Questionnaire (Appendix G), Menopause Rating Scale (MRS) (Appendix A), and Brief Resilient Coping Scale (BRCS) (Appendix H). During the screening interview the SMP was reviewed and subjects had the opportunity to ask questions.

Upon conclusion of the eight sessions, participants were scheduled for a 30-minute follow-up session wherein participants completed the MRS (Appendix A). Participants also completed an assessment survey (Appendix B) to inform the investigator of the perceived benefits obtained during the program. In the eighth and last session participants were able to share with the group the benefits that they found in the program and any suggestions they

may have had for future programs. The data was anonymized for analysis and is used for this thesis and possible publication.

Risks/Benefits

The potential benefits and/or risks to themselves and/or to others were explained to the participants. Potential benefits of SMP included enhanced well-being and health, social support, personal empowerment and knowledge of yogic tools to better manage symptoms of menopause. While risks were minimal, reasonable risks included discomfort from physical practices, embarrassment, or privacy concerns due to the group nature of the program. To minimize risks, modifications of practices were offered and participants were encouraged to avoid any practices that cause discomfort. The Subjective Intake Questionnaire (Appendix G) includes a medical screen and any participant who had a medical condition was offered variations of practices should there be any potential risks. All participants signed a confidentiality agreement (Appendix E).

Applied Yoga Philosophy-Patañjali's *Yoga Sūtra* in Menopause

While originating in South Asia over 5,000 years ago, the insights of yoga philosophy continue to resonate with modern women navigating the transition of menopause. Countless texts about yoga philosophy offer valuable tools for managing life's challenges, and within the Salutogenic Menopause Program (SMP), Patañjali's *Yoga Sūtra* was chosen for its profound wisdom. Compiled around 400 CE, this collection of 196 verses serves as a timeless guide to self-realization through yoga. This section explores how specific applications of *Patañjali's Yoga Sūtra* can empower women experiencing menopause.

Patañjali's Yoga Sūtra (Bryant, 2009) played a prominent role in the SMP, guiding participants to distinguish between their core selves- *puruṣa* (pure consciousness) (*YS* 1.16), and the transitory experiences of *prakṛiti* (matter/nature) (*YS* 2.18). During menopause, individuals may encounter emotional challenges like anxiety. The SMP emphasized coping

practices that acknowledge these experiences without defining the individual by them. This aligns with the yogic concept of recognizing the difference between "being" and "having," and reflects the program's emphasis on understanding one's unique expression of nature (*prakriti*). By shifting their language from "I am anxious" to "I am experiencing anxiety," participants gained awareness that anxiety is simply one aspect of their *prakriti*, not their core identity. This empowered them to approach anxiety with self-compassion and seek positive change.

According to yoga tradition we exist in a cycle of suffering (*samsāra*) where we can trace the roots of our misery to the *kleśa* (afflictions). Patañjali's *Yoga Sūtras* (YS 2.3) defines five *kleśa* as follows: *avidyā* (ignorance or lack of wisdom), *asmitā* (ego, pride of the ego or the sense of 'I'), *rāga* (attachment to pleasure) *dveṣa* (aversion to pain), and *abhiniveśāḥ* (fear of death and clinging to life) (Iyengar, 2003).

A review of the *kleśa* according to renown yoga teacher Eyal Shifroni (Shifroni, 2021):

1. ***Avidyā*** [ignorance/ lack of knowledge] is usually translated as 'ignorance'; but it actually refers to spiritual ignorance or delusion; not knowing what we really are; what is our real essence (which, according to yoga is pure awareness, or *puruṣa*). "We are deluded because we think we know, where in reality, we don't" (Shifroni, 2021).
2. ***Asmitā*** [egoism/ attachment to the ego] is the narrative of our life; the stories we tell ourselves; our opinions; our thought patterns, our habits, our views and so on. Because we don't know who we truly are, we identify with this story about ourselves and don't see our true essence (or *prāṇāyāma* – pure awareness).
3. ***Rāga*** [attachment/desire] is clinging to pleasant experiences.
4. ***Dveṣa*** [aversion/ resentment] is aversion from unpleasant experiences.
5. ***Abhiniveśāḥ*** [fear of death] is the fear of the ego from its extinction; it also means inertia, in the sense of a desire to continue the status quo.

The *Kleśa* and Menopause

Understanding the *kleśa* offers valuable insights into the emotional and psychological aspects of menopause. These deep-seated afflictions can manifest and contribute to various challenges women face during this transition. To gain further insights, it is helpful to consider how each *kleśa* might impact the experience of menopause:

Avidyā- The woman identifies with her ever changing *prakriti*, her physical body. She has false knowledge that her true, everlasting and unchanging true self is *puruṣa*, which is unaffected by getting older and menopause.

Asmitā- The woman identifies herself with an identity which is not her true self. She experiences her symptoms as being her instead of perceiving her symptoms as just a part of *prakriti*.

Rāga- The woman clings to her old self. She grieves becoming old and no longer being child bearing.

Dveṣa- The woman averses getting older and going through her physical changes. She spends much of her time in repugnance and self-loathing.

Abhiniveśāḥ- Going through these changes lead to 'fear of death'. Questions such as: "What does it mean to become older? Am I coming near to end of my life?" arise and rattle the confidence.

The *kleśa* are only one example of applying philosophy in the SMP. Other important issues such as yoga as a means to calm the fluctuations of the mind (thoughts and emotions of our conscious and subconscious mind that draw us away from the present moment) (YS 1.2); the *yamas* (moral disciplines) and the *niyamas* (observances) (YS 2.30 -2.34) as a guide to restraints and morals which can lead to structure and security; *abhyāsa* (persistent practice) and *vairāgya* (non-attachment) (YS 1.13-1.14) as not only essential aspects of spiritual life, but as practical tools to enhance well-being and contentment; the four great attitudes

(*parisamvad*)- *maitri*- friendliness toward those who are happy, *karuṇā*-compassion toward those who suffer, *muditā* -joy toward the virtuous, and *upekshā* -impartiality/equanimity toward wrong-doers (*YS* 1.33); and more.

Each class in this program begins with an interactive discussion about yoga philosophy and is intertwined in the postural practice.

For example:

1. Finding equanimity: “*Inhale with intention for calmness and equanimity, exhale with intention for detachment from anger and anxiety*” (inspired by *upekshā* *YS* 1:33).
2. Building resilience: Practice patience, self-compassion (*karuṇā* *YS* 1.33) and self-forgiveness (*pratīpakṣha bhāvana* *YS* 2:33- a practice to retrain the mind to think more positively) through dynamic balancing postures like Tree Pose and Warrior 1, acknowledging imperfections and persevering (*vairāgya* and *abhyāsa* *YS* 1.12-1.16).
3. Exploring energy flow-From constriction to release, from extrinsic to intrinsic. Through movement, explore “muscular energy” (“integrative energy”) and “organic energy” (“expansive energy”) - *Anusara* principles that may reflect on emotional tightness and expansion. (Keller, 2023).
4. Connecting heart and voice: Heart-opening poses with *ujjayi* breathing (a type of diaphragmatic breath where the throat muscles of the glottis are slightly constricted, causing the air to produce a whispering, audible vibration as it passes in and out the vocal cords, and is practiced to calm the mind by focusing on the breath) encourage mindfulness of the connection between the heart and throat *chakras* (*anāhata chakra* and *viśuddha chakra*), promoting authentic expression (the *chakras* are centers of energetic and spiritual power in the human body used in a variety of ancient meditation practices, and provide subtle energy that helps the organs, mind, and intellect work at their best level).

5. Honoring the feminine: Flowing pelvic movements with visualization of the water element (balancing *vāta*- the Āyurvedic mind-body element associated with air and space and is dominant during menopause) reconnect us with our pelvic organs and their enduring energy, even after fertility ceases.

***Prāṇāyāma* Breath Practices for Menopause**

अथासने दृधे योगी वशी हित-मिताशनः ।

गुरूपदिष्ट-मार्गेण पराणायामान्समभ्यसेत ॥ १ ॥

athāsane dṛdhe yoghī vaśī hita-mitāśanaḥ |

ghurūpadishṭa-mārgheṇa prāṇāyāmānsamabhyaset || 1 ||

Posture becoming established, a yogî, master of himself, eating salutary and moderate food, should practise *prāṇāyāma*, as instructed by his guru.

Hatha Yoga Pradipika, Swatmarana (Muktibodhananda, 2011)

Prāṇāyāma (energy regulation practices) offers a valuable tool for navigating the unique challenges of menopause. By focusing on and regulating the flow of vital energy (*prāṇa*) through mindful breathing techniques, *prāṇāyāma* holds the potential to alleviate both physical and emotional symptoms commonly associated with this transition. This section delves into the practice of *prāṇāyāma* and explores the growing body of evidence supporting its potential benefits for managing various aspects of menopause.

Prāṇāyāma is the fourth *anga* (limb) of Patañjali's *Yoga Sūtra* (YS 2.29). It is believed that one can control the power of mind through regulating breath. The Sanskrit word *prāṇāyāma* comes from two separate words- *prāṇa* and *ayāma*. *Prāṇa* translates to breath and/or life force, while *ayama* has many different meanings including expansion, length, and rising. Other translations are *prāṇa*-life-force energy; *yama*-control.

It is well established that *prāṇāyāma* can be an effective complementary therapy in managing select menopausal symptoms. Yoga, in general, and *prāṇāyāma* in particular, can help decrease menopausal symptoms, and improve health (Susanti et al., 2022). The menopausal transition is often accompanied by psycho-autonomic symptoms, including stress and anxiety symptoms (Stute & Lozza-Fiacco, 2022). Research shows that *prāṇāyāma* has beneficial effects on symptoms anxiety and depression (Joshi & Vaze, 2010), improves lung function (Saxena & Saxena, 2009), reduces stress and inflammation, and positively affect immune function (Yeun & Kim 2021). Slow *prāṇāyāma* appears to shift the autonomic nervous system from the ‘fight or flight’ sympathetic to the calming ‘rest & digest’ parasympathetic state (Jerath et al., 2006), instilling interoception, and enhancing positive neuroplastic changes (Gibson, 2019). It is shown that mind–body practices, such as *prāṇāyāma*, can target different brain systems that are involved in the regulation of attention, emotional control, mood, and executive cognition (Acevedo et al. 2016).

Count Breathing and Ratio Breathing: Cultivating Calm during Menopause

Count breathing and ratio breathing techniques create a calm and peaceful mind. They are simple but highly effective yoga breathing exercises that can be practiced by just about anyone at just about any time. Practicing these breathing techniques also create a foundation for learning the more advanced techniques of *prāṇāyāma*. The benefits of these *prāṇāyāma* practices are to equalize, harmonize and balance the *prāṇa* flowing through the body’s *nāḍī* or energy channels. An example for count breathing is four-part breathing (inhale, breath retention, exhale, breath retention), primarily practiced for calming and balancing the mind and body to reduce mental stress and worry. Four count breathing can be done as ‘box breath’, or *sama vritti* (equal mental fluctuations), where all four parts are equal in count and length (for example 4/4), or it can be done by changing the ratios of the four parts. Prolong

exhalations have many health benefits such as parasympathetic nervous activity and sympathovagal balance to the heart (Komori, 2018).

Sheetkari Prāṇāyāma: A Cooling Relief for Menopausal Discomfort

Among the various *prāṇāyāma* techniques, *sheetkari prāṇāyāma* may address hot flushes and night sweats, common and often disruptive menopausal symptoms. This cooling and tranquilizing practice aims to address imbalances in *pitta dosha*, an Āyurvedic concept related to heat and the elements of fire and water. During menopause, imbalanced *pitta dosha* is believed to contribute to hot flushes, night sweats, and other discomforts. *Sheetkari prāṇāyāma* appears to work by influencing the sympathovagal nervous system, the branch of the nervous system responsible for the "fight-or-flight" (sympathetic) and "rest-and-digest" (parasympathetic) responses. Research suggests that *sheetkari prāṇāyāma* might help modify the activity of these opposing systems, potentially contributing to a more balanced state and reducing the excessive heat associated with hot flushes (Shetty et al., 2017). The practice itself involves inhaling through the mouth, creating a cooling sensation, and exhaling through the nose. This unique breathing pattern is believed to contribute to its effectiveness in managing *pitta dosha* imbalances and alleviating the associated menopausal symptoms.

Kapālabhāti and Menopause: Exploring Potential Benefits

Kapālabhāti is both a *kriyā* (a cleansing practice which helps rid of CO₂) and a *prāṇāyāma* practice that includes a rapid exhalation process. *Kapālabhāti* is made up of two words ‘*kapāl*’ which means “skull” and ‘*bhāti*’ which means ‘Shine’.

In the *Hatha Yoga Pradipika* (Muktibodhananda, 2011) *kapālabhāti* is mentioned as one of the ‘six kinds of duties or actions’: *dhauti* (cleansing), *basti* (enema), *neti* (nasal cleansing), *trātaka* (steadfast gaze), *nauli* (abdominal churning) and *kapālabhāti* (‘skull shining’/rapid exhalation).

These are called the six actions षट्कर्मि²².

कर्म षट्कर्मिदं गोप्यं घट-शोधन-कारकम् ।

विचित्र-गुण-सन्धाय पूज्यते योगि-पुणगवैः ॥ २३ ॥

karma ṣhaṭkarmidaṃ ghopyaṃ ghaṭa-śodhana-kārakam |

vichitra-guṇa-sandhāya pūjyate yoghi-puṅghavaiḥ || 23 ||

Hatha Yoga Pradipika, Swatmarana, Swatmarana (Muktibodhananda, 2011)

Some believe that the rapid exhalation process in *kapālabhāti* may offer various health benefits. Reports indicate that *kapālabhāti* improves digestion, activates abdominal muscles for core strength, improves blood circulation, makes the respiratory system healthy, energizes the brain, calms the mind and helps in releasing stress and anxiety (Malhotra et al., 2022). Traditional knowledge, personal experiences, and anecdotal evidence show that *kapālabhāti* is considered by many to be the most preferred way to detoxify the body and aid in internal cleansing. It is said that regular practice of *kapālabhāti* cools the mind and enhances radiance on the face. Research shows that high-frequency yoga breathing (HFYB) or *kapālabhāti* and breath awareness have positive effects on the nervous system by improving heart rate variability (HRV) (Telles et al., 2011). Evidences suggest that *kapālabhāti* has an effect on core muscles and that pelvic floor muscle (PFM) strength increases after practicing *kapālabhāti* regularly. Hence, *kapālabhāti* can be practiced regularly to avoid further complications after menopause and preserve the PFM strength (Rathi et al., 2019). Furthermore, women in menopause who experience symptoms of hot flushes and night sweats may benefit from paced respiration such as in *kapālabhāti* which induces peripheral cooling (Freedman, 2014). In some instances, when performed wrongly, *kapālabhāti* can put excessive pressure on the abdominal cavity, which can strain the pelvic floor and lead to prolapse (dropping) of the bladder, uterus, or other organs in the pelvic

region. For this reason, it is suggested that some women in menopause with a risk factor of pelvic floor prolapse to perform *kapālabhāti* in a non- traditional seated position, but rather in half bridge pose (*setu bandhāsana*), to alleviate pressure from the pelvic floor in a way that the pelvic organs are moved away from the pelvic floor openings (Arzi-Padan, 2014).

Instructions for performing these breathing practices in Appendix I.

Mantra-Vocalization Practice for Addressing Menopausal Symptoms: Connecting Breath, Voice, and Well-Being

Mantra means a sound, a certain utterance or a syllable. It is an ancient practice that is believed to calm the mind and soul, to promote concentration and focus, and to invoke specific energies and states of being. *Mantra* practice, involves the act of vocalization and may serve as a potential tool for addressing common menopause symptoms. During menopause, women experience hormonal changes that can lead to various challenges, including pelvic floor disorders (PFDs) and mood swings. Research indicates that optimal coordination between the respiratory diaphragm and the pelvic floor muscles plays a crucial role in maintaining core stability and reducing the risk of pelvic floor disorders (Smith et al., 2014). Proper breathing techniques, involving coordinated movement of both diaphragms, are essential for core engagement. Vocalization practices can strengthen the respiratory and pelvic diaphragms as well as the vocal folds, leading to improved breath control and potentially contributing to core stabilization.

Beyond its physical benefits, vocalization practices like *mantra* chanting offer psychological benefits relevant to menopause. Vocalization stimulates the vagus nerve, a key component of the parasympathetic nervous system, promoting relaxation and stress reduction (Leubner & Hinterberger, 2017). Studies suggest that vocalization and music can improve depression symptoms and quality of life across various age groups (Leubner & Hinterberger, 2017). Specific practices like *om* chanting have also shown potential benefits in addressing

depression (Rao et al., 2018) and regulating cardiovascular health (Gao et al., 2019), which can be impacted by menopause.

Prāṇav Prāṇāyāma: Chanting for Menopausal Well-Being

This section explores *prāṇav prāṇāyāma*, a specific yogic practice combining chanting and breathing exercises, as a potential tool for managing menopausal symptoms. As discussed previously, vocalization practices offer potential benefits for addressing both physical and emotional aspects of menopause.

Derived from the Sanskrit term "*prāṇava*" (meaning "sacred syllable *om*"), *prāṇav prāṇāyāma* involves focusing on the sound or vibration of "*om*" while practicing specific breathing patterns. This ancient practice, referenced in Patañjali's *Yoga Sūtra* (YS 1.27), aims to connect breath, sound, and awareness. *Prāṇav prāṇāyāma* offers a multisensory experience: the combined actions of visualization, coordinated sound, and breath engagement activate multiple regions of the brain, potentially enhancing cognitive function through increased cerebral blood flow. Chanting "*om*", revered as a sacred sound and spiritual symbol in Yoga and other Dharmic traditions, is considered by yogis as the cosmic vibration, embodying the essence of ultimate reality or consciousness. This chanting is integral to *prāṇav prāṇāyāma*, furnishing practitioners with a potent means for spiritual evolution, inner metamorphosis, and connection to the divine self. Research suggests that *prāṇav prāṇāyām* is effective in reducing blood pressure and improving cardiovascular health (Bhavanani et al., 2012), factors often impacted by menopause. While further research is needed on its application for menopause specifically, incorporating vocalization and *mudrā* into a yoga therapy practice may offer benefits for women in mid-life by alleviating associated symptoms.

Detailed instructions for practicing *prāṇav prāṇāyāma* are provided in Appendix J.

Mudrā and Bandha: Enhancing Menopausal Well-Being

This section examines the potential applications of *mudrā* and *bandha* within a yoga therapy framework for menopause.

Understanding Mudrā:

Hasta Mudrā, specific hand gestures, are believed to influence energy flow, promote mental and physical well-being, and symbolize the five elements. Yogic tradition suggests that *mudrā* may possess calming properties, potentially contribute to physical health restoration, and optimize energy levels. Each finger and the palm are believed to correspond to specific areas of the body and mind. While modern scientific evidence is lacking, practicing *mudrā* is believed to stimulate the endocrine system, nervous system, immune system, and internal organs. These hand positions are seen as tools for fostering communication between body and mind.

Example: Ushas Mudrā for New Beginnings



The *ushas mudrā* exemplifies the potential benefits of *mudrā*. It is believed to enhance mental alertness, balance hormones, and concentrate sexual energy. These qualities resonate with the second *chakra* (*swadhisthana*), associated with sexuality and creativity. Located near the sacrum, this *chakra* connects to the element of water and the moon cycle, mirroring the monthly cycles and emotional fluctuations women might experience. "*ushas*," meaning "dawn" in Sanskrit, symbolizes new beginnings, potentially aiding women in menopause who may feel disoriented by the cessation of their cycles. It can encourage them to embrace this transition as an opportunity for growth and reconnect with the healing energies of *swadhisthana* (Hirschi Gertrud, 2000).

Bandha: Internal Locks for Enhanced Well-Being:

“*Bandha*”, a Sanskrit word for "lock" or "bind," refers to the practice of contracting specific muscle groups to influence the flow of vital energy (*prāṇa*) within the body. *Bandha* play a crucial role in *āsana* (posture) practice, regulating *prāṇa* flow and promoting upward movement of energy. The practice of *bandha* assists in toning muscles such as the pelvic floor and abdominal muscles, purifying internal organs, and increasing blood flow. Often practiced during *kriyā* (cleansing practices) and *prāṇāyama* (breathing exercises), *bandha* can benefit *āsana* practice and promote a sense of lightness in the body.

Three Main *Bandha* and their Potential Benefits:

- 1) *Mūla bandha* (Root Lock): Involves engaging the pelvic floor muscles near the perineum (between the anus and genitals). This practice may be beneficial for women experiencing symptoms like incontinence, pelvic pain, and pressure associated with weakened or prolapsed pelvic floor muscles. Research suggests that practicing *mūla bandha* could lead to significant improvement in these symptoms (Sweta et al., 2018).
- 2) *Uḍḍīyana bandha* (Upward Lifting Lock): Involves creating a negative pressure in the abdominal region by lifting the diaphragm. This *bandha* may benefit overall core strength and improve breathing efficiency.
- 3) *Jalandhara bandha* (Chin Lock): Tucking the chin to the chest, bringing the head closer to the sternum. This *bandha* is believed to calm the mind and promote relaxation due to stimulation of the vagus nerve and carotid baroreceptors.

While further research is needed to definitively establish their effectiveness in managing all menopausal symptoms, incorporating *mudrā* and *bandha* into a yoga therapy practice, under the guidance of a qualified professional, may offer a holistic and potentially beneficial approach for women in midlife.

Pratyāhāra- Cultivating Awareness for a More Mindful Menopause

स्वविषयासंप्रयोगे चित्तस्वरूपानुकार इवेन्द्रियाणां प्रत्याहारः ॥ २.५४ ॥

svaviṣayāsamprayoge cittasvarūpānukāra ivendriyāṇāṃ pratyāhārah ॥ YS 2.54 ॥

Pratyāhāra, withdrawal from the sense objects, occurs when the senses do not come into contact with their respective sense objects. It corresponds, as it were, to the nature of the mind [when it is withdrawn from the sense objects].

Yoga Sūtra (Bryant, 2009).

A Neurophysiological Perspective on Meditation

Yoga offers various concentration practices and meditation techniques to significantly improve a practitioner's sense of calm and equanimity. These practices can be particularly helpful for women navigating the emotional challenges of menopause, improving their ability to cope with stressors.

The brain functions through a complex interplay of networks. One crucial network, the default mode network (DMN), becomes active during moments of worry. This network heavily involves the amygdala (a part of the brain that plays a key role in processing emotions, especially fear and aggression), a key player in the body's survival system, triggering the “fight-or-flight” response in stressful situations (Gotink et al., 2018).

Menopause, a natural transition for women, can often be accompanied by emotional challenges. Meditation offers a unique approach to navigate these challenges. By focusing on the present moment, meditation practices quiet the overall activity within the DMN, including the heightened activity of the amygdala (Sung et al., 2020). This quieting allows the prefrontal cortex (PFC), the region responsible for higher-order functions like emotional regulation, to take a more prominent role (Rathore et al., 2022). Consequently, meditation fosters a decrease in the constant feeling of being on edge by reducing the overall activity of the DMN and the amygdala. This translates to a more measured response to stress, leading to

decreased anxiety, depression, and negative emotions (Rathore et al., 2022). Research even suggests that consistent meditation practice may lead to a reduction in the size of the amygdala, potentially signifying an increased capacity to manage stress (Gotink et al., 2018).

Yoga practices promote a sense of calm and equanimity, potentially improving women's ability to cope with the emotional challenges associated with menopause. While initial meditation practices might heighten awareness of stressors, they ultimately equip individuals with the tools to manage stress more effectively. This positive impact might be partly attributed to the influence of meditation on the amygdala (Gotink et al., 2018). Supporting this notion, research suggests associations between meditation practice and improved menopausal well-being. Studies utilizing the MRS (Menopausal Rating Scale) have shown a reduction in the severity of menopausal symptoms amongst meditating women (Sung et al., 2020). Additionally, research has identified alterations in certain blood chemistry markers, potentially indicating a physiological response to meditation practices. These findings suggest that meditation can be a valuable tool for women experiencing menopause, potentially improving their emotional well-being and stress response.

Cultivating Sensory Awareness with Pratyāhāra

Pratyāhāra means "withdrawal of the senses". It is the fifth limb of Patanjali's eight-limbed yoga system (YS 2.32). Derived from the Sanskrit words "*prati*" (to withdraw) and "*ahāra*" (food, in this context, referring to external stimuli), it signifies the inward turning of attention, drawing it away from external distractions. Yoga Studies professor, Lori Rubenstein Fazzio, defines *pratyāhāra* as "the process of becoming aware of the sensations in order to recognize and regulate our reactions to them and then ultimately cease our responses to them" (Pearson et al., 2019). In exploring *pratyāhāra*, Rubenstein Fazzio describes it as cultivating awareness of sensations to gain control over reactions and ultimately achieve non-reactivity. Detached observation is said to lessen emotional and

cognitive responses that might worsen discomfort. By fostering control over the senses, *pratyāhāra* is claimed to reduce suffering. Conversely, the instinctive response to discomfort is often to eliminate it, driven by aversion. While this aversion can be protective, *pratyāhāra* offers an alternative approach, particularly relevant for women experiencing the physical and emotional changes of menopause. By observing these sensations with detachment and learning to respond with acceptance rather than aversion, *pratyāhāra* may empower women to manage this transition with greater ease and inner peace.

Similar to the concept of *dr̥ṣṭi* (gaze/focal point) used in *āsana* practice, *pratyāhāra* helps focus the mind and initiate the inward journey (Frawley, 2009). By withdrawing attention from external stimuli, it prepares the practitioner for meditation, facilitating a transition towards subtler states of consciousness. According to Indian philosophy, the *indriya* (the senses) are the instruments of a person's direct perception of the outside world. They act as a bridge between the external world and our inner selves, constantly feeding us information from the outside environment. This continuous sensory input keeps the conscious mind active. *Pratyāhāra* aims to disengage the mind from its habitual dependence on external stimuli, enabling introspection and self-inquiry (*svādhyāya*). By gaining control over the senses, we shift from reacting to them to observing them with greater awareness.

Practicing Pratyāhāra

Practicing *pratyāhāra* involves the deliberate withdrawal of the senses, which can be challenging due to our habitual dependence on external stimuli. One effective method is through one-pointed meditation, where intense focus is directed towards a single object such as a candle flame or the breath. Additionally, even the practice of *āsana* (postures) can foster *pratyāhāra*; when the mind strays during poses, redirecting attention inward towards bodily sensations and alignment serves as a form of *pratyāhāra*. Moreover, *śavāsana* (corpse pose), typically performed at the end of yoga sessions, presents another opportunity to cultivate

pratyāhāra; by gently turning awareness inward without suppressing external distractions.

Through consistent practice of *pratyāhāra*, one can gradually enhance their ability to concentrate, eventually paving the way to deeper meditative states

Gazing Meditation (Trāṭaka)

This practice involves focusing the gaze on a single point, such as a small object, black dot, or candle flame. It is believed to activate the "third eye" (*ājñā chakra*-believed to govern our intuition, imagination, and spiritual insight) and stimulate the pineal gland (a tiny structure deep within the brain that is famous for producing melatonin, a hormone that regulates sleep-wake cycles) *Trāṭaka*, also considered a *kriyā* (cleansing practice), is said to improve concentration. Some users report increased memory and a state of heightened awareness, attention, and focus. Gazing meditation is associated with relaxation, stress reduction, and improved concentration, inner peace, clarity, and energy. Studies suggest it may also benefit eye health (Sankalp et al., 2018).

Focusing on the Breath

This practice involves various techniques, including: Listening to the sound of *ujjayi* breath (a technique involving nasal breathing with a slight constriction of the throat, creating a sound similar to a light snore), feeling or directing the breath to different body regions, and lengthening or deepening the breath. A unique advantage of breathwork for *pratyāhāra* is the ability to practice breathwork anytime and anywhere.

Instead of ignoring distractions, *pratyāhāra* teaches us to gently shift our attention inward, cultivating a more focused and introspective mind. This can be particularly beneficial during menopause, offering tools to manage emotional fluctuations and enhance overall well-being. Importantly, consistent practice is key to reaping the full benefits of *pratyāhāra* and integrating it into a holistic approach to managing menopause.

Dinacharyā: Daily Routines for Menopausal Well-being

Dinacharyā, an Āyurvedic practice translating to "daily routine," offers a set of recommendations for promoting physical and mental well-being. These practices aim to prevent disease, cultivate a healthier and happier life, and ultimately contribute to longevity. During menopause, the body experiences significant hormonal shifts, impacting various aspects of health and well-being. *Dinacharyā* can be a valuable tool in supporting women navigating this transition by:

- Promoting hormonal balance: Certain practices within *dinacharyā*, like regular sleep and specific dietary choices, may indirectly contribute to hormonal balance, which can be disrupted during menopause.
- Managing stress and improving sleep: *Dinacharyā* emphasizes practices like self-massage (*abhyanga*) and calming meditation (*yoga nidra*) that can help manage stress and improve sleep quality, both of which are crucial for overall well-being and can be particularly challenging during menopause.
- Enhancing digestion and elimination: *Dinacharyā* promotes healthy digestion and elimination through practices like early rising and mindful eating. These practices can contribute to alleviating digestive issues, which can sometimes arise during menopause.
- Boosting immunity and overall health: By promoting a balanced lifestyle, *dinacharyā* may help strengthen the immune system and support overall health, potentially aiding the body in adapting to hormonal changes during menopause.

Abhyanga: Self-Massage for Menopausal Well-Being

Menopause often brings emotional challenges like stress, irritability, anxiety, and even depression. These stem from both the hormonal fluctuations women experience and the uncertainties of entering a new life phase.

Abhyanga, the Āyurvedic practice of self-massage with specially prepared herbal oil, offers several potential benefits for menopausal well-being. This practice aims to deeply penetrate the skin, promoting relaxation of the mind and body. It is believed to break up impurities, stimulate both systemic and lymphatic circulation, and enhance oxygen and nutrient delivery to cells while removing metabolic waste. Additionally, *abhyanga* is thought to heighten awareness and self-regulate the internal healing capacities (Gerson, 1993). Specifically, relevant to managing emotional challenges is *abhyanga's* calming and soothing effect on the nervous system. This may contribute to managing stress and anxiety, common during menopause. Furthermore, improved sleep quality, often disrupted during this transition, can be aided by the relaxation and stress reduction *abhyanga* promotes. Additionally, *abhyanga* may improve blood circulation, potentially leading to increased energy levels and improved mood.

Beyond these physical benefits, the dedicated "me-time" inherent to self-massage practice fosters self-care and self-compassion, potentially alleviating emotional burdens. Studies suggest *abhyanga's* promise in reducing subjective stress experience and lowering heart rate (HR) in general and blood pressure (BP) in individuals with prehypertension (Basler 2011).

Abhyanga and the Doshic Shift in Menopause

Āyurveda recognizes three forms of *pranic* or life energy as the basis for health and disease for all people. These are the three *dosha or biological humors*: *vāta*, *pitta*, and *kapha* (Frawley & Kozak, 2003). When these *dosha* become imbalanced, they are believed to contribute to specific physical and mental health concerns.

Menopause marks a significant transition, often leading to an increase in *vāta dosha*. *Vāta*, associated with air and space elements, possesses characteristics like cold, light, dry, and mobile. Conversely, the *pitta dosha*, governed by fire and water elements, exhibits hot,

sharp, and oily qualities. Perimenopause can manifest *Pitta* imbalances as hot flushes, mood swings, and anger. As women enter menopause and beyond, *vāta dosha* becomes more prominent, potentially leading to irritability and dryness in various body tissues, including the vagina, skin, and eyes. *Abhyanga*, the Āyurvedic self-massage practice, aims to address these imbalances and promote overall well-being.

The Sanskrit word for oil, "*sneha*," translates to love. The practice of *abhyanga* involves saturating the body with oil, symbolizing an act of self-love and care. This self-care ritual is believed to offer a soothing and balancing effect, potentially mitigating the discomforts associated with the *doshic* shifts during menopause.

***Āsana*- Physical Postures for Menopause**

Menopause brings a unique set of physical and emotional changes for women. These can include a decrease in muscle strength (sarcopenia) and bone density (osteopenia/osteoporosis), leading to reduced functionality and potentially increasing the risk of falls and fractures. Additionally, some women may experience joint pain, urogenital disorders like pelvic floor prolapse, irritability, and anxiety during this transition.

Research suggests that a well-designed *āsana* (postural yoga) practice can be a valuable tool for addressing these menopausal symptoms. Specific yoga poses can help maintain muscle mass and strength, which not only improves physical function and balance but may also benefit cognitive health through the production of myokines, molecules released by muscles that have been shown to influence brain function (Scisciola, 2021). Studies examining the effects of yoga have shown it to produce beneficial changes in cardiovascular endurance, flexibility, muscular strength and endurance (Lau et al., 2015) and bone density (Motorwala et al., 2016).

Furthermore, *āsana* practice, when approached with focus and mindful awareness (interoception), can be beneficial in managing irritability and anxiety. By cultivating inner

non-judgmental awareness, yoga poses can create a sense of calm and well-being, potentially alleviating emotional challenges experienced during menopause.

Here are some examples of research based *āsana* practice for menopause:

- *Āsana* for bone density- *setubandhāsana* (half bridge pose), *utkatāsana* (chair pose), *vrkṣāsana* (tree pose)- engaging the big muscles of the legs to enhance bone density. *Mārjārīāsana* & *biḍālāsana* (cat & cow), plank and *adho mukha śvānāsana* (downward facing dog)- weight bearing on wrists (*Benedetti et al.*, 2018), (*Motorwala et al.* 2016).
- *Āsana* for muscle strength, muscle mass and functionality- *utkaṭāsana* (chair pose)- a grounding and powerful posture to help prevent sarcopenia and improve cognitive function with myokines (*Scisciola et al.* 2021); *vīrabhadrāsana* (warrior pose), *ardhachandrāsana* (half-moon pose), and *trikoṇāsana* (triangle pose).
- *Āsana* for emotional well-being- *camatkārāsana* (‘wild thing’) – an invigorating posture that builds core strength, enhancement energy, and may promote secretion of ‘happy hormones’ such as dopamine, serotonin and endorphins that decrease during menopause and accounts for many menopausal symptoms and diseases (*Liu et al.* 2022).
- *Āsana* for hip and spine flexibility, vagus nerve stimulation, visceral massage for the intestines to promote good digestion, and bone density (*Motorwala et al.* 2016)- *ardha matsyendrāsana* (seated twists).
- *Āsana* for the pelvic region, strengthening the pelvic floor muscles with *mula bandha* (*Sweta et al.*, 2018), inversions for removing the weight of gravity from the pelvic floor muscles and improving blood circulation (*Gorji et al.*, 2020)- supine pelvic tilts, *supta baddhakoṇāsana* (supine bound angle pose), *setubandhāsana* (half bridge pose), and *sarvāṅgāsana* (shoulder stand) and *śīrṣāsana* (head stand).

- *Āsana* for muscles endurance, coordination, and mental concentration (Kwok et al., 2011) – *vinyasa* flow, *sūryanamaskāra* (sun salutations).
- *Āsana* for stress management and relaxation- *jaṭhara parivartanāsana* (revolving stomach pose); *yoga mūdra/balāsana* (child pose) for relaxation by stimulating the oculocardiac reflex (Cavuoto, 2022) when resting the forehead on a mat or a yoga block; *śavāsana* (corpse pose)- increasing vagal tone (Khattab et al., 2007) and reducing stress (Telles et al. 2018).
- *Āsana* for improving cardiorespiratory endurance (Lau et al., 2015) - *vinyasa* transitions and *sūryanamaskāra* backbends such as *dhanurāsana*, *uṣṭrāsana*, *bhujāṅgāsana*, *cakravākāsana* to enhance flexibility of the trunk and preserving arterial elasticity (Yamamoto et al., 2009), reduce compression on the heart, increase vagal tone and improve HRV (Heart Rate Variability) (Schwartz, 2017).

Detailed instructions for practicing *Āsana* are provided in Appendix K.

Assessment-MRS, BRCS, Assessment Questionnaire

Prior to the start of the *Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy* participants completed the Menopause Rating Scale (MRS) (Appendix A) and the Brief Resilient Coping Scale (BRCS) (Appendix H). The BRCS was introduced only after the first cohort completed the program, following IRB approval. This addition aimed to provide further insights into participants' resilience coping mechanisms, especially given the initial observation of minimal improvement or change in menopausal symptoms as indicated by the MRS. Following the eight-week program, participants attended a 30-minute follow-up session. During this session, they completed the MRS and the BRCS again to compare pre- and post-program scores. Additionally, participants completed an assessment questionnaire (Appendix B) to provide feedback on their perceived benefits from the program.

Target Population Characteristics and Participation in the Three Research Cohorts

Over the course of 14 months, three separate cohorts participated in the eight-week SMP. Cohort #1 consisted of 4 participants, while cohort #2 and cohort #3 each consisted of 3 participants.

All participants across the three cohorts shared the following characteristics:

- Caucasian ethnicity
- Age range: 51-65 years old
- High socioeconomic status
- Professionals
- Happily married with children
- Overall a balanced healthy lifestyle
- Highly self-aware
- Healthy, fit, and active (yet you describe health issues below?)
- Enjoy group exercise classes such as Pilates, stretching, strength.
- Highly motivated to participate in the SMP to improve awareness of their menopausal symptoms, and enhance their overall well-being and quality of life.
- Five out of ten participants practice yoga regularly. The other five participants have occasionally practiced yoga before.

Cohort #1- Participants and their History

- ◆ D., 56, post menopause, experienced surgical menopause at the age of 45 due to ovariectomy (a surgical procedure to remove the ovaries) BRCA related (a genetic mutation that significantly increases a woman's risk of developing breast and ovarian cancers). She received no menopause consulting or support. CC (chief complaint)-insomnia. Other complaints included vaginal dryness, decrease in concentration, decrease in sex drive, some mood swings and irritability. D. aspired to acquire coping mechanisms

through yoga therapy to manage her menopausal symptoms and improve her physical well-being.

- ◆ O., 60, post menopause, experienced medical menopause at age 54 due to HER2+ breast cancer (HER2-positive breast cancer is a type that tests positive for a protein called human epidermal growth factor receptor 2). She is currently prescribed Tamoxifen, a medication that hinders breast cancer development by blocking estrogen receptors and preventing them from stimulating cancer cell growth. O. underwent a lumpectomy (a surgical procedure to remove cancerous breast tissue), and has not received any menopause consultations or support. CC- insomnia. O. reported poor sleep hygiene. Other complaints included vaginal dryness, decreased sex drive, weight gain with belly fat accumulation, occasional hot flashes, and emotional unrest. O. sought to gain a deeper understanding of menopause and to learn from the experiences of other women practicing yoga, particularly regarding its potential benefits.
- ◆ H., 54, peri menopause, has been taking regular medication (Enalapril Maleate 5mg) for the past two years to manage hypertension. She reported experiencing "severe work stress" at the time of the hypertension diagnosis, which she believed to be a contributing factor. CC- insomnia. Other complaints included vaginal dryness, forgetfulness, decreased sex drive, and occasional mood swings with irritability. H. desired to gain a deeper understanding of menopause and to cultivate greater awareness of her physical transformations. She aspired to achieve a sense of physical well-being.
- ◆ M., 53, peri menopause. CC- night sweats and insomnia. Other complaints included mood swings and occasional irritability. M. reported experiencing oligomenorrhea (infrequent menstrual periods). She adheres to a vegan diet due to previously high cholesterol, which is now well-managed. M. has a history of migraines associated with premenstrual

syndrome (PMS). She sought to understand her ability to manage her current menopausal symptoms.

Cohort #2- Participants and their History

- ◆ A., 52, peri menopause, experienced medical menopause due to HER2+ BC (Breast Cancer), and is currently taking Tamoxifen. She underwent a lumpectomy, followed by chemotherapy and biological therapy in the past few months. Has not received any menopause consultations or support. Reported consuming an "unhealthy and unbalanced diet". Crohn's disease currently in remission. CC- depressive mood and anxiety. Other complaints included vaginal dryness, decrease in sex drive, sleeping disorders, irritability, hot flushes, and night sweats. A. was scheduled to begin radiation treatment for cancer immediately following the conclusion of the eight-week SMP. Despite experiencing emotional distress due to her health challenges, A. maintained a positive attitude and optimism throughout her ordeal. She hoped to find time for self-care ("me time") and to gain the benefits of social engagement and support during the SMP.
- ◆ E., 65, post menopause, underwent two surgeries for pelvic floor prolapse approximately 15 years ago, including a hysterectomy (removal of the uterus). At 53, she underwent cardiac catheterization to investigate a heart problem, which she attributed to stress and grief following her father's death. Currently, she takes medications to manage hypertension (100mg Aspirin, 2.5mg Rampril) and high cholesterol (statins). She follows a well-balanced, primarily vegetarian diet for general well-being. E. also underwent PRP (Platelet Rich Plasma) knee surgery for osteoarthritis. CC- Insomnia. Other complaints included joint discomfort, occasional depressive mood, and irritability. E. expressed lingering emotional and physical burdens due to past pelvic floor prolapse and hysterectomy surgeries, which she

described as an "unresolved past with her pelvis." She sought to cultivate a deeper and more meaningful connection within her intimate relationship with her husband, specifically focusing on pelvic connection, to achieve a sense of peace. Despite entering menopause 16 years ago, she expressed a curiosity about it and desired a more comprehensive understanding of its various aspects.

- ◆ D., 51, peri menopause, reported experiencing depression, weight gain, and developing diabetes following her parents' recent passing. Demonstrating self-awareness of her emotional and physical health, she actively manages her well-being through reflexology, acupuncture, and mind-body practices. D. has a history of migraines since childhood and reported experiencing recurrent bladder infections, overactive bladder (onset after COVID-19 illness), irregular periods with severe hemorrhaging and blood loss. CC- Insomnia. Other complaints included occasional hot flashes, vaginal dryness, depressive mood, irritability, restlessness, and heart discomfort. D. aspired to achieve a sense of balance and inner calm. She sought to reconnect with her body and to gain a deeper understanding of the changes associated with menopause.

Cohort #3- Participants and their History

- ◆ Z., 63, post menopause. CC- urgency incontinence and decreased sexual desire and activity. Other complaints included vaginal dryness, knee joint discomfort, occasional anxiety, and impaired concentration and memory. Z. reported her partner experiencing sexual dysfunction as a side effect of antidepressant medication, leading to a significant decrease in sexual activity to near absence. Despite this sexual issue, Z. emphasized a loving and supportive relationship. Aware of her cognitive decline, Z. actively engages in memory-enhancing activities such as word search games, card games, and maintaining her legal career. Z. expressed a desire to begin teaching

Pilates, a passion she trained for several years ago but hasn't pursued yet. She hoped to gain knowledge about menopause to improve her personal well-being and share it with other women.

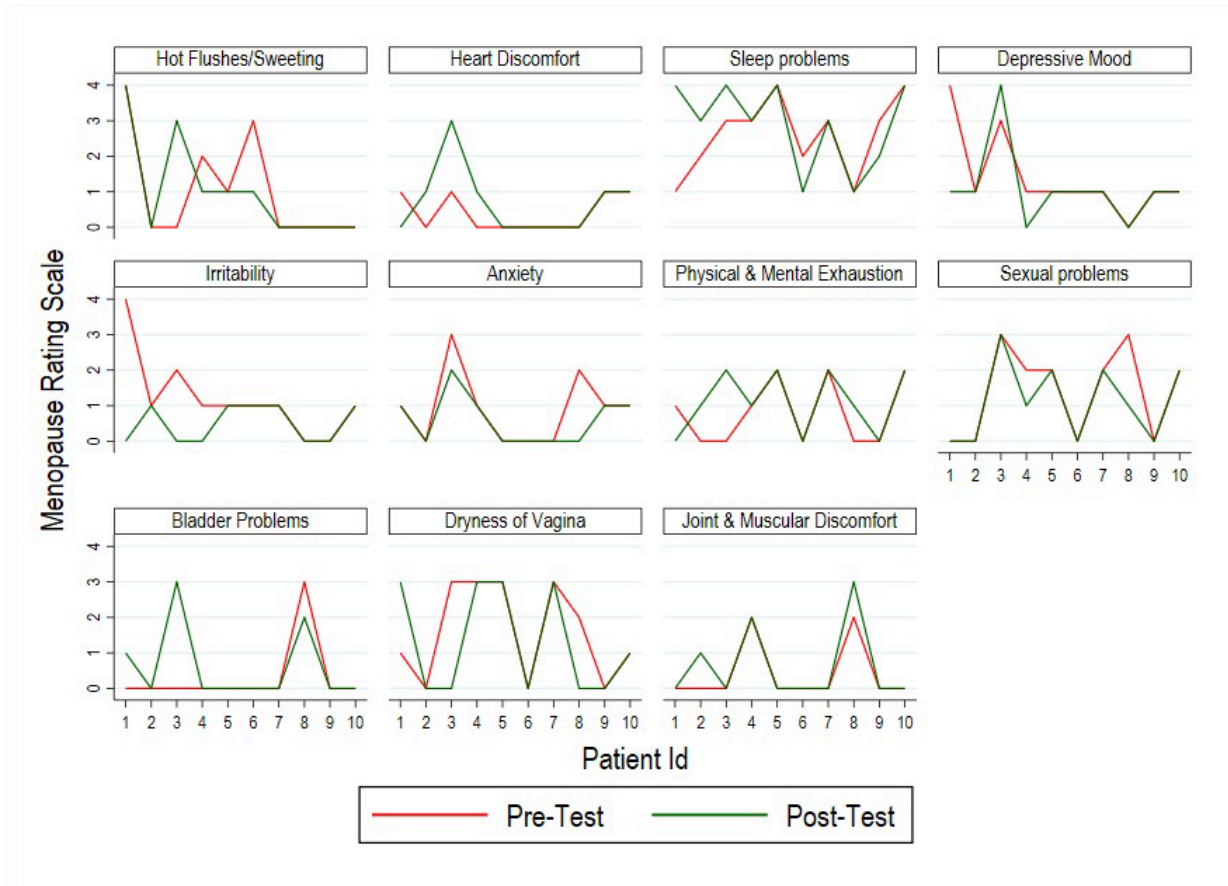
- ◆ L., 52, peri menopause. CC- insomnia. Other complaints included feeling down, mood swings, anxiety, heart discomfort and hormonal migraines. L. reported struggling to cope emotionally with a past marital issue concerning finances. The resulting decrease in trust towards her spouse burdens her emotionally, making her feel restricted and unable to move forward. She aspired to acquire coping mechanisms through the SMP and to gain knowledge about menopause to enhance her self-care and effectively support her female clients in her Pilates studio.
- ◆ M., 56, post menopause. CC- insomnia, leading to daytime fatigue and restlessness. Other complaints included decreased sexual desire and activity, vaginal dryness, impaired concentration and memory, irritability, and heart discomfort. Previously, she reported hot flushes and night sweats, which have subsided since using a herbal remedy called *Cimicifugae Rhizoma* (Black Cohosh). M. sought to learn how to manage the changes associated with menopause and improve her overall well-being.

Results and Discussion

Figure 1

Line Plot for comparing Pre-Test and Post Test scores on Menopause Rating Scale

MRS (Menopause Rating Scale) Results



There were 10 participants (referred to as 'patients') reporting about 11 menopausal symptoms. Figure 1 displays pre-test scores with a red line, while the post-test scores are represented by a green line. In all of the symptoms' plots, pre-test and post-test scores intersect and overlap, indicating that there is no apparent difference in scores. Due to the small sample size (10 participants), the Wilcoxon Signed Rank Test was utilized for paired comparison, as the same patients were rated at two different points in time. The results of the test are tabulated below:

Table 1*Wilcoxon Sign Rank Test*

Comparison for Symptom	# of Patients improving	Z value	P value	Result
Hot Flushes/ Sweating	2	-0.447	0.6547	No improvement
Heart Discomfort	1	1.053	0.2922	No improvement
Sleep problems	2	0.555	0.5791	No improvement
Depressive Mood	2	-0.640	0.5225	No improvement
Irritability	3	-1.725	0.0845	No improvement
Anxiety	2	-1.412	0.1579	No improvement
Physical & Mental Exhaustion	1	1.053	0.2922	No improvement
Sexual problems	2	-1.412	0.1579	No improvement
Bladder Problems	1	0.640	0.5225	No improvement
Dryness of Vagina	2	-0.640	0.5225	No improvement
Joint & Muscular Discomfort	0	1.414	0.1573	No improvement

Results revealed no significant difference between scores before and after the therapy intervention, as p-values exceeded alpha (0.05). The expected negative and high Z value, representing post-scores minus pre-scores, did not materialize. Consequently, the P value was not significant across all 11 symptoms. In conclusion, the *Salutogenic Program for*

Menopause- Enhancing Well-Being with Yoga Therapy is not found to be effective in reducing menopausal symptoms as assessed by the MRS.

BRCS (Brief Resilient Coping Scale) Results

Results of BRCS revealed no difference between scores before and after therapy intervention. All 10 participants were *high resilient copers* with a high score range of 17-20 points before and after the SMP.

Assessment Questionnaire/ Self-Reported Results

In the final assessment questionnaire, all ten participants reported experiencing meaningful, life-changing results from the *Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy*. These included a positive shift in attitude and coping mechanisms, with a change in how they perceived menopause and experienced symptoms. Notably, participants reported a newfound acceptance of menopause accompanied by increased equanimity. This shift led to a decrease in worries and anxieties previously stemming from a lack of knowledge and frustration with the changes they were undergoing. Participants expressed an optimistic and positive outlook on menopause and the future, viewing this time as a potential beginning of something new and promising.

The information received during the program empowered them to make informed decisions about managing their menopause and pursuing therapies to enhance well-being and quality of life. All participants felt better equipped to consult with their physicians at the program's end. They had a deeper understanding of menopause, knew what questions to ask their doctors, and felt less ashamed or embarrassed to discuss their symptoms.

Significant lifestyle changes were reported by all participants, including adopting a well-balanced diet rich in protein, calcium, and soy-based foods. Consultation with a nutritionist facilitated the incorporation of recommended supplements like calcium, vitamin D, and magnesium to support menopausal health. Additionally, prioritizing exercise, with an

emphasis on strength training and aerobic activities, became a focus. These activities benefitted heart health, bone density, muscle mass, cognition, and hormone regulation (endorphins, serotonin, dopamine, and testosterone). Regular breathing and relaxation practices were also incorporated to better manage anxiety.

Participants engaged in intellectually stimulating activities, such as learning new skills (e.g., playing an instrument, playing cards, choreographed dancing, vinyasa yoga), to enhance cognition. Additionally, scheduling regular medical checkups advised for midlife and menopause became a priority, including blood tests for hormonal profiles, DEXA scans for bone density, and physical therapy for the pelvic floor.

Some participants reported improved openness with their partners regarding sexuality, leading to closer, more intimate, and trusting relationships. By the program's end, participants were more mindful of sleep hygiene and meal hours, strategies that helped them cope with menopausal sleep problems.

Overall, participants expressed appreciation for the program's information and solutions, considering them "invaluable, applicable, and helpful" in their own words. The program provided a new comprehension of menopause through the lens of yoga therapy, which many described as "a meaningful and transformative experience." Finally, participants reported a renewed motivation to continue practicing yoga and applying the tools learned in the program.

Discussion

Menopause, a natural transition for women, often brings about a multitude of physical, psychological, and emotional challenges. As life expectancy rises (reaching around 83 years for women in The USA and Israel), a significant portion of a woman's life is spent post-menopause (approximately 40%). This research explored the potential of yoga therapy as a complementary approach to enhance well-being during this significant phase.

The SMP developed and implemented aimed to create a safe and educational platform – a haven for women navigating these challenging times. This program offered a space for women to come together, share experiences, support each other, and receive up-to-date information about menopause and the solutions available, both traditional medicine and complementary therapies like yoga therapy.

The program's success lies in its unique and holistic approach. Participants emerged not only with valuable tools for coping with the challenges of menopause, but also with a transformed perspective. This holistic approach combined education about menopause and its management options, including traditional medicine and complementary therapies like yoga therapy, which integrates mind-body practices for a well-rounded experience. Through acknowledging the inevitability of aging and cultivating acceptance (*pratipaksha bhavana*), participants learned to embrace menopause as a natural stage rather than a source of negativity. This resonated deeply with the participants, many of whom reported feeling a sense of relief and empowerment as they grappled with the emotional and physical changes they were experiencing.

Initially, the program utilized the Menopause Rating Scale (MRS) to assess the participants' experiences and the extent of their symptoms. While the MRS did not show significant changes in scores at the program's end, this was not entirely surprising given the program's short duration (8 weeks). However, the concluding assessment questionnaire, where participants could freely share their experiences, revealed the program's profound impact. They described the program as a "life-changing illuminating experience," highlighting the program's value beyond symptom reduction. Importantly, the MRS also enabled me to learn about the participants' symptoms and to better address them in the program. These testimonials, coupled with the positive participant feedback, provided a richer understanding of the program's transformative influence.

The most rewarding aspect of this research journey has been witnessing the program's impact. Participants reported feeling empowered and equipped to navigate the challenges of menopause with a newfound sense of self-awareness and acceptance. The program's adoption by the public healthcare system and its expansion across municipalities in Israel signifies its potential to benefit a wider population. There are even promising prospects that the Arab population living in Israel will also enjoy the program in the future.

This experience underscores the universality of women's experiences. Despite cultural and religious differences, the core desires for health, happiness, and well-being resonate across borders. The program served as a powerful reminder that women are more alike than we may realize, fostering a sense of shared humanity and connection. As one participant eloquently stated, "We all go through life wanting to be healthy and well. When we grow old we all have some grief over losing our youth, we all want to feel strong healthy and happy, and we are all much more connected and much more alike than we care we think we are." This program brought women together, fostering a sense of shared strength and community.

Conclusion

In conclusion, this research underscores the effectiveness of yoga therapy as a complementary approach to coping with menopausal symptoms. It further emphasizes the importance of creating supportive spaces for women navigating this transition. While the MRS did not reveal significant score changes, the program's deeper impact became evident through participant feedback. As this program continues to evolve and reach new communities, both in Israel and potentially on a global scale, its legacy lies in empowering women to embrace menopause with knowledge, acceptance, and a renewed sense of well-being.

Limitations and Suggestions for Future Research

Sample Characteristics:

- **Limited Socioeconomic Diversity:** The program's participants were all of similar socioeconomic status, highly self-aware, health-conscious, and motivated to self-care. This focus on a specific demographic limits the generalizability of the findings. Women with less health awareness or more ingrained unhealthy lifestyle habits might experience a greater impact from the program. Future research could benefit from recruiting a more diverse participant pool.
- **Pre-existing Healthy Behaviors:** Due to the participants' existing focus on healthy living, the program may not have had as much room to improve their lifestyle habits. Women starting from a less healthy baseline might demonstrate more significant improvements in well-being after completing the program.

Assessment Measures:

- **Language Barriers:** The study relied on self-reported data through questionnaires and interviews. However, a limitation exists regarding the availability of validated menopause assessment scales in Hebrew for Hebrew-speaking participants. This could potentially introduce some bias in the data collected.
- **Culturally Sensitive Measures:** The study did not utilize culturally sensitive measures to assess the participants' attitudes towards menopause. Since attitudes towards menopause vary across cultures, culturally sensitive assessments are crucial to obtain a more accurate representation of participants' experiences (Ayers et al., 2009).

Limitations of Specific Assessment Tools:

- **Menopause Rating Scale (MRS):** While the MRS provided a standardized measure of menopausal symptoms, it does not comprehensively address quality of life and

well-being during menopause. This limits the ability to fully capture the program's impact on these broader aspects of women's experiences.

- **Brief Resilience Coping Scale (BRCS):** The BRCS is an assessment tool designed to measure coping abilities in individuals facing challenges. However, since the participants already demonstrated high coping skills, the BRCS may not have been the most sensitive tool to detect changes specifically related to menopausal challenges. Future research might benefit from utilizing a menopause-specific measure of well-being or coping.

Specific Area of Interest:

- **War Trauma and Menopause:** The investigator was particularly interested in exploring the impact of war trauma on menopause, specifically the effects of the Hamas terrorist attack on Israel in October 2023. While research exists on trauma-induced menopause due to domestic violence and combat experiences, there is a lack of research specifically investigating war trauma's influence on menopause. This highlights a gap in current knowledge and a potential area for future research.

Addressing Limitations:

These limitations suggest the need for future research to:

- Recruit a larger and more diverse sample population to enhance generalizability.
- Consider employing a combination of self-reported data and physiological measures to provide a more comprehensive picture of the program's impact.
- Utilize or develop culturally sensitive assessment tools.
- Explore the specific impact of war trauma on menopausal experiences through further research.
- Select assessment tools that are more sensitive to the specific aspects of the program being investigated.

- Mitigate language barriers in future research: Dr. Sigal Shaklay, Head of the Menopause Clinic at the Institute of Endocrinology, Metabolism and Hypertension, Tel-Aviv Sourasky Medical Center, Ichilov, is currently leading the translation and validation of the Menopause Rating Scale (MRS) into Hebrew. I am assisting Dr. Shaklay in this important effort. This validated MRS will be a valuable tool for future research with Hebrew-speaking populations.

Reference List

- Acevedo, B. P., Pospos, S., & Lavretsky, H. (2016). The Neural Mechanisms of Meditative Practices: Novel Approaches for Healthy Aging. *Current Behavioral Neuroscience Reports*, 3(4), 328–339. <https://doi.org/10.1007/s40473-016-0098-x>
- Alexander, J. L., Dennerstein, L., Woods, N. F., McEwen, B. S., Halbreich, U., Kotz, K., & Richardson, G. (2007). Role of stressful life events and menopausal stage in wellbeing and health. *Expert Review of Neurotherapeutics*, 7(sup1), S93–S113. <https://doi.org/10.1586/14737175.7.11s.S93>
- Allen, J. T., Laks, S., Zahler-Miller, C., Rungruang, B. J., Braun, K., Goldstein, S. R., & Schnatz, P. F. (2023). Needs assessment of menopause education in United States obstetrics and gynecology residency training programs. *Menopause (New York, N.Y.)*, 30(10), 1002–1005. <https://doi.org/10.1097/GME.0000000000002234>
- Antonovsky, A. (1979). *Health, Stress, and Coping*. Jossey-Bass.
- Arnot, M., Emmott, E. H., & Mace, R. (2021). The relationship between social support, stressful events, and menopause symptoms. *PLoS ONE*, 16(1), e0245444. <https://doi.org/10.1371/journal.pone.0245444>
- Artzi Padan, M. (2014). *Yoga for Women/Yoga Nashit*.
- Artzi Padan, M. (2022). *Women's Voyage into Menopause, along with Yoga Nashit*.
- Atkinson, N. L., & Permuth-Levine, R. (2009). Benefits, barriers, and cues to action of yoga practice: A focus group approach. *American Journal of Health Behavior*, 33(1), 3–14. <https://doi.org/10.5993/ajhb.33.1.1>
- Ayers, B., Forshaw, M., & Hunter, M. S. (2010). The impact of attitudes towards the menopause on women's symptom experience: A systematic review. *Maturitas*, 65(1), 28–36. <https://doi.org/10.1016/j.maturitas.2009.10.016>

- Baber, R. (2017). *Hormone therapy and menopause: A protracted misunderstanding explained.*
- Baker, F. C., Lampio, L., Saaresranta, T., & Polo-Kantola, P. (2018). Sleep and Sleep Disorders in the Menopausal Transition. *Sleep Medicine Clinics*, 13(3), 443–456. <https://doi.org/10.1016/j.jsmc.2018.04.011>
- Basler, A. J. (2011). Pilot Study Investigating the Effects of Āyurvedic *Abhyanga* Massage on Subjective Stress Experience. *The Journal of Alternative and Complementary Medicine*, 17(5), 435–440. <https://doi.org/10.1089/acm.2010.0281>
- Benedetti, M. G., Furlini, G., Zati, A., & Letizia Mauro, G. (2018). The Effectiveness of Physical Exercise on Bone Density in Osteoporotic Patients. *BioMed Research International*, 2018, 4840531. <https://doi.org/10.1155/2018/4840531>
- Bhardwaj, A., & Sharma, D. kumar. (2022). Rajonivritti: A Physiological Study. *Journal of Āyurveda and Integrated Medical Sciences*, 7(11), Article 11. <https://doi.org/10.21760/jaims.7.11.10>
- Bhavanani, A. B. (2020). Salutogenesis Approach to Communication. In S. C. Parija & B. V. Adkoli (Eds.), *Effective Medical Communication* (pp. 235–245). Springer Singapore. https://doi.org/10.1007/978-981-15-3409-6_23
- Bhavanani, A. B. (2021, April 12). Yoga Therapy or Yogopathy? *Medium*. <https://bhavanani.medium.com/yoga-therapy-or-yogopathy-d9b417991442>
- Bhavanani, A. B. (Director). (2022, April 28). *Yogacharya Dr Anandaji on “Salutogenesis and Yoga therapy”- Yoga Mahotsav 2022 at MAHER, Chennai.* <https://www.youtube.com/watch?v=u3pD58gbEGM>
- Bhavanani, A. B. (2021, May 28). Role of salutogenesis in healthcare communication. *Medium*. <https://bhavanani.medium.com/role-of-salutogenesis-in-medical-communication-20d71a1a4059>

- Bolouki, A., & Zal, F. (2020). Impact of War on Fertility and Infertility. *Archives of Iranian Medicine*, 23(4Suppl1), Article 4Suppl1. <https://doi.org/10.34172/aim.2020.s4>
- Bryant, E. F. (2009). *The Yoga Sūtra of Patañjali: A New Edition, Translation, and Commentary with Insights From the Traditional Commentators* (Patañjali, Ed.). North Point Press.
- Cabral, F. R. (1983). Isolation of Chinese hamster ovary cell mutants requiring the continuous presence of taxol for cell division. *The Journal of Cell Biology*, 97(1), 22–29. <https://doi.org/10.1083/jcb.97.1.22>
- Cagnacci, A., & Venier, M. (2019). The Controversial History of Hormone Replacement Therapy. *Medicina*, 55(9), 602. <https://doi.org/10.3390/medicina55090602>
- Carr, L. (2022). *Past traumas may worsen menopausal symptoms and wellbeing at midlife*. 67. <https://www.contemporaryobgyn.net/view/past-traumas-may-worsen-menopausal-symptoms-and-wellbeing-at-midlife>
- Central Bureau of Statistics. (n.d.). <https://www.cbs.gov.il/en/mediarelease/pages/2022/population-of-israel-on-the-eve-of-2023.aspx>
- Cody. (2023, October 24). *Can Grief Cause Early Menopause*. Pelvic Floor Pro. <https://pelvicfloorpro.com/can-grief-cause-early-menopause/>
- Colletto, M., & Rodriguez, N. (2018). Routine Yoga Practice Impacts Whole Body Protein Utilization in Healthy Women. *Journal of Aging and Physical Activity*, 26(1), 68–74. <https://doi.org/10.1123/japa.2016-0085>
- Coughlin, J. F. (2017). *The longevity economy: Unlocking the world's fastest-growing, most misunderstood market* (First edition). PublicAffairs.
- Cramer, H., Lauche, R., Langhorst, J., & Dobos, G. (2012). Effectiveness of Yoga for Menopausal Symptoms: A Systematic Review and Meta-Analysis of Randomized

- Controlled Trials. *Evidence-Based Complementary and Alternative Medicine*, 2012, 1–11. <https://doi.org/10.1155/2012/863905>
- Crowe, B. M., Van Puymbroeck, M., Linder, S. M., Mcguire, F. A., & Watt, P. J. (2015). The Effects of Yoga Participation on Women’s Quality of Life and Symptom Management During the Menopausal Transition: A Pilot Study. *Health Care for Women International*, 36(10), 1124–1142. <https://doi.org/10.1080/07399332.2015.1066789>
- D’Amrosio, A. (2022, October 17). *Traumatic Experiences Tied to Lower Estrogen Levels in Menopause*. <https://www.medpagetoday.com/meetingcoverage/nams/101265>
- Drageset, J. (2021). Social Support. In G. Haugan & M. Eriksson (Eds.), *Health Promotion in Health Care – Vital Theories and Research*. Springer. <http://www.ncbi.nlm.nih.gov/books/NBK585650/>
- Duralde, E. R., Sobel, T. H., & Manson, J. E. (2023). Management of perimenopausal and menopausal symptoms. *BMJ (Clinical Research Ed.)*, 382, e072612. <https://doi.org/10.1136/bmj-2022-072612>
- Estevao, C. (2022). The role of yoga in inflammatory markers. *Brain, Behavior, & Immunity - Health*, 20, 100421. <https://doi.org/10.1016/j.bbih.2022.100421>
- Faublon, S. et al. (2022). The 2022 hormone therapy position statement of The North American Menopause Society. *Menopause*, 29(7), 767–794. <https://doi.org/10.1097/GME.0000000000002028>
- Fishman, L. M. (2009). Yoga for Osteoporosis: A Pilot Study. *Topics in Geriatric Rehabilitation*, 25(3), 244–250. <https://doi.org/10.1097/TGR.0b013e3181b02dd6>
- Forder, J. (2023, September 21). *How can we retain more staff through menopause?* <https://www.linkedin.com/pulse/how-can-we-retain-more-staff-through-menopause-jeanette-forder->

- Frawley, D. (2009). *Inner Tantric Yoga: Working With the Universal Shakti - Secrets of Mantras, Deities and Meditation* (First Indian Edition 2009, by arrangement with Lotus Press, USA). Motilal Banarsidass.
- Frawley, D., & Kozak, S. S. (2003). *Yoga for your type: An Āyurvedic approach to your Asana practice* (1. Indian ed). Shri Jainendra Press.
- Gerson, S. (1993). *Āyurveda: The ancient Indian healing art*. Element.
- Ghosal, A., & Bandyopadhyay, N. (2018). *Effect of exercise on bone density and osteoporosis of menopausal women: A review study*.
- Gibson, C. J., Huang, A. J., McCaw, B., Subak, L. L., Thom, D. H., & Van Den Eeden, S. K. (2019). Associations of Intimate Partner Violence, Sexual Assault, and Posttraumatic Stress Disorder With Menopause Symptoms Among Midlife and Older Women. *JAMA Internal Medicine*, *179*(1), 80–87.
<https://doi.org/10.1001/jamainternmed.2018.5233>
- Gibson, J. (2019). Mindfulness, Interoception, and the Body: A Contemporary Perspective. *Frontiers in Psychology*, *10*, 2012. <https://doi.org/10.3389/fpsyg.2019.02012>
- Gilmartin, D. (2022, October 26). Consider Trauma in Your Menopausal Patients. *Women's Healthcare*. <https://www.npwomenshealthcare.com/consider-trauma-in-your-menopausal-patients/>
- Glover, E. M., Jovanovic, T., Mercer, K. B., Kerley, K., Bradley, B., Ressler, K. J., & Norrholm, S. D. (2012). Estrogen Levels Are Associated with Extinction Deficits in Women with Posttraumatic Stress Disorder. *Biological Psychiatry*, *72*(1), 19–24.
<https://doi.org/10.1016/j.biopsych.2012.02.031>
- Gorji, Z., Pourmomeny, A. A., & Hajhashemy, M. (2020). Evaluation of the effect of a new method on the pelvic organ prolapse symptoms. *Lower Urinary Tract Symptoms*, *12*(1), 20–24. <https://doi.org/10.1111/luts.12277>

- Gotink, R. A., Vernooij, M. W., Ikram, M. A., Niessen, W. J., Krestin, G. P., Hofman, A., Tiemeier, H., & Hunink, M. G. M. (2018). Meditation and yoga practice are associated with smaller right amygdala volume: The Rotterdam study. *Brain Imaging and Behavior, 12*(6), 1631–1639. <https://doi.org/10.1007/s11682-018-9826-z>
- Guddeti, R. R., Dang, G., Williams, M. A., & Alla, V. M. (2019). Role of Yoga in Cardiac Disease and Rehabilitation. *Journal of Cardiopulmonary Rehabilitation and Prevention, 39*(3), 146–152. <https://doi.org/10.1097/HCR.0000000000000372>
- Heinemann, K., Ruebig, A., Potthoff, P., Schneider, H. P., Strelow, F., Heinemann, L. A., & Thai, D. M. (2004). The Menopause Rating Scale (MRS) scale: A methodological review. *Health and Quality of Life Outcomes, 2*(1), 45. <https://doi.org/10.1186/1477-7525-2-45>
- Hoga, L., Rodolpho, J., Gonçalves, B., & Quirino, B. (2015). Women’s experience of menopause: A systematic review of qualitative evidence: *JBIR Database of Systematic Reviews and Implementation Reports, 13*(8), 250–337. <https://doi.org/10.11124/jbisrir-2015-1948>
- Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How Does Mindfulness Meditation Work? Proposing Mechanisms of Action From a Conceptual and Neural Perspective. *Perspectives on Psychological Science, 6*(6), 537–559. <https://doi.org/10.1177/1745691611419671>
- Hunter, M., & O’Dea, I. (1999). An evaluation of a health education intervention for mid-aged women: Five -year follow-up of effects upon knowledge, impact of menopause and health. *Patient Education and Counseling, 38*(3), 249–255. [https://doi.org/10.1016/s0738-3991\(98\)00143-8](https://doi.org/10.1016/s0738-3991(98)00143-8)
- Iyengar, B. K. S. (2003). *Light on the Yoga Sutras of Patanjali*. Thorsons.

- Jorge, M. P., Santaella, D. F., Pontes, I. M. O., Shiramizu, V. K. M., Nascimento, E. B., Cabral, A., Lemos, T. M. A. M., Silva, R. H., & Ribeiro, A. M. (2016). Hatha Yoga practice decreases menopause symptoms and improves quality of life: A randomized controlled trial. *Complementary Therapies in Medicine, 26*, 128–135.
<https://doi.org/10.1016/j.ctim.2016.03.014>
- Joshi, S., & Vaze, N. (2010). Yoga and menopausal transition. *Journal of Mid-Life Health, 1*(2), 56. <https://doi.org/10.4103/0976-7800.76212>
- Kabat-Zinn, J. (1990). *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness*. Delacorte Press.
- Keller, D. (2003). *Anusara yoga: Hatha yoga in the anusara style*.
- Khattab, K., Khattab, A. A., Ortak, J., Richardt, G., & Bonnemeier, H. (2007). Iyengar Yoga Increases Cardiac Parasympathetic Nervous Modulation Among Healthy Yoga Practitioners. *Evidence-Based Complementary and Alternative Medicine : eCAM, 4*(4), 511–517. <https://doi.org/10.1093/ecam/nem087>
- Kling, J. M., Saadedine, M., Faubion, S. S., Shufelt, C. L., Mara, K. C., Enders, F. T., David, P. S., & Kapoor, E. (2023). Associations between childhood adversity and age at natural menopause. *Menopause (New York, N.Y.), 30*(11), 1085–1089.
<https://doi.org/10.1097/GME.0000000000002249>
- Kwak, E. K., Park, H. S., & Kang, N. M. (2014). Menopause Knowledge, Attitude, Symptom and Management among Midlife Employed Women. *Journal of Menopausal Medicine, 20*(3), 118–125. <https://doi.org/10.6118/jmm.2014.20.3.118>
- Kwok, T. C., Lam, K., Wong, P., Chau, W., Yuen, K. S., Ting, K., Chung, E. W., Li, J. C., & Ho, F. K. (2011). Effectiveness of coordination exercise in improving cognitive function in older adults: A prospective study. *Clinical Interventions in Aging, 6*, 261–267. <https://doi.org/10.2147/CIA.S19883>

- Kwon, J. H., Moon, K. M., & Min, K.-W. (2020). Exercise-Induced Myokines can Explain the Importance of Physical Activity in the Elderly: An Overview. *Healthcare*, 8(4), 378. <https://doi.org/10.3390/healthcare8040378>
- Lau, C., Yu, R., & Woo, J. (2015). Effects of a 12-Week Hatha Yoga Intervention on Cardiorespiratory Endurance, Muscular Strength and Endurance, and Flexibility in Hong Kong Chinese Adults: A Controlled Clinical Trial. *Evidence-Based Complementary and Alternative Medicine : eCAM*, 2015, 958727. <https://doi.org/10.1155/2015/958727>
- Li, Q. (2022). The Effects of Yoga Exercise on Pelvic Floor Rehabilitation of Postpartum Women. *Journal of Healthcare Engineering*, 2022, 1–16. <https://doi.org/10.1155/2022/1924232>
- Life Expectancy by Country and in the World (2024)—Worldometer*. (n.d.). Retrieved March 17, 2024, from <https://www.worldometers.info/demographics/life-expectancy/>
- Liu, K. A., & Mager, N. A. D. (2016). Women’s involvement in clinical trials: Historical perspective and future implications. *Pharmacy Practice*, 14(1), 708. <https://doi.org/10.18549/PharmPract.2016.01.708>
- Liu, N., Yang, H., Han, L., & Ma, M. (2022). Oxytocin in Women’s Health and Disease. *Frontiers in Endocrinology*, 13, 786271. <https://doi.org/10.3389/fendo.2022.786271>
- Louis, A. (2018, April 2). *Yoga Meets Therapy: How to Incorporate Pratipaksha Bhavanam Into Your Life*. Inner Fokus. <https://innerfokus.com/blog-pratipakshabhavanam/>
- Lu, Y.-H., Rosner, B., Chang, G., & Fishman, L. M. (2016). Twelve-Minute Daily Yoga Regimen Reverses Osteoporotic Bone Loss. *Topics in Geriatric Rehabilitation*, 32(2), 81–87. <https://doi.org/10.1097/TGR.0000000000000085>
- Malhotra, V., Javed, D., Wakode, S., Bharshankar, R., Soni, N., & Porter, P. K. (2022). Study of immediate neurological and autonomic changes during kapalbhathi pranayama in

yoga practitioners. *Journal of Family Medicine and Primary Care*, 11(2), 720–727.

https://doi.org/10.4103/jfmprc.jfmprc_1662_21

Manjunath, N. K., & Telles, S. (2003). Effects of sirasana (headstand) practice on autonomic and respiratory variables. *Indian Journal of Physiology and Pharmacology*, 47(1), 34–42.

Manjunath, N. K., & Telles, S. (2005). Influence of Yoga and Āyurveda on self-rated sleep in a geriatric population. *The Indian Journal of Medical Research*, 121(5), 683–690.

Menopause Diagnosis and Management. (2019, December 5). *National Institution for Health and Care Excellence*.

<https://www.nice.org.uk/guidance/ng23/chapter/Recommendations#managing-short-term-menopausal-symptoms>

Micha, J. P., Rettenmaier, M. A., Bohart, R. D., & Goldstein, B. H. (2022). Hormone Therapy and Risk of Breast Cancer: Where Are We Now? *Journal of Menopausal Medicine*, 28(2), 47–51. <https://doi.org/10.6118/jmm.21035>

Mittelmark, M. B., & Bauer, G. F. (2017). The Meanings of Salutogenesis. In M. B. Mittelmark, S. Sagy, M. Eriksson, G. F. Bauer, J. M. Pelikan, B. Lindström, & G. A. Espnes (Eds.), *The Handbook of Salutogenesis*. Springer.

<http://www.ncbi.nlm.nih.gov/books/NBK435854/>

Motorwala, Z., Kolke, S., Panchal, P., Bedekar, N., Sancheti, P., & Shyam, A. (2016). Effects of Yogasanas on osteoporosis in postmenopausal women. *International Journal of Yoga*, 9(1), 44. <https://doi.org/10.4103/0973-6131.171717>

Muktibodhananda Saraswati, & Satyānanda. (2011). *Hatha Yoga pradiipika* (Repr). Yoga Publ. Trust.

Muliira, R. (2013). *Review of literature on distress during the menopausal transition and their impact on the quality of life of women*. 2(4).

- Nall, R. (2020). *MedicalNewsToday*. *What are the vasomotor symptoms of menopause?*
<https://www.medicalnewstoday.com/articles/317801>
- Newton, K. M., Reed, S. D., Guthrie, K. A., Sherman, K. J., Booth-LaForce, C., Caan, B., Sternfeld, B., Carpenter, J. S., Learman, L. A., Freeman, E. W., Cohen, L. S., Joffe, H., Anderson, G. L., Larson, J. C., Hunt, J. R., Ensrud, K. E., & LaCroix, A. Z. (2014). Efficacy of yoga for vasomotor symptoms: A randomized controlled trial. *Menopause*, *21*(4), 339–346. <https://doi.org/10.1097/GME.0b013e31829e4baa>
- Nishimi, K., Thurston, R. C., Chibnik, L. B., Roberts, A. L., Sumner, J. A., Lawn, R. B., Tworoger, S. S., Kim, Y., Koenen, K. C., & Kubzansky, L. D. (2022). Posttraumatic stress disorder symptoms and timing of menopause and gynecological surgery in the Nurses' Health Study II. *Journal of Psychosomatic Research*, *159*, 110947.
<https://doi.org/10.1016/j.jpsychores.2022.110947>
- Okeke, T., Anyaehie, U., & Ezenyeaku, C. (2013). Premature Menopause. *Annals of Medical and Health Sciences Research*, *3*(1), 90–95. <https://doi.org/10.4103/2141-9248.109458>
- OlaOlorun, F. M., & Shen, W. (2020). Menopause. In F. M. OlaOlorun & W. Shen, *Oxford Research Encyclopedia of Global Public Health*. Oxford University Press.
<https://doi.org/10.1093/acrefore/9780190632366.013.176>
- Ozbay, F., Johnson, D., Dimoulas, E., Morgan, C., Charney, D., & Southwick, S. (2007). Social support and resilience to stress: From neurobiology to clinical practice. *Psychiatry (Edgmont (Pa. : Township))*, *4*, 35–40.
- Patanjali. (n.d.). *Yoga Sutra*.
- Pearson, N., Prosko, Shelly, & Sullivan, Marlysa (Eds.). (2019). *Yoga and science in pain care: Treating the person in pain*. Singing Dragon.
- Perry, S. (2017, June 9). <https://www.gennev.com/education/women-menopause-ptsd>.

- Perry, Shannon. (2020, February 19). *PTSD and menopause*.
<https://www.gennev.com/education/ptsd-menopause-symptoms>
- Piccirillo, R. (2019). Exercise-Induced Myokines With Therapeutic Potential for Muscle Wasting. *Frontiers in Physiology*, 10, 287. <https://doi.org/10.3389/fphys.2019.00287>
- Porges, S. W. (1995). Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A Polyvagal Theory. *Psychophysiology*, 32(4), 301–318.
<https://doi.org/10.1111/j.1469-8986.1995.tb01213.x>
- Porges, S. W. (2011). *The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation* (1st ed). W. W. Norton.
- Porges, S. W. (2006, February 1). *The Polyvagal Perspective—PMC*.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1868418/#R95>
- Raise-Abdullahi, P., Meamar, M., Vafaei, A. A., Alizadeh, M., Dadkhah, M., Shafia, S., Ghalandari-Shamami, M., Naderian, R., Afshin Samaei, S., & Rashidy-Pour, A. (2023). Hypothalamus and Post-Traumatic Stress Disorder: A Review. *Brain Sciences*, 13(7), 1010. <https://doi.org/10.3390/brainsci13071010>
- Raj, M., Atkins, M., Balasubramanian, S., Banks-Harold, M. D., Bar, J., Bethel, K., Blashki, L., & Butler-Robinson, C. D. (2021). *Yoga therapy: Foundations, tools, and practice : a comprehensive textbook* (D. Finlayson & L. C. Hyland Robertson, Eds.; 1 [edition]). Singing Dragon.
- Rathore, M., Verma, M., Nirwan, M., Trivedi, S., & Pai, V. (2022). Functional Connectivity of Prefrontal Cortex in Various Meditation Techniques – A Mini-Review. *International Journal of Yoga*, 15(3), 187–194.
https://doi.org/10.4103/ijoy.ijoy_88_22
- Riggins Nwadike Valinda. (2020, February 27). *Surgical Menopause*. Healthline.
<https://www.healthline.com/health/surgical-menopause>

- Rizq, R. (2017). Its all part of the big change: A grounded theory study of women's identity during menopause. *Journal of Psychosomatic Obstetrics & Gynecology*.
- Rowson, Tatiana. (2023, October). *Menopause has a PR problem*. Henley Business School. <https://www.henley.ac.uk/news/2023/menopause-has-a-pr-problem>
- Sanjay, P. (n.d.). *Acharya Vagbhata's Astanga Hridayam Vol-1: The Essence of Āyurveda (ashtanga Hridayam Series)*. Biblio.Com.Au. Retrieved March 3, 2024, from <https://biblio.com.au/book/acharya-vagbhatas-astanga-hridayam-vol-1/d/1379874082>
- Schwartz, A. (2017, December 21). *Vagus Nerve Yoga for Balance | Dr. Arielle Schwartz*. Arielle Schwartz, PhD. <https://drarielleschwartz.com/vagus-nerve-yoga-dr-arielle-schwartz/>
- Scisciola, L., Fontanella, R. A., Surina, Cataldo, V., Paolisso, G., & Barbieri, M. (2021). Sarcopenia and Cognitive Function: Role of Myokines in Muscle Brain Cross-Talk. *Life*, 11(2), 173. <https://doi.org/10.3390/life11020173>
- Shepherd-Banigan, M., Goldstein, K. M., Coeytaux, R. R., McDuffie, J. R., Goode, A. P., Kosinski, A. S., Van Noord, M. G., Befus, D., Adam, S., Masilamani, V., Nagi, A., & Williams, J. W. (2017). Improving vasomotor symptoms; psychological symptoms; and health-related quality of life in peri- or post-menopausal women through yoga: An umbrella systematic review and meta-analysis. *Complementary Therapies in Medicine*, 34, 156–164. <https://doi.org/10.1016/j.ctim.2017.08.011>
- Shifren, J. L., & Gass, M. L. S. (2014). The North American Menopause Society Recommendations for Clinical Care of Midlife Women. *Menopause*, 21(10), 1038–1062. <https://doi.org/10.1097/GME.0000000000000319>
- Shifroni, E. (2021, June 15). *The kleshas, dukkha, and samsara*. <https://eyalshifroni.com/blog/the-kleshas-dukkha-and-samsara/>

- Sood, R., Kuhle, C. L., Kapoor, E., Thielen, J. M., Frohmader, K. S., Mara, K. C., & Faubion, S. S. (2019). Association of mindfulness and stress with menopausal symptoms in midlife women. *Climacteric*, 22(4), 377–382.
<https://doi.org/10.1080/13697137.2018.1551344>
- Stute, P., & Lozza-Fiacco, S. (2022). Strategies to cope with stress and anxiety during the menopausal transition. *Maturitas*, 166, 1–13.
<https://doi.org/10.1016/j.maturitas.2022.07.015>
- Sullivan, M., & Hyland Robertson, L. C. (2020). *Understanding Yoga Therapy: Applied Philosophy and Science for Health and Well-Being* (1st ed.). Routledge.
<https://doi.org/10.4324/9780429507243>
- Sung, M.-K., Lee, U. S., Ha, N. H., Koh, E., & Yang, H.-J. (2020). A potential association of meditation with menopausal symptoms and blood chemistry in healthy women. *Medicine*, 99(36), e22048. <https://doi.org/10.1097/MD.00000000000022048>
- Sweta, K. M., Godbole, A., Awasthi, H. H., & Pandey, U. (2018). Effect of Mula Bandha Yoga in Mild Grade Pelvic Organ Prolapse: A Randomized Controlled Trial. *International Journal of Yoga*, 11(2), 116–121.
https://doi.org/10.4103/ijoy.IJOY_32_17
- Telles, S., & Singh, N. (Eds.). (2018). *Research-Based Perspectives on the Psychophysiology of Yoga*: IGI Global. <https://doi.org/10.4018/978-1-5225-2788-6>
- Telles, S., Singh, N., & Balkrishna, A. (2011). Heart rate variability changes during high frequency yoga breathing and breath awareness. *BioPsychoSocial Medicine*, 5(1), 4.
<https://doi.org/10.1186/1751-0759-5-4>
- Thurston, R. C. (2024). Trauma and its implications for women's cardiovascular health during the menopause transition: Lessons from MsHeart/MsBrain and SWAN studies. *Maturitas*, 182. <https://doi.org/10.1016/j.maturitas.2024.107915>

- Tripathi, by D. B. (2005). *Ashtanga Hridayam*. Chaukhambha.
- Tyagi, A., & Cohen, M. (2016). Yoga and heart rate variability: A comprehensive review of the literature. *International Journal of Yoga*, 9(2), 97–113.
<https://doi.org/10.4103/0973-6131.183712>
- Undiyaundeye, F. A. (2013). Menopause in women: implications for counselling. *Global Advanced Research Journal of Educational Research and Review*.
- Women with symptoms of menopause should not suffer in silence. (2015, November 12).
NICE National Institute for Care and Health Excellence.
<https://www.nice.org.uk/news/article/women-with-symptoms-of-menopause-should-not-suffer-in-silence>
- Woods, N. F., Mitchell, E. S., Schnall, J. G., Cray, L., Ismail, R., Taylor-Swanson, L., & Thomas, A. (2014). Effects of mind-body therapies on symptom clusters during the menopausal transition. *Climacteric: The Journal of the International Menopause Society*, 17(1), 10–22. <https://doi.org/10.3109/13697137.2013.828198>
- Woodyard, C. (2011). Exploring the therapeutic effects of yoga and its ability to increase quality of life. *International Journal of Yoga*, 4(2), 49–54.
<https://doi.org/10.4103/0973-6131.85485>
- Wu, J., Liu, Y., Song, Y., Wang, L., Ai, J., & Li, K. (2022). Aging conundrum: A perspective for ovarian aging. *Frontiers in Endocrinology*, 13.
<https://www.frontiersin.org/articles/10.3389/fendo.2022.952471>
- Yamamoto, K., Kawano, H., Gando, Y., Iemitsu, M., Murakami, H., Sanada, K., Tanimoto, M., Ohmori, Y., Higuchi, M., Tabata, I., & Miyachi, M. (2009). Poor trunk flexibility is associated with arterial stiffening. *American Journal of Physiology. Heart and Circulatory Physiology*, 297(4), H1314-1318.
<https://doi.org/10.1152/ajpheart.00061.2009>

Yazdkhasti, M., Keshavarz, M., Khoei, E. M., Hosseini, A., ESmaeilzadeh, S., Pebdani, M. A., & Jafarzadeh, H. (2012). The Effect of Support Group Method on Quality of Life in Post-menopausal Women. *Iranian Journal of Public Health*, 41(11), 78–84.

Appendices

Appendix A: Menopause Rating Scale

Menopause Rating Scale (MRS)

Which of the following symptoms apply to you at this time? Please, mark the appropriate box for each symptom. For symptoms that do not apply, please mark 'none'.

Symptoms:	<div style="display: flex; justify-content: space-between; width: 100%;"> none mild moderate severe very severe </div> <div style="display: flex; justify-content: space-between; width: 100%; border-top: 1px dashed black; margin-top: 5px;"> </div>				
	Score =	0	1	2	3
1. Hot flushes, sweating (episodes of sweating).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Irritability (feeling nervous, inner tension, feeling aggressive).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Anxiety (inner restlessness, feeling panicky).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Sexual problems (change in sexual desire, in sexual activity and satisfaction).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Joint and muscular discomfort (pain in the joints, rheumatoid complaints).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B: A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy Assessment Survey

A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy Assessment Survey



Please rate between 1-5. 1 is the lowest. 5 is the highest.
Please feel free to answer as well in your own words.

Before participating in this program:

1) How much did you know about menopause in general?

1	2	3	4	5
---	---	---	---	---

2) How much did you know what is the cause of your specific symptom/s and how to manage it/them?

1	2	3	4	5
---	---	---	---	---

3) Did you discuss your symptoms with your doctor? Yes/No

4) Did your doctor provide satisfactory information and solutions? Yes/No

5) Did you seek solutions for your symptoms elsewhere? Yes/No

If so, where? Was it helpful? Please describe.

6) Did you practice yoga? Yes/No.

If so, how often and which kind?

After completing this program:

7) How much do you know about menopause?

1	2	3	4	5
---	---	---	---	---

8) How much do you know about your specific menopausal symptom/s?

1	2	3	4	5
---	---	---	---	---

9) Was the program helpful to you? Yes/No.

If so, please describe in what way.

10) Did you enjoy the program? Yes/No.

If yes, what did you enjoy about it?

11) Was the program helpful to you in dealing with your menopausal symptoms? Yes/No

Please describe what symptoms you had when entering the program and how the program helped with these symptoms.

12) Do you feel the program was empowering to you? Yes/No. If so, in what way?

13) What information in the program did you find beneficial? Please describe.

14) Was there anything else you would like to have addressed in the program in order to better support you through menopause?

15) Has your quality of life improved since beginning and completing the program? Yes/No
Please explain in what ways.

16) Are there any practices you plan to continue after the program? Yes/No
Please describe.

17) Have any of your symptoms improved during the program? Yes/No. If so, which?

18) Would you recommend this program to others? Yes/No.

- Thank you for your participation in the program and for completing this survey.

Yours,
Donna

Appendix C: A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy Initial Screening of Participants

A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy

Initial Screening of Participants



As part of my Master's Thesis research I am conducting an eight-week in-person group Yoga Therapy program to provide perimenopausal and menopausal women with education and yoga practices to improve health and well-being and manage symptoms of menopause. Sessions will be conducted at my yoga studio. Each session will last ninety minutes and will include education, movement, breathing and meditation practices. If you are currently experiencing symptoms of menopause and are medically stable, you qualify for this program. Expectations include attending at least seven of the eight sessions and maintaining confidentiality of the other group participants. If you are interested, we will schedule a private session with me prior to the start of the program wherein you will be receiving more information about the program and have the opportunity to ask me questions about it in person. You will be asked to complete written forms which include an informed consent form, a yoga therapy consent form, a confidentiality agreement, a subjective intake questionnaire, a Menopause Rating Scale (MRS) and a Brief Resilience Coping Scale (BRCA). The data will be anonymized for use in my master's thesis. Do you have any questions regarding this? Would you be interested in participating in the program?

Donna Rachlin

Appendix D: Loyola Marymount University – Informed Consent Form

Loyola Marymount University- Informed Consent Form

TITLE: A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy

INVESTIGATOR: Donna Rachlin, Yoga Studies Master's Program, LMU, [REDACTED]
[REDACTED]

ADVISOR: Dr. Lori Rubenstein Fazzio, lori.fazzio@lmu.edu

PURPOSE: You are being asked to participate in a research project that seeks to investigate menopausal symptoms, to provide education about menopause and to enhance well-being during menopause with yoga therapy. You will be asked to fill out questionnaires, to participate in open discussion and lectures, to participate in postural yoga practice, breathing exercises, and meditative practices.

RISKS: Risks associated with this study include: Due to the group nature of this program, risks may include embarrassment, fear or privacy concerns. You will receive information about the nature of the program in advance. You will not be forced to participate in any activity that feels uncomfortable for you-whether it is discussion or practice. I will always suggest modifications and encourage you to listen to your inner voice and needs. All participants will sign a consent form and agreement to maintain the privacy of the other participants. Tolerance, kindness, attentiveness, and non-judgement are integral to this program.

BENEFITS: Benefits include attaining education about menopause, creating a safe space for women to come together for heart to heart talk about menopause and mutual support, enhancing well-being with suitable physical exercises and breathing exercises, promoting a healthy attitude, empowerment, social connectedness, learning about yoga therapy and its benefits in alleviating menopausal symptoms

INCENTIVES: You will receive no gifts/incentives for this study.

CONFIDENTIALITY: The participants in the program will all be acquainted with one another by name. The meetings are all in person and the connectedness between all participants is important and a vital component of the program. In the first meeting, expectations for confidentiality will be discussed. What goes on in the room stays in the room. This is in everyone's best interest. It will be established through mutual trust and no papers of confidentiality will be signed by them. I will keep all materials in my computer with a passcode. Your name will never be used in any public dissemination of these data (publications, presentations, etc. All of the information you

provide will be kept confidential, Confidentiality cannot be guaranteed in a group setting; however, I ask all participants to respect other participant's privacy and keep all information shared confidential.

RIGHT TO WITHDRAW: Your participation in this study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled, your class standing or relationship with Loyola Marymount University.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request. My e-mail is [REDACTED]. My phone number is [REDACTED]. I predict that a summary of the results will be available by June 2023.

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. If the study design or use of the information is changed I will be informed and my consent reobtained. On these terms, I certify that I am willing to participate in this research project.

I understand that if I have any further questions, comments or concerns about the study or the informed consent process, I may contact Dr. David Moffet, Chair, Institutional Review Board, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045-2659 or by email at David.Moffet@lmu.edu

Participant's Signature

Date

Appendix E: Yoga Therapy Consent and Release Agreement

YOGA THERAPY CONSENT AND RELEASE AGREEMENT

In consideration of receiving services rendered by (Practitioner's name):
 _____, heretofore known as "Practitioner".

I hereby declare as follows:

That my true and legal name is signed below and not otherwise.

That Practitioner has informed me, and I am aware, that s/he is a student in the Loyola Marymount University Post Graduate Certificate in Yoga Therapy program and that s/he is receiving supervision of her/his practice sessions. That supervision includes submission of written reports of these practice sessions. I have been informed that it is my right to request use of my initials or a pseudonym in that report.

That Practitioner is not licensed under laws of California to practice any form of medicine.

That s/he has stated s/he will neither diagnose nor prescribe for any condition or problem from which I may appear to be suffering.

That I understand Practitioner practices Yoga Therapy. Sessions may include breathing exercises, meditation, yoga philosophy education, chanting, visualization, guided imagery and other practices of Yoga. Gentle touch may be incorporated for safety or facilitation. I reserve the right to refuse such touch at any time. I understand that Yoga Therapy is not a substitute for medical treatment. I understand that Yoga Therapy includes exercises, movement, stretching, certain positions, and other physical exertions, and that these exertions come with bodily risk. The risks include, but are not limited to, strained muscles or ligaments, joint pain, lower back injury, and bruising.

I warrant and believe that I have no physical or mental impairments that will preclude me from engaging in these activities. I acknowledge that it is my responsibility to maintain adequate health insurance in the event I suffer an injury and that Practitioner or LMU is in no way financially responsible for any injuries I incur.

Practitioner has informed me, and I understand that no guarantee or promises of cures have or will be made to me and that any benefits which I experience come from within my own awareness and self-knowledge.

That I am 21 years of age or older or have the signature below of my Legal Guardian.

In consideration of being allowed to participate in the activity I hereby agree as follows:

TO WAIVE ANY AND ALL CLAIMS for personal injury including death, illness, and/or property damage that I may have against Practitioner and LMU hereinafter collectively referred to as "the Releasees".

TO RELEASE THE RELEASEES FROM ANY AND ALL LIABILITY for any loss, damage, injury, death, medical or other expense that I may suffer or that any other party may suffer as a result of my participation in the activity.

THIS RELEASE OF LIABILITY SHALL BE EFFECTIVE AND BINDING upon my heirs, next of kin, executors, administrators, successors, and assigns in the event of my personal injury, including death, illness, and/or property damage.

DATE: _____

SIGNATURE: _____

NAME (Please Print): _____

ADDRESS: _____

CITY, STATE, ZIP: _____

TELEPHONE: _____

Appendix F: Confidentiality Agreement



Confidentiality Agreement

A Salutogenic Program for Menopause- Enhancing Well-Being with Yoga Therapy

This form is a confidentiality agreement. As a candidate of this program for menopause, the following information must be agreed and adhered to in order to participate in it:

- You are participating in this group voluntarily.
- Sharing of information is also voluntary.
- The group format involves sharing information to help yourself and others in the group.
- You may choose to share as much or as little as you feel comfortable with during each session.
- Any information shared by you and others is confidential.
- Do not share this information outside of the group setting, except in an individual meeting with your group leader.
- As a participant, you agree to not disclose any information to those outside of the group that may reasonably be used to identify another member of the group.

Please confirm that you've read the confidentiality agreement and agree with its terms:

- Yes, I agree.
- No, I disagree.

Participant's name: _____

Participant's signature: _____

Appendix G: Yoga Therapy Client Intake Form- Confidential Information



Yoga Therapy Client Intake Form- Confidential Information

The Greatest Wealth is Health

Welcome! This confidential information will help me become aware of your specific needs when we work together. If you feel uncomfortable answering any of the questions please feel free not to answer them. Thank you!

Name:

Date:

Address:

Telephone:

Emergency Contact (name and phone):

E-mail:

Age:

Occupation:

Lifestyle:



Hobbies:

Favorite pastime:

Fitness (what type and how often):

Diet:

Smoking (if yes how much and how often?): Yes/ No

Alcohol (if yes how much and how often?): Yes/ No

Medications (if yes how much and how often?): Yes/ No

Sleep habits:

Anything else regarding lifestyle you would like to add:



Personal Information (so I may get to know you better):

Meaningful relationships (spouse, partner, friends, children and more):

Things that give you pleasure and relief:

Things that cause you stress and discomfort:

Anything else personal you would like to share:



Health Information

To the best of your knowledge do you have or have you had:

High blood pressure Yes/ No

Low blood pressure Yes/ No

Heart problems Yes/ No

Glaucoma Yes/ No

Seizures Yes/ No

Diabetes Yes/ No

Rheumatoid arthritis Yes/ No

Osteoarthritis Yes/ No

Anemia Yes/ No

Asthma Yes/ No

Other breathing problems Yes/ No

Dizziness, vertigo or loss of balance Yes/ No

Unexplained falls or fractures Yes/ No

Hernia/rupture Yes/ No

Unstable joint(s) Yes/ No

Joint swelling Yes/ No

Joint dislocation Yes/ No

Bladder or bowel control problems Yes/ No

Pinched nerves or disc problems Yes/ No

Cancer Yes/ No

Osteoporosis Yes/ No

Broken bones Yes/ No

Allergies Yes/ No

Neurological diseases Yes/ No

Headaches Yes/ No

Vision difficulties Yes/ No

Chest pain Yes/ No

Shortness of breath Yes/ No

Night sweats Yes/ No

Back problems Yes/ No

Sciatica Yes/ No

Chronic fatigue Yes/ No

Hypoglycemia Yes/ No

Fibromyalgia Yes/ No

Auto accidents (if yes please explain) Yes/ No

Major surgeries (if yes please explain) Yes/ No

Other chronic conditions (if yes please explain) Yes/ No

Recent surgeries (if yes please explain) Yes/ No

Women only-

Hysterectomy Yes/ No

Menopausal challenges Yes/ No

Caesarian delivery Yes/ No

Early termination of menses Yes/ No

Are you pregnant? Yes/ No

Irregular periods? Yes/ No

Any other OBGYN concerns or ailments (if yes please explain) Yes/ No

Yoga History



What is your experience with Yoga, meditation or other spiritual practices?

How often do you practice and is your practice regular?

What have you found most beneficial from these practices?

What have you found most difficult or challenging?

What are your goals for yoga Therapy?

What aspects of your life would you like tending to in yoga therapy?

Appendix H: Brief Resilient Coping Scale

BRIEF RESILIENT COPING SCALE

© Sinclair and Wallston, 2004

<i>BRCS Instructions:</i> <i>Consider how well the following statements describe your behavior and actions.</i>	(1) Does not describe me at all	(2) Does not describe me	(3) Neutral	(4) Describes me	(5) Describes me very well
I look for creative ways to alter difficult situations.					
Regardless of what happens to me, I believe I can control my reaction to it.					
I believe I can grow in positive ways by dealing with difficult situations.					
I actively look for ways to replace the losses I encounter in life.					

Sinclair, V. G., & Wallston, K.A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*, 11 (1), 94-101. <https://www.ncbi.nlm.nih.gov/pubmed/14994958>

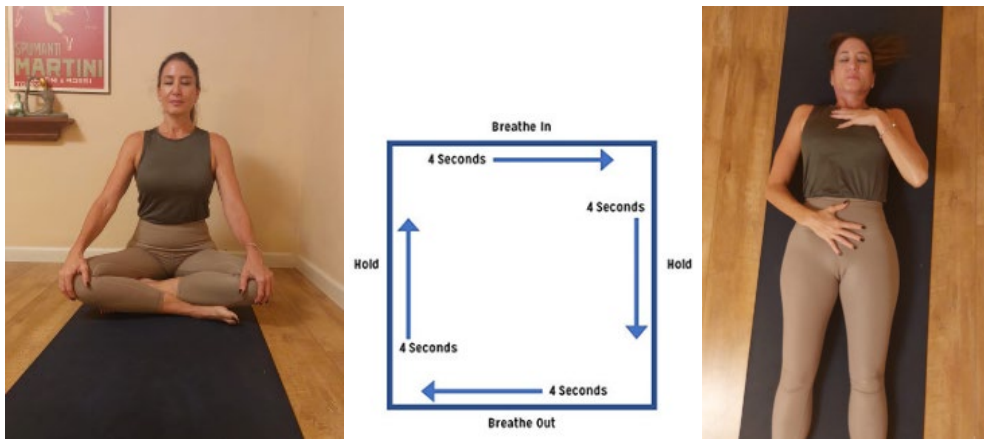
An online, self-scoring version is available at: <https://www.psytoolkit.org/survey-library/resilience-brcs.htm#> (You will need to scroll down and click "run the demo" to access the online test.)

BRCS Interpretation	Score range
Low resilient copers	4-13 points
Medium resilient copers	14-16 points
High resilient copers	17-20 points

Appendix I: How to Practice *Prāṇāyāma*

How to Practice *Prāṇāyāma*

How to practice Count/ Ratio Breathing



You may choose to either sit or lie on your back. Close your eyes to increase interoception, or keep them open, gazing at one point, if closing your eyes makes you feel uncomfortable or even anxious.

If you sit, it is advised to sit on a cushion or on a yoga block (sitting on a chair is also an option), with a neutral spine, so your respiratory diaphragm and your pelvic floor diaphragm are stacked. Place your hands on your legs, relaxing the shoulders.

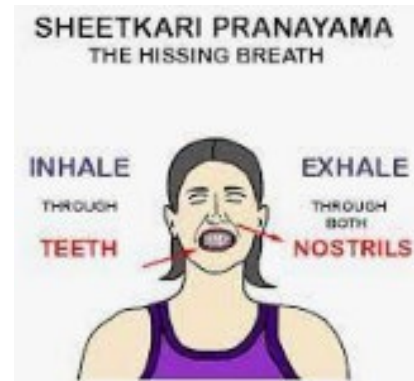
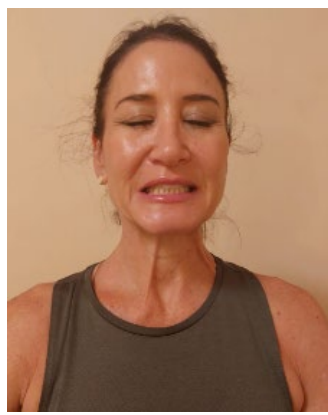
If you lie on your back, place one hand on your belly and the other hand on your chest. The advantages of lying on your back in this manner are: 1) relaxation- giving into gravity 2) the hands will enhance interoception, receiving feedback from the chest and the belly to focus on diaphragmatic-belly breathing.

Inhale slowly through the nose, pause at the end of the inhalation, exhale through the nose, pause at the end of the exhalation. Focus on a count that you feel comfortable with. You may start with Box Breathing of 4 counts for each of the four parts of breathing or create a different ratio, preferably extending the exhalation.

Notice the movement of your belly under your hand. Imagine the diaphragm descending towards the belly, pressing gently against your internal organs, massaging them and causing them to move a bit sideways and forward. As you exhale, notice your belly sinking towards the back. Imagine your diaphragm ascending towards your thorax, alleviating the pressure from your internal organs, which are now moving back to their original place.

If you have an *Ujjayi* breath practice you may use it to increase interoception, concentration and relaxation.

How to Practice *Sheetkari Prāṇāyāma*



1. Sit in a comfortable seated position with palms on the knees. It is advised to sit on a cushion or on a yoga block (sitting on a chair is also an option), with a neutral spine, so your respiratory diaphragm and your pelvic floor diaphragm are stacked. Place your hands on your legs, relaxing the shoulders.
2. Roll the tongue upwards so that the lower part of the tongue touches the upper palate.
3. Clench the teeth together. Pull the lips apart so that the teeth are exposed.
4. Breathe in slowly. First fill the abdomen, then the chest and finally the neck region. This is the complete yogic breath. When breathing in, a slight hissing sound is produced. This is similar to the hissing of a snake.
5. Bend the neck forward to do the chin lock, also called the *Jalandhara Bandha*.
6. Hold the breath for some time, as much as you are comfortable.
7. Release *Jalandhara Bandha* and exhale slowly through the nose.
8. This is one round of *Sheetkari prāṇāyāma*. One can do as many rounds as you may feel comfortable. This breath is cooling, it focuses the mind and brings about a relaxation.

How to practice *Kapalbhati Prānāyāma*

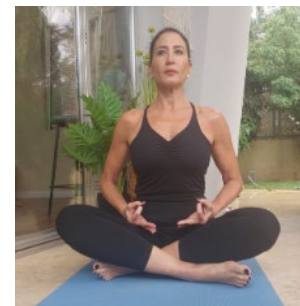


1. **Posture-** Assume half bridge pose (*Setu Bandhasana*)- unsupported half-bridge or supported half-bridge using a yoga block or a bolster. This position is intended to alleviate pressure from the PF in *Kapalbhati pranayama* in a way that the pelvic organs are moved away from the PF openings
2. **Inhalation-** Inhale deeply and calmly with both nostrils until your lungs are filled with air. Focus on your abdominal region while doing this.
3. **Exhalation-** Pull in your stomach such that you bring your navel as close as possible to your spine. Focus on *Mula Bandha*, the root lock- Closing the PF openings, and lifting the pelvic floor muscles upwards towards the chest. Now inhale and relax from this contraction. Begin to exhale rhythmically with a short burst, following this up with an automatic, immediate inhalation. As you release your abdomen, you will be able to feel your lungs filling up with air. It is advised that women in menopause do not practice this rapidly and forcefully as is done in the traditional way, but rather in a pace and volume that is personally suitable for themselves.
4. **Repeat and Meditate-** When beginning this practice start with 10 repetitions. You may gradually progress to 20-40 repetitions. Rest for a while after this, hugging your knees to your chest and then lying in *Shavasana*, meditating and relaxing.

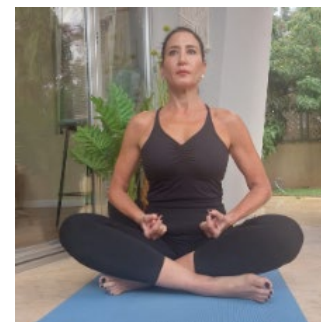
Appendix J: Mantra- Vocalization Practice for Addressing Menopausal Symptoms

Mantra- Vocalization Practice for Addressing Menopausal Symptoms

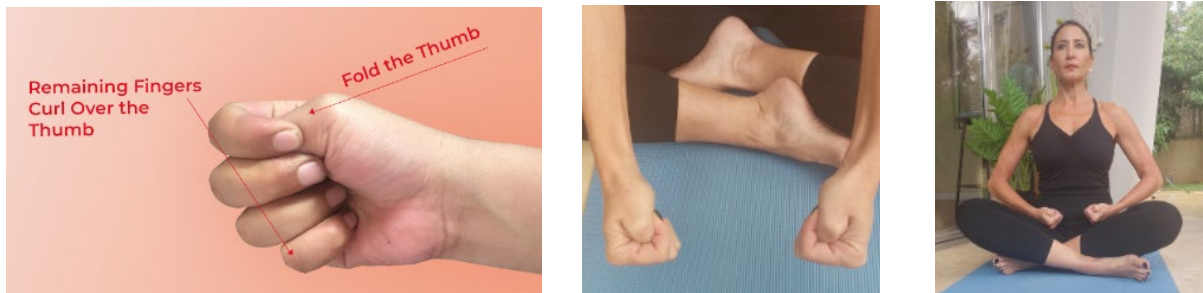
Sitting in a comfortable position (such as *padmasana*, *sidhasana*, *swastikasana*, *vajrasana*) with a neutral spine, preferably in an agreeable space where *prana* is present in abundance and peace of mind can be achieved. Close your eyes and bring your awareness to your breath.



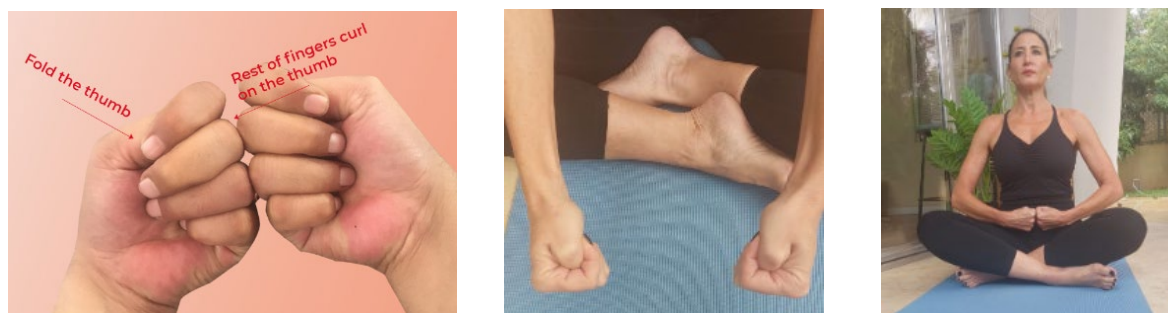
Place your hands on your thighs by your groin in **Gyan Mudra** (the *mudra* of wisdom)- fold your index finger and tap the tip of the index finger to the tip of the thumb. The rest of the three fingers should be kept extended as much as possible. Inhale deeply and **chant 'A'**-extending the sound comfortably without strain. Focus on the **upper part of your lungs** as you chant. Perform these three times.



Place your hands on your thighs by your groin in **Chinmaya Mudra** (the *mudra* of awareness)- fold your index finger, press it with your thumb. The rest of the three fingers (middle, ring and small) should be curled into your palms. Inhale deeply and **chant 'U'**- extending the sound comfortably without strain. Focus on the **middle part of your lungs** as you chant. Perform these three times.



Place your hands on your thighs by your groin in **Adhi Mudra** (the *mudra* of energy regulation)- fold your thumb and place at the base of the small finger. The remaining fingers curl over the thumb, putting pressure over the outer thumb and making a gentle fist. Inhale deeply and **chant 'M'** extending the sound comfortably without strain. Focus on the **lower part of your lungs** as you chant. Perform these three times.



Place your hands in **Brahma Mudra** (the energy seal mudra)- fold your thumb and place at the base of the small finger. The remaining fingers curl over the thumb, putting pressure over the outer thumb and making a gentle fist. Join both fists so that the palms are facing skyward. Inhale deeply and **chant 'AUM'** -extending the sound comfortably without strain. Focus on **your entire lungs, visualizing the breath moving from the lower to the middle and to the upper lungs** as you can. '**A, U, M**'. Perform these three times.

Appendix K: *Āsana* Practice for Menopause

Āsana Practice for Menopause

अथ आसनम्।

हठस्य प्रथमाङ्गत्वादासनं पूर्वमुच्यते।
कुर्यात्तदासनं स्थैर्यमारोग्यं चाङ्गलाघवम्॥१७॥

Atha āsanam |

Haṭhasya prathamāṅgatvādāsanam pūrvamucyate |
Kuryāttadāsanam sthairyamārogyam cāṅgalāghavam || 17 ||

And now *Āsana* or Posture:

Āsana or Posture is described in the first place inasmuch as it is the first limb or step. Therefore, *āsana* which gives steadiness and firmness, health and bodily lightness, should be performed ||17||

(*Hatha Yoga Pradipika* 17)

यमनियमासनप्राणायामप्रत्याहारधारणाध्यानसमाधयोऽष्टावङ्गानि

yama niyama āsana praṇayama pratyahara dharana dhyana samadhayo- ashtavangani

(*Yoga Sutra* 2.29)

According to Patanjali the eight limbs of yoga are: 1) Self -restraint 2) observances 3) posture-
āsana

4) breath control 5) withdrawal from the senses 6) concentration 7) meditation 8) *samadhi*-
meditative consciousness

Setubandhāsana a (Half Bridge Pose)- strengthening the back body- legs, buttocks and back. Preventing **sarcopenia** (degeneration of muscle mass and function) and improving **cognitive function** with myokines (Scisciola et al. 2021). Improving **bone density** with sufficient magnitude, rate and frequency of loading (Hong et al. 2018) mechanical loading.

A combination of holding the pose for 90--120 seconds (isometrically), and/or lowering and lifting the hips leg for 10-15 repetitions for 2-3 sets (isotonically) for muscle fatigue.

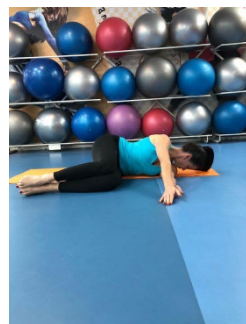
This pose takes weight and pressure off the pelvic organs and is appropriate for women with **pelvic floor prolapse**. *Sarvangāsana* (shoulder stand) and other inversions may serve for the same purpose.



Bandha Tria with pausing at the end of the exhalation (*Bahya Kumbhaka*) -enhances awareness, concentration, enhancing blood flow.



Jathara Parivartanāsana –revolving stomach pose- Shoulder and spine mobility; supine spinal rotation has a **calming effect** for many practitioners and contributes to parasympathetic arousal.



Mermaid Thread the Needle-shoulder and spine mobilization. Wrist movement (dorsal and palmar flexion) for **nerve gliding** of the Brachial Plexus (Ulnar, Radial and Median nerves)



Mermaid into Side Bend- weight bearing on hand to increase **bone density** in the wrist



Ardha Matsyendrāsana (open and closed rotation)- hip and spine flexibility, vagus nerve stimulation, visceral massage for the intestines to promote good digestion, bone density (Motorwala et al. 2016).



Dandāsana for core strength, rolling down to *Viparita Karani* to **enhance blood flow** from the periphery to the heart, **reduce swelling** in the hands and feet, promote **drainage of lymph**.

Viparita Karani (legs up against a wall) can be modified and done restoratively with resting the legs against the wall.



Half *śīrṣāsana* - half head stand- to **relieve stress and improve eyesight**. When you flip over your head, there is increase in intra **ocular pressure** (Baskaran et al. 2006); the head and eyes enjoy an increase in nutrient-rich blood, which may help the sensory organs to work properly. Whether *śīrṣāsana* is modified for progression (full head stand) or regression (supported or half *śīrṣāsana*), it results in immediate sympathetic activation evidenced by **HRV** changes when the pose is held for about two minutes (Manjunath & Telles 2003).



Adho Mukha Śvānāsana- downward facing dog- to improve strength and flexibility in the legs and shoulders, promote **bone density** in the wrists, relieve tension.



Eka Pada Adho Mukha Śvānāsana- same benefits as downward facing dog with the addition of hip mobility and balance.



Camatkārāsana / 'Wild Thing'- a challenging and empowering 'feel good' pose!!! This pose promotes secretion of '**happy hormones**' (as mentioned before) which decrease during menopause and accounts for many menopausal symptoms and diseases (Liu et al. 2022)



Utkaṭāsana -chair pose- Grounding and powerful! Leg and shoulder strength. Preventing **sarcopenia** (degeneration of muscle mass and function) and improving **cognitive function** with myokines (Scisciola et al. 2021). Improving **bone density** with sufficient magnitude, rate and frequency of loading (Hong et al. 2018) mechanical loading.

A combination of holding the pose for 90--120 seconds (isometrically), and/or flexing and extending the legs for 10-15 repetitions for 2-3 sets (isotonically) for muscle fatigue.



Virabhadrāsana II -warrior 2- Grounding and powerful! Leg and shoulder strength. Similar benefits as the preceding chair pose. A combination of holding the pose for 90--120 seconds (isometrically), and/or flexing and extending the front leg for 10-15 repetitions for 2-3 sets (isotonically) for muscle fatigue.



Ardha Chandrāsana -half- moon pose- for improving **balance** and total body strength. A woman in menopause experiences many changes that can easily throw her off balance, both mentally and physically (*anamaya and manamaya kosha*). Balancing poses such as half-moon, *vṛkṣāsana*/tree, eagle, *hasta padangustāsana*, etc. are beneficial for physical and mental wellness.



Prasarita Padottanāsana for flexibility of the back of the legs, the shoulders, and inversion benefits.



śavāsana- corpse pose- *śavāsana* is the restorative position often used at the end of yoga classes to help counteract the energy of the movements. It achieved by lying flat on your back, with your legs and arms slightly apart, your palms facing up. By practicing *śavāsana* a woman may achieve calm and peace.

She can surrender herself in a safe environment, letting down her guard, practicing being in the present and letting go of everything else. This pose increases **vagal tone** (Porges, 2017).

The effects of induces physiological stress are reversed in shorter time in *śavāsana* in comparison to other postures (Telles et al. 2018)



उत्तानं शववद्भूमौ शयनं तच्छवासनम्। शवासनं श्रान्तिहरं चित्तविश्रान्तिकारकम्॥३२॥
*Uttānam śavavadbhūmau śayanam tacchavāsanaṁ | Śavāsanaṁ śrāntiharam
 ittaviśrāntikāarakam || 32 ||*

Lying on the back, resting like a corpse on the ground; that is "the corpse posture - Śavāsana removes fatigue *and* brings about mental rest or repose (Hatha Yoga Pradipika 32)

- **Important note about the time of practice:**

Menopause is a transition from *pitta dosha* to *vata dosha*.

If a woman has excess *vata* (dryness, irritability, insecurity, etc.) it is recommended she practiced asana at noon. If a woman has *pitta* (hot flushes, anger, etc.) it is recommended she practiced in the morning (Telles & Singh, 2018).

Sources for Asana

- Artzi Padan, M. (2022). *Women's Voyage into Menopause, along with Yoga Nashit*.
- Baskaran, M., Raman, K., Ramani, K. K., Roy, J., Vijaya, L., & Badrinath, S. S. (2006). Intraocular Pressure Changes and Ocular Biometry during Sirsasana (Headstand Posture) in Yoga Practitioners. *Ophthalmology*, 113(8), 1327–1332. <https://doi.org/10.1016/j.ophtha.2006.02.063>
- Cavuoto, K. M. (2022, October 5). *Oculocardiac Reflex* [American Academy of Optolmology]. Eye Wiki. https://eyewiki.aao.org/Oculocardiac_Reflex#:~:text=First%20described%20in%201908%2C%20the,%2C%20globe%2C%20or%20conjunctiva.
- Lam, K.-C., Kwok, T., Mak, & Ho. (2011). Effectiveness of coordination exercise in improving cognitive function in older adults: A prospective study. *Clinical Interventions in Aging*, 261. <https://doi.org/10.2147/CIA.S19883>
- Liu, N., Yang, H., Han, L., & Ma, M. (2022). Oxytocin in Women's Health and Disease. *Frontiers in Endocrinology*, 13, 786271. <https://doi.org/10.3389/fendo.2022.786271>
- Manjunath, N. K., & Telles, S. (2003). Effects of sirasana (headstand) practice on autonomic and respiratory variables. *Indian Journal of Physiology and Pharmacology*, 47(1), 34–42.
- Motorwala, Z., Kolke, S., Panchal, P., Bedekar, N., Sancheti, P., & Shyam, A. (2016). Effects of Yogasanas on osteoporosis in postmenopausal women. *International Journal of Yoga*, 9(1), 44. <https://doi.org/10.4103/0973-6131.171717>
- Porges, S. W. (2017). *The pocket guide to the polyvagal theory: The transformative power of feeling safe*. W W Norton & Co.
- Pradīpaka, G. (15 century C.E.). *Haṭhayogapradīpikā. Sanskrit-Trikashaivism*. <https://www.sanskrit-trikashaivism.com/en/hatha-yoga-pradipika-asana/622>
- Telles, S., & Singh, N. (Eds.). (2018). *Research-based perspectives on the psychophysiology of yoga*. IGI Global.
- Telles, S. (2000). [No title found]. *Applied Psychophysiology and Biofeedback*, 25(4), 221–227. <https://doi.org/10.1023/A:1026454804927>
- Scisciola, L., Fontanella, R. A., Surina, Cataldo, V., Paolisso, G., & Barbieri, M. (2021). Sarcopenia and Cognitive Function: Role of Myokines in Muscle Brain Cross-Talk. *Life*, 11(2), 173. <https://doi.org/10.3390/life11020173>
- Wasada, T., Akamine, Y., Kato, K.-I., Ibayashi, H., & Nomura, Y. (1978). Adrenal contribution to circulating estrogens in woman. *Endocrinologia Japonica*, 25(2), 123–128. <https://doi.org/10.1507/endocrj1954.25.123>