What This Isn’t

A session of movements or circuits
Intensive research based studies
A set format or progression

What This Is

A session based upon principles & concepts of movement
Based upon 34+ years of practice
of common issues within the fitness, sports performance, and corrective exercise industries
Strategies to create an environment for client’s success
Open-ended
Very interactive discussion…or not…
…it depends upon you
Swing Phase

Relative Bone Position of the Extremities

Movement is described as of the distal bone in relation to the proximal bone.

Relative Bone Position of the Spine

Movement is described as of the proximal bone in relation to the distal bone.

Loading the Cannon – Tri-Plane Loading

- Calcaneal eversion
- Ankle Dorsiflexion
- Tibial internal rotation
- Calcaneal Eversion
- Forefoot Abduction

Eccentric loading

Must occur to maximally recruit the gluteals
3 Elements of Discussion

Cueing
Gait & Injury Issues
Programming

**Insight: Stand Tall**
Too often we give too many cues to clients when they squat or lunge. Keep it simple, tell them to stand tall. Specifically, have them reach from their greater trochanter through their head to the sky.

**Insight: Shine the Beacon of Life**
Shine “The Beacon of Life”... where the pelvis goes, the low back will follow. Imagine there is a flashlight in one’s navel (The Beacon of Life). When performing rotational motions, shine the light so the pelvis rotates as well. If the pelvis rotates, the lumbar spine will follow.
When performing shoulder work and the client is moving through the transverse plane, they should not reach with the arm. Tell them to move the scapula—where the scapula goes, the humerus will follow. Likewise, where the humerus goes, the scapula will follow. This will not only train the shoulder girdle, but will allow motion through the thoracic spine.

Insight: “WHERE THE SCAPULA GOES...”

Recently, I was at a conference and heard a statement, “foot pronation is bad.” While human body conditions, gait, and normal healthy conditions, foot pronation is essential to normal function. The foot has to go through calcaneal eversion, ankle dorsi/plantar flexion, knee extension/ flexion, and hip adduction. The reaction allows the hip to flex, internally rotate, and abduct...yes, you read correctly, allows the hip to flex, internally rotate, and abduct. With the reaction, the body has the ability to absorb forces seen in normal reactions. The hip reacts and allows the body to absorb motion, compensating occurs.

The question is not going through pronation, but how long and how much can the system tolerate and then ACCELERATE out of pronation. If a person has too long of a pronation moment, or has difficulty getting out of the deceleration phase, then the issue is on concern. The knee will flex, internally rotate, and abduct… This reaction allows the knee to flex, internally rotate, and abduct. The reaction allows the body to absorb forces seen in normal reactions. We need to assess the quality of the reaction to determine if compensations are occurring. We need to assess the quality of the reaction to determine if compensations are occurring. The body has the ability to absorb forces seen in normal reactions. The hip reacts and allows the body to absorb motion, compensating occurs.

Insight: Gait & Injury Issues

INSIGHT: FOOTING THE LOAD

In the majority of people presenting with low back pain, they have a limitation of motion in the foot/ankle complex, hips, and thoracic spine. Make sure these “Big Rocks” have good range of motion to reduce compensations in the lumbar region.

Insight: BACK PAIN

In the majority of people presenting with low back pain, they have a limitation of motion in the foot/ankle complex, hips, and thoracic spine. Make sure these “Big Rocks” have good range of motion to reduce compensations in the lumbar region.
I have found it interesting that in approximately 75% of the ACL injuries that have not had acute blunt trauma, there has been a flat foot involved. The calcaneal eversion will increase ankle dorsiflexion and tibial internal rotation, putting the ACL under tension. Could there be a connection that is not being investigated? I think so….

Insight: acl issues

As a client walks and their hip appears to "ball out" during mid-stance, take a look at the adductors and foot. Often the adductors are tight in the transverse plane. The foot often may have problems stabilizing the first ray during mid-stance. This will cause a common compensation, as the rearfoot will over-rotate. Often, the heel will then whip medially, causing the tibia to externally rotate, taking the femur to rotate outward, resulting in the hip to "ball out". It looks like the opposite hip flexor is tight, but actually, the affected hip of the foot compensation does not lift forward, but circumducts. This can lead to back, SI joint, hip, or knee problems.

Insight: the hips can lie

It is interesting to find, with numerous clients who have had sports hernia injuries, each one of them had a foot or ankle injury within the previous 2-5 years. After assessing these clients, they all had limitations of the foot and ankle of the injured foot or ankle. Coincidence…? I believe not. Make sure they have re-captured the motion in these previously affected areas.

Insight: sports hernia

If a calf is tight and dorsiflexion is limited, in most cases I have found the same side hip flexor is also tight. During the normal, healthy gait cycle, the foot passes over the foot causing the ankle to dorsiflex. As the hip continues to move forward, the hip will extend. If the calf or ankle joint is tight, it will not allow the hip to fully extend. Likewise, the reverse can be true. If the hip flexor is tight and does not permit the hip to extend, the ankle will not fully dorsiflex. The extension moment is greatly dependent upon these two structures to "cooperate" with each other, otherwise many deleterious compensations can ensue. Be sure to stretch the calf and same side hip flexor together, as one can affect the other.

Insight: footing the load
I have worked with numerous multi-sport athletes that have ITB, piriformis, and tight hamstring issues. Often, they have had a foot problem that does not allow the gluteal complex to load effectively. When the gluteals become weak, the hamstrings, deep internal hip rotators, and ITB often are overused. This is not to say the foot is the only cause, but check foot function.

**Insight: footing the load**

**Programming**

Regress before we progress our clients that have been sedentary, immobile, or recovering from injury or recent surgery. Make sure they are moving through the “Big Movement Rocks”: foot/ankle complex, hips, and thoracic spine.

**Insight: regress before progress**

Adequate motion in the Anterior Flexibility Highway (AFH) enhances extension moments. The AFH has fascial connections from the anterior tibialis to distal quads, to hip flexors, to abdominals, to pectorals, to cervical flexors, and shoulder complex, depending upon shoulder position.

**Insight: anterior flexibility highway**
The Posterior Flexibility Highway (PFH) runs from the calcaneus to the Achilles tendon to the posterior calf group, over the knee joining the hamstrings, to the ischial tuberosity. Via the sacrotuberous ligament to the sacrum, the fascial connection to the sacrospinalis runs to the occiput. From the occiput, the fascia conjoins with the epicranial fascia to the forehead. Having ample range of motion in the PFH enhances flexion movement patterns.

**Insight:** Posterior Flexibility Highway

The Lateral Flexibility Highway (LFH) runs from the peroneals to the iliotibial band, to the tensor fascia lata, gluteus medius, gluteus minimus, gluteus maximus. The gluteal fascia interfaces with the quadratus lumborum fascia, transverse abdominus, obliques, rectus abdominus, latissimus dorsi, teres major, teres minor, biceps femoris, hamstrings, rectus, rotators, pectoralis, and tensor fascia. The LFH is critical to enhance frontal plane motion and necessary to allow optimal internal rotation in the transverse plane.

**Insight:** Lateral Flexibility Highway

The Anterior X-Factor (AXF) runs from the opposite adductor into the abdominals, obliques, pecs, and shoulder of the opposite side. Any motion that involves extension and external rotation will be improved with ample range of motion in the AXF.

**Insight:** AXF Flexibility Highway

Notice how the fibrous alignment of the opposite gluteal complex and latissimus dorsi to the shoulder run in nearly a straight line, forming the Posterior X-Factor (PXF) and mobilizing the fascia around the spine for optimal motion. Having good range of motion along the PFH. If there is poor motion in the hip or opposite shoulder girdle regions, often the rotation goes through the lumbar spine—not a desired outcome.

**Insight:** PXF Flexibility Highway
Fascia consists of collagen and fibroblasts, comprising the sticky extra-cellular matrix. Studies demonstrate fascia responds to stress, particularly eccentric loading. Collagen favors mobility, which results in stability. Therefore, mobility and stability are part of the same movement continuum, not opposite each other. If we eccentrically load under our own body weight, tissue lengthens (mobility in 3 planes), while strengthening (stability in 3 planes).

**Insight: Fascial Fitness**

I find it interesting when people perform heel raised squats. Biomechanically, this creates relative plantar flexion, tibial external rotation, relative calcaneal inversion, and forefoot adduction. This is the opposite actions the foot and ankle complex should do during pronation and loading the gluteal complex. The biomechanical reaction through pronation is ankle dorsiflexion, calcaneal eversion, tibial internal rotation, and forefoot abduction. This allows the femur to internally rotate and eccentrically load the gluteal complex. So if someone says, "when I squat, I don't feel it in the glutes," step back and assess the foot and ankle complex.

**Insight: No Heel Raised Squats**

Over the past few weeks, I have assessed 4 clients who presented with either patellar tendon pain, hip flexor tightness, the loss of speed when running, and Achilles tendon issues. When I asked what strength and conditioning they had been doing, all had included weight loaded toe raises. These clients had significant tightness in their calf complex that was inhibiting their ability to ankle dorsiflex during their daily activities. This is not to say do not perform loaded toe raises; however, I do not advocate this movement pattern. If they are part of a strength training program, make sure it is integrated into the full spectrum of movement of the calf group. Keep in mind, when doing loaded toe raises, the ankle is moving through plantar flexion and concentric shortening of the muscle group. If the calf group is tight, while dorsiflexion will be reduced and can limit hip extension. Additionally, spine rotation to the opposite side can also be reduced and potentially create a myriad of problems. To work within the entire movement spectrum, the client needs to also include a loaded ankle dorsiflexion movement to eccentrically lengthen the muscle group.

**Insight: Calf Raises - Why or Why Not?**

When a client presents with kyphosis, the fitness and rehabilitation industries generally have addressed the thoracic spine. However, there is a chain reaction when kyphosis is present. The thoracic spine and lumbar spine flex, lordosis is lost, and the pelvis most often will go into posterior tilt. Therefore, we must ask, is kyphosis a thoracic or pelvic problem… both need to be involved in the solution.
When clients complain of hamstring tightness, do not assume the hamstrings are short and tight...they could be long and taut...giving the sensation of tightness. Therefore, check pelvic alignment to determine there is a significant anterior pelvic tilt. If there is, the ischial tuberosity is further from the tibial condylar insertion, thereby lengthening the hamstrings. Often accompanying the anterior pelvic tilt, the tibia will be internally rotated, adding to the hamstring tension in the transverse plane.

**Insight: Hamstrings - Long & Tight/Short & Tight?**

**Insight: Re-Set Proprioceptors**

When a previously tight tissue has been stretched and mobilized, be sure to provide an appropriate movement pattern that has regressive to progressive strategy. The primary rationale is proprioceptors are stimulated when lengthened, yet the myofascial tissue usually does not have the immediate eccentric loading strength.

In the frontal plane, I always find it interesting when one adductor is tight and weak, the opposite lateral gluteal complex is tight and weak. We should make sure our strength and flexibility strategies include an integrated approach to impact both complexes.

**Insight: Frontal Plane Motion**

I have found those tight in the hips through the transverse plane, are also tight in the frontal. We must improve the frontal range of motion before addressing the transverse plane of motion. This approach will enhance the client’s ability to get into the transverse plane more easily.
Thank you!!!

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Thank you for coming!!!