



PLAY THE SLOTS: Coccyx Cues for Postural Organization:

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Mat, Reformer, Tower, Power Point

“Movement in correct alignment produces correct muscular development.” This is a quote from Bruce King, First-Generation Pilates Teacher.

Correct execution within exercises yields the results that require concentration and effort from both the client and the teacher. In the first lessons, the organization of the pelvis can be relatively simple. The goal is to slowly and methodically improve organization and apply this to movement. As the client progresses, organizational cuing becomes more detailed and refined. The teacher will recognize that subtle postural changes are necessary but discover that the words are hard to find. This is especially true when cuing the coccyx. What does it mean to say tailbone down? What do we mean when we say the pelvis is tucked? The functional spine also includes the sacrum and the coccyx which join to form the sacral coccygeal joint. The sacrum and coccyx can move independently but are connected. They are a team. Applying imagery and anatomical cues specific to the tailbone can assist with better results when applied to Mat and equipment. When clients change, they feel the difference and teachers feel empowered.

How much to teach and when to teach?

- Educate yourself to empower your cues.
- Teach enough for client awareness.
- Stop when the lesson becomes a lecture.

ANATOMY PELVIS

Pelvic halves

Asis

Pubic symphysis

Anterior Images

Triangle

Anchor

Heavy Ball

Sacrum and Coccyx

Sacrum 5 fused vertebrae

Coccyx 4 fused vertebrae

L5/S1 connection

Posterior Images

Plop/Ball

Sacral Clock

Dimples of Venus

Curves of Spine

Shock Absorption

Flexibility

Support

Supine Position of Spine in Gravity.

The head, mid-thoracic, mid-sacrum weight the mat.

The cervical spine, lumbar spine and coccyx are off the mat.

Sacral Nutation and Counter Nutation – The Coccyx goes for the ride!

The Sacrum has 2 job descriptions:

Form closure of pelvis with the two SI joints and the cartilage that connects the two ends of the pubic symphysis.

The sacrum and coccyx are anatomically vertebrae of the spine and have fused curves.

Sacral Nutation and Counter nutation

Nutation is when the TOP of the sacrum moves forward and downward.

Counter nutation is when the TOP of the sacrum moves upward and backward.

Nutation occurs in hip flexion, lumbar extension, and hip extension.

Counter nutation occurs in lumbar flexion.

Where is the coccyx when the sacrum moves?

When the sacrum moves into nutation, the coccyx moves backward and away from the pubic symphysis.

The pelvic outlet widens.

When the sacrum moves in counter nutation, the coccyx moves forward toward the public symphysis.

The pelvic outlet narrows.

The coccyx is a moveable joint and contributes its own degrees of motion because of muscle and ligament connections to the sacrum.

Relative movement of the SI joints and sacrum.

The sacrum and coccyx can move with stable pelvic halves.

The pelvic halves can move over the sacrum.

The pelvis, sacrum, and coccyx can coordinate.

Degrees of nutation and counternutation.

4 degrees – 2 forward and 2 backward.

Hypermobility may be 5+ degrees

Variations can be due to personal anatomy, age, ligamentous laxity.

Translation = The coordinated downward and upward movement of the sacrum in the SI joints.

The sacrum glides slightly forward and downwards relative to the pelvic half between 1 to 3 mm.

The position of the coccyx follows these joints.

The component of translation also creates more forward and backward movement of the coccyx.

Find SI joint with the standing forward/bending test.

Position of the sacrum will influence the position of the coccyx.

Position of the sacrum determine if the coccyx is forward or backward relative to the pubic symphysis.

Find the coccyx.

Independent movement of the Sacrum and Coccyx.

Coccyx will follow the tilt of the sacrum.

This movement cannot be seen, but it can be felt.

How does the client interpret a verbal cue to move the tailbone down?

On the floor?

Where is the tailbone?

Can I feel the tailbone?

How does this help with my Pilates?

Why is coccyx movement hard to cue?

The joint movement is relatively small in terms of space.

The joint movement is large in degrees of motion.

Normal: 5 – 25 degrees in sagittal plane.

Average: 9.3 degrees.

Immobile: Less than 5 degrees

Hypermobility: More than 25 – 30 degrees

The movements are generally passive in the sagittal plane.

Sitting causes the coccyx to move forward = sacrum backward or counternutation.

Standing, bathroom and childbirth cause coccyx to move backward = sacrum forward.

The coccyx position will be determined by the position of the sacrum.

Pilates can help with coordination of the spine including the sacrum and coccyx.

Improves functional flexibility and strength of SI joints.

Increases strength and flexibility of pelvic floor.

Promotes functional movement precision of many exercises.

Possible limitations of coccyx movement:

There can be fusion or loss of mobility due to age or an accident.

Childbirth can cause a fracture, fusion or dislocation that can be painful.

The sacral movement may be impeded due to injury.

For some clients, the widening of the pelvic floor is a trigger due to trauma or a sense of propriety.

Teachers should be sensitive and respectful when introducing coccyx cues.

Some clients may not be aware that they have restrictions.

When there are restrictions or injury to a joint, the best strategy is to strengthen the muscles that support the joint to the extent that is possible.

Muscle attachments to coccyx are important for pelvic floor health.

Levator ani

Iliococcygeus

Pubococcygeus

Coccygeus

Gluteus maximus - The gluteus maximus originates from the lateral crest of the ilium, and the posterior surface of the sacrum **including the posterior surface of the coccyx.**

Broad and fleshy attachment at the lower end of sacrum and coccyx.

Provides functional stability to the SI joints and the pelvic floor.

Structural support is provided by the attachment to the gluteus maximus.

Ligament Attachments to coccyx coordinate with the sacrum to provide movement and stability.

Anterior and Posterior Sacrococcygeal ligaments: The inferior anterior and posterior longitudinal ligaments of spine.

Superficial Posterior Sacrococcygeal: The middle of the sacral crest to the dorsal surface of the coccyx.

Sacro-tuberous Ligament: The Sacro-tuberous ligament is strong band in the posterior pelvis connecting the sacrum, coccyx, and ilium to the sit bone. It provides stability to the sacroiliac joint. Flexibility during childbirth allows for the pelvic outlet to widen.

Sacrospinous Ligament: Connects the sit bone to the coccyx and bottom of the sacrum.

EXERCISES:

MOBILIZATION:

The first step is to present an exercise that can emphasize the widening and narrowing of the sit bones. If the sit bones begin to move, the sacrum will be moving front to back in nutation and counternutation. The coccyx will move in opposition at the end of the spine. Muscle attachments to the coccyx will be activated. If the coccyx is fused or immobile, the movement of the sacrum and coccyx coordination will create some improvement opportunities for the coccyx.

Mat Quadruped:

- Cat and Cow
- Long Back Stretch to Swan

Tower:

- Spread Eagle
- Kneeling Cat

Reformer:

- Knee Stretch
- Semi-Circle

SUPINE AND PELVIS CONTROL:

Anterior Pelvic Tilt

If the pelvis moves into an anterior tilt, the coccyx will move downward.

If the client is hypermobile with a pronounced lordosis while standing, the coccyx.

Posterior Pelvic Tilt

If the pelvis moves into a posterior tilt the coccyx will move upward.

The posterior position is called tucking.

This posture is common due to slumping in chairs.

Athletes and movement artists may have excessive lordosis due to performance requirements.

The cue to move the tailbone downward or upward is ambiguous.

The coccyx never touches the mat in neutral.

There is no proprioceptive awareness in neutral.

Images are more reliable.

Mat:

- **Leg Circle**
 - Center sacrum on plop.
 - Organize the triangle on the horizontal plane.
 - The coccyx will be aligned between the two cues.
- **Neck Pull or Roll Up**
 - Narrow sit bones to roll downward.
 - Move coccyx toward the feet.
 - Roll upward to widen sit bones sitting tall,
 - Move coccyx to back sitting tall.
- **Rolling Back:**
 - Narrow sit bones
 - Counternutation of sacrum.
 - Coccyx toward pubic symphysis
 - Rolling with a smooth motion requires pelvic control.

Reformer:

- **Leg Circles**
 - Center sacrum on plop.
 - Organize the triangle on the horizontal plane.
 - Lengthen the pubic symphysis away from the sternum.
- **Frog**
 - Requires more strength when the legs are bent to hold pelvis.

Tower:

- **Leg Circles in Straps**
 - Center sacrum on plop.
 - Organize the triangle on the horizontal plane.
 - Lengthen the pubic symphysis away from the sternum.

- **Scissors in Straps**

- Independent springs create greater need for control.
- Focus on plop.
- Focus on sacral clock.

SIDE BEND WITH COCCYX CUE:

Mat:

- Side Bend

Reformer

- Side Over on Short Box

Tower:

- Side Bend Supine

ARTICULATION AND CONTROL:

Mat:

- Teaser

Reformer:

- Short Spine
- Semi-Circle

Tower:

- Side Bend Stretch
- Airplane