

Killer Core Circuit

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Overview:

This circuit is designed to target all aspects of the core musculature – the rectus abdominis, the transverse abdominis, the external and internal oblique abdominals, the erector spinae, and the quadratus lumborum. Other involved muscles include the hip flexors (the iliopsoas and adductor muscles groups) and the hip extensors (the gluteal and hamstrings muscle groups).

Station List:

1. 3-Way Planks
2. Oblique Penguin Crunches
3. Reverse Crunches
4. V-Ups
5. Window-Wipers
6. Supermans
7. Seal Stretch

Specifics:

The circuit will include 7 stations, 6 of which are dedicated to core-strengthening exercises and 1 of which is allocated to stretching the abdominal muscles. Three students should be at each station at any given time throughout the course of the circuit. Time at each station will be 90seconds as signaled by a referee's whistle. No equipment will be required for the completion of this circuit although the use of mats may be helpful if performing the circuit on a hard floor or surface.

Safety Concerns and Considerations:

The primary concern to be noted in regards to this circuit is the paramount importance of core *bracing* or *hollowing* to protect the spine throughout exercise. Also, keeping the neck aligned with the spine at all times is important to maintain the neutrality of the spinal column.

Other Information:

A list of the stations incorporated in this circuit as well as descriptions of the respective exercises along with example variations for altering intensity can be found below. Also listed are the target muscles of each station along with cautions and considerations specific to each exercise.

Station 1: 3-Way Planks (Front plank, right side plank, left side plank; 30seconds each)

Exercise Description:

- *Front Plank:*
 1. Start from a prone position
 2. Brace (tighten) core before raising upper body up onto the forearms
 3. Keep toes on ground and hold the body in a straight-line position from ankles, to knees, to hips, to shoulders, to head (maintain spine in straight-line position)
- *Side Plank:*
 1. Start from a side-lying position
 2. Brace core before raising upper body up onto ground-side forearm
 3. Keep side of ground-side foot on the ground and hold body in a straight-line position from ankles, to knees, to hips, to shoulders, to head
 4. Keep opposite arm at side or extended straight up for balance

Target Muscles:

- *Primary Muscles*
 - Rectus Abdominis
 - Transverse Abdominis
 - Erector Spinae
- *Secondary Muscles (include: synergists and stabilizers)*
 - Serratus Anterior
 - Deltoids
 - Pectorals
 - Rotator Cuff Muscle Group
 - Quadriceps Muscle Group
 - Gluteal Muscle Group

Variations for Decreased Intensity:

- *Front Plank:*
 - keep knees, rather than toes on ground for balance (hold the body in a straight-line position from knees, to hips, to shoulders, to head)
- *Side Plank:*
 - bring opposite arm across front of body and use to help stabilize ground-side arm

Variations for Increased Intensity

- *Front Plank:*
 - raise up onto hands rather than forearms add a weight (may be plates if in a fitness center, a large book or other sturdy object if in the home)
 - rotate the body in circles or figure-8 patterns
 - alternate balancing on one forearm, to one hand, to the other forearm, to the other hand
- *Side Plank:*
 - raise up onto hands rather than forearms
 - pump the hips upward toward the sky and downward toward the ground in a slow, controlled manner

Safety Concerns and Other Considerations:

- keep the core braced (or tightened) at all times
- do not allow hips to sag nor back to over-extend
- keep spine in a straight line at all times (except when varying side planks for increased intensity)

Station 2: Oblique Penguin Crunches

Exercise Description:

1. Start from a supine position
2. Draw knees up into cross-legged (Indian-style) position
3. Brace core to raise shoulders off the ground (keep the neck in line with the spine)
4. Raise arms just off ground and alternate crunching to each side so as to reach each arm towards each knee

Target Muscles:

- *Primary Muscles*
 - Rectus Abdominis
 - Transverse Abdominis
 - Abdominal Obliques
 - Quadratus Lumborum

Variations for Decreased Intensity:

- rather than keeping legs in a cross-legged position, bend knees up to approximately 70°, keeping soles of feet balanced on ground and crunch in this position

Variations for Increased Intensity:

- rather than keeping legs in a cross-legged position, raise the legs straight up to make a 90° with the torso at the hips, hold knees straight and crunch in this position

Safety Concerns and Other Considerations:

- keep core braced at all times, pushing lower back into ground and preventing back from arching or extending
- maintain the neck in line with the spine, avoid flexing neck or allowing head to bend forward toward chest

Station 3: Reverse Crunches

Exercise Description:

1. Start from a supine position
2. Draw knees up to chest
3. Use arms straight down by sides to brace against ground
4. Keeping shoulders grounded raise hips and lower back off of ground, bring knees up to nose
5. Carefully lower low back and hips back toward ground; be sure to lower slowly and with control

Target Muscles:

- *Primary Muscles*
 - Rectus Abdominis
 - Transverse Abdominis
- *Secondary Muscles*
 - Iliopsoas Muscle Group
 - Tensor Fascia Latae
 - Adductor Muscle Group
 - Gracilis
 - Rectus Femoris

Variations for Decreased Intensity:

- rather than keeping legs in a cross-legged position, bend knees up to approximately 70°, keeping soles of feet balanced on ground and crunch in this position

Variations for Increased Intensity:

- rather than keeping legs in a cross-legged position, raise legs straight up to make a 90° with torso at hips, hold knees straight and crunch in this position
- rather than allowing hips to touch ground after being lowered, allow only lower back to touch, hover hips off ground, then crunch again without hips ever contacting ground

Safety Concerns and Other Considerations:

- maintain the neck in line with the spine, avoid flexing neck or allowing head to bend forward toward chest

Station 4: V-Ups

Exercise Description:

1. Start from a supine position
2. Brace core
3. Bend at hips, simultaneously raising legs and torso up toward one another in a V-shape (keep the neck in line with the spine)
4. Reach for corresponding foot with each arm
5. Carefully lower torso and legs back toward ground; be sure to lower slowly and with control

Target Muscles:

- *Primary Muscles*
 - Rectus Abdominis
 - Transverse Abdominis
 - Iliopsoas Muscle Group
 - Adductor Muscle Group
 - Rectus Femoris
- *Secondary Muscles*
 - Tensor Fascia Latae
 - Gracilis

Variations for Decreased Intensity:

- rather than raising both legs simultaneously, raise one leg at a time keeping other on ground for balance and support

Variations for Increased Intensity:

- rather than reaching bilaterally for toes, isolate one side by rotating torso to reach both arms toward one foot and then the other

Safety Concerns and Other Considerations:

- keep core braced at all times
- keep spine in a straight line at all times; do not allow back to bend forward nor over-extend

Station 5: Window-Wipers

Exercise Description:

1. Start from a supine position
2. Brace core
3. Bend at hips, keeping torso on ground and raising legs to make a 90° angle at the hips
4. Brace arms on ground straight by sides or straight out from shoulders
5. Carefully lower both legs directly sideways keeping torso and legs at a 90° angle at all times; be sure to lower slowly and with control (avoid rotating torso as legs are lowered, produce motion from hips rather than spine)
6. Alternate sides, lowering first to one side before raising back to straight above the body and lowering to the opposite side

Target Muscles:

- *Primary Muscles*
 - Rectus Abdominis
 - Transverse Abdominis
 - Abdominal Obliques
 - Iliopsoas Muscle Group
 - Quadriceps Muscle Group
- *Secondary Muscles*
 - Tensor Fascia Latae
 - Adductor Muscle Group
 - Gracilis

Variations for Decreased Intensity:

- rather than extending legs straight up, bend knees and lower legs sideways in this position

Variations for Increased Intensity:

- rather than bracing arms on ground, hold a weight or other sturdy object straight out above torso
- weight legs with strapped ankle weights or by holding a ball or other weight between knees or ankles

Safety Concerns and Other Considerations:

- keep core braced at all times, pushing lower back into ground and preventing back from arching, extending, or rotating
- maintain the neck in line with the spine, avoid flexing neck or allowing head to bend forward toward chest

Station 6: Supermans

Exercise Description:

1. Start from a prone position
2. Extend arms forward in front of head
3. Simultaneously raise arms and legs away from the ground
4. Hold arms and legs in raised positions, avoid allowing either to contact ground

Target Muscles:

- *Primary Muscles*
 - Erector Spinae
 - Gluteal Muscle Group
 - Hamstring Muscle Group
- *Secondary Muscles (include: synergists and stabilizers)*
 - Trapezius
 - Rhomboids
 - Deltoids

Variations for Decreased Intensity:

- rather than extending arms and legs simultaneously, extend one at a time (i.e., extend and raise arms while legs remain on ground or extend and raise legs while arms remain on ground for balance and support)

Variations for Increased Intensity:

- after extending and raising arms and legs, alternate raising one arm and one leg (may be on same side or opposite side of body) slightly higher before returning to initial raised position and proceeding to raise the other arm and leg; perform these motions slowly without excessive abruptness or jerking motion
- hold small hand-weights or other weighted object (e.g., can of soup or bottled drink)

Safety Concerns and Other Considerations:

- keep neck in line with the spine, avoid extending neck or allowing head to bend backward toward back

Station 7: Seal Stretch

Exercise Description:

1. Start from a prone position
2. Keep legs and hips on ground while raising torso up onto arms
3. Keep elbows straight, hands flat on ground and beneath shoulders while supporting torso
4. Hold “seal” position for 20-30seconds at a time before returning to prone position to alleviate stretch
5. Repeat 2-3 times as permitted by circuit station alternation

Target Muscles:

- rectus abdominus
- obliques (if variation for increased intensity is applied)

Variations for Decreased Intensity:

- rather than propping torso up with hands on ground, prop up onto forearms (similar to front plank position from Station 1)

Variations for Increased Intensity:

- rather than propping torso up with both hands on ground, prop up onto one hand, raise other hand up toward sky and rotate spine such that chest faces sideways rather than straight ahead

Safety Concerns and Other Considerations:

- keep legs and hips on ground to facilitate stretch and to prevent stress on spine from weight added to extended position