

# Suspension Training System

*Presented by Paula Lord of Gym Roots*

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# Tier 1 – Main Body (Trunk)

## Basic Core Exercises

These basic exercises will strengthen the entirety of the core as the body is challenged to maintain a dynamically unstable shape against gravity. For best results, the bungee cords should be set to have a small to medium stretch as the exercise is performed. If the cords are taut – either they are too heavy or they have bottomed out – the dynamic instability is lost in the third dimension of movement and the desired effects are diminished.

No recommendations for sets or repetitions are given. Instead, try to work to the performer's EDGE – that is the place where the position is very stable, very challenging, and few repetitions are needed to feel the effects of the exercise. The EDGE is the place where the maximum amount of positive effects and neurological change (i.e., MAGIC) will happen.

Setting the cords for proper stretch varies with the following factors:

- Weight – heavier performers need more bungees
- Natural skeletal stability – performers with more stability require less bungee assistance
- Angle of the exercise against gravity – a more vertically oriented exercise requires less bungee

\*NOTE: Frequent overloading of the bungees will result in premature wear of the equipment.

# Standing Plank Exercises

These exercises create conditions that greatly increase the stability of the spine in a posturally correct position versus exercises done in spinal flexion, which can be overused. The exercises also include feet, hips, shoulders, and wrists as part of the core strengthening work.



Front Standing Plank



Side Standing Plank



Back Standing Plank

The three basic standing exercises can be thought of as simply vertical planks and are performed to the front, side, and back.

# Front Standing Plank



## How to do the basic:

- \*Begin standing under the bungee suspension point
- \*Handles positioned between the waist and lower ribs
- \*Find good posture with the arms extended forward
- \*Palms press on the handles with thumbs on top so as to discourage too much grip with the fingers
- \*Lean forward with a straight body, putting as little pressure on the handles as possible

## What you should feel:

- \*The core should be clearly felt working near the ribs and in the lower abdominal region
- \*The neck and upper shoulders should feel relaxed
- \*The back of the arms and lower lats will be working
- \*The inner thighs and pelvic floor will be engaged

**What you should NOT feel** (this means to check the bungee setting, reduce the range of motion, or take a small step forward to fix it):

Tension or pain in the neck or top of shoulders

LOOKS LIKE – forward head, collarbones lifted, shoulder blades retracted

CUE to FIX – cheekbones back, collarbones down, shoulder blades wide

Tension or pain in the lower back (lumbar) region

LOOKS LIKE – hips forward, lumbar spine shortened, front ribs lifted or expanded

CUE to FIX – hips back, lift pelvic floor, close bottom front ribs

Tension or pain in the elbows or knees

LOOKS LIKE – hyperextended or locked out elbows/knees, wrists or ankles bent or broken

CUE to FIX – soften or slightly bend the joint, keep wrists straight or lift ankles

Tension or pain in the toes or fingers

LOOK LIKE – gripping fingers or toes, unstable wrists or ankles

CUE to FIX – relax fingers and toes, press into the heel of the hand or ball of foot

## MOVEMENT VARIATIONS on Front Standing Plank

- Arms open/close or circles (with one or two arms at a time)
- Shoulder flexion/extension
- Tricep dips
- Push ups
- Heel lift/lower

# Side Standing Plank

## How to do the basic:



- \*Begin standing under the bungee suspension point
- \*Handles positioned between the waist and ribs
- \*Find good posture with the arms extended to one side
- \*Directional arm is extended fully and about 20 degrees in front of the body (position for scaption)
- \*Non-directional arm is bent in front of the body for assistance, not for the main support
- \*Palms press on the handles with thumbs on top so as to discourage too much grip with the fingers
- \*Lean to the side with a straight body, putting as little pressure on the handles as possible
- \*Weight shifts to outside edge of the directional foot

## What you should feel:

Anything down the directional side of the body, beneath the level of the armpit:

Triceps, side ribs (serratus), side waist (obliques, lower lats), side hip (glute med)

The neck and upper shoulder should feel relaxed

The ribs will be stacked and front facing with the body's side lean

The pelvis will be level and front facing with the body's side lean

The foot and ankle will be stable and organized with the body's side lean

**What you should NOT feel** (this means check the bungee setting, reduce the range of motion, or take a small step in the side direction to fix it)

Tension or pain in the neck

LOOKS LIKE – forward or tilted head

CUE TO FIX – cheekbones back and head in line with body's side lean

Tension of pain on top of shoulder

LOOKS LIKE – collarbones lifted or uneven, shoulder blade elevated

CUE TO FIX – collarbones wide, shoulder blade down the back, ribs align with body's side lean

Tension or pain in the lower back region (usually QL)

LOOKS LIKE – pelvic misalignment with body's side lean, twisted pelvis

CUE TO FIX – activate the directional hip by pressing down on the heel, pull upper thigh bone back

Tension or pain in the elbows or knees

LOOKS LIKE – hyperextended or locked out elbows/knees, wrists or ankles bent or broken

CUE TO FIX – soften or slightly bend the joint, keep wrists straight or lift ankles

Tension or pain in the ankle

LOOKS LIKE – ankle tilted too far

CUE TO FIX – stabilize ankle to the body's side lean

## Side Standing Plank (cont.)

VARIATION to remove SHOULDER variable on Side Standing Plank



Hook on the sling and position it on the ribs, waist or hips



Perform the Side Standing Plank with hands behind head or extended overhead

# Back Standing Plank



## How to do the basic:

- \*Begin standing well behind the bungee suspension point
- \*Find good posture with the hands pulled into chest, elbows lifted
- \*Palms hold the handles with thumbs on top so as to discourage too much grip with the fingers
- \*Lean backward with a straight body, putting as little pressure on the handles as possible

## What you should feel:

- Activation of the middle back and upper neck
- Activation of the forearm and hand
- The front of neck and shoulders should feel relaxed
- The hips and lower abdominals will be engaged
- The inner thighs and pelvic floor will be engaged

## What you should NOT feel (this means to check the bungee setting or take a small step backward to fix it)

- Tension or pain in the front of the neck
  - LOOKS LIKE – forward head or protracted shoulders
  - CUE TO FIX – cheekbones back, collarbones down and open
- Tension or pain in the lower back (lumbar) region
  - LOOKS LIKE – pelvis misaligned with the body’s back lean, usually tilted or shifted front or back
  - CUE TO FIX – activate hips by pushing into floor with feet, activate rear pelvic floor
- Tension or pain in the elbows
  - LOOKS LIKE – unstable shoulders, gripping fingers
  - CUE TO FIX – draw collarbones and shoulder blades down and back, hold with palm

## MOVEMENT VARIATIONS on Back Standing Plank



Flys  
Straight arms wide



Bicep Curls  
Shoulder flexion  
Elbows lifted



Rows  
Elbows Narrow

For additional challenges try these  
VARIATIONS in all Standing Planks:

- Stand on a BOSU ball or other instability device
- Perform the exercise unilaterally – standing on one foot or using only one arm (bungee setting will need to be higher for unilateral work)
- Sustain the position with good breath for up to 90 seconds
- Perform 3-5 sets of 3-5 repetitions
- Close the eyes while performing the exercise



# Horizontal Plank Exercises

These exercises challenge and improve the proper function of the hip and pelvic stability as they relate to spinal stability in a position parallel to gravity. Strength and mobility of the pelvis and hip are required to maintain and support a healthy spine.



Supine Plank



Side Plank



Prone Plank

The three basic horizontal exercises are simply planks and are performed supine, side and prone.

## Supine Plank



### How to do the basic:

- \*Begin lying on back with feet in the slings under the bungee suspension point
- \*Slings are approximately knee height
- \*Stabilize the neutral spine with arms relaxed at the sides
- \*Flex the ankles with soles of feet focused on the wall, 2-3 inches apart
- \*Press down into slings and lift hips into supine plank position

### What you should feel:

- The backs of the thighs are active
- The neck and shoulders should feel relaxed
- The abdominal core will be engaged
- The inner thighs and pelvic floor will be engaged

**What you should NOT feel** (this means check the bungee setting, move the slings up the legs, or move feet beyond the suspension point to fix it)

Tension or pain in the neck or top of shoulders

- LOOKS LIKE – shortened neck, shoulders lifted, head tilted back
- CUE to FIX – reach arms toward feet, draw collarbones down, lengthen back of neck

Tension or pain in the lower back (lumbar) region

- LOOKS LIKE – hips too high, legs externally rotated, lumbar spine shortened OR ribs laying flat
- CUE to FIX – draw hips back and relax glutes, internally rotate the thighs, lift pelvic floor OR lift ribs to rest on shoulder blades

Tension or pain in the knees

- LOOKS LIKE – hyperextended or locked out knees, loose ankles
- CUE to FIX – soften or slightly bend the joint, flex strongly at the ankle

### MOVEMENT VARIATIONS on Supine Plank

- Legs open/close (with one or two arms at a time)
- Knees bend/extend
- Hip dips

## Side Plank



### How to do the basic:

\*Begin lying on side with feet in the single large sling under the bungee suspension point

\*Sling is slightly lower than knee height

\*Stabilize the neutral spine with support arm extended under head, second arm relaxed on side of body

\*Flex the ankles with soles of feet focused on the wall

\*Press down into sling and lift hips into side

plank position, releasing the top leg as able

### What you should feel:

The outer side of the support leg will be working most

The backs of the thighs and side waist are active

The neck and shoulders should feel relaxed

The abdominal core will be engaged

**What you should NOT feel** (this means check the bungee setting, move the sling up the legs, or move feet beyond the suspension point to fix it)

Tension or pain in the neck

LOOKS LIKE – shortened or twisted neck position, collapsed support shoulder

CUE to FIX – look straight ahead from the side position, stabilize shoulder against the floor, use a pillow

Tension or pain in the lower back region (usually QL)

LOOKS LIKE – hips too high or low, legs externally rotated AND/OR ribs laying flat

CUE to FIX – activate support hip by drawing thigh bone back and pressing through the ankle, internally rotate the thighs, AND/OR activate support waist and shoulder to lift ribs

Tension or pain in the knees

RECOMMEND moving the sling up the leg as FIRST FIX

LOOKS LIKE – side bending or locked out knees

CUE to FIX – soften or slightly bend the joint, flex strongly at the ankle

### MOVEMENT VARIATIONS on Side Plank



Release the top leg as able

Hip dips

Support on elbow or hand

Full body tips forward and backward

## Prone Plank



### How to do the basic:

- \*Begin lying on stomach with feet in the slings under the bungee suspension point
- \*Slings are approximately knee height
- \*Stabilize the neutral spine while supported on the forearms
- \*Extend the feet with ankles aligned with knees and hips
- \*Press down into slings, extend legs, and lift hips into prone plank position



### What you should feel:

- Lower and upper abdominal core is working
- The hips are open and thighs are active
- The neck and shoulders should feel relaxed
- The ribcage is drawn in and active
- The inner thighs and pelvic floor will be engaged

### What you should NOT feel (this

means check the bungee setting, move the slings up the legs, or move feet beyond the suspension point to fix it)

Tension or pain in the lower back (lumbar)

LOOKS LIKE – hips too high or low, legs externally rotated, shoulder blades retracted

CUE to FIX – open and activate hips to align with neutral spine, internally rotate the thighs, activate rear pelvic floor, pull ribcage to back, press into forearms

Tension or pain in the neck or top of shoulders

LOOKS LIKE – forward head, shoulders unstable, shortened neck

CUE to FIX – pull cheekbones back, draw collarbones down, lengthen back of neck



### MOVEMENT VARIATIONS on Prone Plank

- Legs open/close (one at a time or both together)
- Knees bend/extend (one at a time or both together)
- Hip dips
- Pike/Plank
- Push-ups



## For additional challenge try these VARIATIONS in all Horizontal Planks:

- Support on the forearm or on the hands
- Support on a BOSU ball or other instability device
- Perform the exercise unilaterally – with only one leg in the sling (bungee setting will need to be higher for unilateral work)
- Sustain the position with good breath for up to 90 seconds
- Perform 3-5 sets of 3-5 repetitions
- Close the eyes while performing the exercise



# Tier 2 – Support (Roots)

## Joint Specific Mobility and Strengthening

These support exercises will isolate specific movements of the hip, shoulder, and neck, allowing for direct joint rehabilitation and strengthening. The bungee cords should be set to have minimal resistance as the exercise is performed. If the cords are too heavy, the compromised joint will be too weak to accomplish the movement with proper muscle recruitment.

Setting the cords for proper resistance varies with the following factors:

- Functionality of the targeted joint(s) – less stable, weaker, or more diseased joints require lighter bungee
- Position of the sling – sling placed more proximal may require heavier bungee
- Weight – heavier performer requires heavier bungees

NOTE: Frequent overloading of the bungees will result in premature wear of the equipment.

## Horizontal OKC Exercises for the Hip

These exercises isolate, improve, and strengthen proper function of the hip joint (femur head as it articulates with the socket space in the pelvis). These exercises serve to help stabilize the pelvis and spine and recalibrate initiation of leg movement. These exercises, done properly, address all of the degrees of mobility inherent in proper hip function.

Horizontal Open Kinetic Chain (OKC) exercises are performed supine, side, and prone with a variety of internal/external rotations and flexions/extensions of the hip and with a variety of foot and ankle positions.

NOTE: OKC exercises operate at a deep neurological level. The work here is rewiring the body's communication system with the brain. Purposeful and intentional tactile cueing is a very effective and often necessary way to assist the brain with restoring lost communication to body parts. Coaches should seek out and learn effective tactile cueing methods before practicing with students.

NOTE: Sometimes the OKC exercises are ACTIVATING dormant muscles. Other time, the OKC exercises are requiring OVERACTIVE muscles to work just a little harder so they can then release and relax. Either way, the joint will then work more properly as the coordination and communication among all the mobilizer and stabilizer muscles are reset to a more functional level.

## Supine OKC – Hip Extension



### How to do the basic:

- \*Begin lying on back with one foot in the sling under or beyond the bungee suspension point
- \*Slings are approximately knee height
- \*Flex the ankle with sole of foot focused on the wall
- \*Non-working leg is bent with foot flat on the floor
- \*Stabilize the pelvis and neutral spine with arms relaxed at the sides

\*Press down into sling as far as pelvis and spine can remain completely stable or until activation is felt

### What you should feel:

- The back of the thigh is activated
- Various gluteal muscles are activated
- The spine and pelvis are neutral and stable
- The neck and shoulders are relaxed
- The abdominal core is engaged
- The inner thighs and pelvic floor are engaged

**What you should NOT feel** (this means lighten the bungee setting, move the slings up the leg, or apply tactile cue)

Pain (or tension) in the knee

LOOKS LIKE – hyperextended or locked out knees

ADJUST to FIX – move sling closer to knee, lighten bungee

Pain (or tension) in the lower back

LOOKS LIKE – pelvic rotation or tilt

ADJUST to FIX – internally rotate the thigh, bend the knee

Pain (or tension) in the neck or shoulders

LOOKS LIKE – tight neck muscles

ADJUST to FIX – pull ribs down to stabilize spine, exhale with effort

### SUBTLE VARIATIONS on Supine OKC

- Raise or lower the bungee height
- Place different parts of the foot on the sling
- Adjust the non-working leg to a variety of different positions
- Integrate a range of flexed knee positions
- Integrate a variety of hip rotation positions
- Hold sling pull while moving leg through variety of positions
- Hold sling pull and integrate a variety of breath patterns

NOTE: For maximum results, work MOST on the position(s) that are most difficult for the performer to activate properly or hold for an extended period. Make small movements around the most difficult positions. Remember that the OPPOSITE movement to the most difficult will likely also be very challenging to initiate properly.

## Side OKC – Hip Abduction (work away from midline)



### How to do the basic:

- \*Begin lying on side with bottom leg in the sling under or beyond the bungee suspension point
- \*Sling is slightly lower than knee height
- \*Stabilize the neutral spine with support arm extended under head or head on pillow
- \*Support the non-working leg on a pillow in front of body
- \*Flex the ankle with sole of foot focused on the wall
- \*Press down into sling as far as pelvis and spine can remain completely stable or until proper activation is felt



### What you should feel:

- The back of the thigh is activated
- Various outer gluteal muscles are activated
- The spine and pelvis are neutral and stable
- The neck and shoulders are relaxed
- The side waist and ribs are activated and engaged

**What you should NOT feel** (this means lighten the bungee setting, move the slings up the leg, or apply tactile cue)

Pain in the knee

LOOKS LIKE – side bending or locked out knee

ADJUST to FIX – move sling closer to knee, lighten or lower bungee

Pain in the lower back

LOOKS LIKE – pelvic rotation, twist or misalignment between pelvis and ribcage

ADJUST to FIX – internally rotate the thigh, bend the knee

Pain (or tension) in the neck or shoulders

LOOKS LIKE –forward, tilted, or turned head

ADJUST to FIX – lift lower ribs from floor, stabilize support shoulder, cheekbone, back, adjust pillow

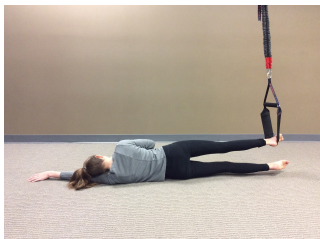
### SUBTLE VARIATIONS on Side OKC for Abduction

- Raise or lower the bungee height
- Place different parts of the foot or leg on the sling
- Integrate a variety of hip rotation positions
- Hold sling pull while gently flexing and extending the knee
- Hold sling pull and integrate a variety of breath patterns

NOTE: For maximum results, work MOST on the position(s) that are most difficult for the performer to activate properly or hold for an extended period. Make small movements around the most difficult positions. Remember that the OPPOSITE movement to the most difficult will likely also be very challenging to initiate properly.



## Side OKC – Hip Adduction (work toward midline)



### How to do the basic:

Begin lying on side with top leg in the sling under or beyond the bungee suspension point  
Sling is slightly above knee height  
Stabilize the supporting shoulder or back, extended under head or head on pillow  
Non-working leg is resting on the floor, bent or straight  
Extend the ankle with foot pointed toward wall

Press down into sling as far as pelvis and spine can remain completely stable or until proper activation is felt

### What you should feel:

The inner thigh and pelvic floor are activated  
The back of the thigh is activated  
The spine and pelvis are neutral and stable  
The neck and shoulders are relaxed  
The side waist and ribs are activated and engaged

**What you should NOT feel** (this means lighten the bungee setting, move the slings up the leg, or apply tactile cue)

Pain in the knee

LOOKS LIKE – side bending or locked out knee

ADJUST to FIX – move sling closer to knee, lighten or lower bungee

Pain in the lower back

LOOKS LIKE – pelvic rotation, twist or misalignment between pelvis and ribcage

ADJUST to FIX – internally rotate the thigh, bend the knee

Pain (or tension) in the neck or shoulders

LOOKS LIKE –forward, tilted, or turned head

ADJUST to FIX – lift lower ribs from floor, stabilize support shoulder, back, adjust pillow

### SUBTLE VARIATIONS on Side OKC for Adduction

- Raise or lower the bungee height
- Place different parts of the foot or leg on the sling
- Integrate a variety of hip rotation positions
- Hold sling pull while swinging leg front and back (hip flexion and extension)
- Hold sling pull while flexing and extending the knee
- Hold sling pull while lifting and lowering the bottom leg

NOTE: For maximum results, work MOST on the position(s) that are most difficult for the performer to activate properly or hold for an extended period. Make small movements around the most difficult positions. Remember that the OPPOSITE movement to the most difficult will likely also be very challenging to initiate properly.

## Prone OKC – Hip Flexion



### How to do the basic:

- \*Begin lying on stomach with feet in the slings under or beyond the bungee suspension point
- \*Slings are just below knee height
- \*Extend the ankles with feet pointed toward the wall
- \*Knees are resting on the floor
- \*Stabilize the pelvis and neutral spine with hands under forehead and elbows wide
- \*Extend one leg and press down into sling

as far as pelvis and spine can remain completely stable

### What you should feel:

- The front of the thigh is activated
- The abdominal core is engaged
- The spine and pelvis are neutral and stable
- The neck and shoulders are relaxed
- The inner thighs and pelvic floor are engaged

**What you should NOT feel** (this means lighten the bungee setting, move the slings up the leg, or apply tactile cue)

Pain (or tension) in the lower back

LOOKS LIKE – pelvic rotation or tilt

ADJUST to FIX – lower the sling, lighten bungee

CUE to FIX – bring leg toward midline, internally rotate the thigh, align ankle, activate abdominals

Pain (or tension) in the knee

LOOKS LIKE – hyperextended or locked out knees

ADJUST to FIX – lower the sling, lighten bungee

Pain (or tension) in the neck or shoulders

LOOKS LIKE – shortened neck

CUE to FIX – pull ribs down to stabilize spine, exhale with effort

### SUBTLE VARIATIONS on Prone OKC

- Integrate a variety of hip rotation positions
- Hold sling pull while moving leg toward and away from midline
- Alternate with prone position thigh stretch

## OKC Exercises for the Shoulder

These exercises isolate, improve, and strengthen the proper function of the shoulder joint (humerus head as it articulates with the collarbone and shoulder blade). These exercises serve to help stabilize the ribcage and shoulder girdle and recalibrate movement of the arms. These exercises, done properly, address all of the degrees of mobility inherent in proper shoulder function.

Open Kinetic Chain (OKC) shoulder exercises are performed supine, prone, and seated with a variety of internal/external rotational and flexion/extension movements.

**IMPORTANT:** Shoulders are very complex joints and much less stable than hips. Always begin with the lightest bungee setting possible. Work range of motion only to the point before pain, then hold the position to encourage reprogramming.

## Supine Shoulder OKC exercises



### How to do the basic:

- \*Slings are 8-10 inches above the floor
- \*Begin lying on back with chest under bungee suspension point
- \*Arms extend down to sides with hands on slings or holding handles
- \*Stabilize the pelvis and neutral spine
- \*Pull slings toward the floor and slowly release

### What you should feel:

The neck and shoulders are relaxed

The collarbones are wide and drawn down away from chin

The upper abdominal core is engaged

The shoulder joint is stable (humerus remains connected to collarbone and shoulder blade)

The triceps, lower lats, and rhomboids are engaged

**What you should NOT feel** (this means lighten the bungee setting, move the slings up the arm, or apply tactile cue)

Pain (or tension) in the elbow

LOOKS LIKE – hyperextended or locked out elbows

ADJUST to FIX – raise the sling, lighten bungee

Pain (or tension) in the neck or shoulders

LOOKS LIKE – shortened neck

CUE to FIX – pull ribs down to stabilize spine, exhale with effort, pull cheekbones down and back

### VARIATIONS on Supine Shoulder OKC Exercises

- Pull toward floor low, side middle, and overhead
- Perform each position with a variety of hand positions and grips
- Add humerus bone rotations in each position
- Add elbow bends in each position
- Add elbow bends with rotations in each position



## Seated Shoulder OKC exercises



### How to do the basic:

- \*Handles are level with lower ribs when seated
- \*Begin sitting on ball or box in line with bungee suspension point
- \*Arms extend out to sides holding handles
- \*Stabilize the pelvis and neutral spine with hips relaxed in any position
- \*Pull slings toward the floor and slowly release



### What you should feel:

- The neck and shoulders are relaxed
- The collarbones are wide and drawn down away from chin
- The upper abdominal core is engaged
- The shoulder joint is stable (humerus remains connected to collarbone and shoulder blade)
- The triceps, lower lats, and rhomboids are engaged

**What you should NOT feel** (this means lighten the bungee setting, move the slings up the arm, or apply tactile cue)

Pain (or tension) in the elbow

LOOKS LIKE – hyperextended or locked out elbows

ADJUST to FIX – raise the sling, lighten bungee

Pain (or tension) in the neck or shoulders

LOOKS LIKE – shortened neck

CUE to FIX – pull ribs down to stabilize spine, exhale with effort, pull cheekbones down and back

Pain (or tension) in the lower back

LOOKS LIKE – lumbar spine curved too much or too little, pelvis tilted, hips tight

ADJUST to FIX – change the leg position or raise the seat until pelvis can maintain neutral

### VARIATIONS on Seated Shoulder OKC Exercises

- Add shoulder shrugs and shoulder circles
- Begin with bent elbows close to sides for triceps press
- Press handles down behind body and lift elbows for chest opener
- Add head turns in each position

## Tier 3 – Neural Expansion (Leaves)

### Instability Drills

When the basic and support exercises fail to completely address pain and performance issues around movement, it is necessary to invoke a higher level of the brain for assistance. The following drills are designed to get the attention of the brain at a level that signals “Hey, we’re unstable here” without panic or fear that will further shut down its communication with the body.

The key is to invoke just enough instability that the reflexive brain takes over and allows the conscious brain to take a break or let go for a moment. In that moment it is possible to rewire faulty movement patterns enough that the support and basic exercises will become more efficient and effective in solving those stubborn issues.

Setting the cords for proper resistance varies with the following factors:  
Weight – heavier performer requires heavier bungees  
Confidence and proficiency of the performer – a better mover will require lighter bungees

NOTE: Frequent overloading of the bungees will result in premature wear of the equipment.

# Instability Exercises with 1 set of Bungees

## Bounce or Balance



### How to do the basic:

- \*Stand on a BOSU ball or other instability device
- \*Slings are set at waist height
- \*Balance or begin a small bouncing motion
- \*Challenge Bounce/Balance with the following:
  - \*Close the eyes
  - \*Turn the eyes to different positions and hold
  - \*Turn the head while focusing on a single point and hold
  - \*Hold with one hand
  - \*Stand on one foot

### What you should feel:

- Wobbly without the fear of falling
- Mentally challenged to do the eye or head movements

**What you should NOT feel** (this means stop the drill and consult an expert for assistance)

- Panic symptoms such as cold sweat, nausea, severe dizziness
- Headache or lightheadedness



## Standing in Slings

### **How to do the basic:**

Stand suspended off the ground with one foot in each sling

Slings are set 10-12 inches off the floor

Squeeze legs together and hold, release 18-24 inches and repeat

### **What you should feel:**

Strong activation of the inner thighs

No fear of falling

Mentally challenged to do the eye or head movements

### **What you should NOT feel** (this means stop the drill and consult an expert for assistance)

Pain in the neck or knees

Panic symptoms such as cold sweat, nausea, severe dizziness

Headache or lightheadedness

### **Challenge Standing in Slings with the following:**

Close the eyes

Turn the eyes to different positions and hold

Turn the head while focusing on a single point and hold

Hold with one hand

Stand on one foot



## Push-ups



### How to do the basic:

\*Begin in a plank with hands on handles in front of bungee suspension point

\*Slings are set 10-12 inches off the floor

\*Hold plank position until stable, then slowly bend the elbows and return to plank



### Challenge Push-ups with the following:

Place feet on a BOSU ball or other instability device

Perform a variety of elbow positions for the push-ups

Use only one foot at a time

### What you should feel:

Wobbly with no fear of falling

Total core activation

**What you should NOT feel** (this means raise the bungees or move forward from the suspension point)

Pain in the lower back or elbows

# Instability Exercises with 2 sets of Bungees

## All Fours



### How to do the basic:

\*Hold an All Fours position with either the hands or the knees suspended in the slings

\*Slings are set 10-12 inches off the floor

\*Hold the position then begin small movements of the arms or legs

### What you should feel:

Strong activation of the shoulder or hip stabilizers

No fear of falling

Mentally challenged to do the arm or leg movements

### What you should NOT feel (this means lighten the bungee or stop the drill)

Pain in the neck, elbows or back

### Challenge All Fours with the following movements of the arms or legs:

Open/close from midline

Single arm/leg circle

Spinal articulation (cat/cow)

## Crawling



### How to do the basic:

\*Suspend the knees and hands in an All Fours position

\*Slings are set 10-12 inches off the floor (heavier setting for knees, lighter setting for hands)

\*Hold the position until stable then challenge with movements



### What you should feel:

Everything active

No fear of falling

Mentally challenged to do the movements

**What you should NOT feel** (this means stop the drill and consult an expert for assistance)

- Panic symptoms such as cold sweat, nausea, severe dizziness
- Headache or lightheadedness

### Challenge Crawling with the following:

Close the eyes

Do a slow crawling motion

Do a fast crawling motion

Perform frog legs out and in

Pull knees and hands together then extend

## Bungee Training System GLOSSARY

### Part 1 – HELPFUL ANATOMICAL MOVEMENT EXPLANATIONS

- **Neutral Spine** – refers to the shape of the spine with its natural curvatures. The neck and lumbar spine are designed to have a natural extension while the thoracic (rib area) and sacrum (tailbone) are designed to have a natural flexion.
- **Cheekbones Back** – draws the base of the skull over the top of the spine. Forward head posture causes a shortening of the muscles at the back of the neck. Simply trying to pull the head back often leads to a backward tip of the head and compression of the vertebrae in the neck. Cheekbones back also has the effect of elevating the crown of the head.
- **Collarbone Elevation** – lifting of the shoulders with awareness of the collarbones moving up toward the chin. The collarbones are part of the shoulder girdle which includes the shoulder blades and the upper arm bone. Together they make the “shoulder.” Being aware of the collarbones when trying to correct shoulder position helps maintain the relationship of the upper arm bone with the points of articulation. Often the shoulder blades get stuck or move improperly, which causes stress on the connective tissues in the shoulder and can lead to many different injuries.
- **Spinal Flexion** – bending forward in the back. Each vertebra along the spine has a certain range of movement which is safe and healthy. When a section of the spine is stiff or immobile, compensations will occur where two vertebrae move greater than the healthy range. This is when problems occur and injuries develop.
- **Shoulder Blade Retraction** – pinching together of the shoulder blades. The shoulder blades should glide freely over the back ribs and can move in a variety of directions. Understanding and maintaining movement and stability of the shoulder blades is very important for proper use and function of the arms.
- **Shoulder Blade Protraction** – widening of the shoulder blades. It is the unintended protraction or retraction of the shoulder blades when under load that is undesirable.
- **Internal Rotation** – turning the bone in toward the body’s center line. Insufficient rotational mobility in the hip or shoulder will result in torque or rotational pressure in the knees and elbows, respectively.
- **External Rotation** – turning the bone outward and away from the body’s center line. Proper external rotation of the upper arm bone is very important to healthy shoulder function.
- **Hip Abduction** – sideways movement away from the center line of the body. The hip abductors become overworked and weakened when midline strength and adduction is inhibited. Activating and strengthening

the hip adductors can help increase hip mobility in all directions and often alleviate common low back pain.

- Hip Adduction – sideways movement toward the center line of the body. Weak hip adduction is often the result of weak midline core strength. The hip adductors are part of a chain that includes the arch of the foot, pelvic floor, lower abdominals, and spinal stabilizers. Activating and strengthening any part of the chain will affect and strengthen all the pieces.
- Prone Position – lying on the stomach. The spine must be stabilized against gravity, so in a prone position effort must be made to hold the proper curves of the spine. Look to keep the pelvis out of a forward tilt and the stomach wall (including the lower ribs) light on the ground. Support the forehead with the hands and lift the chin from the floor to keep neck and shoulders open and relaxed. Any prone exercises should have an emphasis on maintaining the spinal alignment for maximum effectiveness.
- Supine Position – lying on the back. Maintaining proper spinal position while supine is challenging as the back chain of muscles can often get confused. It is easiest to be aware of the proper tight/relax alternating chain to get the best results. In its simplest form try to learn and cue the following...
  - \*Strong ankles/relaxed knees
  - \*Strong inner thighs and hamstrings (back hips)/relaxed “tush” (lower glutes)
  - \*Strong lower ribs/relaxed navel
  - \*Strong shoulder blades/relaxed neck and heavy head
- Mobilizing muscles – muscles that contract to move a bone and create a body movement. In the example of a forward kick the mobilizing muscles are at the front of the thigh and hip. When mobilizing muscles are inhibited or not being recruited properly, different muscles will try to pitch in and make the movement happen. This is called a compensation pattern and will lead to deterioration of the joint if allowed to continue over time and with repetitive forces.
- Stabilizing muscles – muscles that contract to hold a joint stable while motion occurs elsewhere. In the same example of a forward kick the stabilizing muscles are around the foot, ankle, knee, and hip of the supporting leg; in the pelvis holding the SI joint stable; all along the spine keeping the torso upright; in the shoulders keeping the arms in position. Any dysfunction in the stability chain will cause compensation in the mobilizing muscles. Stability is fundamental to movement.
- Hyperextension – movement of a joint beyond its safe and healthy design. Joints in hyperextension are not being stabilized by the surrounding muscles and are therefore leading to a chain of

compensated movement patterns. Increasing load on hyperextended joints is not a good idea.

## **Part 2: GENERAL TERMS**

- **Dynamic Instability** – refers to the inherent property of the equipment to allow for movement in all three spatial dimensions. This invokes the body's proprioceptive system (the ability to know where your body parts are without looking at them). Performing the same exercises on equipment which is stable in one or more of the three spatial dimensions lessens the neurological effects.
- **Neurological Change** – the effect of neuroplasticity or ability of the brain to change and rewire. The nervous system can recalibrate at 300 miles per hour, which allows exercises to work faster in the body.
- **Open Kinetic Chain** – refers to an exercise in which the body remains stable and the end point is mobile. Open kinetic chain exercises assist with reorganizing and strengthening specific movements at a specific joint.
- **Skeletal Stability** – refers to the reflexive (without thinking about it) ability of the body to hold bones in place with proper spacing and alignment. Strong reflexive skeletal stability looks like perfect posture with ease and efficiency of movement. Bodies with strong skeletal stability will utilize less energy to produce the same results.
- **Unilateral Work** – strengthening and exercising using one leg or one arm at a time. In a plank, for example, unilateral work would be lifting one arm or one leg while holding a stable front position. Unilateral work is very important to create a complete strong core as the body works to stabilize rotational forces that are not present in bilateral (using both arms and legs in parallel) work.

## **Part 3 – ANATOMY BASICS**

*NOTE: Please refer to a true anatomy source for more scientific explanations. The purpose of these basics is simply to direct the reader to the general area of the body involved. This list is not a comprehensive anatomical review; rather it is simple descriptions of the terms used in this manual. The items are presented in order from the top to bottom of the body.*

- **Shoulder Girdle** – the anatomical ring that includes the collarbones, shoulder blades, upper arm bones, and all the associated soft tissues (muscles, tendons, ligaments, cartilage, fascia) that make it work. The shoulder girdle can be thought of as a lampshade that sits atop and can be moved independent of the lamppost (in this case the spine, ribcage, and head).
- **Humerus Head** – the ball-shaped upper end of the upper arm bone. The humerus head articulates with the ends of the collarbone and shoulder

blade to form the shoulder joint. The shoulder joint relies on soft tissues for stability and is therefore much less stable than the hip joint in comparison. Shoulder movement is very complicated and should be given good attention when developing movement and strength.

- Triceps – muscles at the back of the upper arm
- Rhomboids – muscles between the shoulder blades
- Lower Lats – muscles at the lower back of the ribcage
- Serratus – muscles down the sides of the ribcage
- Abdominal Core – refers to the totality of muscles in the abdominal region. Often the central abdominal muscle (rectus abdominus) becomes dominant. Care should be taken to make sure the underlying abdominal muscles are active and working.
- Rectus Abdominus – the abdominal six-pack muscle. This muscle pulls the lumbar spine into flexion and can inhibit the supporting abdominal muscles if worked without the proper balance of strength.
- Obliques – muscles felt at the sides of the abdominal region. Internal and external obliques support the spine and create side bending and twisting movements.
- Lumbar Spine – the lowest 5 vertebrae of the spine. The lumbar spine is designed to have a natural degree of extension. Constant work to flex the lumbar spine can decrease the natural curve and lead to problems in this area.
- Pelvis – the group of bones including the tailbone (sacrum and coccyx) and two hip bones. The junction of the tailbone and the hip bone is referred to as the SI (Sacroiliac) joint. Improper position and functioning of the SI joint can lead to pinched nerves, improper signaling to the leg muscles, and pain in the low back and legs.
- Pelvic Floor – muscles at the base of the pelvis, between the thighs. Proper function of the pelvic floor is one of the most important pieces of spinal stability and core strength. It is not to be confused with activation or squeezing of the “tush,” or lower glutes.
- Gluteal Muscles – the “tush,” is made up of a number of different muscles responsible for different movements. These muscles are rarely used as one big unit and cooperation amongst all the gluteal muscles is very important.
- Glute Med (gluteus medius) – a deep muscle of the “tush.” Glute med is partially responsible for hip abduction and external rotation. This muscle can become overworked and weakened when the pelvic floor is weak or inhibited.
- Femur Head – the ball shaped upper end of the thigh bone. The femur head moves within the socket of the pelvis and should have a skeletal stability holding proper spacing. Proper basic hip function required as the hip basically serves as the engine which moves everything.

## NOTES FROM THE AUTHOR

I write this manual to accompany the **Suspension Training System** so that users may experience the greatest possible benefits. The information contained in this manual is detailed and technical, but attention to details is where the magic lies. For a deeper understanding or clarification of the details, please book a weekend workshop or one-day clinic with Perfect 10 Posture. Contact [paula@gymrootsinc.com](mailto:paula@gymrootsinc.com) for more information.



The information and exercises contained here and the concept of suspended training equipment are all part of my personal education experience and were taught or introduced to me through a wide variety of sources. The information and exercises are not my own invention. Rather, what is unique is the manner of presentation and the swirling together of information through my 45 years of experience with movement.

I want to give thanks and gratitude to all of my teachers for the pieces they have shared which have found themselves together in this project. The list that follows is sure to leave out someone important, but I will try to shout out to the major players in chronological order...

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Thank you from the bottom of my heart to everyone for your gifts.