

## **NSAIDS AND FALL RISK IN OLDER ADULTS**

**Resource by Zahin Nilu on June 3<sup>rd</sup>, 2020**

Nonsteroidal anti-inflammatory drugs (NSAIDs) are long known for their ability to reduce fevers, inflammation, and pain. Moreover, they are among the most common pain relievers in the world for older adults (Ogbru, 2019). Like all drugs, they come with some side effects. The side effects of NSAIDs include confusion, dizziness or lightheadedness, drowsiness, and vision impairments. These side effects increase the likelihood for falls in older adults who take NSAIDs and have a medical condition (Walker et al., 2005). Considering 86% of older adults in the United States are living with at least one medical condition and about 96% of adults (over the age of 65) are under the use of NSAIDs daily, this is a problem (Ward et al., 2014; Wongrakpanich et al., 2018). Falls remain the leading cause of injury and death among older adults, with an estimated total

medical cost of \$30.9 billion for fatal and nonfatal fall injuries. Fear of falling can often lead to curtailing activities and tasks that people need to complete in order to be independent. As a result of these self-limiting behaviors, older adults experience decreased physical functioning, which then contributes to an increased risk for falls (Burns et al., 2016).

So, what can older adults do to manage their pain and reduce their dosage of NSAIDs?

#### Solution #1

Yoga has long been known for its ability to pose many health benefits. In 2015, a study conducted by Dr. Catherine Bushnell discovered that chronic pain can be prevented or reversed through mind-body practices. Furthermore, the research reports that yoga appears to bulk up gray matter and strengthen white matter connectivity in the brain to reduce pain perception.

As we age, we lose gray matter, but yoga enables a neuroprotective effect that disrupts this process and increases pain tolerance. The study theorizes that many benefits of yoga begins with the autonomic nervous system (ANS) and stress reduction as it relates to chronic pain. The sympathetic nervous system (SNS) and parasympathetic nervous system (PNS) branch off from the ANS and explain how we feel pain. When someone is expecting pain, it triggers the “fight-or-flight” response of the SNS which causes an increase in cortisol levels. On the other hand, when someone who practices yoga anticipates pain, their PNS activates. This creates a “rest-and-digest” response and a decrease in cortisol levels. The decrease in cortisol levels promotes a lower perception of pain (Bushnell et al., 2015).

Below, I have provided a video and the link that demonstrates yoga positions lying on a mat. The resource is great for beginners and elders who have balance problems.



*Yoga for Chronic Pain || Beginner Stretches for Natural Pain Relief*

[https://www.youtube.com/watch?v=\\_BMqDzrFpSg](https://www.youtube.com/watch?v=_BMqDzrFpSg)

For more resources on yoga exercises and equipment to alleviate painful experiences checkout the following:

*-Restorative Yoga for Chronic Pain*

<https://yogainternational.com/article/view/restorative-yoga-for-chronic-pain>

*-Gentle Chair Yoga for Beginners and Seniors*

<https://www.youtube.com/watch?v=1DYH5ud3zHo>

*-Gaiam*

<https://www.gaiam.com/collections/yoga-props-accessories>

## Solution #2

Mindfulness meditation has been discussed through mainstream on its ability to reduce or treat pain. Mindfulness meditation is described as a “non-elaborative, non-judgmental awareness” of the present-moment experience. Interventions that are based on mindfulness meditation are known to improve pain symptoms across a wide range of diseases and disabilities such as fibromyalgia, migraines, irritable bowel syndrome (IBS), and many other conditions (Zeidan & Vago, 2016). So how does mindfulness meditation actually work? Hölzel et al. (2011) discovered that mindfulness meditation can actually change the brain’s structure. Meditators were found to have increased cortical thickness in the hippocampus (area of the brain that governs memory and learning), and areas of the brain important for emotional regulation and self-referential processing. There

was also a decrease in brain cell volume in the amygdala (area of the brain that is responsible for fear, anxiety, and stress).

### **How to practice mindfulness meditation**

**Step 1: Take a seat.** Find a spot to sit that provides you stability or a seat that is solid and not perching or hanging back.

**Step 2: Notice what your legs are doing.** If you're on the floor, cross your legs comfortably in front of you. If you're on a chair, it's good if the bottoms of your feet are touching the floor.

**Step 3: Straighten-do not stiffen-your upper body.** The spine has a natural curvature, let it be there. Your head and shoulders can comfortably rest on top of your vertebrae.

**Step 4: Situate your upper arms parallel to your upper body.**

Then let your hands drop onto the tops of your legs. With your upper arms at your sides, your hands will land in the right spot.

Too far forward will make you hunch. Too far back will make

you stiff. You're tuning the strings of your body—not too tight and not too loose.

**Step 5: Drop your chin a little and let your gaze fall gently**

**downward.** You may let your eyelids lower. If you feel the need, you may lower them completely, but it's not necessary to close your eyes when meditating. You can simply let what appears before your eyes be there without focusing on it.

**Step 6: Be there for a few moments.** Relax. Bring your attention to your breath or the sensations in your body.

**Step 7: Feel your breath.** Follow how your breath goes out and as it goes in. Either way, draw your attention to the physical sensation of breathing: the air moving through your nose or mouth, the rising and falling of your belly, or your chest. Choose your focal point, and with each breath, you can mentally note “breathing in” and “breathing out.”

**Step 8: Inevitably, your attention will leave the breath and wander to other places.** Don't worry. There's no need to block or eliminate thinking. When you get around to noticing your mind wandering—in a few seconds, a minute, five minutes—just gently return your attention to the breath.

**Step 9: Practice pausing before making any physical adjustments,** such as moving your body or scratching an itch. With intention, shift at a moment you choose, allowing space between what you experience and what you choose to do.

**Step 10: You may find your mind wandering constantly—**that's normal, too. Instead of wrestling with or engaging with those thoughts as much, practice observing without needing to react. Just sit and pay attention. As hard as it is to maintain, that's all there is. Come back over and over again without judgment or expectation.

**Step 11: When you're ready, gently lift your gaze (if your eyes are closed, open them).** Take a moment and notice any sounds in the environment. Notice how your body feels right now. Notice your thoughts and emotions. Pausing for a moment, decide how you'd like to continue on with your day.

Tip: Results will accrue with constant practice.

For more information check out:

<https://www.mindful.org/mindfulness-how-to-do-it/>

For more resources on mindfulness meditation checkout the following videos and websites:

*-Jon Kabat-Zinn, PhD – Mindfulness Meditation for Pain Relief (Audio)*

[https://www.youtube.com/watch?v=QCNXi\\_0lsCk](https://www.youtube.com/watch?v=QCNXi_0lsCk)

*-Healing Chronic Pain: 20 Minute Guided Meditation*

<https://www.youtube.com/watch?v=3RNXvq3oCHA>

*-Online Mindfulness-Based Stress Reduction (MBSR) (Free)*

<https://palousemindfulness.com/>

Solution #3

Managing the pain can be addressed through many interventions. So how can we manage the falls associated with taking NSAIDs?

Here are some fall prevention tips:

- 1.) **Stay physically active.** Plan an exercise program that is right for you. Regular exercise improves muscles and makes you stronger. It also helps keep your joints, tendons, and ligaments flexible.
- 2.) **Have your eyes and hearing tested.** Even small changes in sight and hearing may cause you to fall. When you get new eyeglasses or contact lenses, take time to get used to them. Always wear your glasses or contacts when you need them. If you have a hearing aid, be sure it fits well and wear it.

3.) **Get enough sleep.** If you are sleepy, you are more likely to fall.

4.) **Limit the amount of alcohol you drink.** Even a small amount of alcohol can affect your balance and reflexes.

Studies show that the rate of hip fractures in older adults increases with alcohol use.

5.) **Stand up slowly.** Getting up too quickly can cause your blood pressure to drop. That can make you feel wobbly. Get your blood pressure checked when lying and standing.

6.) **Be very careful when walking on wet or icy surfaces.**

They can be very slippery! Try to have sand or salt spread on icy areas by your front or back door.

7.) **Always tell your doctor if you have fallen since your last checkup, even if you aren't hurt when you fall.** A fall can alert your doctor to a new medical problem or

problems with your medications or eyesight that can be corrected. Your doctor may suggest physical therapy, a walking aid, or other steps to help prevent future falls.

For more tips, guidelines, and devices helpful in preventing falls checkout the following:

*-Prevent Falls and Fractures*

<https://www.nia.nih.gov/health/prevent-falls-and-fractures>

*-Fall Prevention for Older Adults*



Fall Prevention Tip Sheet.pdf

*-Preventing falls and safe mobility in the home*

<https://www.iofbonehealth.org/news/preventing-falls-and-safe-mobility-home>

*-The Rehab Store*

<https://www.rehab-store.com/>

Other professionals to seek to reduce falls in older adults who take NSAIDs are pharmacists, yoga instructors, and home care specialist. A pharmacist can recommend appropriate dosages and inform clients on the side-effects of NSAIDs.

Pharmacists can also provide advice on how to take the medication safely and when to take the medication. Pharmacists can also educate clients on other medications that reduce the side-effects of NSAIDs or safer alternative drugs (Smith, 2009).

A yoga instructor can provide more information on yoga techniques and positions to reduce pain. Also, yoga instructors can implement mindful meditation throughout their practice (Lee, n.d.). A home care specialist can provide the necessary tools and resources to assist older adults in home modifications to prevent falls. They can also provide instructions, recommendations, and best practice to allow maximum satisfaction and safety (“Home Care Specialists,” n.d.).

Yoga and mindfulness meditation assist with self-care to improve occupational engagement. Fall prevention techniques assist with self-care and mobility to improve occupational

engagement (“ICF,” 2017). Yoga and mindful meditation are both helpful interventions to reducing pain and allowing clients to take care of their health. For example, instead of taking NSAIDs for chronic or acute pain, clients can practice yoga or mindful meditation so they can have an easier time completing their day to day activities without suffering. Chronic pain leads to a decrease in activity level and to increase the activity level we must address ways to reduce the pain without just medications (Bergart, 2020).

Fall prevention techniques assist with self-care by assisting clients to take care of their health as well. For example, if a client was unaware of certain fall prevention techniques, they put themselves at risk for injury and more pain. Furthermore, falls prevention techniques can allow clients to be mobile while being safe. For example, if a client is walking to the bathroom, it

is important that a client wipes spills or has rubber-backed bathmat to prevent the bathroom floor from getting wet (“ICF,” 2017).

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