

## Chronic Musculoskeletal Pain Interventions



Musculoskeletal pain can be localized in one area or spread to many different areas throughout the body. It affects the bones, muscles, ligaments, tendons, and nerves while usually being caused by an injury and / or overuse. Musculoskeletal pain becomes chronic when its implications last over a long duration of time (Alexandra, 2017). However, there is hope. This post will serve as a practical guide in helping assist you with such pain and what approaches you can take to overcoming such. The diagram above will serve solely as an example for this post and the interventions that can be implemented for such posture. If you find yourself currently possessing such posture, or any similarities, then this post is just for you. If not, and you have other postural deficiencies, the information given can still be applied and manipulated to help rehabilitate your unique posture and any pain that it is causing.

If we had a client present us with the posture shown in the diagram above we could suspect some pretty specific muscle imbalance patterns. We will start at the bottom and work our way up. The client appears to have a slight forward lean, placing a significant amount and the majority of their weight on the anterior portion of their body. The ankles, followed by the knees, take on this drastic weight causing the joints and ligaments in these prime movers to take on an unhealthy amount of stress. Tracing our way up the body the client also appears to have an anterior pelvic tilt. This is visible from the forward tipped pelvis, increased lower back curve, and a bulging (not necessarily fat) abdomen. Finally, we reach the upper back and recognize a rounded thoracic spine. This condition is known as kyphosis. This client's rounded thoracic spine also leads up to their cervical spine, causing an unhealthy curvature in their neck.

So, now that we have addressed some suspected muscle imbalance patterns, what do we do? We provide prescription in the form of exercise. Such an intervention is not only the most cost-effective, but also the most long-term and sustainable form of rehabilitation. Injections and medications are all temporary forms of treatment in addition to lacking involvement of the neurological patterns and sensorimotor system that new movement patterns will require. This requirement is a benefit as proper thinking will lead to proper action, proper movement, and an increased quality of life.

Once again, let's start at the bottom and work our way up. Concerning the forward lean placing unwanted stress on the ankles and knees we need to implement a strategy that allows the client to squat and stand safely on their heels as opposed to the balls of their feet. Implementing such will thereby eliminate such stress teaching our client a new way in which to move, almost recreating their posture as they do such. An exercise that has proven to be great is the Spanish Squat / Groney Squat (see image below.) It is a staple in rehabilitation programs. The band

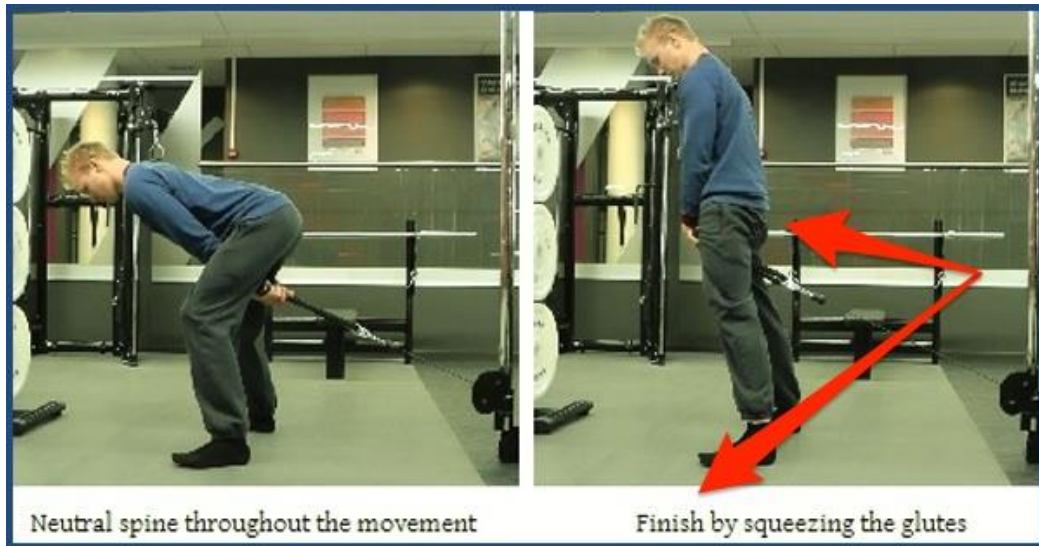
allows athletes and persons to sit back and keep their shins vertical. This decreases the joint stress on the ankles and knees. An added benefit to this exercise is the amount of constant tension it elicits on the quadriceps if the client focuses on driving their knees into the band through the entire motion. It can also be implemented as a strength or hypertrophy exercise with the addition of weight in a goblet hold.



Now to address the anterior pelvic tilt. This pattern is characterized by overextension of the lumbar spine, lack of glute involvement, and low-back dominance. This results in stiff hip flexors, along with poor glute and abdominal strength leading to unhealthy compensation patterns. A solid exercise to start with is a lying pelvic tilt. Have the client lie down, feeling their usual anterior pelvic tilt, then cue them to push their lower back to the ground. This will result in a posterior pelvic tilt, allowing the client to feel how their posture should be at all times. Next, upon standing, cue the client to squeeze their glutes. This will trigger them, once again, to posteriorly tilt the pelvis. Now we can begin to implement some resistance training in the form

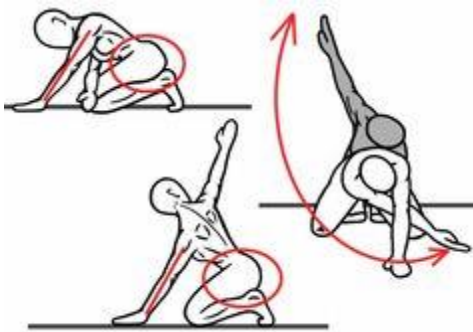
of a pull-through. This will teach the client a proper hip hinge pattern in addition to forcing them into a posterior weight shift as the band or cable is attached behind them. Cue the client to keep their chest up, push the hips back, and squeeze the glutes to finish. Finally, we get to strengthening the posterior pelvic tilt movement pattern and surrounding muscles that promote such. A prime example of this is the RKC plank which results in a posterior pelvic tilt, as opposed to a standard plank which often results in an anterior pelvic tilt (Garnar, 2017). Please see the images below for a visual of the four steps to this intervention described previously.

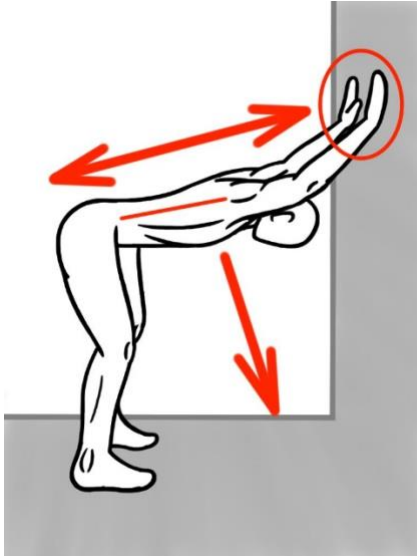




This brings us to the rounded thoracic spine, also known as kyphosis. There are a wide array of mobility exercises to implement in curing a rounded thoracic spine that we will get to momentarily, but perhaps the most important thing for clients suffering from this is the neurological patterns they associate with such. It is critical for these persons to actively think about and carry themselves in proper posture when they are outside of the gym. This is as simple as squeezing their shoulder blades together / keeping their chest up and maintaining such posture throughout the day. It has taken a significant amount of time to result in the client's current posture, and the case is the same for getting them back into the posture we want; this is why each moment is critical. Actively practicing proper positioning of the thoracic spine, after a period of time, will allow this posture to happen passively as to where the individual does not have to think

about it, which is our end goal. In addition, there are various mobility exercises including, but not limited to: thoracic rotations, lying vertically or horizontally on a foam roller, and placing the hands or elbows on an elevated surface above the spine, once again allowing it to open up (see images below.) These exercises will only speed up the process of correcting thoracic spine posture, which will almost immediately fix the curvature in the cervical spine that it leads to as well.





Perhaps the most critical aspect to implement with all of these interventions is patience. Patience in waiting for structural changes in your posture along with relief from your pain. Hopefully these exercises will elicit immediate relief, but if not then just know that it takes time. The structure of your body did not happen overnight and it will not change overnight. However, by implementing these proper movement patterns and being neurologically aware of such, things will only get better. Putting in the effort and working on them definitely will not make things worse, but day by day will lead us to the quality of movement, and thus quality of life that we strive for. If you need help concerning what interventions to implement, do not hesitate to contact one of your coaches at Reignited!

## References

- Villa-Forte, Alexandra. "Musculoskeletal Pain - Bone, Joint, and Muscle Disorders." Merck Manuals Consumer Version, [www.merckmanuals.com/home/bone-joint-and-muscle-disorders/symptoms-of-musculoskeletal-disorders/musculoskeletal-pain](http://www.merckmanuals.com/home/bone-joint-and-muscle-disorders/symptoms-of-musculoskeletal-disorders/musculoskeletal-pain).
- Garnas, Eirik. "5 Steps for Dealing With Anterior Pelvic Tilt." The PTDC, 2 Jan. 2017, [www.theptdc.com/2014/06/5-steps-dealing-anterior-pelvic-tilt/](http://www.theptdc.com/2014/06/5-steps-dealing-anterior-pelvic-tilt/).
- <https://i.ytimg.com/vi/0upn6tdpTOY/maxresdefault.jpg>
- [http://www.stretchiq.com/Upload/Videos/63/large/ST006\\_1.jpg](http://www.stretchiq.com/Upload/Videos/63/large/ST006_1.jpg)
- <http://crossfitpride.com/wp-content/uploads/2016/03/Shoulder-Mobility-Wall-Assisted-Shoulder-Flexion-Shoulders-Thoracic-Spine-Stretching-Mobility-Alignment-Evaluation.jpg>
- <https://i.pinimg.com/236x/e7/f5/17/e7f5176a61af4b0c361ddd70ab76f952--physical-therapy-exercises-upper-body-warm-up.jpg>