Osteoarthritis (OA) is a common diagnosis and if one lives long enough, a diagnosis that we will all hear. My interest lies in OA of the hand. In treating this diagnosis, I often gravitate first toward pain reduction modalities. There are many pain relieving modalities that can be explored both in therapy and at home. These may include but are not limited to paraffin bath treatments, ultrasound, moist heat, mineral baths, copper bracelets, low level laser therapy to name a few. If these are coupled with joint protective techniques and the use of adaptive equipment as needed, pain can be reduced and quality of life can be greatly improved.

After talking to some of my coworkers, I determined that paraffin baths are used frequently as a treatment modality for hand OA. Paraffin bath units contain paraffin wax and mineral oil and are kept in a commercial container that is plugged in to maintain heat to the unit. In using this, the person dips their hand into this mixture which coats the hand providing good tissue heat. This coating can be kept on the hand until the mixture cools off and can be used as often as desired. Patients report pain relief with this treatment and I have found this modality to be very well accepted and a beneficial treatment option. This treatment does not reverse the osteoarthritis or the degeneration itself but can provide some increase in function due to pain relief.

I wanted to explore mineral baths as another possible treatment option and its effectiveness in reducing pain. This might be a good option for the patient not able or willing to plug in and store a paraffin bath unit. Mineral baths can have multiple ingredients and are put on the market by multiple different companies. I found many different options available over the counter yet the ingredient that has been studied includes hydrogen sulfide in conjunction with other minerals.

One study from Hungary looked at the effectiveness of the use of mineral soaks. These mineral baths contained hydrogen sulfide, which is known to be an antioxidant, as well as high levels of magnesium, sodium, calcium, chloride and bicarbonate. The solution mixed in water and used therapeutically is called balneotherapy. The study randomized 47 patients with OA of the hand into a double blind, controlled and prospective study. The age range of patients included in the study were 46-75 and did not have any preexisting conditions, previous injections or treatments that would affect symptom reduction.

Both the control group and the balneotherapy group were treated 5 times a week for 3 weeks at the spa. The control group used tap water at the same temperature and because a “sulfurous order pervaded the entire spa,” it was determined that both groups were blinded to the type of water their hands were being soaked in. Assessment took place at the beginning and end of 3 weeks, at 6 weeks
and 12 months. The results were measured by grip strength dynamometer test, hand pain measured on a visual analog scale, morning stiffness in minutes.

The mineral bath group showed significant improvements in every measure at the end of 3 weeks, and at 3 months except the morning joint stiffness and the quality of life questionnaire. As for long term results, the assessment questionnaire remained significantly improved over the baseline in the mineral bath soak group.

The improvements may be attributed to the sulphur content in the water and may be beneficial through both inhalation and absorption through the skin. Hydrogen sulfide is a known antioxidant and could be a contributor to pain relief. These findings support the use of mineral baths or at least using this treatment as an option for patients with OA of the hand who are looking for a conservative treatment option.

Ariel Coffey is a Certified Hand Therapist at Flagstaff Bone and Joint located at 77 W Forest Ave. (in the Physicians & Surgeons Offices attached to Flagstaff Medical Center). Helping patients regain their independence and be able to perform all previous activities is what Ariel finds most rewarding. For additional information or to schedule an appointment visit www.flagstaffboneandjoint.com or call 928.773.2280.