

# THE LOW BACK LOW DOWN

Treatments for the most common low back injuries



## WHAT'S IN THIS ISSUE

- What to Expect -1
- The Easy Stuff - 2
- The Hard Stuff -3
- The Stuff we have to be Patient with -4
- Conclusion -5



*Written By: Thomas L. Bennett, MPSM, LAT, ATC, FMT, FMS, GT Thomas is the Assistant Athletic Trainer for the RecWell Athletic Training Program and has been since the program's inception in 2018.*

## WHAT TO EXPECT

In the previous article of the “Low Back Lowdown” series my colleague Alysia discussed the most common types of injuries we as Athletic Trainers observe and evaluate in the clinic and on the field. Having a greater understanding of what these injuries are and how each pathology is conceptualized, we can now begin explaining various treatments to be expected for these injuries.

Throughout this article we will be discussing treatment considerations, modalities and rehabilitation exercises we use here in the clinic to resolve the more common low back injury pathologies. There are numerous ways to approach treatment of any of these injuries but we will be focusing on what Alysia and myself as Athletic Trainers can do for you in the clinic here on campus. I could discuss treatment more in detail and get into philosophies and protocols but let us save that for another time.

Let's dive in...

# Sprains, Strains and Bruising

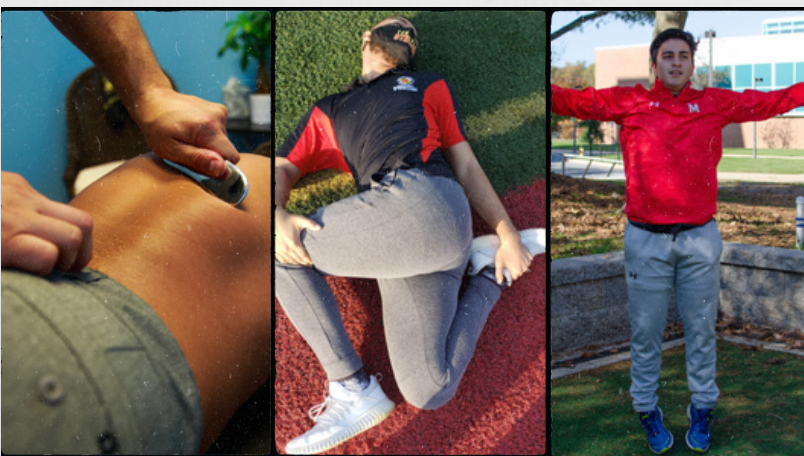
## *Sprains and Strains*

Let's Begin with Strains and Sprains. You already know the difference: strains involve muscular tissue, sprains involve ligamentous tissue. The treatment is generally the same. Working In tandem with the series of inflammation and the first 72 hours of healing we can begin with the most basic of rehab principles, control or manipulate the inflammation process to our advantage. We can speed the process up or we can slow it down while protecting the area through bracing and taping as needed. Either way, we take advantage of the body's natural healing elements depending on the type of injury and its severity.

Working closely with the patient's perception of pain and integrity of the damaged tissue we begin to resolve things like elasticity of the area, the strength of the region, and the structures proprioceptive and neurologic adaptability (its functions). First, we solve for restricted or stiff tissue (elasticity). Current research and education show us that we can combine manual manipulation (massage, instrument assisted soft tissue mobilization, foam rolling, etc) of soft tissue (tendon, muscle, ligament fascia) and applying gentle stretching to the affected area. Second, we create a strengthening program based on the limitations of the injured area, these involve a series of bodyweight and rehabilitation equipment programmed carefully following both modern and traditional periodization methods. Third, we return to the normal activity slowly by breaking down more specific movements (agility drills, speed drills, breathing techniques, or daily life skills like picking something up from the ground) that challenge the region and structures proprioceptive and neurological adaptations required of it during physical activity.

## *Bruising or Contusions*

Contusions or bruising anywhere on the lumbar spine is relatively easy. The treatment for bruises is all about protecting the injured site from further injury while reducing pain and returning the range of motion or mobility to normal. Generally we mitigate and control pain through RICE method or various modalities in the clinic and give the patient stretching exercises to maintain the tissues elasticity. The rest takes time and patience.





## THE HARD STUFF

# Disc Herniations & Sacroiliac Joint Dysfunction

## Disc Herniations

Treatment for disc herniations in the lumbar spine involves managing pain with the use of various modalities depending on the severity of pain and limitations, protecting the painful area through postural and ergonomic adjustments, addressing the mechanics that cause pain with physical rehabilitation, and discussing load management when we finally reach returning to physical activity (such as weight training or sports)

Note the list below for examples of treatment

### Managing pain with Modalities

- Transcutaneous Electrical Neuromuscular Stimulation
- Hot Packs
- Ice Bags/Packs

### Addressing Posture

- Ergonomic Assessment
- Postural Assessment

### Physical Rehabilitation

- Stretching the Lumbar Spine and related lower extremities
- Strengthening related trunk and core musculature
- Providing Traction
- Breathing Techniques

### Discussing Volume and Load Management

- Education
- Programing

## Sacroiliac Joint Dysfunction

Treatment for Sacroiliac Joint Dysfunction involves a similar process to that of Disc Herniations. The largest difference is that we focus on the sacrum relationship with the iliac crests of the hip (sacroiliac joint) and how it can affect the lumbar spine. To address this we focus on muscle energy to level or adjust the sacrum between the iliac crests there by alleviating some symptoms. The rest is up to physical rehabilitation and even breathing techniques to normalize or solidify the new relationship.

Note the list below for examples of treatment

### Managing pain with Modalities

- Hot Packs
- Ice Bags/Packs

### Physical Rehabilitation

- Clinician Assisted Muscle Energy Techniques
- Stretching the Lumbar Sacral Plexus, Gluteus Group, and Pelvic Musculature
- Strengthening related trunk and core musculature
- Breathing Techniques

### Discussing Volume and Load Management

- Education
- Programing

# Fracture Care and Spondylopathies



Compression Fracture L1

## Veretbral Fractures

To be completely honest there is not much we as Athletic Trainers can do for vertebral fracture care and rehabilitation other than remind you that there is a fracture and to rest until it is healed. In the injury pathology article it was mentioned that it takes specific imaging (sometimes more than an x-ray) to evaluate and diagnose and this requires an orthopaedic physician specializing in spine care. The remaining treatment is rest and protecting the area as best as possible.



I mean they are pretty close...right?

## Coccyx Fractures

Similarly to vertebral fractures, there is not much to be done about these fractures. Imaging is required and a referral to an orthopedic physician is the best course of action. A recommendation one receives when dealing with a coccyx fracture is to sit on a donut-shaped inflatable pad to protect the fracture site. A similar treatment is taken when the coccyx is bruised.

## Spondylopathies

There are four spondylopathies that we can manage and provide treatment for in the clinic. These are Spondylaigia, Spondylitis, Spondylolysis Spondylosis. There are examples of exercises to the left, **however, you should not attempt to do these exercises on your own.** Every spondylopathy should be evaluated by and discussed with a physician (preferably a low back specialist) prior to thinking about doing any form of rehabilitation exercise. These injuries are very specific to each individual and should not be approached without the guidance of an experienced clinician such as a Physical Therapist, Physical Therapist Assistant or Athletic Trainer.

### Rehab examples for Various Spondylopathies:

- Diaphragmatic Breathing
- Dead Bugs
- Pelvic Tilts
- Supine Bent Knee Marches
- Planks and Side Planks

THAT, SEEMED LIKE A LOT

# Conclusion

## *We know its a lot, but that is why we are here*

As one can imagine low back pain treatment ranges from “tricky” to “oh wow.” Each case should always be consulted by a treatment team specializing in orthopedics and if possible spine care (consisting of an orthopedic physician or surgeon, physical therapist, and an athletic trainer). Alysia and I have a very large toolbox and resources to use to our advantage for each of these injury pathologies. I didn't even go over the actual McKenzie Principle or some of the Thomas Myers Anatomy trains techniques (those could be their own series of articles) and I won't, they are honestly boring, but they work! Look, as a student here at the University of Maryland, you have an awesome resource with the RecWell Athletic Trainers to resolve that mysterious low back pain that never seems to go away. So use it! We hope you learned a lot from this and the previous articles and hope you look forward to more in the future.

We look forward to helping you,

Your RecWell Athletic Trainers

## References

- Denegar PhD ATC PT, C. R., Saliba PhD ATC PT, E., & Saliba PhD ATC PT, S. (2010). *Therapeutic Modalities for Musculoskeletal Injuries* (3 ed.). (D. H. Perrin PhD ATC, Ed.) Champaign, IL, United States of America: Human Kinetics.
- Prentice PhD PT ATC, W. E. (2011). *Rehabilitation Techniques for Sports Medicine and Athletic Training* (5 ed.). New York, NY, United States of America: McGraw Hill Companies Inc.
- Prentice PhD PT ATC, W.E. (2011). *Principles of Athletic Training A Competency-Based Approach* (14th e.). New York, NY, United States of America: McGraw Hill Companies Inc.
- Houglum PhD, J., Harrelson EdD, A. G., & Leaver-Dunn PhD, A. D. (2005). *Principles of Pharmacology for Athletic Trainers*. Thorofare, New Jersey, United States: SLACK Incorporated.
- Cleveland Clinic Professional Staff. (2018, September 14). *Diaphragmatic Breathing*. Retrieved from [clevelandclinic.org: https://my.clevelandclinic.org/health/articles/9445-diaphragmatic-breathing](https://my.clevelandclinic.org/health/articles/9445-diaphragmatic-breathing)
- Lee PT MS, J.-H., Lee PT PhD, D.-K., & Oh PT PhD, J.-S. (2016, June 28). *The effect of Graston technique on the pain and range of motion in patients with chronic low back pain*. *Journal of Physical Therapy Science*, 1852-1855. doi: 10.1589/jpts.28.1852
- Selhorst DPT, O. M., Allen PT, O. M., McHugh DPT OCS, R., & MacDonald MD MPH, J. (2020, April 15). *REHABILITATION CONSIDERATIONS FOR SPONDYLOLYSIS IN THE YOUTH ATHLETE*. *International Journal of Sports Physical Therapy*, 15(2), 287-300. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7134351/>
- Sharma, A., Alahmari, K., & Ahmed, I. (2015, June 26). *Efficacy of Manual Therapy versus Conventional Physical Therapy in Chronic Low Back Pain Due to Lumbar Spondylosis. A Pilot Study*. *Medical Sciences*, 55-63. doi:10.3390/medsci3030055
- The McKenzie Institute International. (2014). *Mechanical diagnosis and therapy: Lumbar spine*.