



# Vanderbilt Sports Medicine

Knee Center *and* Shoulder Center

## Core Strengthening: Phase I



Pelvic Tilt

- Lie flat on back, both knees bent, feet flat on floor.
- Flatten back by tightening stomach muscles and buttocks.



Side-Lying Hip Abduction

- Lie on uninvolved side, legs straight.
- Tighten quad on involved leg, raise involved leg upward (keeping knee straight throughout motion).



Prone Hip Extensions

- Lie face down, keep knee straight on involved leg.
- Tighten quad on involved leg and lift upward (keeping knee straight throughout motion).



Curl-Up (Crunch)

- Lie flat on back, both knees bent, feet flat on floor.
- Flatten back (using pelvic tilt), tighten stomach, lift head and shoulders off floor toward knees (keep low back in contact with floor).



Supine Hip Bridge

- Lie flat on back, both knee bent, feet flat on floor.
- Slowly raise buttocks from floor, keeping stomach muscles tight throughout motion.



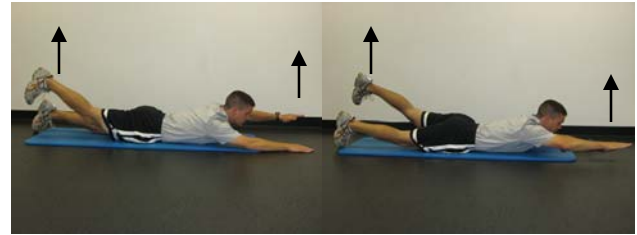
Side-Lying "Clam Shell"

- Lie on either side, hips and knees bent, with resistive band looped around knees.
- Keeping feet together and hips and knees bent, lift upper thigh, keeping lower thigh against floor. (Repeat for both sides)



“Supermans”

- Lie face down, with arms and legs outstretched.
- Slowly lift both upper body and legs from floor, do not arch neck.



“Swimmer”

- Lie face down, with arms and legs outstretched.
- Raise arm and opposite leg off mat, raise other arm and opposite leg off mat, repeat alternating pattern.



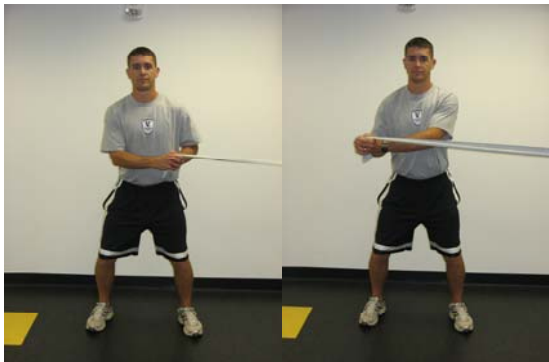
Plank

- Position yourself in a “push-up” start position, with your elbows on the floor in line with shoulders.
- Tighten your stomach, lift your hips off floor till your legs and upper body are in line, with your shoulders positioned over your elbows (keeping legs and torso straight).



Side Plank

- Lie on either side, legs outstretched, lower elbow on floor in line with shoulder.
- Tighten your stomach muscles, lift your hips off floor till your legs and upper body are in line, with your shoulders positioned over the elbow on the floor (keep legs and torso straight and place upper arm against side).



Trunk Stabilization T-Band Pulls

- Position resistive band such that it is at stomach level, stand with feet shoulder width apart, slight knee bend, holding band with both hands in front of you.
- Tighten your stomach muscles to stabilize your core, pull the resistive band across your body with only your arms moving, keeping trunk still. (Repeat for both sides)



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## Core Strengthening: Phase II



Cobra

- Begin in kneeling position on floor.
- Slowly lean back, hold, slowly return to start position (keeping stomach tight and trunk rigid throughout entire motion).



Bird Dogs

- Begin in a 4 point kneeling position.
- Tighten stomach, extend one leg while lifting the opposite arm, return to start position, repeat with opposite leg and arm (keeping trunk rigid throughout motion).



Dead Bug

- Lie flat on back, both knees and arms extended toward the ceiling.
- Flatten back (using pelvic tilt), tighten stomach, touch one hand to opposite knee, repeat with opposite hand and knee (keeping pelvis still throughout motion).



Single-Leg Supine Hip Bridge

- Lie flat on back, knees bent, feet close together and flat on floor.
- Slowly raise buttocks from floor, keeping stomach muscles tight throughout motion. In up position, slowly extend one knee (keeping stomach tight), return knee to bent position, repeat with opposite knee.



Crunch on Physioball

- Lie on back on ball (ball positioned at low/mid back), knees bent, feet shoulder width and flat on floor.
- Tighten stomach, crunch upward till shoulders clear ball (focus on controlling balance throughout motion, try to keep ball from rolling)



### Diagonal Chops

- Secure resistive band at level above head, stand with feet shoulder width apart, slight knee bend, holding band with both hands.
- Tighten stomach, twist and bend trunk toward opposite side. (Repeat for both sides)



### Side Plank with Hip/Arm Abduction

- Lie on either side, legs outstretched, lower elbow on floor in line with shoulder.
- Tighten your stomach muscles, lift your hips off floor till your legs and upper body are in line, with your shoulders positioned over the elbow on the floor (keep legs and torso straight), from this position either raise your upper arm toward the ceiling or lift your upper leg (continuing to keep lower leg and torso rigid and straight).



### Side Plank on Outstretched Arm

- Lie on either side, legs outstretched, lower hand on floor in line with shoulder.
- Tighten your stomach muscles, lift your hips off floor till your legs and upper body are in line, with your shoulders positioned over the hand on the floor (keep legs and torso straight and place upper arm against side).



### Prone Elbow Roll-Out on Physioball

- Begin in kneeling position on floor with physioball out in front, elbows and forearms resting on ball, slight bend at hips.
- Extend hips so that torso and upper legs are in straight line (leaning on physioball), hold this position with torso and legs, slowly roll physioball forward and backwards using shoulders/arms (keep trunk rigid and stomach muscles tight throughout exercise)



### Physioball Walk-Out

- Lie on stomach on physioball, hands and feet touching floor, hands shoulder width.
- Tighten you stomach muscles to hold your torso rigid, slowly walk yourself out onto your hands, such that the physioball rolls down along your legs (keeping legs and torso straight and arms extended).