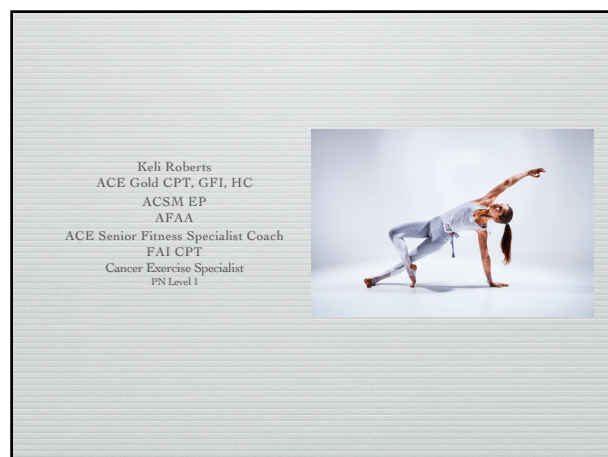


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## Course Goals

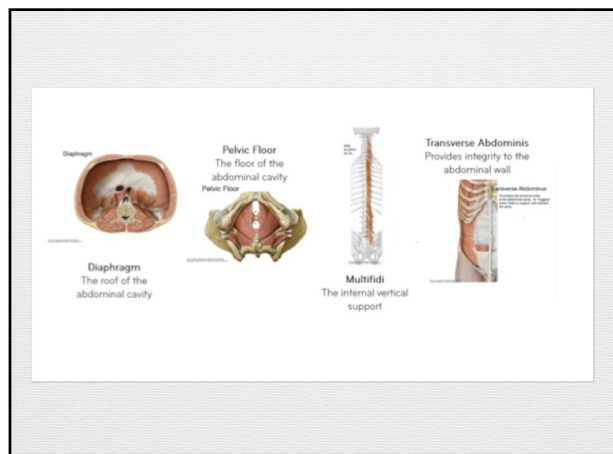
- A comprehensive review of the deep inner unit and superficial core provide a background for training the female body.
- In an interactive environment through hands-on practical application, trainers will learn a series of specific techniques to train the female core, utilizing stability balls, rubber resistance, Gliding and a small ball

3

## Anatomy Review

- The Inner Unit: A cooperative quartet!
  - Diaphragm
  - Pelvic Floor
  - Multifidi
  - Transversus Abdominis

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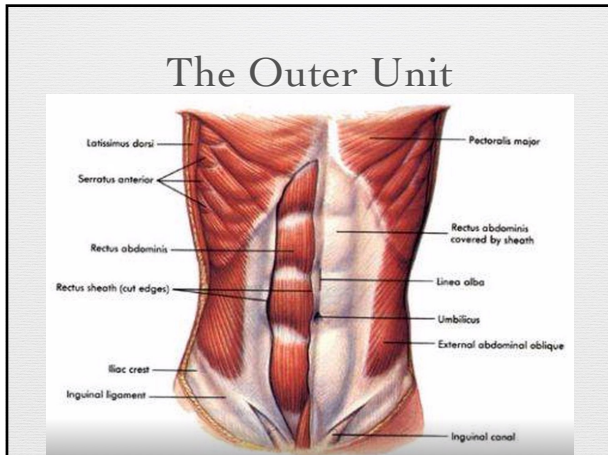


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## The Inner Unit

- Acts to stabilize the spine, pelvis and rib cage while the torso is challenged in activities such as lifting, walking, running or performing most daily or athletic tasks

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- Lumbopelvic stability is the ability of the neuromuscular system to maintain balanced support between the ribcage, lumbar spine and pelvis during movement
- Good inner unit or core activation of the 4 outer units is required for lumbopelvic stabilization

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- ### Myofascial Slings
- The muscular system has been described as being designed to distribute forces throughout the human body (Myers, 2008)
    - The body generally distributes forces over large surface areas to reduce excessive forces on individual muscles or joints
    - This process reduces the potential for injury by transferring forces to other muscles, tendons, ligaments, fascia, joint capsules and bones that lie in parallel to actively moving joints or muscles creating continuous lines of action called **myofascial slings**

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### Outer Unit: Mobility

#### Anterior Oblique Sling

**Anatomy Includes:**  
 Serratus Anterior  
 External Oblique  
 Internal Oblique  
 Opposite Adductor Muscle

**Function:**  
 Torso Flexion  
 Rotation

**Takeaway:**  
 Instrumental in creating pelvic stability in walking, ADL's and sports performance

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### Outer Unit: Mobility

#### Posterior Oblique Sling

**Anatomy:**  
 Latissimus Dorsi  
 Opposite Gluteal Maximus  
 External Hip Rotators

**Function:**  
 Torso Rotation and Extension

**Takeaways:**  
 Instrumental in cross patterning and training the posterior sling with sports and ADL's

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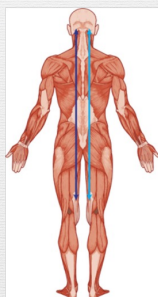
## Outer Unit: Mobility

### Deep Longitudinal System

Anatomy:  
Erector spinae, quadrates  
lumborum, thoracodorsal  
fascia, sacrotuberous ligament,  
biceps femoris

Function:  
Upright posture &  
back extension

Takeaway: Anatomy trains system  
also includes medial hamstrings  
gastrocnemius, plantar flexors  
and toe flexors



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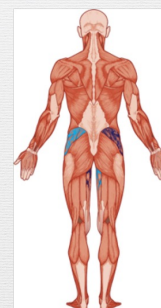
## Outer Unit: Mobility

### Lateral System

Anatomy:  
Hip adductors and  
Abductors

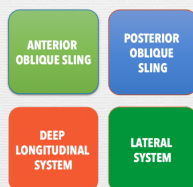
Function:  
Side Bending

Takeaway:  
Responsible for keeping  
pelvis balanced over femur.  
Imbalances lead to an un-level  
pelvis when standing



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## Movement Experiences



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## Isolation Vs. Integration

- Thomas Myers... “Whatever else they may be doing individually, muscles also influence functionally integrated body-wise continuities within the fascial webbing”

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## Length-Tension Relationships

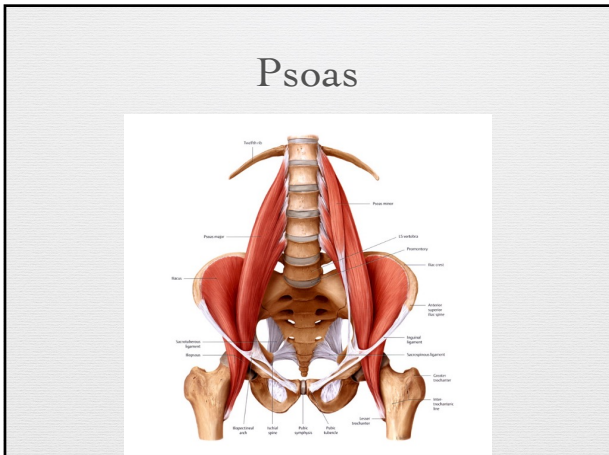
- The resting length of a muscle and the tension the muscle can produce at this resting length
- The optimal muscle length where the **actin** and **myosin** filaments in the sarcomere have the greatest degree of overlap

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## Force-Couple

- The synergistic action of muscles to produce movement around a joint

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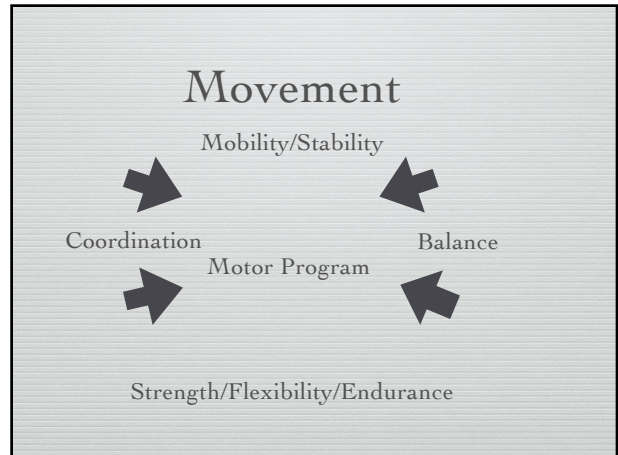
### Optimal Neuromuscular Control

- Normal length-tension relationship - normal force-force-couple relationships - normal joint arthrokinematics
  - Optimal sensorimotor integration
  - Optimal neuromuscular efficiency
  - Optimal tissue recovery

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Human movement begins from a position of static posture and includes a number of components leading to inefficient or efficient movement patterns - ACE

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### Stability

- Synergistic action of the muscles, ligaments, and connective tissue to maintain or control joint position; must never compromise joint mobility

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### Mobility

- Synergistic actions of skeletal (joints) and neuromuscular systems to allow uninhibited range of motion around a joint, or body segment: must never compromise joint stability

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## Mobility/Stability Relationships

Stability	Mobility
Foot	Ankle
Knee	Hip
Lumbar Spine	Thoracic Spine
Scapulothoracic	Glenohumeral

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## Movement Experience

Walk without ankles moving

Walk with tight hips

Walk with tight thoracic spine

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## Program 1: Corrective

- Theme: 3-D movement in a supported environment designed to enhance core function through increased mobility, key flexibility and stability
- Goal: Activate inner unit, develop isolated stabilization strength through bracing, while improving muscle balance and essential mobility
- Equipment: Small ball and Gliding Discs

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Base Movement	Intermediate Progression	Advanced Progression
Supine Dead Bug	Single Leg Stretch, Ball @ knees	Single Leg Stretch Ball Under Pelvis/Levers
Supine Bridge Ball Between Knees	Supine Single Leg Bridge, Knee @ Chest	Supine Bridge Discs Under Feet
Ball Supported V-Sit Arms @ Chest	Ball Supported V-Sit Long Lever	Ball Supported V-Sit with Paddling
Side Elbow Bridge/Plank	Side Elbow Plank with Rotation	Side Elbow Plank with Reach-Back Rotation
Quadruped Opposite Arm/Leg Raise	Quadruped Opposite Arm/Leg/Planes	Quadruped Opposite Arm/Leg/Planes/Eyes
Prone Plank	Prone Plank, Feet on Discs/Various Leg	Prone Plank, Hands on Discs. Glide-outs

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## Mobility/Flexibility

Supine Hamstring Stretch	Supine Torso Rotation	Supine Psoas Stretch
1/2 Kneeling Multi-Dimensional Stretch	1/2 Kneeling Multi-Dimensional Adductor Stretch	1/2 Kneeling Soleus Stretch
Standing Psoas and Gastroc Stretch	Standing Lateral Flexion	Standing Torso Rotation Cervical Mobilization

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## Program 2: Stability and Alignment Training

- Theme: Excite the nervous system in an unstable environment in order to further enhance core stability. Increase range of motion to improve key mobility.
- Goal: Improve postural alignment, balance and core stabilization strength
- Equipment: Stability Ball

30

Base Movement	Intermediate Progression	Advanced Progression
Plank with Hands on Ball	Alternating Knee to Ball	Alternating Knee Knock on Ball
Star Rocker with Lateral Ball Trap	Star Rocker Long Levers	Star Rocker/Lift/Hold Ball
1-legged Dead Lift Toe Down	1-legged Dead Lift, Hold Ball/Leg Raised	1-legged Dead Lift/Hold Ball/Long Lever
Bridge with Shoulders on Ball	Torso Rotation 'Charlie's Angels'	Bridge and Shift Side to Side w-Heel/Foot
Sumo Squat w/ Pelvic Floor Contraction	Sumo Squat, Ball Rainbow Circle	Sumo Squat, Holding Ball OH
Elbow Plank on Ball, Feet Wide	Elbow Plank on Ball, Feet Narrow	Elbow Plank on Ball w-Sawing Fwd/Back

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## Mobility/Flexibility

Seated on Ball 3-D Psoas Stretch	Seated on Ball Adductor Stretch	Seated on Ball 3-D Hamstring Stretch
Supine Over Ball Spinal Extension	Seated on Ball Lateral Flexion with Ball Roll	Seated on Ball Assisted Torso Rotation
Seated on Ball Lateral Cervical Flexion with Ball Roll	Side Lying on Ball Lateral Spinal Flexion	Standing Rotating Lat and Lumbar Stretch

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## Program 3: Power and Performance

- Theme: Develop whole body core infused movements to challenge coordinated strength and ability
- Goal: Increase core performance and power production with both anti-rotation and rotational ability
- Equipment: Resistance Tubing, Partner

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Base Movement	Intermediate Progression	Advanced Progression
Squat/Hip Extension	Add Diagonal Chop	Add Speed
Anti-Rotation Sagittal Chop	Narrow Stance Sagittal Chop	Add Speed
½ Kneeling Anti-Rotation Chop	½ Kneeling ALT Chop	Add Power
Side Bridge and Row	Side Plank and Row	Side Plank and Rotation
V-Sit Sagittal Chop	V-Sit ALT Chop	V-Sit ALT Chop, feet lifted

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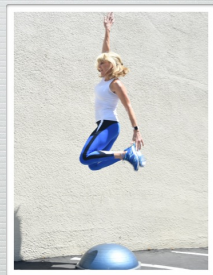
## Mobility/Flexibility

Partner Quad	Partner Glute	Partner Lat
Partner Lower Back	Partner Calf	Partner Pec
Seated Partner Glute	Seated Partner Hamstring	Seated Partner Adductor

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## Thank You

[www.keliroberts.com](http://www.keliroberts.com)  
[keliroberts@mac.com](mailto:keliroberts@mac.com)  
 IG: keli.robertsfitpro  
 Twitter: @keliroberts  
 FB: kelirobertsfitness



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