

ISOMETRIC TRUNK STABILIZATION

INTRODUCTION

The Isometric Trunk Stabilization program is a unique series of exercises designed to improve balance, coordination, strength, and endurance of the trunk and pelvis muscles.

The program begins with an assistant placing a hand behind the small of the back. The low back muscles are tightened against the hand. Excessive pressure against the hand is avoided as this will result in pain due to an unnatural position of the spine. The goal is to find a position which is comfortable as the spine muscles are tightened. This is called the neutral pain-free position.

A series of exercises then follows which trains the body to move the arms and legs while maintaining the neutral pain-free position and therefore protecting the spine from injury. When performing the other exercises such as partial sit-ups, bridging, prone positions, quadrupeds, wall slides, and the ball exercises, the spine must be kept in the neutral pain-free position. This is very difficult but extremely important. When the program is completed a series of maintenance exercises are continued. This program has proven to be successful in relieving pain, improving performance, preventing injuries, and prolonging careers in professional athletes.

BEGINNING POSITION

- Knees flexed
- Abdominal muscles tightened
- Spine muscles tightened
- Neutral pain-free position obtained



- Leg raised with knee flexed
- Abdominal and spine muscles tightened
- Full concentration on maintaining the neutral pain-free position



- Leg raised with knee extended
- Abdominal and spine muscles tightened
- Maximum concentration is now needed to maintain the neutral pain-free position



ISOMETRIC TRUNK STABILIZATION

LEVEL I

I-A. DEAD BUG

- Supported (1 leg on ground)
- Arms overhead
- Marching
 - 2 minutes total



I-B. PARTIAL SIT-UPS

- Forward
- Arms on chest
- Slow reps, hold 10 seconds
 - 1 set x 10 reps (1x10)



I-C. BRIDGING

- Double legs
- Slow reps
 - 2 x 10



I-D. PRONE

- Gluteal squeeze
- Alternate lifting
- 1 arm then 1 leg
- Hold for 10 seconds
 - 1 x 10



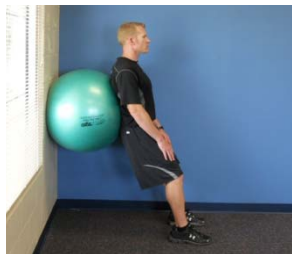
I-E. QUADRUPED

- Alternate lifting
- 1 arm then 1 leg
- Hold for 10 seconds
 - 1 x 10



I-F. WALL SLIDE

- Knees flexed 45 degrees
 - 1 x 10



I-G. BALL

- Balance on ball, then leg press until knees are straight
- Arms overhead or crossed on chest. May place toes against a wall
 - 1 x 10



- I-H. AEROBIC – Walking in water or land

ISOMETRIC TRUNK STABILIZATION

LEVEL II

II-A. DEAD BUG

- Unsupported
- One arm extended at a time
- Then one leg extended at a time
 - 3 minutes total



II-B. PARTIAL SIT-UPS

- Forward
- Arms on chest
 - 3 x 10



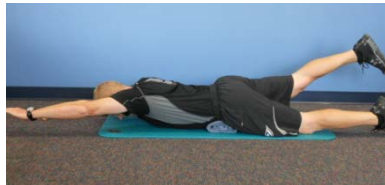
II-C. BRIDGING

- Double leg, slow reps
- Weights on hips (5-10 lbs)
 - 2 x 20



II-D. PRONE

- Gluteal squeezes
- Diagonals, lift L arm & R leg
- Hold 10 seconds then repeat on opposite side
 - 2 x 10



II-E. QUADRUPED

- Diagonals, lift L arm & R leg
- Hold 10 seconds then repeat on opposite side
 - 2 x 10



II-F. WALL SLIDE

- Knees at 90 degrees flexion
- Hold 20 seconds
 - 1 x 10



II-G. BALL

- Balance on ball, then leg press until knees are straight, arms overhead or crossed on chest. May place toes on wall. 1 x 10
- Sit-ups forward, arms crossed on chest. 1 x 10



II-H. AEROBIC – Cycle or water run

ISOMETRIC TRUNK STABILIZATION

LEVEL III

III-A. DEAD BUG

- Unsupported
- Arms overhead with weights
- Alternate leg extensions
 - 7 minutes total



III-B. PARTIAL SIT-UPS

- 1. Forward 3 x 10
- 2. Right 3 x 10
- 3. Left 3 x 10



III-C. BRIDGING

- Single leg, hold for 20 seconds, 1 x 20
- Double leg with weights on hips, 1 x 20
- Ball bridge – heels on ball, lift hips so hips and knees are straight, 1 x 20



III-D. PRONE (ON BALL)

- 1. Flies 1 x 10
- 2. Swims 1 x 10
- 3. Superman 1 x 10



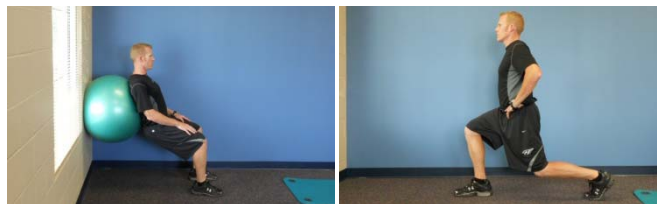
III-E. QUADRUPED

- Diagonals, lift left arm & right leg, hold 10 seconds, then repeat opposite side
- May use wrist weights, 3 x 20



III-F. WALL SLIDE

- 1. Knees at 90 degrees flexion, hold 30 seconds, 1 x 20
- 2. Lunges – no weights, 1 x 10



III-G. BALL (SIT-UPS)

- 1. Forward 1 x 20
- 2. Right 1 x 20
- 3. Left 1 x 20



III-H. AEROBIC

- Swim, ski machine – 20-30 minutes

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LEVEL IV

IV-A. DEAD BUG

- Unsupported, marching
- Diagonals, L arm & R leg, hold 10 seconds, then repeat opposite side
 - 10 minutes total



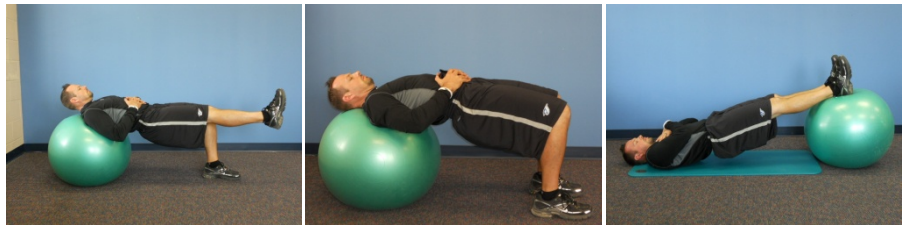
IV-B. PARTIAL SIT-UPS

- 1. Forward 3 x 20
- 2. Right 3 x 20
- 3. Left 3 x 20
 - May use weights on chest



IV-C. BRIDGING (ON BALL)

- 1. Single leg, hold 10 seconds, 1 x 20
- 2. Double leg with weights, 1 x 20
- 3. Heels on ball, 1 x 20



IV-D. PRONE (ON BALL)

- 1. Superman with weights, 1 x 10
- 2. Prayer, 1 x 10



IV-E. QUADRUPED

- Diagonals, lift L arm & R leg
- Hold 10 seconds
- Repeat opposite side
- May use weights on wrists, 2 x 20



IV-F. WALL SLIDES

- 1. Knees at 90 degrees flexion with weights held in hands at arms length, hold for 15 seconds
- 2. Lunges with weights 1 x 10



IV-G. BALL (SIT-UPS)

- 1. Forward 2 x 20
- 2. Right 2 x 20
- 3. Left 2 x 20



IV-H. AEROBIC

- Stair climber, skip rope - 45 minutes

ISOMETRIC TRUNK STABILIZATION

LEVEL V

V-A. DEAD BUG

- Unsupported
- Both arms and both legs at 90 degrees flexion then full extension
- Hold 10 seconds
 - 15 minutes total



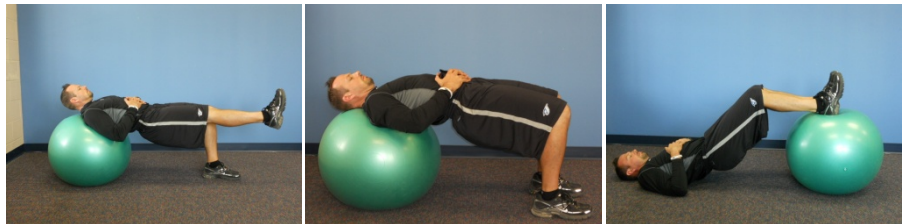
V-B. PARTIAL SIT-UPS

- 1. Forward 3 x 30
- 2. Right 3 x 30
- 3. Left 3 x 30
- May use weights held overhead or behind head (5 lbs)



V-C. BRIDGING – ON BALL

- 1. Single leg, hold 10 seconds, 1 x 20
- 2. Double leg, with weights, hold 10 seconds, 1 x 20
- 3. Heels on ball with both knees flexed at 90 degrees, 1 x 20



V-D. PRONE

- 1. Superman with weights, 1 x 20
- 2. Flies with weights, 1 x 20
- 3. Swim with weights, 1 x 20



V-E. QUADRUPED

- Diagonals, lift left arm & right leg, hold 15 seconds, then repeat opposite side
- May use weights on wrists, 3 x 20



V-F. WALL SLIDE

- 1. Knees at 90 degrees flexion with weights held in hands at arms length, hold 60 seconds, 1 x 10
- 2. Lunges with weights, 1 x 10



V-G. BALL (SITUPS w/RESISTANCE)

- 1. Forward 3 x 20
- 2. Right 3 x 20
- 3. Left 3 x 20



V-H. AEROBICS

- Run 60 minutes

ISOMETRIC TRUNK STABILIZATION

MAINTENANCE PROGRAM

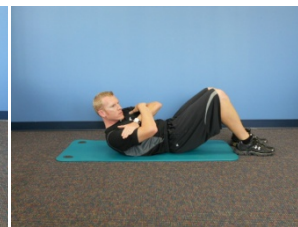
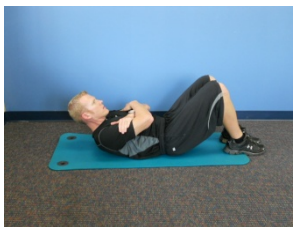
DEAD BUG – 12 MINUTES

- I-A – Supported (1 leg on ground), arms overhead.
 - 1 minute warmup
- II-A – Unsupported, one arm extended at a time, then one leg extended at a time
 - 2 minutes
- III-A – Unsupported, arms overhead, alternate leg extensions (extend one leg, then the other)
 - 3 minutes
- IV-A – Unsupported, marching diagonals, left arm & right leg, hold 10 seconds then repeat opposite side
 - 3 minutes
- V-A – Unsupported, both arms and legs at 90 degrees flexion then full extension, hold 10 seconds
 - 3 minutes



PARTIAL SIT-UPS

1. Forward 3 x 20
2. Right 3 x 20
3. Left 3 x 20
 - May use weights on chest (5 lbs)



BRIDGING

- Single leg, hold for 20 seconds, 2 x 20
- Double leg with weights on hips, 2 x 20

