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## Effects of trunk muscles on lumbar lordosis on middle aged women

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### Abstract

Importance of this article is knowing about human trunk muscles and lumbar spine. This article answer to important questions such as what is muscles of trunk? What is lordosis deformity? How trunk muscles effect on lordosis deformity?

The peruse of this study was to assess the effect of muscles of trunk on lordosis deformity.

In this article level of participation questionnaire were explored. The participants in this study were 10 middle ages women. The sample was collected through random sampling method.

They fill up questionnaire based on muscle back pain.

**Keywords:** trunk muscles, hyper lordosis, questionnaire

### 1. Introduction

The human spine as we all know is formed by a series of curves from the head down to the coccyx (tail bone). First we have the neck, the cervical curve, formed of 7 vertebrae. Next we have the chest, the thorax along with the ribs, formed of 12 vertebrae. Next is the lower back, the lumbar region (subject of this blog), formed of 5 vertebrae. Finally, we have the two sets of fused bones the Sacrum (comprised of 5 fused bones to make one unit) at the base of our spine and the much smaller Coccyx (comprised of 4 fused bones and also know as our tail bone since it is the last vestige of the tail the evolutionary ancestors possessed).

### Abdominal muscles

- The abdominal muscles support the trunk, allow movement and hold organs in place by regulating internal abdominal pressure.
- The deep abdominal muscles, together with muscles in the back, make up your 'core' muscles and help keep your body stable and balanced, and protects your spine.

The four main abdominal muscle groups that combine to completely cover the internal organs include:

**Rectus Abdominis:** slung between the ribs and the pubic bone at the front of the pelvis. When contracting, this muscle has the characteristic bumps or bulges that are commonly called 'the six pack'. The main function of the rectus abdominals is to move the body between the ribcage and the pelvis.

**External oblique muscles:** these are on each side of the rectus abdominals. The external oblique muscles allow the trunk to twist, but to the opposite side of whichever external oblique is contracting. For example, the right external oblique contracts to turn the body to the left.

### Back muscles

- Function of the Back Muscles.
- Latissimus Dorsi (Lats)
- Trapezius (Traps)
- Erector Spinae (Spinal Erectors)
- Rhomboid.
- Teres Major

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### **Lower back muscles**

These muscles include the large paired muscles in the lower back (Erector spinae), which help hold up the spine, and gluteal muscles. The flexor muscles are attached to the anterior (front) of the spine (Which includes the abdominal muscles) and enable flexing, bending forward, lifting, and arching the lower back.

Posture can be defined as the relationship of the parts of the body to the line of the center of gravity. The definition of center of gravity is the place in a system or body where the weight is evenly dispersed and all sides are in balance.

### **Lordosis**

One of the most important parts of the spine which, if it is abnormal can Interrupts the body in a standing position. The excessive normalization of the lumbar vertebrae is called lordosis.

### **Hyper lordosis**

Hyper Lordosis is a condition where there is an increased inner curvature of the spine. If this spinal curvature increases more than 60 degrees, then it puts a lot of pressure or strain on the other regions of the spine resulting in pain. The term lordosis means inward curving of a part of the lumbar and cervical vertebral column. Excessive lordosis is termed as swayback or saddle back. There are three types of curves which can be present in the human spine.in the situation of lumbar lordosis muscles of the erectors of spine (erector spin and quadratus lumborum) and hip flexors (iliopsoas muscle) are become short and stiff abdominal muscles (rectus abdominus, internal oblique and external oblique) and hip extensors (hamstrings and gluteus Maximus. are become weak or stretches. The muscular imbalance results in pulling down the pelvis in the front of the body, creating the swayback in the spine.

### **Muscle pain**

Almost everyone has sore, aching muscles now and then. Muscle pain can involve a small area or your whole body, ranging from mild to excruciating. Although most muscle aches and pains go away on their own within a short time, sometimes muscle pain can continue for months. Muscle pain can develop almost anywhere in your body, including your neck, back, legs and even your hands. Physical therapy and back exercises to treat back pain in the lower spine usually focus on strengthening the flexor, extensor and oblique muscles to help reinforce support of the spine and in turn, reducing low back pain and sometimes eliminating the need for surgery.

Muscle pain is the achy, sore pain that increases with movement or with pressure on the affected muscle. Stretching can create increased pain, but it often feels better afterwards. Walking or exercising can also ease muscle pain, but doing too much can actually increase it and make it feel sharp.

### **Relationship between back pain and hyper lordosis**

Many therapists believe that having a “normal” spinal curve is associated with less or no back pain. Thus, people with too much or too little lordosis are at a higher risk of getting low back pain. Postural changes are sometimes a risk factor for low back pain. Abnormal posture creates a strain on ligaments and muscles that indirectly affects the curvature of the lumbar spine. Any changes in the curves of the spine will cause some muscles to stretch and some muscles to shorten, contributing to 8 instabilities in the spine. This instability leads to chronic

tension in certain muscle groups and increased strain on joints. Abdominal muscles being weaker than the muscles in the lumbar spine and the hamstring muscles, there is an imbalance which results in the pelvis being pulled forward of the body, creating the exaggerated arch or “swayback” in the spine.

### **Difference between bone pain and muscle pain**

1. Bone pain is caused by bone tissue while the muscle pain is caused by strenuous activities and postural deformities.
2. Muscle pain is diagnosed by physical examinations while bone pain needs to be investigated with physical tests, blood studies, x-rays, MRI scans and urinalysis.
3. Most of the muscle pains are often curable with the help of over the physical therapy, while bone pain needs to be supported with antibiotics and anti-inflammatory, and it depends on the cause of the bone pain.

### **2. Difference between joint pain and muscle pain**

1. Joint pain comes from falls or blows to a joint, which tears the ligaments and tendons in the region while the muscle pain is caused by strenuous activities and postural deformities.
2. Most of the muscle pains are often curable with the help of over the physical therapy, while Exercise doesn't reduce the inflammation or help mend the tendons or ligaments.
3. Broken bones and dislocation
4. Joint pain is achy, but feels like it is deeper than muscle pain. Many times joint pain hurts as much or even more when we are still, such as sitting at a computer or laying down at night. Instead of being focused over a large, muscular area, it is often focused around a particular bony joint. Joint pain is caused by fracture, degeneration or arthritis.

### **2.1 Hypotheses**

1. Questionnaire show there is no muscle effect on lumbar hyper of middle aged women.
2. There is no difference between experimental group and control group.

### **3. Methodology**

#### **3.1 Selection of subjects**

A total of twenty middle aged women employed in the Isfahan Refinery oil industry, were selected as the subject for the present investigation. These middle aged women were found affected by hyper lordosis. These selected subjects were divided into experimental group (N=10) and control group (N=10) for the purpose of study.

The subjects with hyper lordosis were identified in the clinic under the supervision of the physician. Subjects with Hyper lordosis were all with back muscular pain that had previously also been diagnosed by a doctor.

#### **3.2 Data collection**

Patients with hyper lordosis were identified in the clinic under the supervision of the physician. Subjects with Hyper lordosis were all with back pain, (muscle pain) that had previously been diagnosed by a doctor.

#### **3.3 Statistical method**

The raw materials obtained from measurement questionnaire and inferential statistics.

**4. Results**

**Table 1:** What are the common symptoms of your back pain in lordosis?

A. pain	B. numbness	C. weakness	d. stiffness
1. numbness		-	
2. pain		-	
3. pain		-	
4. pain		-	
5. numbness		-	
6. numbness		-	
7. numbness		-	
8. pain		-	
9. pain		-	
10. pain		-	

The Above table indicates that what is the common symptoms of their back injury that 60% has been answered pain and 40% has been answered numbness.

- **Analyze:** Pain typically is ongoing (as opposed to flaring up for a few days or weeks and then subsiding)
- Pain may be worse in the leg and foot than in the lower back
- Typically felt on one side the buttock or leg only
- Pain that is usually worse after long periods of standing still or sitting: relieved somewhat when walking
- More severe (burning, tingling) vs. dull, aching pain
- May be accompanied by weakness, numbness or difficulty moving the leg or foot.

**Table 2:** What is the best advice for prevention of back muscle pain?

A. good posture	B. Flexi ability	C. Strength	D. proper technique
1.			proper technique
2.			proper technique
3.			proper technique
4.			strength
5. good posture			
6.			proper technique
7.			proper technique
8. flexi ability			
9.			good posture
10.			proper technique

The Above table indicates that about best advice for prevention back injuries among women weightlifters. That 70% has been proper technique and 10% has been answered strength and also 20% has been answered good posture

1. Proper preparation: One or more warm-up sets
2. Examination of athlete
3. Strength balance
4. Flexi ability
5. Proper technique-avoids Valhalla a. Basic exercises should be performed through a full range of motion.
6. Proper manipulation of training variables
7. Proper equipment maintenance

Parts lubricated, floors cleaned and disinfected, plates put away

**Table 3:** Do you experience muscle pain while or after activity?

A. after training	B. While training
1. after training	
2. after training	
3. after training	
4.	while training
5. after training	
6. after training	
7.	while training
8. after training	
9.	while training
10.	while training

The Above table indicates that the experience of lower back pain for women middle aged that 60% has been answered after training and 40% has been answered while training.

**Table 4:** What is the best time of day to train?

A. morning	B. none	C. afternoon	d. night
1. morning			
2. afternoon		afternoon	
3.			
4. morning			
5. morning			
6.		afternoon	
7.		afternoon	
8. morning		afternoon	
9. morning			
10. morning			

Above table indicates that the best time for doing their exercise that 60% has been answered morning and also 40% has been answered afternoon

**Analyze:** There has been little in the way of scientific research in this area, but a wealth of practical experiences suggests that most women best in the afternoon - though a substantial number do well in the evening and a smaller number in the morning. But performance and training are different things. There is nothing that says training in the morning won't have as significant an effect on the organism as doing so in the afternoon, you may simply not perform at as high a level as you would at a different time of day. In the end, the very best time to train is the time at which you are most likely to be consistent, as consistency is a much more important long term factor in training success than the time of day you do it.

**5. Conclusion**

The result showed experimental group that fill up questionnaire have significantly muscle pain Rating Index questionnaire it can't be ignored for more than a few minutes' pain that dominates your senses and significantly limits your ability to perform normal daily activities.

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