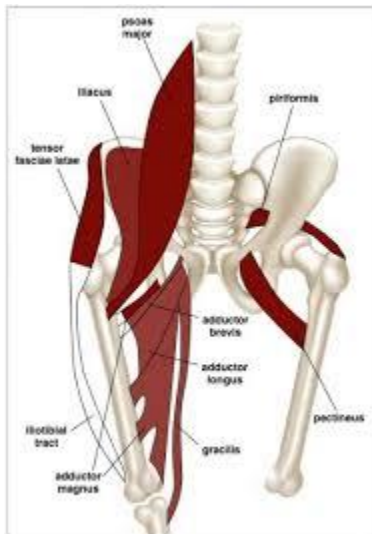


# FI PALOOZA™

## CORE TRAINING

### Overview

**Core:** The structures that make up the lumbo-pelvic-hip complex (LPHC), which includes the lumbar spine, the pelvic girdle, abdomen, and hip joint. The core is the place where the body's center of gravity (COG) resides and where all movement originates. Subsequently, if the core is weak and unstable, then this can potentially lead to a domino effect of wasteful movement and injuries, such as lower back pain and poor posture. Therefore, the goal is to have an efficient core in order to maintain proper muscle balance throughout the human movement system, which includes the nervous system, skeletal system, and muscular system.



Lumbo-pelvic-hip complex

Source: IDEA Health & Fitness Association

### Deeper Dive

The core muscle groups are divided into three (3) systems: **local stabilization system**, **global stabilization system**, and **movement system**.

The **local core stabilizers** are muscles that are directly attached to the vertebrae and the primary function of these muscles is to secure the vertebrae.

The muscles of the **global stabilization system** attach from the pelvis to the spine. The primary function of the global stabilization system is to transfer loads from upper to lower extremities and provide support for the pelvis and spine.

The **movement system** is made up of muscles that attach the spine and/or to the extremities. The movement system collectively provides stability during functional activities such as cleaning, preparing meals, exercising, etc.

The recommended approach is to train the core from the inside out – local stabilization system, global stabilization system, and movement system. Performing traditional abdominal and low-back exercises without spinal and pelvic stabilization can cause abnormal forces throughout the LPHC, which can potentially lead to injury.

For the purpose of this discussion, the focus is on the local core stabilization system.

## Actions

### Drawing-in Maneuver

Research indicates that the drawing-in maneuver is recommended to activate the local core stabilization system by drawing the navel in toward the spine. Use the drawing-in maneuver while performing the core training exercises for stabilization.

### Core Training Exercises for Stabilization



Core Exercises

Source: National Academy of Sports Medicine

### Description of each exercise

#### MARCHING

##### Preparation

1. Lie supine (face up) on floor with knees bent, feet flat, toes pointing straight ahead, and arms by sides.

##### Movement

2. Lift one foot off the floor only as high as can be controlled. Maintain the drawing-in maneuver.
3. Hold for 1 – 2 seconds.
4. Slowly lower.
5. Repeat on the opposite leg.

##### Technique

Make sure to keep the abdominals drawn-in throughout the entire movement and the pelvis in a neutral position. Pelvic rotation or abdominal protrusion indicates lack of neuromuscular control of the local core stabilizers.

## TWO-LEG FLOOR BRIDGE

### **Preparation**

1. Lie supine (face up) on floor with knees bent, feet flat on floor, toes shoulders-width apart and pointing straight ahead.

### **Movement**

2. Lift pelvis off the floor until the knees, hips, and shoulders are in line.
3. Slowly lower pelvis to the floor.
4. Repeat as instructed.

### **Safety**

When performing a bridge, do not raise the hips too far up off the floor (hyperextending the low back – too much pressure on the lumbar spine). This places excessive stress to the lumbar spine. Make sure at the end position, the knees, hips, and shoulders are in alignment and the gluteal muscles are fully contracted.

## FLOOR PRONE COBRA

### **Preparation**

1. Lie prone (face down) floor.

### **Movement**

2. Activate gluteal muscles, and pinch shoulder blades together.
3. Lift chest off the floor with thumbs pointed up and arms externally rotated as illustrated.
4. Hold for 1-2 seconds.
5. Slowly return body to the ground, keeping chin tucked.
6. Repeat as instructed.

### **Safety**

Like the floor bridge, do not come too high off the floor (hyperextending the low back - too much pressure on the lumbar spine).

## PRONE ISO-ABS (PLANK)

### **Preparation**

1. Lie prone (face down) floor with feet together and forearms on ground.

### **Movement**

2. Lift entire body off the ground until it forms a straight line from head to toe, resting on forearms and toes.
3. Hold for desired length of time keeping chin tucked and back flat.
4. Repeat as instructed.

### **Technique**

If this version of the exercise is too difficult, some regression options include:

- ❖ Perform in a standard push-up position.
- ❖ Perform in a push-up position with the knees on the floor.
- ❖ Perform with the hands on a bench and the feet on the floor.
- ❖ Perform with the hands on a wall in the standing position.

**Core stabilization training routine:**

Number of exercises: 1-4

Sets: 1-4

Reps: 12-20

Tempo: slow (4/2/1)

Rest: 90 seconds

Definitions:

Rep – the number of times a specific exercise is performed

Set – the number of cycles of reps completed

Tempo – the speed used for each repetition performed (accelerate for 4 count/hold for 2 count/decelerate for 1 count)

***Before starting a new exercise routine, receiving medical attention is advised.***

**Reference**

Clark, M. A., Lucett, S. C., & Sutton, B. G. (2012). *NASM essentials of personal fitness training – 4<sup>th</sup> edition*. Baltimore, MD: Lippincott Williams & Wilkins.