PILATES FOR HYPERLORDOSIS

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Abstract

Hyperlordosis is an exaggerated curve in the lumbar spine in which the lower back curves inwards more than it would naturally do. The spine needs a natural curve to function correctly due to the shape of its individual bones (vertebrae,) but too pronounced a curve places stress on other parts of the spine and can cause pain. By strengthening the spine and abdominals and stretching the spine and hamstrings, the spinal curvature can be normalized or reduced. Consistent, weekly Pilates programs have proven to be effective, as explained in this case study.

Hyperlordosis is a faulty posture in which the curve of the lumbar spine is increased. This can be caused by a variety of behavioral or congenital movement patterns or predisposed anatomical structure; but in all cases of lordosis, the pelvis is always in an anterior tilt. The anterior tilt of the pelvis resonates to the muscles surrounding the pelvic complex, resulting in tight hip flexors and back extensors, and weak abdominals and hamstrings.
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Case Study

Name : Dian
Age : 36
Sex : Female
Occupation : Yoga Teacher

Physical Background:
Dian is already a young mother with 2 kids. Her pregnancy and Yoga practice with so many backbending pose, without awareness of the core engagement, can be caused of the hyperlordosis. She is suffering with back pain and lower back pain too, for long time. The goal of her conditioning program is to reduce is to reduce and possibly correct her hyperlordosis. By targeting certain muscle groups, and varying the emphasis from strengthening to stretching, the proposed conditioning program will be great assistance in finding better alignment and harmony throughout the body. The Pilates program is designed to help Dian reach her fitness goals, while keeping her hyperlordosis the priority in the selection of exercises.
Anatomical Overview

The normal spine has natural curves, namely, a thoracic kyphosis, a lumbar lordosis, and a cervical lordosis. Exaggeration of these normal alignments may result in hyperkyphosis (lameback) of the thoracic spine or hyperlordosis (swayback) of the lumbar spine. Spasm of the lumbar paraspinal muscles results in flattening of the usual lumbar lordosis. Inspection may reveal lateral curvature of the spine (scoliosis) or an asymmetry in the paraspinal muscles, suggesting muscle spasm. Taut paraspinal muscles limit motion of the lumbar spine. Back pain of bony spine origin is often reproduced by palpation or percussion over the spinous process of the affected vertebrae.

*Later view: 1. Lordosis; 2. Normal*
**Causes**

In most cases, hyperlordosis appears from the onset of skeletal growth and the cause is unknown. It is more frequent in some races. In some cases, shortening of the ischiotibial muscles can facilitate the adoption of hyperlordotic postures.

**Symptoms**

It was formerly believed that lordosis invariably caused back pain. That is not the case. It is generally a problem of appearance and often it does not cause pain.

**Risk**

Some studies suggest that hyperlordosis can increase the force exerted on facet joints and, eventually, accelerate their degeneration.

**Diagnosis**

Hyperlordosis is normally directly observable. It can be confirmed by an X-ray.

**Treatment**

In itself, hyperlordosis does not require treatment. Appropriate physical exercise, adapted by the physician to the specific case, is normally sufficient to offset any risk of overloading the facet joints.

The paravertebral muscles cooperate with the abdominal and psoas muscles in keeping the back straight, in a way that resembles the opposing ropes holding a ship's mast. The glutei attach the spine to the pelvis and assure stability to the muscular system.
If the muscles at the posterior face of the thigh (ischiotibial) are shortened, there is a tendency to inadequate spinal postures. Muscles are innervated; lesions or overload may be very painful.
Conditioning Program

Assessment:
At the start of the session, the Standing Roll Down shows tension and lack of mobility in her lower back, and weakness in abdominals and hamstrings. The back extensors are extremely tight, causing her difficulty in finding posterior tilt when supine. The tightness resonates in exercises such as Pelvic Curl and Roll Up. During Pelvis Curl, the spine immediately goes into lordosis at the top of movement. The lower back extensors are tight and weak, the abdominals are also weak. Dian finds difficulty finding “navel to spine” position.

Warm Up:
1. Pelvic Curl (Mat), focus on hamstring control and spine articulation
2. Supine Spine Twist (Mat with ball underneath the legs for support), avoid anterior tilt of the pelvis
3. Chest Lift (Mat), focus on maintain “navel to spine” position
4. Chest Lift with rotation (Mat)
5. Single Leg Lift (Mat), focus on pulling the navel down to the floor in order to lift the leg
6. Leg Changes (Mat)
7. Roll Up with Roll Up Bar (Cadillac), focus on scooping the belly, feeling the spine against the mat while rolling up and down

Foot Work (on Cadillac)
1. V Position Toes
2. Open V Heels
3. Open V Toes
4. Hip Opener

**Abdominal Work**
1. Hundreds Prep
2. Mini Roll Up
3. Mini Roll Up Obliques
4. Roll Up Top Loaded

**Hip Work (on Reformer)**
1. Frog
2. Circles (Down and Up)
3. Openings

**Spinal Articulation**
1. Bottom Lift (on Reformer)
2. Tower Prep (on Cadillac)

**Stretches**
1. Standing Lunge (on Reformer)
   
   Focus on posterior tilt during hip flexor stretch, and anterior tilt when hamstring stretch.
Full Body Integration
1. Scooter (on Reformer)
2. Sitting Forward (on Cadillac)
3. Sitting Back (on Cadillac)

Arm Work (on Reformer)
1. Arms Supine Series: Extension, Adduction, Up & Down Circles
2. Arms Sitting Series: Chest Expansion
3. Arms Kneeling Series: Triceps, Biceps

Leg Work (on Wunda Chair)
1. Hamstring Curl
   Focus on pelvic lumbar stabilization.

Lateral Flexion and Rotation
1. Side Stretch (on Wunda Chair)
   Keeping the pelvis still, focus on the obliques.
2. Side Lift (on Step Barrel)
   Focus on oblique strength, keeping a straight movement pattern, not arching into
to lordosis at the top of the lift.

Back Extension
1. Swan Prep (on Ladder Barrel)
   Focus on lift with the back extensors, not allowing the
   abdominals to sink forward.
2. **Breaststroke Prep (on Reformer)**

   Focus on keeping abdominals engaged, not sink into lumbar spine, shoulder away from the ears.

3. **Prone 1 (on Cadillac)**

   Focus on back extensors, abdominals engaged.

The goals for this Conditioning Program, utilizing the BASI Block System were to strengthen the hamstrings and abdominals, stretch the hip flexors and back extensors and re educate the back extensors and abdominals to correctly engage to flex/extend the trunk.

All of the exercises listed in the conditioning program are not to be addressed in a single session. The exercises listed in the conditioning program are a combination of Fundamental and Intermediate exercises, each chosen specifically for Dian’s needs and abilities, weakness and strength.

These exercises are chosen to correct or reduce the increased curve in her lumbar spine.
Conclusion

Hyperlordosis is a painful posture, which can be incapacitating for many individuals. Through the exercises and observations used through this Pilates conditioning program, Hyperlordosis can be severely corrected or at least reduced by creating a mind-body connection with the muscles integral in attempting to achieve ideal posture. By locating and understanding the role of the transverse abdominus and the hamstrings, anyone with lordosis of the lumbar spine will be able to exercise in correct pelvic and spinal posture. In addition to the strengthening of the abdominals and hip extensors, the stretching of the back extensors and hip flexors plays a similar vital role in eliminating or reducing lordosis. By stretching the two muscle groups, the muscles surrounding the pelvic complex can begin to work symbiotically to improve and work towards neutral pelvis, spine, and eventually work towards the ideal posture. The condition program proposed for Dian is a series of exercises chosen specifically for her needs, both to create a trimmer waistline and to achieve healthier alignment.

Dian completed a four-week exercise program. Her flexibility in the lower back and hamstrings improved significantly. She also gained strength in the abdominal area and the tension in her neck was released. Our goals of increasing general flexibility, reducing lower back pain and neck tension, strengthening the abdominals and increasing the overall fitness level were achieved. Today, Dian feels an overall improvement in the alignment and health of her spine.
Bibliography

Book:


Website: