# *Entry Level Athletic Movement*

## *with Anthony Mychal*

**http://anthonymychal.com | http://www.tricktraining.net**

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# Who Is Anthony Mychal?

- **Education**
  - Bachelor's and Master's
- **College Experience**
  - Under Strength Coaches
- **High School Coaching**
  - Teacher and Coach

# What Makes Me Different?

- **Strength coach = STRENGTH**
- **Tricking background**
- **The more learned = the less known**
  - "…think…"
  - "…believe…"

# Introduction to Athleticism

- **Athleticism is balance**
  - Relaxation and contraction
- **Being a chain**
  - Strong guys
- **Being a whip**
  - Fast guys

# What is “Balance?”

- **Muscular imbalances**
  - Dangerous?
  - Healthy?
- **Every athlete has imbalances**
  - “Perfect” depends on sport
- **“The Athlete”**
  - **by Howard Schartz and Beverly Ornstein**



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# “The Athlete”



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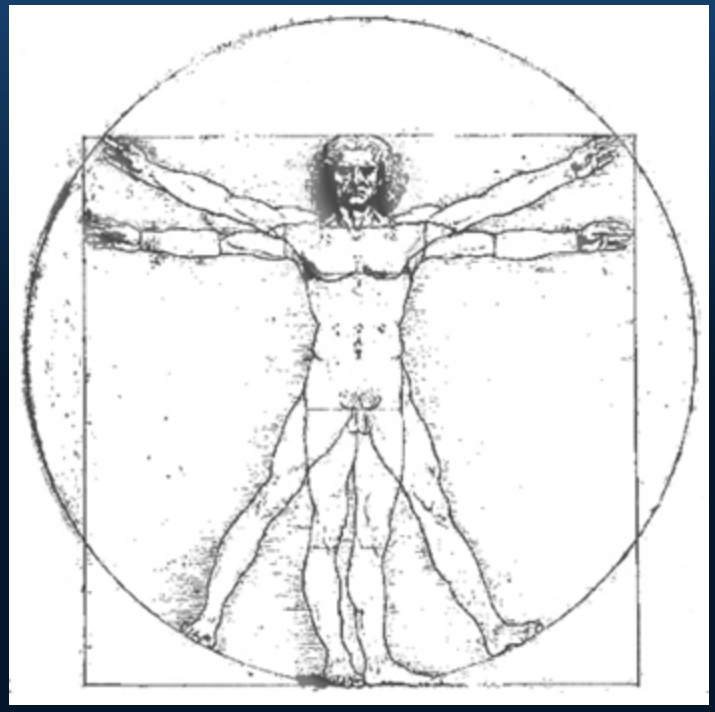
# Assumed Rules

- **Assumptions**
  - Muscle size hints at capacity
    - Larger muscle, stronger muscle
    - Da Vinci's Vitruvian Man
  - High level athletes use their hips
    - Glutes are the biggest muscle
    - Olympic weightlifters, pitchers, throwers, etc.

# Vitruvian Man



# The Hips

# The Hips

# The Hips

- “Olympic Weightlifters …lock the lumbar spine close to the neutral position and rotate almost entirely about the hips.”
  – *Low Back Disorders,* Stu McGill

# Lower Body Movement

- **General athletic movement for the lower body**
  - Most activities
  - “Clean Up” the lower body
- **Transition concepts to other areas**
  - Upper body
  - Movement patterns
  - Strength movements



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# 4 Things to Note

1. Position
2. Activation
3. Absorption
4. Propulsion

# Position

- **Your body in space**
- **Every movement in question will have different positions and intricacies**
- **Position is also general**
  - Upright, etc.

# Position Specific

# Activation

- **What muscles are “on” in said positions**
- **Great athletes tend to use more hips and more forefoot**
- **Activation patterns *can* change**
  - Buttifant, D, Crow, J, Kearney, S, and Hrysomallis, C. Whole-body vibration vs. gluteal muscle activation: What are the acute eff ects on explosive power? Journal of Strength and Conditioning Research 25: S14–S15, 2011.

# Absorption

- How capable the muscles that are “on” are at harnessing and dissipating force
- Similar and closely related to isometric strength
- Force from ground, what can your body do with it?
- Leaks in the system

# Propulsion

- How well the muscles can output the absorbed force
- Depends on which muscle drive movement
- Leaks in the system

# The “Spring” Analogy

# Motor Reprogramming

- **Motor Reprogramming**
  - **The process of cleaning up these 4 areas**
  - **Makes movement refined and better for task at hand**

# Stopping At Activation

- **Most people “activate”**
  - Can’t stop there
- **Activation nice, but consider the entire chain of movements and where they fit in**

# Problems With “Activation”

- **Most times, non-specific**
  - Glute bridges?
- **Dynamic Correspondence**

# Verkhoshansky and Siff, 1998

- The exercise must resemble the amplitude and direction of movement
- The accentuated region of force production must be considered. In other words, where in the amplitude of movement are the highest forces produced?
- Consider the dynamics of the effort. For example, should the exercise involve an explosive concentric contraction, or a slow eccentric contraction?
- Look at the rate and time of maximum force production of the skill or an aspect of it. Try to resemble it in the training exercise.
- The regime of muscular work (the type of muscle contraction)

# Yessis, 2006

- 1. The exercise must duplicate the exact movement witnessed in a certain segment of the sports skill. For example, an exercise to duplicate the exact ankle, knee, hip, or shoulder joint action in running.
- 2. The exercise must involve the same type of muscular contraction as used in the skill execution. For example, in the knee drive exercise, the muscles undergo an explosive concentric (shortening) contraction (after being pre-tensed) to produce maximum force and resultant running speed. After the initial contraction the limb continues on via its own momentum until the antagonist muscles undergo a strong eccentric (lengthening) contraction to slow down and stop the limb before an injury can occur. The special exercise can also duplicate the speed of movement.
- 3. The special exercise must have the same range of motion as in the skill action. For example, in running, doing an exercise with the arm raised above the head and then pulling it downward may use the same muscles, but it does not duplicate the same range of muscular arm action. A more specific exercise is to move the arm backward and upward so that it duplicates the exact range of motion which occurs in the running stride.

# Truth About Reprogramming

- **Alter muscle involvement, change body movements**
  - Very difficult in fast, reaction based movement
- **Follows four stages of learning**
  - Unconscious incompetence, conscious incompetence, conscious competence, unconscious competence

# Programming Analogies

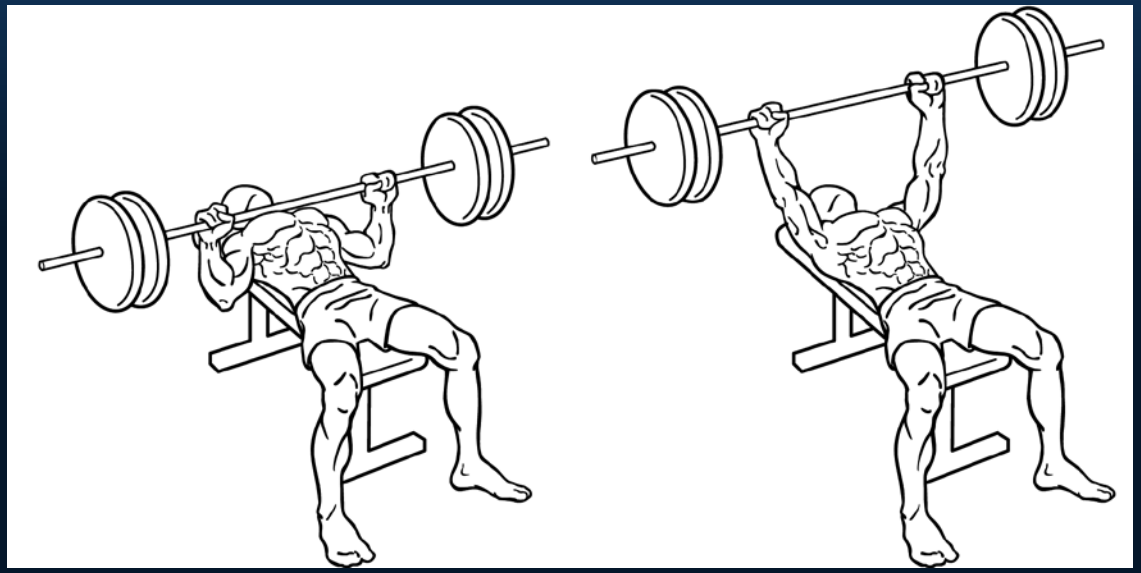
- **Learning how to swing**
  - Hitting a fastball

# Programming Analogies

- **Learning how to write**
  - Non-dominant hand

# Programming Analogies

- **Learning how to bench press**
  - Dave Tate





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# Correlating It All

- **Position and Activation**
  - Slow movements (perhaps no movement at all) that help **conscious** learning
- **Absorption**
  - Adding some movement but still withholding activation
- **Propulsion**
  - Reflexes, hoping it all translates over

# Overriding Theory

- **Better position allows for better activation**
- **Better activation allows for the “right” muscles to be used**
- **Both of the above allow for better absorption**
- **Better absorption allows for better propulsion**
  - Coil

# Athletic Anecdote

- **Good athletes use their hips**
  - Research proven
- **Forefoot anecdote**
  - Sprints, movements, observations
  - Tricksters
    - Hover, bounce

# Athletic Anecdotes

- **How life kills athleticism**
  - Sitting
  - Shoes
- **Most hardwired to fail athletically**

# Goal of Reprogramming

- **Goal**
  - Glutecentric
  - Hip Driven
  - Forefoot

# Beliefs

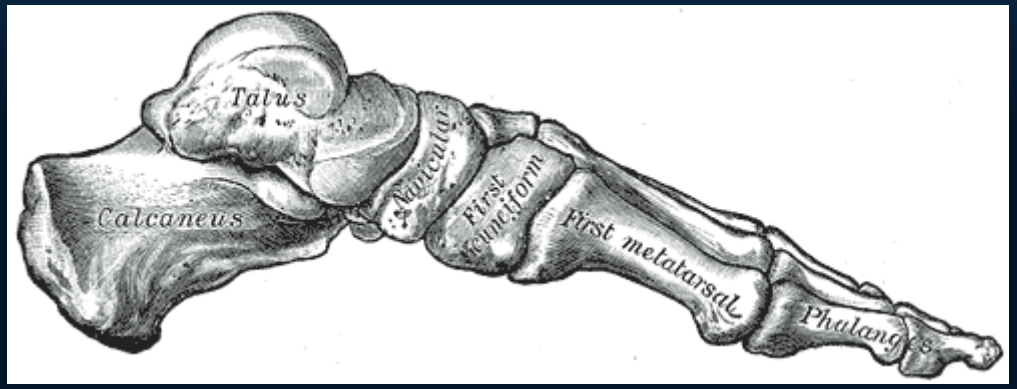
- **Don’t believe in misguidedly doing every isolation or activation exercise**
  - Targeted exercises that hint at movement capacity
  - Hint at both position and activation for future absorption and propulsion

# Baseline Athletic Movement

- **Muscle of hip in charge of hip**
- **Femoral Control**
  - Glutes drive hip extension
  - Balance with hip flexors

# Baseline Athletic Movement

- **Understanding the foot's tripod**
  - Avoiding navicular drop
  - Solid force transfer



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# Baseline Athletic Movement

- **Learning how to hinge**
  - Bringing it all into upright movement



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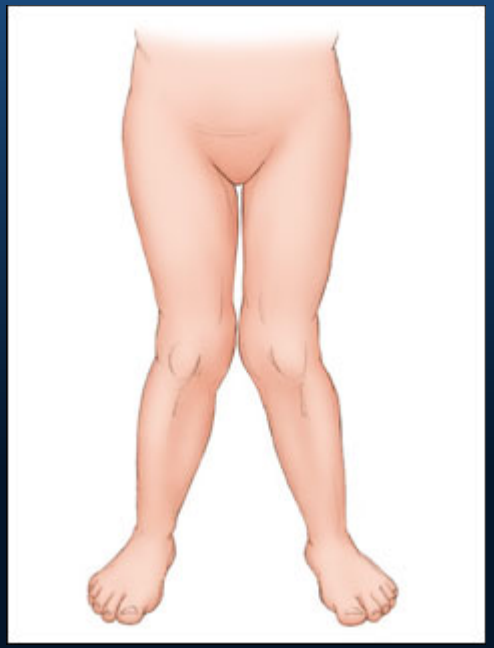
# Athletic Assessments

- **Standing and squatting**
  - Look for navicular drop

# Navicular Drop

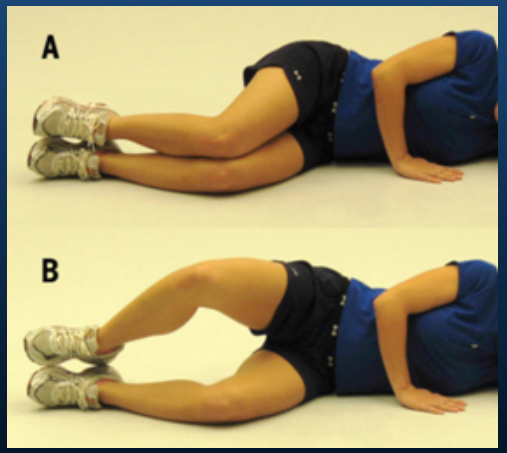
# Navicular Drop

- **Bad force transfer**
  - Off-center spring
- **Dangerous to the knee**



# Standing and Squatting

- **External rotation…?**
  - Non-specific




- **During squat**
  - Both hip *and* foot affects position, not so much the knee

# Understanding the Tripod



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# Understanding the Tripod

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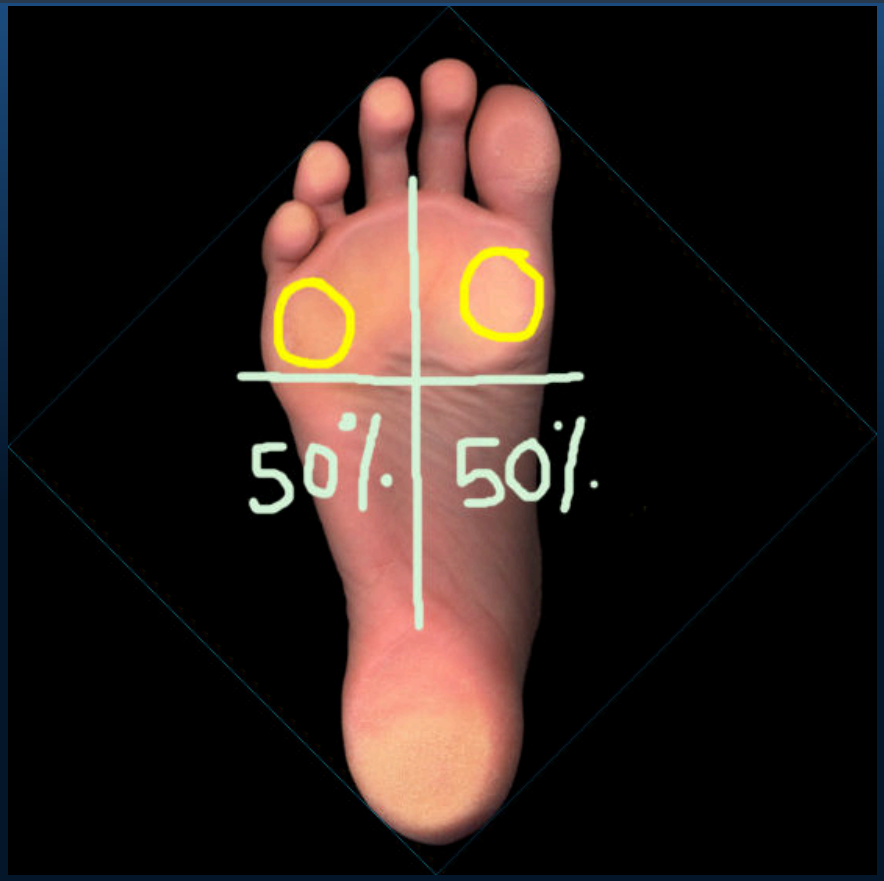




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# Understanding the Tripod




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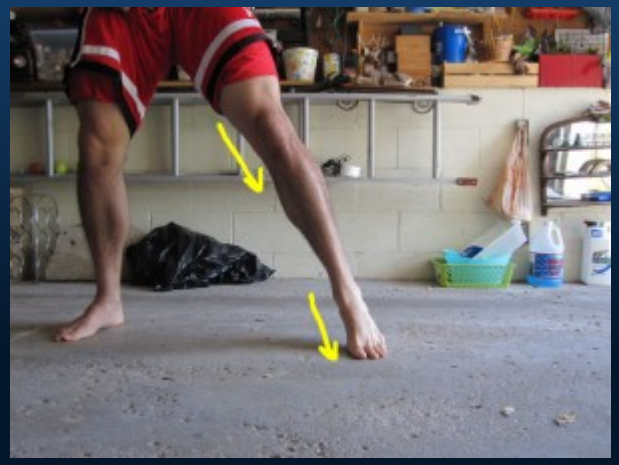
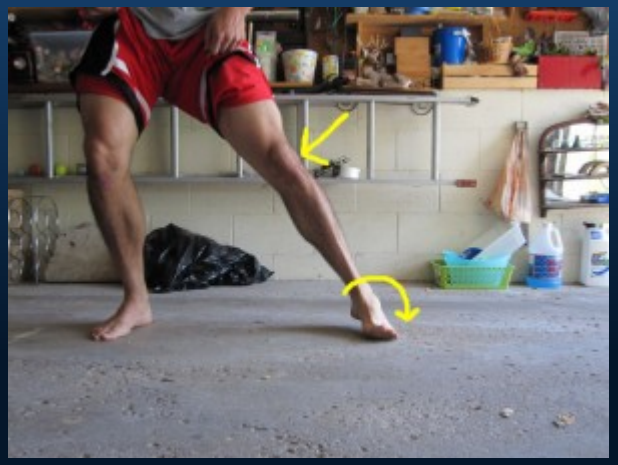
# Understanding the Tripod







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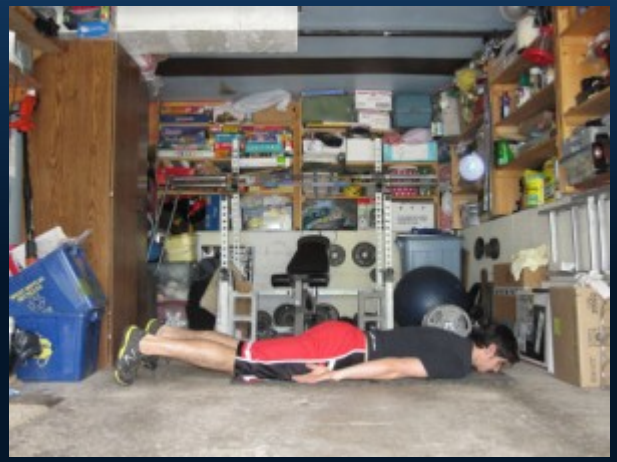
# THE GOAL

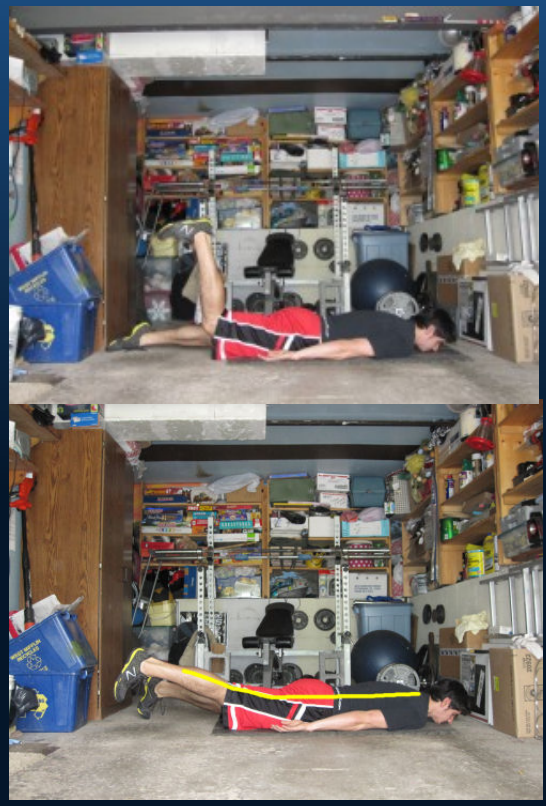
- **Understand the tripod**
- **Understand where the weight should be**
  - Grounded movements
  - Explosive movements

# Hip Extension Firing

- **Want glute to power hip extension**
  - Simplest hip extension exercise = prone glute
  - See whether the hamstring or glute fires

# The Prone Glute







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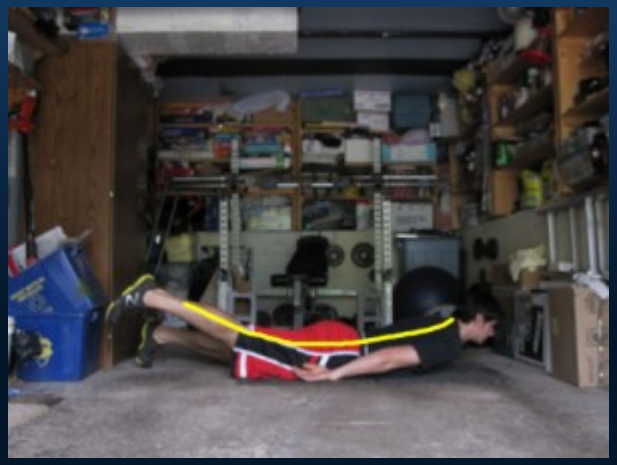
# Issues With the Prone Glute





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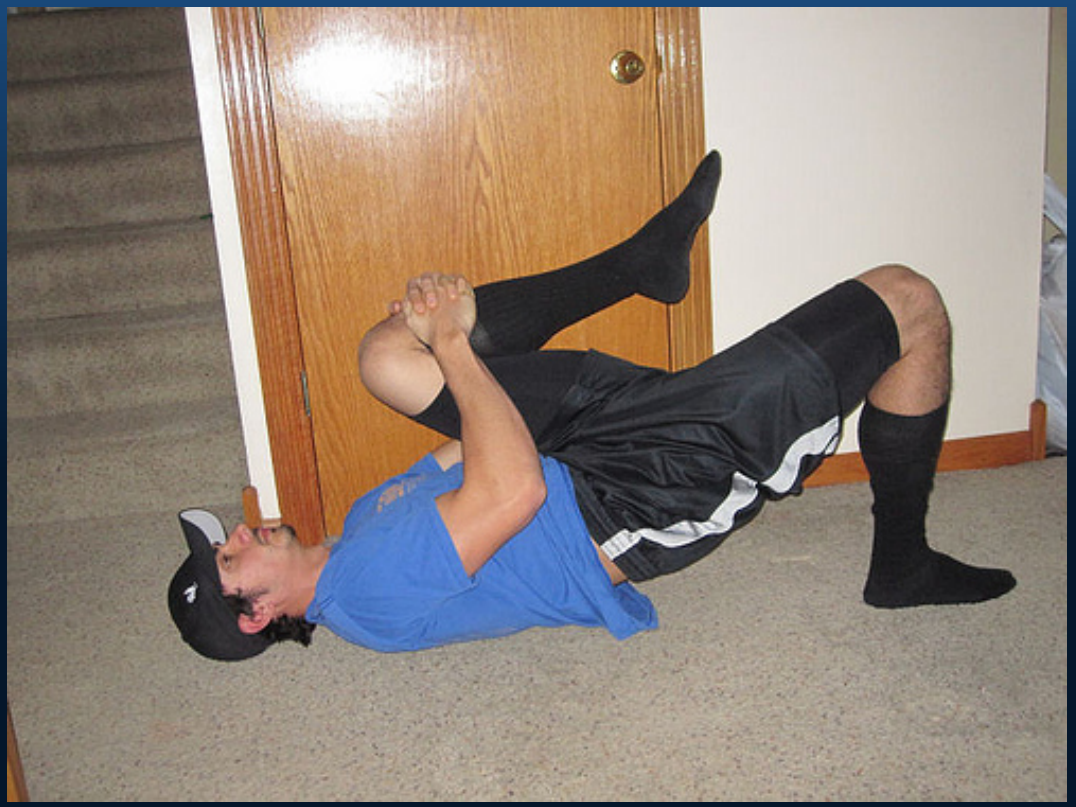
# Prone Glute Cues

- **Think about lengthening the hip flexors**
  - Push hip into the ground
- **Keep the abs *locked***
- **Rotate about the hips**

# Using the Cook Hip Lift



# THE GOAL

- **Looking for:**
  - Glute to turn on first
- **No hamstring cramping**
  - Straight or bent leg
- **Glute to fatigue without hamstring fatigue**

# Standing Hip Flexion

- **Gets the “front butt” in working order**
- **“High knees”**
- **Often tight and weak**
  - Sitting and neglect

# Hip Flexion

# Standing Hip Flexion

- **Tests entire chain**
  - Bent knee = poor glute control
  - Low knee lift = poor hip strength
  - Poor balance = poor tripod control

# Standing Hip Flexion Fixes

- **Bent knee**
  - Glute work
- **Balance**
  - Tripod work
- **Hip lift height**
  - Hip strength

# Remedial Hip Strength

- **Keep good spinal position**
  - Good athletes rotate about and use the hips, spinal position is what allows this to happen

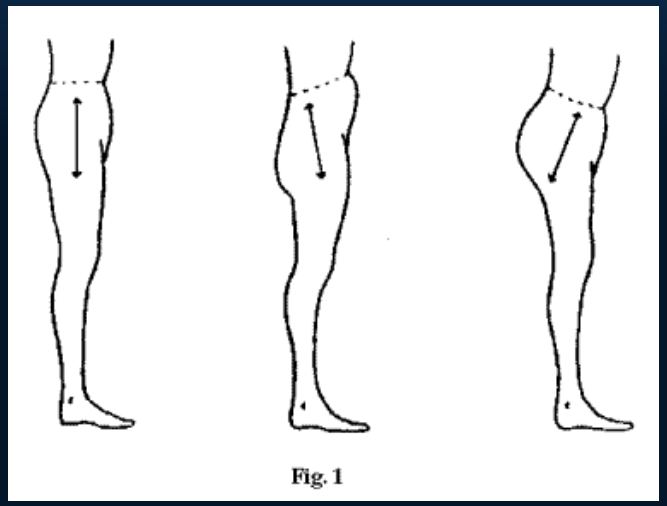
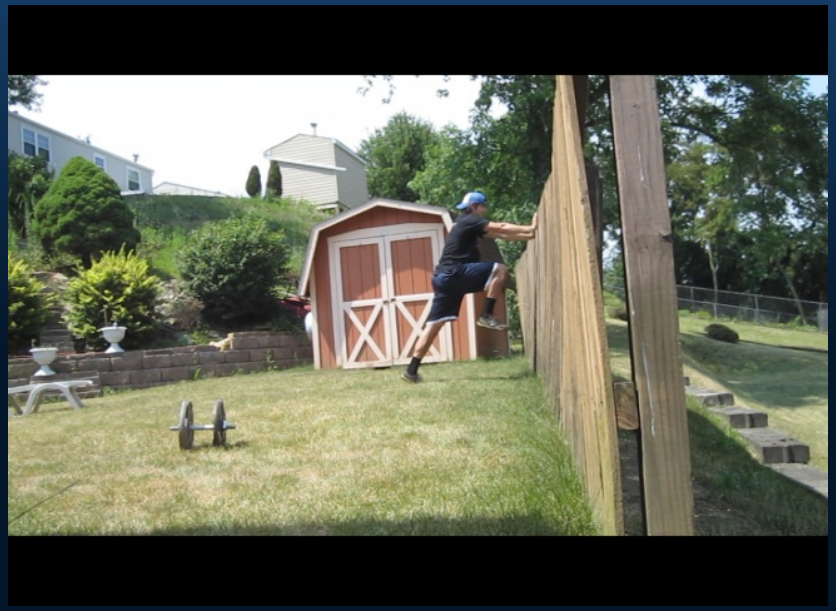


Fig. 1

# Remedial Hip Strength





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# THE GOAL

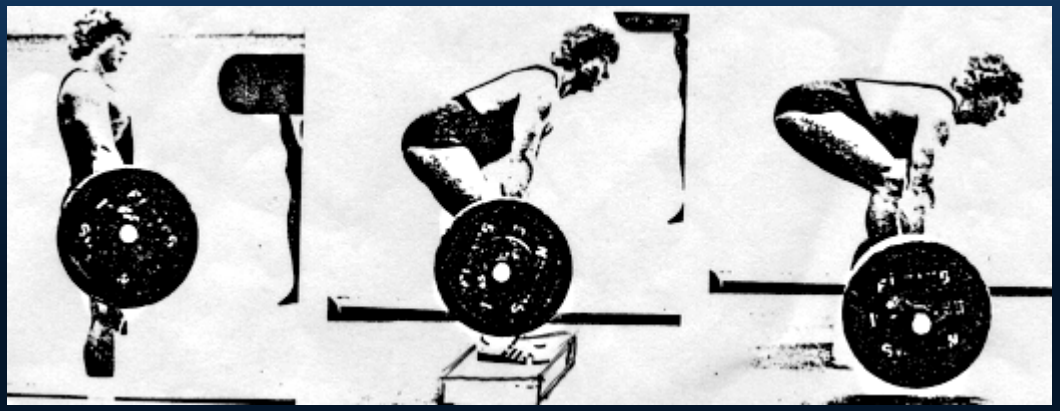
- **Hold the leg for thirty seconds**
  - Above parallel
  - Good balance (barefoot)
  - Tight hip

# Standing Hip Extension

- **Romanian deadlift**
  - Teaches hip extension from an upright position
    - Dynamic correspondence
    - Better than “activation” exercises or bridges
  - Bridge uses
    - Mind-muscle

# Romanian Deadlift

- **Nicu Vlad**



# Fixing Standing Hip Extension

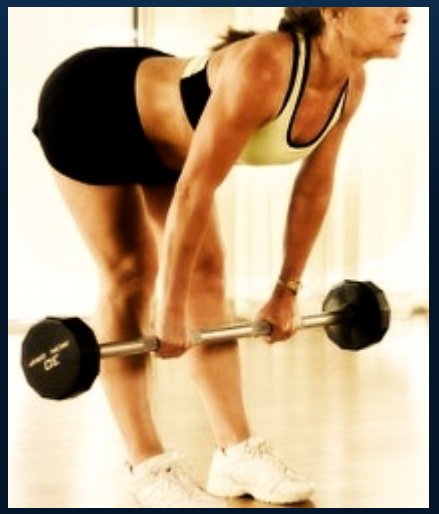
- **Making a vertically loaded movement into a horizontally propelled movement**
  - Difficult concept to grasp
- **“Pawing” the ground**
  - Kelly Baggett
- **Fundamental Tip Toe Position**

# Fundamental Tip Toe Position

- **Tip toes**
  - 60-40 Tripod
- **Glutes squeezed**
- **Hands on abdominals**

# Fundamental Tip Toe Position

- **Finished position of a good hinge**
  - Kettlebell swing hip snap



# Fundamental Tip Toe Position

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# Fundamental Tip Toe Position

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# FTTP Into RDL

- **Goal to do RDL, but finish with the FTTP**
- **Lock spine in neutral**
  - Rotate about the hips
  - Not lower back

# THE GOAL

- **Learn the RDL→FTTP**
  - Power through hips
  - Strong hip snap
- **Great as a warm-up**

# Sample Program

| Week One | Week Two | Week Three | Week Four |
|---|---|---|---|
| **Cook Hip Lift** 3x20 (2 second hold at top) | **Prone Glute** 3x20 (2 second hold at top) | **Prone Glute** 3x10 (5 second hold at top) | **Prone Glute** 1x10 (5 second hold at top) |
| **Sitting Hip Flexor Lift** 3x20 (2 second hold at top) | **Wall Assisted Hip Flexor Lift** 3x20 (2 second hold at top) | **Standing Hip Flexor Lift** 3x10 (5 second hold at top) | **Standing Hip Flexor Lift** 2x 30 second holds |



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# Sample Program

| Week One | Week Two | Week Three | Week Four |
|---|---|---|---|
| Lift toes to sky, find tripod, hold for one minute | Lift toes to sky, find tripod, hold for one minute | Lift toes to sky, find tripod, calf raise, 60-40% hold for one minute | Lift toes to sky, find tripod, calf raise, 60-40% hold for one minute |
| **FTTP**<br>1 minute hold | **RDL→FTTP**<br>2x20 | **RDL→FTTP**<br>3x20 | **RDL→FTTP**<br>1x20 |



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# What's Next?

- **Baseline Athletic Movement Tests**
- **Think about the specific athletic movement or sport**
  - Position
  - Activation
  - Absorption
  - Propulsion

# BONUS: Absorption Info

- **Using concepts just explained**
  - Hip extension into explosive movement
- **Drop Jumps**
  - Theory into practicality



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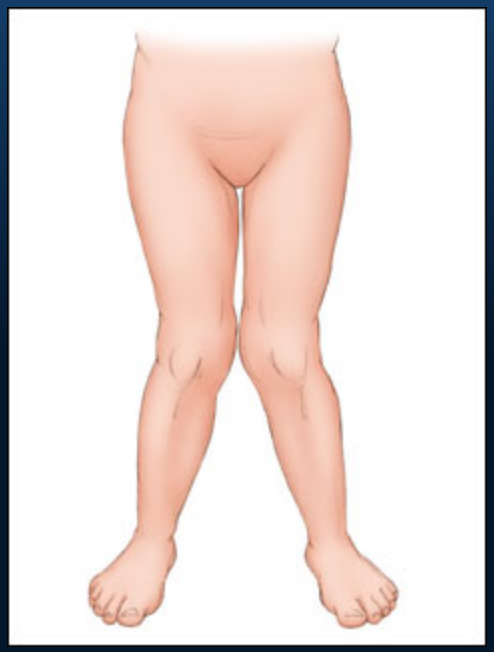
# Landings – Ultimate Test

- Moves away from position and activation and into the world of absorption
- See how body responds to a force spike
- Tests how firm activation and position are solidified

# REGRESSION…?





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# 12-24” Drop Jump

- **Tests the foot and hip’s ability to maintain position and absorb force**
- **Also tests activation**
  - Where the movement is “felt”
    - Knees = bad
    - Hips = good

# 12-24” Drop Jump

- **If repeatedly done and “felt” incorrectly**
  - Repatterning process incomplete
    - Remember the normal learning progression
    - Slow movements mastered before fast movements
    - Absorption happens fast, activation must be solidified else it won’t happen

# Progressing Athleticism

- **Once basic evaluations are clear**
  - Think movement specificity
    - Positions
    - Muscles

# Thank You

- **Send me your questions!**

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