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# A Review and Critical Analysis of Yoga and Mindfulness Meditation in Pain Management for Individuals With Rheumatoid Arthritis: Design of Prospective Yoga Intervention Lesson Plans

Jamie Butikofer  
*Utah State University*

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***A REVIEW AND CRITICAL ANALYSIS OF YOGA AND  
MINDFULNESS MEDITATION IN PAIN MANAGEMENT FOR  
INDIVIDUALS WITH RHEUMATOID ARTHRITIS: DESIGN OF  
PROSPECTIVE YOGA INTERVENTION LESSON PLANS***

by

Jamie Butikofer

**Capstone submitted in partial fulfillment of  
the requirements for graduation with**

**University Honors**

with a major in  
Philosophy and Environmental Studies

in the Departments of Communication Studies and Philosophy and Environment and Society

**Approved:**

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**Capstone Mentor**  
Dr. Breanna Studenka

---

**Departmental Honors Advisor**  
Dr. Rachel Robison-Greene

---

**Committee Member**  
Emily Perry

---

**University Honors Program Executive Director**  
Dr. Kristine Miller

**UTAH STATE UNIVERSITY  
Logan, UT**

**Spring 2024**

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## **Abstract**

Rheumatoid Arthritis (RA) is a chronic autoimmune disease that causes joint pain, inflammation, and in some cases permanent damage. This research project explores yoga's potential to manage pain and improve quality of life for RA patients. A review of existing research investigated the impact of yoga on pain and function in RA. Studies employed various yoga programs, making comparisons difficult. All studies reported improvements in areas of pain, inflammation, emotional and mental wellbeing, or disease activity. Interestingly, meditation, a core tenet of traditional yoga, emerged as a potentially beneficial component. Studies suggest it may help manage chronic pain and improve emotional well-being in RA patients. Further research is needed to determine the most effective yoga practices for RA management. Integrating mindfulness practices back into Western yoga approaches may be a promising avenue for improving pain and quality of life in patients with RA. 8 yoga intervention lesson plans are included.

**To all the yogis who have inspired me to share the practice. And to anyone living with  
rheumatoid arthritis.**

**Acknowledgements:**

I would first like to thank my parents for supporting me throughout my undergraduate education, always going a step-further by pushing me to participate in extracurricular programs and experiences that have elevated my education at Utah State University. I would like to thank my sisters and parents together for encouraging me to attend USU in the first place. Through Utah State University the Philosophy department, the Center for Anticipatory Intelligence, the Honors Program, the Heravi Peace Institute, and the Yoga Minor Studies program have propelled me towards growth I didn't know I had in me! A never-ending thank you to the professors that have deepened my critical thinking skills, compassion, and curiosity! Namely, I would like to thank Dr. Harrison Kleiner for understanding me when I did not understand myself, Dr. Jeannie Johnson for seeing beyond my weaknesses and motivating me to push through, Dr. Jeffrey Taylor for his kind support and research mentorship, Dr. Layne Coppock for teaching me to trust myself, Dr. Rose Judd-Murray for offering mentorship and kindness, Clair Canfield for facilitating so much personal growth that has opened me to meaningful connections, Haley Hayes and Emily Perry for their inspiration in continuing my yoga journey, and Dr. Michael Sowder for opening my heart, spirit, and mind to the possibilities that yoga encompasses. And a special thank you to Dr. Breanna Studenka, Dr. Rachel Robison-Greene, and Emily Perry for overseeing this project. And lastly, I send love and gratitude to the Aggie family for introducing me to the best boss and supporter I could ask for, Patsy, my soul sister, Josie, my best friend and partner, Noah, and most importantly, the beautiful woman I am becoming.

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## What is Rheumatoid Arthritis?

The body's immune system is built of different organs and cells throughout the body, designed to protect the body against unwanted or dangerous bacteria, viruses, and cancer cells. When the immune system begins attacking the body instead of the unwanted infections and illnesses, it results in an autoimmune disorder or disease. There are hundreds of autoimmune disorders that people experience yet their pathogenesis is not yet cemented in scientific research and rather there a couple of different factors that are believed to contribute to or cause autoimmune disorders (*Autoimmune Diseases*, n.d.; Pisetsky, 2023). Depending on the type of disorder, the body can attack the musculoskeletal system, digestive tract, endocrine system, the pancreas, and other various components. While different parts of the body may be specifically affected, people with all kinds of autoimmune diseases have many symptoms in common—these include chronic inflammation, pain, and fatigue (*Fatigue and Autoimmune Disease*, n.d.).

Rheumatoid arthritis, commonly referred to as RA, is an autoimmune and rheumatic disease that results in the body's immune system mistakenly attacking the joints. inflames the joints by sending antibodies and inflammation causing enzymes to the joints' cartilage and synovial fluid causing swollen joints, joint stiffness, and over long-term inadequate treatment, permanent joint damage. RA's presence is attributed to several factors such as hereditary genetics, lifestyle choices, and environmental influences (McInnes & Schett, 2011; *Rheumatoid Arthritis - Symptoms and Causes*, n.d.). Many environmental triggers can contribute to the onset of RA, but high or increased levels of reactive oxygen species (ROS) are always involved. ROS are spurred by oxidative stress namely air pollutants, smoking, sedentary lifestyles, and other unhealthy social habits (Gautam et al., 2021). When ROS interact with the body they stimulate T-cell activation (Lubberts & Berg, 2013; Sena et al., 2013; *Understanding Rheumatoid Arthritis*



*at the Cellular Level*, 2019). Treg cells or T-cells are responsible for the initiation and/or perpetuation of the disease and are often the targets of immunomodulator medications (Cope et al., 2007). On the cellular level, RA is characterized by autoantibody production of the rheumatoid factor and anti-citrullinated protein antibodies (McInnes & Schett, 2011). The body's inflammatory response is centered around white blood cells. Significant white blood cells in RA include macrophages and lymphocytes. In autoimmune diseases, macrophages, the largest kind of white blood cell, release cytokines which are primary inflammatory markers (Ann Swanson, 2019). When cytokines are released, they cause heat, pain, redness, and swelling within joints and can damage joint cartilage. The key inflammatory cytokines in RA are IL-1 and TNF.

RA's impact on the physical body systems often result in social, mental, and emotional stressors that contribute to the overall pain caused by RA, a recognized disability. People with RA frequently report feelings of tearfulness, irritability, frustration, anxiety, and depression caused by their disease (Lwin et al., 2020). Not only do these effects cause another source of pain, but they also exacerbate the physical pain present within the body. Biologically, there is an association between higher levels of inflammation and levels of depression and anxiety (Uda et al., 2021). Patients with anxiety and then later diagnosed with RA showed a poorer quality of life and higher disease activity (Machin et al., 2020). Investigating the effects of yoga on pain management for people with rheumatoid arthritis, asks that a holistic approach is taken—considering chronic inflammation of the joints as well as quality of life and mental health impacts. Over 1.3 million American live with disease and as much as 1% of the global population (Freeman, 2018).

## **Pharmacological Interventions**

The most common medication prescribed to adults with RA is methotrexate (MTX). MTX's effectiveness is measured in its ability to suppress the immune system to prevent it from attacking innocent joints. By suppressing the immune system, people taking MTX, are more prone to contracting sickness, debilitating fatigue, and are subject to other side effects such as hair loss and liver damage (*Methotrexate Side Effects*, n.d.). As previously cited, RA not only affects the body's joints but the medication used to treat clinical symptoms introduce issues with chronic fatigue and fevers, hair loss, nausea, and other challenges introduced by medical interventions and inhibitory lifestyle impacts (Ma et al., 2019).

MTX is often combined with other pharmacological responses such as NASIDs and immunomodulators in the form of biologics. Immunomodulators are drug treatments intended to alter the immune response of certain antibodies—in some cases enhancement, in others suppression. For RA and most autoimmune disorders, immunomodulators decrease the immune response with the goal to correct the immune system's mistaken inflammation (Bascones-Martinez et al., 2014). Biologic immunomodulators used to treat RA like adalimumab (Humira) or etanercept (Enrbel) target the tumor necrosis factor (TNF) and new medications such as Rinvoq target the Janus activated kinase (JAK) or transforming growth factor beta activated kinase-1 (TAK1) (Freeze et al., 2023). These medications work well for patients suffering from moderate to severe RA, but liver injury and other side effects are expected (Zhao et al., 2023). They are, however, cost prohibitive at upwards of \$4,000 a month!

## **Alternative Interventions**

Taking a more holistic approach, many rheumatologists and adults with RA support the Mediterranean diet to help decrease inflammation in the body by limiting the number of

processed foods, seed oils, red meats, and refined grains. The sentiment “food is medicine” lies here, although it is not wholly supported by research as an effective prevention measure and treatment of RA (Forsyth et al., 2018). A study on the impact of fasting and a vegetarian diet also produced inconclusive results (H. Müller et al., 2001). Some studies found an improvement in inflammation levels and clinical symptoms in patients with RA when supplementing with Vitamin E, D, curcumin (turmeric), and omega-3 fatty acids (Guan et al., 2020; Kostoglou-Athanassiou et al., 2020; Kou, Huang, et al., 2023; Kou, Qing, et al., 2023).

Apart from pharmacological, dietary, and supplementation interventions, research consistently shows that increased physical activity among patients with RA benefits disease-related symptoms (Metsios & Kitas, 2018). Physical exercise such as aerobics and high-intensity resistance training are also beneficial in improving functional ability and pain relief (Ye et al., 2022; Yekini & Grace, 2023). Engaging in physical activity and exercise can also decrease the risk of rheumatoid cachexia or increased fat mass, a main characteristic of RA. There exists an association between RA inflammatory markers and reduced lean body mass (R. Müller et al., 2019; Yekini & Grace, 2023). One can deduce that through increasing physical activity and exercise will increase lean body mass decreasing inflammatory markers.

### **Yoga and RA**

Until 2003, research investigating yoga’s health applications was stagnant with less than 100 papers published. However, in 2003-2019, there was nearly a 15-fold increase in the number of papers published with 580 published in 2019 alone. Yoga research now spans all organ systems and heavily focuses on pain in the musculoskeletal system and psychological well-being (Gururaja et al., 2020).

To adequately process the research pertaining to yoga and rheumatoid arthritis, I used the following keywords and Boolean operators:

“yoga” OR “yoga therapy” AND “rheumatoid arthritis” OR “RA” OR “autoimmune disease” OR “chronic pain” OR “chronic inflammation” OR “joint pain” NOT “osteoarthritis”

and

“yoga” OR “yoga therapy” AND “pain relief” OR “pain management” OR “pain reduction”

I found many articles and studies exploring the impacts of yoga on pain but a slim number dealing specifically with autoimmune disorders and even less with RA. Of those focused on RA, methods were divergent, albeit results were similar.

In a single-group study with sixty-four participants at a residential yoga camp on the effects of one week yoga on function and severity in rheumatoid arthritis, they found that doing two hours of yoga each day significantly decreased participants’ rheumatoid factor (rf) but overall pain levels did not change. Including rf and pain levels, the study also looked at c-reactive protein numbers, an enzyme that causes inflammation in the body, as well as an administered Health Quality Assessment (HQA) and Disability Index (DI). Female participants saw an improvement in dress, arising, and walking and males saw the same improvement in addition to increased grip strength. This study, while it provides decent information about the short-term effects of yoga, does not account for real life application outside of a residential facility. The authors acknowledged this by highlighting the potential influence of the vegetarian diet participants were served (Telles et al., 2011). This alone could be responsible for results produced (H. Müller et al., 2001).

In a controlled study with 47 patients with RA, patients underwent 12 sessions of Vishwas-Raj yoga within an 8-week period. Vishwas-Raj yoga was developed specifically for the use of

people with arthritis and adopts a yin approach rather than vinyasa. After completing the 12 sessions, patients demonstrated significant improvement in all RA disease activity measures—disease activity in 28 joints (DAS28), health assessment questionnaire (HAQ), tender and swollen joint count, fatigue, use of medications, physical, social, mental, and emotional functioning, and pain. Despite these improvements, there was no significant improvement in Quality of Life (QOL) (Badsha et al., 2009). The improvements found in this study are promising however, Raj yoga may be inaccessible to people with RA if not taught by RA-informed yoga practitioners.

A study focused on the application and results of Iyengar yoga on young women with RA, also showed that Iyengar yoga is a feasible and safe adjunctive treatment for young adults with RA. The women who participated in the yoga program showed significantly greater improvement on standardized measures of health-related quality of life (HRQOL), pain disability, general health, mood, fatigue, acceptance of chronic pain and self-efficacy regarding pain at post treatment. Almost half of the yoga group reported clinically meaningful symptom improvement. Later analysis of the residual effects of the practice 2-months post study showed maintenance of treatment effects with improvements in HRQOL, pain disability and weekly ratings of pain, mood, and anxiety and depression (S et al., 2013).

Apart from the improvement of clinical symptoms, another study found that for people living with stress-related diseases, yoga alleviated suffering, increase self-awareness and self-esteem, which enriched their perception of themselves, their lives, and their disease (Anderzén-Carlsson et al., 2014).

In a randomized controlled trial with 70 participants undergoing 8-weeks of yoga, mitochondrial health improved significantly and there was a reduction in severity of

inflammation (Gautam et al., 2021). This study demonstrates yoga's impact on the pathogenesis of RA rather than the manifested symptoms.

## **History of Yoga**

Yoga as a medical intervention has been used since early Vedic culture with Brahmins or priests practicing yoga for its healing properties (Newcombe, 2009). However, their understanding of yoga differed greatly from the yoga that is widely discussed in contemporary medicine today. In the west and in the medical world, Modern Postural Yoga (MPY) has extracted the physical postures from the greater context of yoga philosophy and practices more broadly and applied them to a physical exercise routine—but many could argue that this is not actually yoga.

Yoga is an ancient practice originating from Northern India. There are disputes about the exact origin of yoga practice but it was first mentioned in the Upaniśads—an ancient Hindu text written in 800-500 BCE (*Upanishads - World History Encyclopedia*, n.d.). However, the practice has intermingled with many other cultures all of which have syncretized itself into the yoga tradition. The Sanskrit proverb from Patanjali's Yoga Sutras, *yogascittavrittinirodhah*, encapsulates the purpose of yoga. Its translation means “Yoga is the stilling of the turnings of the mind” (Patañjali, 2009). Patañjali's yoga incorporated *samskara* philosophy or a dualistic approach. Rather than unionizing the spirit and body, *samskara* views the body as something to overcome and yoga to separate the spirit from the body. However, this approach to yoga is significantly different from the yoga that has led to the popularization of MPY. The 15<sup>th</sup> century's *Hathapradipika* outlined 15 postures or *asanas* that helped deepen one's awareness of the body and breath in time and space contributing to deeper meditation (Singh, 2009). The *Hathapradipika* adopts a non-dualistic view of the body and spirit. In line with the Tantric yoga

tradition, the body is sacred and thus can be used to attain enlightenment. It was not until the early 1900's that MPY was introduced by innovations brought to the west by Krishnamacharya, who is coined the Father of MPY. Influenced by Tantric and Hatha traditions, Krishnamacharya viewed yoga as a meditative practice but saw the body as a way to enter that meditative state. The emphasis placed on the movements of yogasanas revolutionized yoga into an increasingly physical practice with hundreds of asanas that are now taught in studios across the world. Krishnamacharya's students, namely B.K.S. Iyengar, Indra Devi, and Pattabhi Jois yoga practice intermingled with various other aerobic and mobility exercises like gymnastics and judo to become the yoga that the west practices today (Singleton, 2010).

Dr. Ann Swanson, author of *Science of Yoga*, along with other yoga therapists indicate that yoga's benefits for people with RA and chronic pain lie mostly in meditation rather than asana practice. When the physical practice of yoga is meshed with the science behind the Center for Mindfulness in Medicine, or more so its roots of meditation, it might have more favorable results than either practice on their own.

### **Mindfulness-Based Stress Reduction**

Mindfulness meditation is a form of Buddhist meditation practice that encourages “awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003). Recent decades have led to an increase in the western adoption of Buddhist practices and emphasized the secular application on psychological ailments (Mullen, 2020). Now, its application is being researched as a form of pain management for people experiencing chronic pain—no doubt influenced by the opioid epidemic, people are searching for new ways to control pain.

The Mindfulness-Based Stress Reduction (MBSR) program was founded in 1979 and early research concluded that MBSR was a “viable intervention for a host of physical, emotional and psychological conditions” (*History of MBSR*, n.d.). The MBSR curriculum, as established by the CFM, is an 8-week, 10-session program designed to introduce users to the idea of mindfulness and gain accustomed to it over the two-month period. According to the official guide, “the primary intention... is to create a structured pathway to relieve suffering and increase wellbeing for people facing a host of challenges arising from a wide range of medical and psychological conditions” (Kabat-Zinn et al., 1985). Other mindfulness-based medical strategies include Mindfulness Based Cognitive Therapy (MBCT), Dialectical Behavior Therapy (DBT), and yoga (Young, 2011). These techniques show great promise and have decreased overall pain in patients with RA and increased quality of life.

As aforementioned, RA causes those diagnosed with physical pain within their joints and causes overall fatigue as well as emotional and psychological pain that comes with having to grieve, cope, and live with a disease that effects interpersonal relationships, work and family life, and decreases self-esteem (Kurt et al., 2013; Lwin et al., 2020). As mindfulness requires that those practicing use concentration in the present moment and allowing them to recognize any emotions or sensations arise without focusing on them, patients with RA can decrease their psychological and physiological response to joint pain (Zhou et al., 2020). Mindfulness-based approaches also ask that practitioners use non-judgement when observing the mind and body, limiting the amount of resistance and rumination surrounding bodily or psychological pain. After completing the official MBSR program, patients with RA saw significant improvement with their levels of pain and ability to manage their pain (Young, 2011). Mindfulness gifts those who



use it autonomy over their actions and feelings towards what is happenings in their minds, bodies, and environments.

Research clearly shows that when patients with RA utilized mindfulness-based interventions, their pain levels improved and alleviated anxiety (Slagter et al., 2022). In fact, flare ups can occur during times of heightened stress, showing a link between psychological well-being and inflammation (Lwin et al., 2020). Because people with autoimmune disorders have a malfunctioning immune system it seems counterintuitive to destroy their immune system with medication interventions leaving them more prone to other sickness, pain, and disease. Mindfulness offers those affected an alternative to their pain management that begins from within. This is not to say that western medical interventions should not be used. Rather, if non-invasive techniques can limit pain and stress, they should be fully integrated into the way the medical field addresses chronic pain.

### **Discussion and Conclusion**

Understanding the comprehensive impact of yoga and meditation of RA is difficult because there is a lack of guidelines in the types of practices used, the frequency at which it is completed, as well as the duration or longevity of the programs or individual practices. That being said, while all studies signal improvement in disease metrics or pain management, it is not clear what specific aspects of the studies were responsible for success in disease activity and symptom improvement. However, the commonality remains some form of yogasanas, breathwork or pranayama, and/or meditation practice. Other research suggests that physical activity that increases the mind-body connection such as Iyengar Yoga, Yoga Therapy as taught by Desikachar, Yang Tai Chi, MBSR, Feldenkrais method, Alexander technique, Breath

Therapy, Somatic Experiencing, Somatic Therapy, Hakomi therapy, and massages were phenomenologically beneficial for those with chronic pain and anxiety (Mehling et al., 2011).

The popularization of yoga as a physical practice in the late 1980's heavily influences the way that the medical world approaches yoga. This, I think, is a flawed and failed misunderstanding of yoga. Yoga in medicine is most often separated from its origins and intent beyond the body—I think benefit can be found by taking in the whole of yoga. At most yoga can be almost a religious or spiritual practice for people, but at least it can incorporate the ethical principles of the Yamas and Niyamas and focus on surrendering to gratitude. By surrendering the body to something greater, I think people with arthritis can find solace in knowing that their pain does not define them or their experience. When engaging with MPY, and especially when teaching, the yoga practice should remain rooted in the traditional intentions of the practice. Yoga has proven amazing adaptability in the modern world, but its original pursuit of spiritual enlightenment should not be overlooked even when only practiced for the asanas (Perry, 2020).

## 8 Yoga Lesson Plans for People with Rheumatoid Arthritis

### Goals and Structure:

The goal of this program is to encourage participants to feel safe in their bodies, their pain, and the emotional toll that comes with living with chronic and often spontaneous pain. Given the nature of Rheumatoid Arthritis and that periods of flare ups can occur at any moment, a sequential 10-week program is not the best approach taken here. Rather, 10 lesson plans targeting the bodily and emotional experiences of those with RA will grant participants autonomy and deepen awareness of the body and mind. The material in these lesson plans is based on the previous studies above as well as my personal experience living with RA and practicing yoga. Each lesson plan begins with a short introduction to what the practice will look like as well as my intention in crafting it. Some lesson plans will go through all cues, modifications, and transitions while others will simply list out the order of poses and potential modifications. My hope is that people with RA can find solace in knowing that their bodies and their practice is in their hands. The 8 lessons can be completed at any time: the key to this practice is tuning in, listening to, and following the body and breath. Lessons are intentionally untimed as they can be catered to the practitioners' needs and are meant to be taken at their own pace. Disclaimer: Those with RA and who are new to the practice should avoid intense, fast-pace, and heated classes until confidence is built in the postural alignment and strength and their bodies.

*Equipment: yoga or exercise mat preferred (substitute with a towel), blocks, bolster, strap, and chair if needed.*

## Lesson Plan 1: When the Body Needs Rest

*The combination of the physical stress of having rheumatoid arthritis, the intense medications taken to manage the disease, as well as the psychological impacts of living with arthritis, the mind and body can easily experience burn out. This practice's intention is to reset and restore the body through slow, mindful, and restful asanas, pranayama techniques, and meditation.*

*Prepare for your practice by setting up near a wall.*

- ⇒ To begin this practice, find a comfortable seated position in **Sukhasana** or Easy Pose. I recommend elevating the hips by sitting on a block, blanket, cushion, or bolster to relieve any tension on the hips, knees, and ankles. You can also begin this practice sitting in a chair with both feet on the ground. I want to emphasize comfortable posture in this seat—ground down through the sits bones and lifting through the crown while not straining the back, shoulder, or neck muscles. For the next couple of minutes, the goal is to release any physical tension as well as any mental awareness of anything but the breath and the body. We will lengthen the inhales, making the exhales even longer to calm the body.
- ⇒ We will begin the pranayama practice of **Nadi Shodhana**. Nadi Shodhana or alternate nostril breathing means purification of the channels of the mind-body system. It is believed to reduce stress and anxiety, activate the parasympathetic nervous system, and direct the mind towards concentration. Taking the right-hand, find **Vishnu mudra**: you will fold the index and middle finger in toward the palm with the thumb and pink and ring finger extended. You will use the thumb to close the right nostril as you inhale through the left, pausing at the top of your breath, closing your left nostril with your pinky and ring finger, and exhale through the right. Again, pause at the bottom your

breath and inhale through the right nostril, pausing, exhaling through the left. You will follow this pattern for as long as it serves you, I recommend for at least 10 breath cycles.

- ⇒ Allowing the breath to return to its normal inhalation and exhalation cycle, we will place both the hands on the knees. With our inhales, gently pull your body forward, arching the back, shoulders push towards the back of the room and belly moves forward between our legs. The gaze can lift slightly. Exhale the spine arches in the opposite direction, chin to chest and pull the belly toward the spine and spine towards the back of the room. This is a seated **Marjaryasana-Bitilasana** or cat-cow.
- ⇒ If the spine wishes for more movement, you can add in **sufi circles**. You will make circles with your torso around your midline, giving yourself an internal massage.
- ⇒ We will then do some self-guided hand and foot massage. You can do this in whatever position you would like for as long as you like but I want to emphasize mindfulness here! Use this opportunity as a way to deepen your relationship with the physical body while maintaining steady breath to keep the mind focused.
- ⇒ Slowly roll down the spine into a lying position and pull the knees into the chest. We will roll around the back body for a moment, noticing all the points of contact. When ready, we will come into **Viparita Karani** or legs up the wall. Placing you right hip flush to the wall, you will your hands to gently lay back, gently moving the legs to an elevated position supported by the wall. The goal here is to release. Release the physical body to be supported by the wall and the mat and allow tension or activity in the body to melt away. The same follows for the mind—if you find it racing, stay tuned in with the breath. If you feel comfortable, release any focus or intention and practice being. Modification: place a blanket underneath the hips.

- ⇒ The practice ends by finding your way back to a lying or seated posture. It might help to gently shake the legs to invite the blood to flow again. A closing meditation is encouraged.

*The end goal of this practice is that you leave feeling lighter, more at peace with the body, and clear in your identity.*

## **Lesson Plan 2: Cultivating Awareness of the Joints**

*There are 28 joints primarily involved in RA disease activity. These are the shoulders, elbows, wrists, each finger joint, and the knees. In my experience living with RA, the ankles and toe joints are also heavily impacted. This lesson will focus on gaining awareness of the 28 joints plus some. A strap is needed for this practice. This lesson plan lists out the sequence of postures with the expectation that the teacher or practitioner is familiar with the pose, its purposes, and its modifications.*

- ⇒ **Sukhasana** or easy pose.
- ⇒ Self hand and foot massage. Touch every single little joint in the feet, hands, ankles, and wrists. Meet any sensations with nonjudgement.
- ⇒ Neck stretches and openers.
- ⇒ Small arm circles.
- ⇒ Modified **Gomukhasana** or cow face with strap on both sides.
- ⇒ Seated modified **Garudasana** arms or eagle arms.
- ⇒ **Bharmanasana** or table top wrist stretches.
- ⇒ **Apanasana** or knees-to-chest.
- ⇒ Release left foot to rest on the mat. Take hip circles with the right leg.
- ⇒ **Ardha Ananda Balasana** or half happy baby.

- ⇒ **Supta Matsyendrasana** or supine spinal twist.
- ⇒ Knee back to center. Attach strap to foot. Modified **Supta Padangusthasana** or reclining hand-to-big-toe pose. Play around making different shapes here. You can extend the right leg out to the right or across the body. Make big or little hip circles here, feeling the femur into the hip joint.
- ⇒ Repeat on other side.
- ⇒ Both feet come to mat. Windshield wiper the knees back and forth.
- ⇒ **Svasana** or corpse pose.

*This practice acquainted yogis with the joints that are primarily affected by their arthritis. By gaining awareness of the way the joints feel and move, they are introduced to a new way to interact with their joints while tender, swollen, flaring, or when they are none of the above.*

### **Lesson Plan 3: Befriending the Breath**

*In yoga, the breath is referred to as prana, or our life force energy. Of all the bodily functions, the breath is the single one we can deliberately control. When the mind wanders, the breath invites us back into our body. This practice will include breathwork and gentle asanas.*

- ⇒ Find a comfortable seat in **Sukhasana** or easy pose.
- ⇒ Beginning with a **three-part yogic breath**, you will begin to feel the way the breath moves through your body and how the breath affects the body. This three-part breath begins with the belly expanding leading toward the ribs widening and then inviting the breath into the collarbone space. The exhalation follows the reverse pattern.
- ⇒ Release the three-part breath and engage in **Ujjayi** breath. If you are unfamiliar with Ujjayi, the best way to describe it is that you are producing the same sound and sensation as you would if you were trying to fog a mirror. Practice this a few times. Then Ujjayi

seal the lips and breath in and out of the nose making the same sound and creating the same sensation in the throat. The breath should be audible. The sound of the breathing is meant to keep you grounded throughout your practice with something to focus on, aid in finding a meditative state. Attention of the breath and movement with the breath should be cued throughout.

⇒ Inhale reach arms above the head. Exhale plant right hand and open up left side body.

**Sukhasana Variation Side Bend.** Repeat as many times as desired on both sides. Move with the breath. Inhale extend and length, exhale ground and engage.

⇒ Roll to hands and knees. **Marjaryasana-Bitilasana** or cat-cows. Add in spinal waves and/or hip circles.

⇒ **Balāsana** or child's pose. Rest here and stay engaged with the breath. Fill up the back body expanding the ribcage.

⇒ Lift into **Ardha Mukha Svānasana** or downward facing dog. Hold this posture for 8 breath cycles. Allow the energy of the breath to settle into the body and its gentle movements.

⇒ Slowly walk forward to meet feet with hands. **Utthānasana.** Grasp elbows with hands and allow the spine to release onto the thighs.

⇒ Inhale, rise into **Tadasana** or mountain pose.

⇒ With the arms above the head, grasp left wrist with right hand. Cross left ankle or right and take a side opening stretch. Repeat on other side. Inhale: you lengthen and find more space. Exhale: you ground and settle the body into any new space created.

⇒ Find your way to your back and hug your knees into your chest. **Apanāsana** or knees-to-chest.



- ⇒ Taking each leg into each hand take some intuitive movement here! Move with the breath, taking hip circles, coming into happy baby, rolling on the spine, etc. The goal here is listen to the breath and move with it.
- ⇒ When you are ready, land in **Svasana** or corpse pose. Release your Ujjayi breath.
- ⇒ Let the body melt into the mat and notice any minor differences in your body before and after this practice.

*This practice is meant to connect the body, mind, and movement with the breath. Yogis should leave feeling refreshed and connected to their bodies.*

#### **Lesson Plan 4: Managing Flare-ups**

*People with autoimmune disorders struggle with managing their disease and its symptoms because it often comes out of nowhere and varies in intensity. The only thing predictable about RA is its unpredictability. This lesson plan is all about giving yourself grace during flare-ups and navigating mindful movement when the body is inflamed.*

- ⇒ We will begin this practice finding a comfortable seated or lying asana, tuning into the cues of the body. During flare ups, I would recommend lying on the back with the legs supported with a bolster—avoiding any tension in the hips, knees, or ankles. This position should feel grounding, and you should allow your body to release into the Earth.
- ⇒ Beginning with a **three-part yogic breath**, you will begin to feel the way the breath moves through your body and how the breath affects the body. This three-part breath begins with the belly expanding leading toward the ribs widening and then inviting the breath into the collarbone space. The exhalation follows the reverse pattern.
- ⇒ Conducting a meditative **body scan** allows us to get a better idea about where the body is in time and space and what is going on inside the body. Remaining in your comfortable

position, we will begin toes. I want you to mindfully direct all your breath and attention to each toe, each toe joint, and slowly move down the foot towards the ankle. Focusing on the top and bottom of the foot, wrapping around the ankle and calf. This thoughtful movement of attention will make its way up the body through each limb, each contact point of the body, and each joint. If *ćakra* work is in your practice, you may use this body scan as an opportunity to tune into these energy centers.

⇒ Remaining in a lying position, take some mindful movement. This might look like gently closing and opening the fists, softly curling the toes, or light wrist or ankle circles. Or you might feel comfortable with resting the body in no movement. If so, use this opportunity to offer yourself grace and respect for the pain you are currently experiencing. Gently note any sensations in the body as feelings without getting attached to the sensation itself. If the body asks for it, you can engage in larger movements while acutely paying attention to the way each movement feels in the body and in the joints.

*Ultimately, this practice is meant to help you relax into the body, whether it is in pain or not. The sensations of a flare-up will come and they will go. How can you respond to change in the body and in your disease?*

### **Lesson Plan 5: When the Body Wants to be Active**

⇒ This practice will begin by finding a comfortable asana and releasing the day. A yoga practice, as shown through my research, will be more beneficial when there is the core tenet of active mindfulness while in movement. Take some deep breath, sigh it out, and release any tension being held in the body.

⇒ We will begin with practice the pranayama technique of **Kapalabhati** or skull shining breath. Kapalabhati activates the pranic hub of the abdomen, increases control over the

sympathetic response, increase oxygen to cells in turn increase the energy in the body.

Begin by taking a deep inhale and then exhale in short bursts using powerful contractions of the lower belly. The chest should be moving minimally—try with hands on back of neck/upper back to make sure the power is coming from the abdomen and not the lungs or chest. After each exhalation, every inhalation should be done passively. You will do this 11 times for 3 rounds taking a couple deep breaths in between each round.

Pranayama can be difficult to understand without a physical example: if you are unfamiliar with Kapalabhati or the instructions are not resonating please do not practice or find a video online to help. If you have untreated blood pressure issues, are pregnant, are prone to panic attacks, or have glaucoma please do not practice this pranayama.

- ⇒ Coming to hands and knees we enter **Bharmanasana** or table top. Use this as an opportunity to get your body into intuitive movement. You might take some **Marjaryasana-Bitilasana** or cat-cows, hip circles, push back into **Balasana** or child's pose, might even add a modified screaming toes pose.
- ⇒ Pulling back into **Bharmanasana** feel strength coming down from the shoulders into the elbows and down to the fingertips. Extend your right leg and find balance on the three points of both hands and other knee. Engage the core here while you lengthen and extend the left arm forward—now your weight falls on opposing hand, knee, and core. Intentionally engaged quad and glute on the extended leg, do the same with your extended arm's scapular placement. Inhale lengthen from finger tips to toes, exhale draw right knee to left elbow, taking a cat shape in the back body. On your inhale, extend again. Repeat this four times.

⇒ Place the left hand back on the mat while you cross your right leg over the left and set the toes down. Open up the right-side body by looking past your left side, back at the extended leg. Feel the ribs expand and outer hip open on the right side. Keeping the right leg extended come back to center.

⇒ Rotate the left calf clock-wise, open the hips, and extend right arm towards sky.

**Supported Vasisthasana** or supported side-plank.

⇒ Engage the core and energetically pull the inner thighs toward one another. Windmill arms to place right hand on right thigh, calf, or ankle. Breathe into the left-side body here in **Parighasana** or gate pose.

⇒ Coming back into **Supported Vasisthasana**, you are going to take some side crunches. Lift right leg off the mat and crunch right elbow to right knee using your oblique strength. Rep for 8.

⇒ And release to **Bharmanasana**. Repeat sequence on next side.

⇒ Once back in **Bharmanasana**, we lower to the mat resting the belly and the forehead.

⇒ Moving with the breath here, we will inhale lift into **baby Bhujangasana** or baby cobra and exhale back to the mat. Flow through as many times as needed.

⇒ On your last baby cobra, push and exhale into **Balasana**.

⇒ Spread the weight into all ten fingers and all ten toes hovering the knees above the mat. Externally rotate the arms so that the inside elbow points towards the front of your mat. Begin by pushing back through the upper body and lengthening through the shoulder and spine. Lift the hips towards the ceiling simultaneously and gently straighten the legs.

**Adho Mukha Svanasana** or downward-facing dog. Bend through the legs and move as needed here to open the upper and lower back bodies.

- ⇒ Slowly lower into **Bharmanasana**, check in with the mind here. Where have your thoughts or focus been for the last couple of minutes. Notice, without judgement, and adjust as you see fit.
- ⇒ Entering into **Adho Mukha Svanasana**, inhale the right leg up into a three-legged dog. Keep both shoulders in line with one another, both hips in line with one another, and distribute the body's weight evenly into the three points of contact on the mat.
- ⇒ Keeping the right leg extended, pull your body over your shoulder, and place the right foot down on the outside of your hands. You have entered **Utthan Pristhasana** or lizard lunge.
- ⇒ Move intuitively here. You might open your hip up to the knife edge of your foot, twist your right hand up to the ceiling, or even reach behind and grab your left foot for a quad stretch. There are many options here that are meant to feel good in the body and allow the breath to move freely and with ease. Find what feels right for you in this moment!
- ⇒ On an exhale push your hips back extended the right leg into **Ardha Huamanasana** or half splits. Hold here and focus on keeping the breath steady, the shoulders down the back, and the hips even. It can be easy in this posture and in lizard to allow the weight to hang in the hip joints, don't allow it. Engage the muscles, slightly bend the joints to stabilize, and lessen the amount length you have created. You can move with the breath inhaling into **Utthan Pristhasana** and exhaling into **Ardha Huamanasana**. Give the breath permission to move the body.
- ⇒ Coming back to a stable lizard lunge, you will walk the right foot to the left side of the mat, allowing the right hip to rest of the mat, and keeping the knee at a 90 degree angle. The left leg will bend to a 90 degree as well to take **Mrigasana** or deer pose. Walk the

hands in front of the right leg and begin folding forward. You want this stretch to get into the right hip and glute. It may be uncomfortable but should never be painful. Flex both feet to protect the knees. You should rest in this posture for a few minutes, staying present with the breath.

⇒ When you are done with deer pose, swing the left leg from behind to the front of the body and stack left ankle over right knee and right ankle under left knee. This is

**Agnistambhasana** or fire log.

⇒ Extend the left leg and place the right foot on the inside of the left. Turn the belly button toward left leg and fold over. Keep a slight bend in the left leg to make sure not to hyperextend it.

⇒ Lifting the hips, push up with right hand and enter into the **Supported Vasisthasana** we were in earlier.

⇒ Find **Bharmanasana** and repeat this sequence on the other side.

⇒ This practice will end in a seated posture and a non-guided meditation.

*When the body wants to be active, especially living with arthritis, it is important to move mindfully, safely, and intuitively. This practice focused on correct alignment and engagement of the muscles and joints. But it should also be reminded that if the yogi wishes to take different movements, let them do so freely. Practitioners will leave this practice feeling more connected with their body and where it exists in time and space.*

### **Lesson Plan 6: Gaining Strength Living with Arthritis**

*Living with Rheumatoid Arthritis can feel like your body is not your own and that you lack control. While you may not have complete control over your symptoms, your disease, or your pain, you do have direct control over the way the body and mind handle the pain and living with*

*arthritis. On days when the body feels strong and able, it's nice to give back to the body that takes such great care of you by looking out for your muscles. I have been told by many yoga teachers and I affirm their statement that the best way to work on building strength in yoga is by perfecting **Surya Namaskar A** or Sun Salutation A. This practice will be based on Sun A with modifications, additions, and subtractions here and there. Listen to your body's needs! This practice should not be done with any tender, inflamed, or swollen joints. This practice will largely list out asanas with the expectation that the practitioner or teacher can guide with cues, alignment, and modifications.*

⇒ This practice will begin in **Tadasana** or mountain pose. At the top of your mat, imagine pushing the four corners of each foot into the earth and the earth pushing back. Arms rest gently at the sides with the palms facing outwards causing an external rotation in the shoulders and elbows. Draw the shoulders up towards the ears and gently down the back body, resting comfortably. Taking some deep breaths and closing the eyes, I want you to set an intention for your practice.

⇒ **Surya Namaskar A** or Sun Salutation A:

- Half Sun A: You will do half Sun A's five times through grounding the mind and body in the connection between breath and movement.
- Full Sun A: take these next four cycles very slowly, focusing on gaining familiarity with the postures, the pattern, and the breath cycle—we will be coming back to this basic sequence throughout.

⇒ **Virabhadrasana** or warrior sequence:

- Warrior poses and variations are energetically and physically about strength. Step into these postures like the warrior you are and never underestimate your mental fortitude!
  - **Ashta Chandrasana** or high lunge
  - **Virabhadrasana II** or warrior II
  - **Utthita Parsvakonasana** or side angle pose
  - **Virabhadrasana II**
  - **Viparita Virabhadrasana** or reverse warrior
  - **Virabhadrasana I** or warrior I
  - Close back hip and float to **Virabhadrasana III** or warrior III
  - **Tadasana Pavanmuktasana** or standing knee to chest
  - **Eka Pada Utkatasana** or standing figure-four
  - Release into **Utkatasana** or chair
  - Cycle through your Sun A vinyasa and repeat on other side.
- ⇒ Once complete, lower into **Ardha Pincha Mayurasana** or dolphin to rest. You can drop to your knees and push back into **Balasana** or child's pose when needed.
- ⇒ We will repeat the sequence on each side over, but rather than sinking into Utkatasana, you will remain balanced on one foot after **Eka Pada Utkatasana** and enter **Vrksasana** or tree pose.
- ⇒ From here, ground both feet on the mat again in **Tadasana**. Feel the energy or prana moving through your body. Listen to your breath, your heartbeat, and the rising and falling of the chest. Walk the feet to the outsides of the mat, turning to toes outward and sit into **Malasana** or garland pose.



⇒ Come to lying and warm down the body and close the practice with some slower movements on the back. It is recommended to take 5-10 minutes in **Svasana** or corpse pose when movement has ceased.

*Throughout the practice, there should be constant cues and reminders about activating the muscles and using core and bandha engagement to move the body. This sequence incorporates many strength-based, hip-opening, and balancing postures. Tune in to the way their movements have affected the mind and body after practice. What energetic influences can you adopt from the postures into your daily life?*

### **Lesson Plan 7: Self-Compassion Practice**

*Feeling safe in your body living with RA is directly tied to offering yourself compassion. When, at times, it can feel like your body is not a part of you and is rather against you, compassion can help. This practice includes a loving-kindness meditation, a journaling exercise, and restorative, held asanas to open the heart space. PA bolster, blanket, and block are preferred for this lesson.*

⇒ This practice starts in a seated position conducive to sitting for meditation and journaling.

⇒ Loving-kindness or **Metta Bhavana** meditation asks that you cultivate kindness first to yourself, another person, and then all living beings through repeating the mantras “May I be peaceful”, “May you be peaceful”, and “May all living beings be peaceful”. By offering ourselves kindness and compassion and by extending that to others, we will enter a clearer space, more focused on the present moment. The meditation should be guided for 5-15 minutes.

⇒ Next spend 20-30 minutes reflecting and writing on the following prompts:

- *What does self-compassion mean to you?*
- *How might your arthritis affect your sense of self?*

- *Who, other than yourself, are you needing to grant compassion to?*
  - *In what instances do you need more self-compassion? How can you do that?*
- ⇒ When you have completed the journaling prompts, come to **Bharmanasana** or table top .
- ⇒ **Marjaryasana-Bitilasana** or cat-cows
- ⇒ **Urdhva Mukha Pasasana** or thread the needle on both sides.
- ⇒ Supported **Balasana** or child's pose with a bolster underneath the body
- ⇒ Supported wide-leg **Paschimottanasana** or forward fold..
- ⇒ Supported **Supta Baddha Konasana** or reclined bound angle.
- ⇒ Supported **Matsyasana** or fish pose.

*Throughout the practice, modifications and supports should be used. This is a restorative practice. Practitioners should also be cued back to what came up for them in their meditation practice and journaling exercises. Student should leave feeling a greater sense of peace and openness for themselves, their bodies, and others.*

### **Lesson Plan 8: Understanding Ahimsa**

*Ahimsa is the first of the Yamas or moral disciplines of the 8-limbed path of yoga. Ahimsa, a Sanskrit term, mean non-harming or non-violence. Ahimsa is meant to guide us towards words, actions, and practices that cultivate inner peace and peace in the world around us. When applied to asana practice, Ahimsa can be understood as listening to one's body and not forcing it to do anything it does not want to do. In my asana practice, ahimsa reminds me to remove judgement of my body and its abilities and to avoid comparison and judgement of other's practices. One trial that people with RA experience is not being able to move their bodies as they once did and comparing their abilities to their past selves or other people. Ahimsa asks us to practice non-*

*harming in this way. This lesson plan is intended to encourage non-harming in our words and actions towards ourselves, our bodies, and others.*

- ⇒ We begin lying on our backs. A bolster under the knees or supporting the spine might bring greater comfort in this position. Start with diaphragmatic breaths or deep belly breathing. Draw the breath deep into the belly, inflating the stomach. Slowly exhale. Notice the rising and falling sensations of the breath and begin extending both inhalations and exhalations. Be gentle with your thoughts. Discuss the Yamas and Niyamas. Reflect on the importance of ahimsa and what it asks of us.
- ⇒ Roll to seated. And take some nice big breaths and you can move the neck here, roll the shoulders back, massage the feet, etc.
- ⇒ Right ear to right shoulder. Extend left hand. Play around with the placement of the left arm and the angle of the chin. Repeat on other side.
- ⇒ Inhale arms reach toward the ceiling, exhale twist to the right. **Parivrtta Sukhasana** or seated spinal twist. Left hand meets right knee and right hand supports in the back of the body. Keep the spine upright here while twisting from the midline. Inhale, arms extend overhead, exhale twist to the other side. Repeat through a sequence connected with the breathe.
- ⇒ Roll to hands and knees. Push back into **Balāsana** or child's pose.
- ⇒ Coming back into **Bharmanāsana** or table top.
- ⇒ Inhale reach right hand to the ceiling, opening through the chest and shoulder, exhale thread the arm through and come to rest the cheek on the mat. **Urdhva Mukha Pasasana** or thread the needle on both sides. Press down into the mat with extended arm to stretch through the scapula. Keep hips level here.

⇒ Sit up on the knees. You can place a bolster or 1-2 blocks underneath you for support.

**Vajrasana.**

⇒ Extend right arm and grasp left arm around it. Hug it into the body and place hands on opposite shoulders. Modified **Garudasana** arms or eagle arms. While here, lift the gaze with a slight inflexion in the spine. And curl the spine forward. Feel how tiny movements affect the posture. Repeat on other side.

⇒ Align hips over knees, rising from sitting. Place the hands on the mid-low back and gently lean back to open the heart and lift the gaze. Modified **Ustrasana** or camel pose.

⇒ **Bharmanasana** or table top.

⇒ **Marjaryasana-Bitilasana** or cat-cows.

⇒ Step feet back into **Kumbbhakasana** or plank. Gently lower to the mat.

⇒ Keeping right hand planted, extend the left arm flat on the ground. Lift, open, and bend right knee and hip to twist over the back body to plant on the left side of the body. Gaze keeps right. Repeat on other side.

⇒ Come back to center and place both hands about a foot in front of the body. Press tops of feet into the mat and engage the core as you inhale press into the mat, lifting the chest and gaze forward with the crown reaching toward the sky. **Bhujangasana** or seal pose. Pull the chest up and forward. If there is any compression or pain in the lower back, come out of the pose until you find relief.

⇒ Push back into **Balasana** or child's pose. Take the full expression by resting the forehead on the mat, bending elbows to meet hands above the head. Take the hands into **Padma Mudra** or Lotus Mudra. Rest here.

⇒ Release and pull into **Bharmanasana**.

- ⇒ Shrug the shoulders up near the ears, gently roll them back to rest mindfully on the back. Externally rotate the arms so that the inside elbow points towards the front of your mat. Begin by pushing back through the upper body and lengthening through the shoulder and spine. Lift the hips towards the ceiling simultaneously and gently straighten the legs. **Adho Mukha Svanasana** or downward-facing dog. Bend through the legs and move as needed here to open the upper and lower back bodies.
- ⇒ Slowly walk the feet forward into **Uthanasana** or forward fold.
- ⇒ Inhale and roll the spine up vertebra by vertebra. Arms rise toward the sky. Take a slight backbend if the body allows. Hands meet at heart center. **Tadasana** or mountain pose.
- ⇒ Placing the weight on the right foot, slowly lift and move left leg to the back of the mat. Find **Ashta Chandrasana** or high lunge.
- ⇒ Drop the left knee, plant the left hand, and twist into **Parivrtta Anjaneyasana** or twisted low lunge.
- ⇒ Lift back knee. Plant both hands and step left foot to meet the right in **Malasana** or garland pose. Ensure that your knees are not falling in and that the outside of your foot is planted on the mat. Hands find **Padma Mudra** again.
- ⇒ Plant hands and step right foot back into low lunge. Twist open, finding **Parivrtta Anjaneyasana** on the other side.
- ⇒ Spin towards the right. Right toes point toward the ceiling. **Skandasana** or side lunge.
- ⇒ Use the hands to help you move. Find **Skandasana** at the back of the mat.
- ⇒ Push towards center, extend both legs and find **Prasarita Padottanasana** or wide-legged forward fold. Legs are slightly bent.

- ⇒ Hand come to hips and with a flat back rise to standing. Turn both feet outward 45 degrees. Arms rise above the head and out. **Utthita Tadasana** or five-pointed star.
- ⇒ Inhale lengthen the spine. Exhale sink into **Utkata Konasana** or goddess pose. You can play around between goddess and star pose.
- ⇒ When settled in **Utkata Konasana**, hands come to both knees and you are going to twist to each side. Drop one shoulder down while the gaze follows the same direction.
- ⇒ Release the posture and meet at the top of the mat in **Tadasana**.
- ⇒ Turn the feet outward and drop the hips into **Malasana**. Hands find **Padma Mudra** again.
- ⇒ Teacher discusses the meaning of the mudra and its application to Ahimsa.
- ⇒ Release onto the sits bones and roll to **Apanasana** or knees-to-chest.
- ⇒ **Supta Matsyendrasana** or supine spinal twist.
- ⇒ **Svasana** or corpse pose.

*This practice used twisted and heart opening postures with constant cues back to the concept of Ahimsa. Meaning non-violence, Ahimsa can be cultivated through the heart çakra, compassion practice, and energetically cleaning postures—like twists. Padma Mudra is used throughout the practice and the idea of a beautiful lotus growing amidst dirt and strife should be discussed throughout at well.*

**Word count: 7,456**

## Reflection

My capstone project, like most Honors students, has been my last task to complete before graduating with honors. As I am now done with my undergraduate courses, extracurricular requirements, and all I am waiting for is a couple of signatures, I have been reflecting a lot more on my experience in Honors that has led up to the completion of this project. When I began thinking about different topics to complete my Honors Capstone on, I was overwhelmed. I am currently working on degrees, minors, or certificates in four different colleges across campus and I have so many interests! I considered building upon various philosophy essays on the ethics of AI or nuclear energy and expounding on my research on the West's drought and the Great Salt Lake, but all seemed a moot to my future endeavors. Although my capstone was an academic pursuit in itself, I wanted to work on something more personal that would extend beyond my time spent at USU. Thus, I landed on studying the effects of yoga and meditation on rheumatoid arthritis (RA). As movement science and health is not an area that I have been engaged in in my undergraduate studies, this project has definitely taken me out of my academic comfort zone. But because the Honors Program allows students to complete capstones outside of their major, I have had the opportunity to learn more about things I am passionate about without having to formally study them.

Yoga has played a significant role in my life for the last 5 years as has my diagnosis of RA. I was diagnosed with RA in January 2021 in my fourth semester at USU. My diagnosis has brought me much anxiety, depression, and future tripping but it has also deepened my relationship with my mind and body when paired with yoga. At the time of my diagnosis, I was in the process of working towards my yoga teaching certification through the yoga minor studies program. For the longest time, participating in my yoga classes was so emotional for me because I viewed it as a practice I would never be able to fully participate in. I have a vivid memory of speaking with Emily Perry, who has served on my capstone committee, about my diagnosis and how it might affect my ability to practice yoga. She assured me that yoga is meant to adapt to all needs, all bodies, and all abilities. Her influence encouraged me to continue the yoga path. Now, I want to shout from the rooftops that yoga is for everybody, every ability, every size, and more! I thought it would be most meaningful, relevant, and engaging to work on a project that effects my daily life and will continue to for the foreseeable future. I recognize the barriers of entrance to the yoga community for people with chronic pain and autoimmune disorders and wanted a better understanding of how to make yoga accessible for all abilities! I do not want to sound like a broken record, but I would like to focus on the non-physical nature of yoga. The west's understanding of yoga is so limited and is often consumed by the asana (postural) practice with some added mindfulness—this is a minor part of the grand scheme of yoga philosophy. By increasing education about the other aspects of yoga, it is already made more accessible to differently abled bodies.

While my capstone project is not related to my primary studies and does not pertain to my future educational goals, I have learned a lot about conducting research and cultivating a professional sense of self. Also, given the intimate nature of my chosen topic, the material that I have analyzed, synthesized, and presented will stick with as I continue on my personal yoga journey and life with RA. When I decide to formally teach yoga classes, I anticipate that this project will have prepared me well to work with people with chronic pain, arthritis, and other medical issues. And if not that, learning a bit more about the science behind yoga will make me a

teacher more equipped to answer student questions, who can think critically about students' needs, and is more confident in my yoga background.

I have always struggled with self-directed work and beginning this capstone was nerve-racking for me. I was not sure if I would be able to complete it. However, the compassionate support I received for Dr. Studenka validated my research experience. I had anticipated my final semester at USU to be easy and stress-free but my coursework on top of the transitional life phase I am entering was a lot to handle! My final semester has been one of my most difficult but also the most rewarding. Since January, the thought of "this could be my last ..." has ruminated in my mind when attending a campus event, getting lunch with a professor, or laying out on the quad. And now I am at the end and all I can say is nothing is too important, and everything will fall into place no matter what it looks like. This is something yoga has encouraged me to implement in my practice on the mat and off the mat when applied to school, relationships, the future, and my arthritis. And it has helped me handle the task of completing my capstone over the last couple of months.

Completing this capstone has been the summation of my five years at Utah State University. Intellectually, USU and honors program have supported my values of curiosity and open-mindedness. Professionally, I have developed skills needed for networking, presenting, and communicating in written and oral word. And personally, the last five years at USU have seen me through a transformation that I know would not have occurred if it were not for the programs that I have engaged in. Completing a capstone project is hard, graduating from college is harder, and becoming a better person at the end of it makes it all worth it!

**Word count: 1,001**



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### **Author Biography**

Jamie is graduating from USU in May 2024 with degrees in Environmental Studies and Philosophy. She is also completing minors in Music, Anticipatory Intelligence, and Yoga Studies coupled with a certificate in Conflict Facilitation and Management. Over the last five years, Jamie has conducted research on women in the College of Natural Resources, drought and the Great Salt Lake Water Basin, the ethical implications of synthetic biology and artificial intelligence, ethics of nuclear and hydrogen energies, and the sustainability of the Student Nutrition Access Center. Starting Fall 2024, she will begin law school at Pepperdine Caruso School of Law in Malibu, California. She is interested in pursuing dispute resolution in a variety of areas of law namely agriculture and water law, family law, intellectual property, and national security. Her vast interests have been necessarily cultivated by Utah State University and the various programs and certificates she has participated in. Growing up in a military family, Logan, Utah is now the longest place Jamie has ever lived and has become her home. While she is grieving leaving the beautiful valley, she knows that the Aggie community will follow her no matter where she ends up.

This capstone project is more than just a research assignment—it holds much more meaning. In 2021, at the age of 19, Jamie was diagnosed with Rheumatoid Arthritis. Since her diagnosis, Jamie has found solace and comfort in deepening her relationship with her body and disease through the practice of yoga. As discussed throughout, yoga is more than the physical practice most of us recognize. It is a vast philosophical and ethical program that informs Jamie's life. At USU, she has completed her 200-hour Yoga Teacher Training and will soon be registered with the Yoga Alliance. She hopes to use her experiences living with chronic pain and passion for yoga with others through teaching at community studios, events, and for friends! Jamie has many dream lives and one of those is opening her own yoga studio one day.