

# Ergonomics in Dermatologic Procedures: Mobility Exercises to Incorporate In and Out of the Office

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Dermatologists—particularly dermatologic surgeons—commonly experience neck, shoulder, and back pain due to prolonged static positions and repetitive motions inherent in their practice. Musculoskeletal injuries not only can impact career longevity and satisfaction but also can affect the quality of patient care provided. We highlight mobility techniques and exercises that dermatologic surgeons can incorporate both in and outside the procedure room to reduce pain and prevent future injuries.

## Practice Gap

Dermatology encompasses a wide range of procedures performed in both clinical and surgical settings. One comprehensive review of ergonomics in dermatologic surgery found a high prevalence of musculoskeletal injuries (MSIs).<sup>1</sup> A survey conducted in 2010 revealed that 90% of dermatologic surgeons experienced MSIs, which commonly resulted in neck, shoulder, and/or back pain.<sup>2</sup>

Prolonged abnormal static postures and repetitive motions, which are common in dermatologic practice, can lead to muscle imbalances and focal muscular ischemia, increasing physicians' susceptibility to MSIs. When muscle fibers experience enough repeated focal ischemia, they may enter a constant state of contraction leading to myofascial pain syndrome (MPS); these painful areas are known as trigger points and often are refractory to traditional stretching.<sup>3</sup>

Musculoskeletal injuries can potentially impact dermatologists' career longevity and satisfaction. To date, the literature on techniques and exercises that may prevent or alleviate MSIs is limited.<sup>1,4</sup> We collaborated with a colleague in physical therapy (R.P.) to present stretching, mobility, and strengthening techniques and exercises dermatologists can perform both in and outside the procedure room to potentially reduce pain and prevent future MSIs.

## The Techniques

*Stretching and Mobility Exercises*—When dermatologists adopt abnormal static postures, they are at risk for muscular imbalances caused by repetitive flexion and/or rotation in one direction. Over time, these repetitive movements can result in loss of flexibility in the direction opposite to that in which they are consistently positioned.<sup>3</sup> Regular stretching offers physiologic benefits such as maintaining joint range of motion, increasing blood flow to muscles, and increasing synovial fluid production—all of which contribute to reduced risk for MSIs.<sup>3</sup> Multiple studies and a systematic review have found that regular stretching throughout the day serves as an effective method for preventing and mitigating MSI pain in health care providers.<sup>1,3-5</sup>

Considering the directional manner of MSIs induced by prolonged static positions, the most benefit will be derived from stretches or extension in the opposite direction of that in which the practitioner usually works. For most dermatologic surgeons, stretches should target the trapezius muscles, shoulders, and cervical musculature. Techniques such as the neck and shoulder combination stretch, the upper trapezius stretch, and the downward shoulder blade squeeze stretch can be performed regularly throughout the day.<sup>3,4</sup> To perform the neck and shoulder combination stretch, place the arm in flexion to shoulder height and bend the elbow at a 90° angle. Gently pull the arm across the front of the body, point the head gazing in the direction of the shoulder being stretched, and hold for 10 to 20 seconds. Repeat with the other side (eFigure 1).

Some surgeons may experience pain that is refractory to stretching, potentially indicating the presence of MPS.<sup>3</sup> Managing MPS via stretching alone may be a challenge. Physical therapists utilize various techniques to manually massage the tissue, but self-myofascial release—which

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The eFigures are available in the Appendix online at [www.mdedge.com/cutis](http://www.mdedge.com/cutis).

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**FIGURE 1.** Self-myofascial release using a foam roller.



**FIGURE 2.** Four-point kneeling alternate arm and leg extension.

involves the use of a tool such as a dense foam roller or massage ball, both of which can easily be purchased—may be convenient and effective for busy providers. To perform this technique, the operator lies with their back on a dense foam roller positioned perpendicular to the body and uses their legs to undulate or roll back and forth in a smooth motion (Figure 1). This may help to alleviate myofascial pain in the spinal intrinsic muscles, which often are prone to injury due to posture; it also warms the fascia and breaks up adhesions. Self-myofascial release may have similar acute analgesic effects to classic stretching while also helping to alleviate MPS.

**Strengthening Exercises**—Musculoskeletal injuries often begin with fatigue in postural stabilizing muscles of the trunk and shoulders, leading the dermatologist to assume a slouched posture. Dermatologists should perform strengthening exercises targeting the trunk and shoulder girdle, which help to promote good working posture while optimizing the function of the arms and hands. Ideally, dermatologists should incorporate strengthening exercises 3 to 4 times per week in combination with daily stretching.

The 4-point kneeling alternate arm and leg extensions technique targets many muscle groups that commonly are affected in dermatologists and dermatologic surgeons. While on all fours, the operator positions the hands under the shoulders and the knees under the hips. The neck remains in line with the back with the eyes facing the floor. The abdominal muscles are then pulled up and in while simultaneously extending the left arm and right leg until both are parallel to the floor. This position should be held for 5 seconds and then repeated with the opposite contralateral extremities (Figure 2). Exercises specific to each muscle group also can be performed, such as planks to enhance truncal stability or scapular wall clocks to strengthen the shoulder girdle (eFigure 2). To perform scapular wall clocks, wrap a single resistance band around both wrists. Next, press the hands and elbows gently into a wall pointing superiorly and imagine there is a clock on the wall with 12 o'clock at the top and 6 o'clock at the bottom. Press the wrists outward on the band, keep the elbows straight, and reach out with the right hand while keeping the left hand stable. Move the right hand to the 1-, 3-, and 5-o'clock

positions. Repeat with the left hand while holding the right hand stable. Move the left hand to the 11-, 9-, 7-, and 6-o'clock positions. Repeat these steps for 3 to 5 sets.

It is important to note that a decreased flow of oxygen and nutrients to muscles contributes to MSIs. Aerobic exercises increase blood flow and improve the ability of the muscles to utilize oxygen. Engaging in an enjoyable aerobic activity (eg, walking, running, swimming, cycling) 3 to 4 times per week can help prevent MSIs; however, as with any new exercise regimen (including the strengthening techniques described here), it is important to consult your primary care physician before getting started.

## Practice Implications

As dermatologists progress in their careers, implementation of these techniques can mitigate MSIs and their sequelae. The long-term benefits of stretching, mobility, and strengthening exercises are dependent on having ergonomically suitable environmental factors. In addition to their own mechanics and posture, dermatologists must consider all elements that may affect the ergonomics of their daily practice, including operating room layout, instrumentation and workflow, and patient positioning. Through a consistent approach to prevention using the techniques described here, dermatologists can minimize the risk for MSIs and foster sustainability in their careers.

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## APPENDIX



**eFIGURE 1.** Neck and shoulder combination stretch.



**eFIGURE 2.** Scapular wall clock performed using a resistance band.