



**Ziivaa: Adjustable Compression Technology (ACT),
and the Reduction/Elimination of Menstrual Cramp Pain**

by Stephen D. Lee, D.C.

December 11, 2011

The Menstruation Process

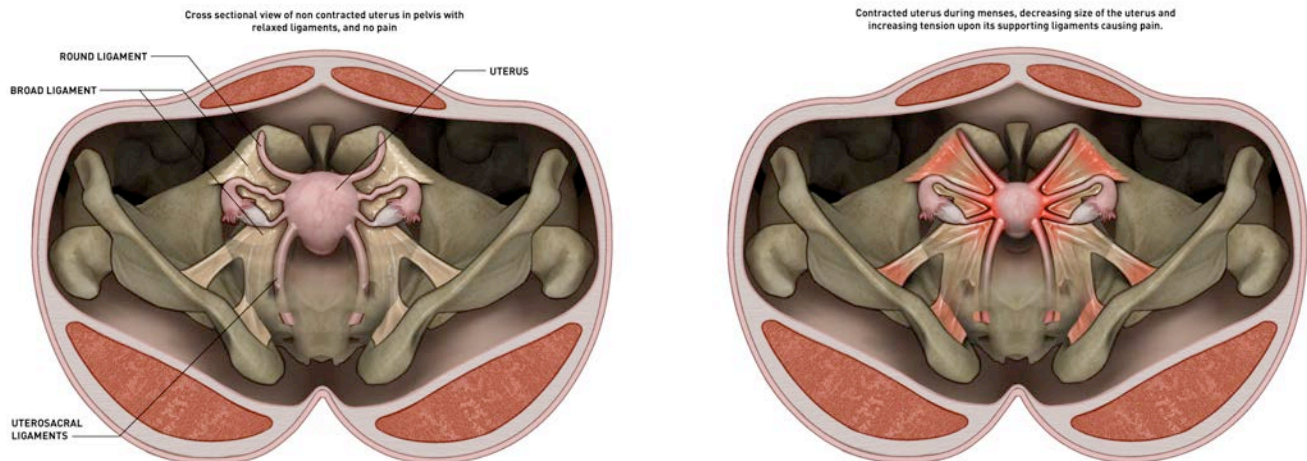
Each cycle, an egg will release from one of a woman's ovaries. The egg will travel through her fallopian tube and into the uterus. If fertilization does not occur, the egg, subsequent blood vessels and uterine lining – endometrial tissue – will be shed from her body through menstruation. To shed the uterine lining, the uterus will contract.

What Causes Pain and Discomfort

The uterus is a hollow, pear-shaped organ with thick muscular walls that are strong enough to push a baby through the vagina during birth. In its relaxed state, the uterus, ovaries and cervix are held in place by suspensory ligaments with a normal amount of tension. The round, broad and uterosacral ligaments attach to the cervix, fallopian tubes, ovaries, pelvis, sacrum and extend to terminate in the labia majorum.

During menstruation the muscles of the uterus contract – decrease and increase in size – to shed the unfertilized egg and endometrial tissue. When the uterus contracts too strongly, it applies extra tension to the attachment points of the suspensory ligaments. These excessive contractions are commonly referred to as severe cramps or primary dysmenorrhea.

Embedded throughout the uterus and attached ligaments are pain receptors called nociceptors. When activated by pressure, stretching, cutting, pinching, burning or other stimuli, the nociceptors translate pain to the individual. It is the purpose of these nociceptors to protect living organisms from danger. The pain should trigger a defensive reaction to the source of pain. In the case of menstrual cramping, though, women experience pain that does not serve a purpose.



Ranges and Degrees of Menstrual Pain

Dysmenorrhea is the gynecological condition of excessive pain during menstruation which interferes with daily activities. Primary dysmenorrhea is diagnosed through a medical history of debilitating pain during menstruation. Secondary dysmenorrhea is diagnosed when symptoms are due to an underlying disease, disorder or structural abnormality with the reproductive organs. There are a few known causes of primary dysmenorrhea.

During a woman's menstrual cycle, several hormones are released to prepare for fertilization and implantation of the egg to allow for pregnancy. One chemical, prostaglandins, is released from the uterus to cause contractions during menstruation. It is a necessary and natural process that needs to occur in order for the uterus to contract. As the amount of prostaglandins increases, the intensity of the uterine contractions will also increase. Some women produce more prostaglandins than others, which accounts for why some women experience more severe cramping than others.

It has also been shown that some other hormones produced – and released – prior to menstruation are meant to cause relaxation of the uterus and the soft tissue on the pelvic floor. This hormone may also cause indiscriminant relaxation of ligaments throughout a woman's body. Excessive relaxation may also be a compounding factor for some women's menstrual cramp pain. This relaxation may cause the relationship between the uterus, pelvis, sacrum to allow for excessive movement of the articulations, leading to increased nociceptor stimulation and more pain.

The Solution

The Ziivaa belt is a unique product that relieves the pain of menstruation without changing the natural, physiological functions of a menstruation cycle. By applying lateral pressure to the woman's pelvis, the Ziivaa belt decreases the stress and tension that is placed on the ligaments by uterine contractions. This reduction in tension diminishes pain for the user.

What is Adjustable Compression Technology™?

The compression method was developed and refined over a number of years prior to the development of the Ziivaa belt. After using the technique in his practice, Dr. Lee knew that he needed to create a product that could achieve the same results and also be available to women when they needed it – beyond regular office hours. In 2003, Dr. Lee introduced the proof of concept belt. After years of in-office research and refinement, the concept was taken to ROBRADY design to be taken to the next level.

Adjustable Compression Technology™ is the combination of macro and micro adjustments that allow the user to make finite adjustments to the degree of compression. The macro adjustment occurs on the hips by placing the pads and pulling the strap. Once the user lies on her side, she can pull the strap a second time to tighten the belt. The micro adjustment happens at the ratchet device which tightens the belt at small increments, so the user can choose a comfortable and effective degree of compression.

How Ziivaa Works

The Ziivaa belt uses Adjustable Compression Technology™. When used, the device creates targeted, inward compression to the hips of the user. This slightly adjusts the pelvic bones inward, which reduces the tension on the suspensory ligaments at their attachment sites on the pelvis, sacrum, soft tissues and uterus.

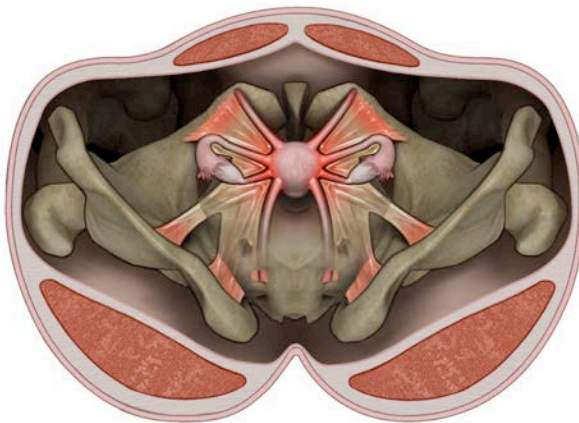
In recently published studies:

(Wojtys, E.; Huston, L.; Lindenfeld, T.; Hewett, T.; Greenfield M.L. (1998). "Association Between the Menstrual Cycle and Anterior Cruciate Ligament Injuries in Female Athletes". *American Journal of Sports Medicine* (American Orthopaedic Society for Sports Medicine) **26** (5): 614–619. [PMID 9784805](#).

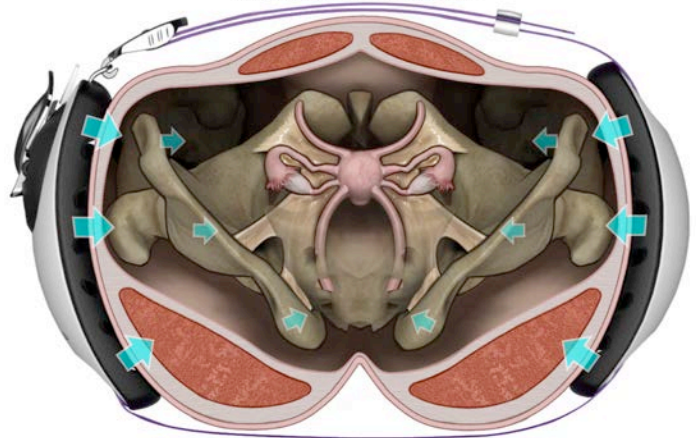
Heitz, N.; Eisenman, P.; Beck, C.; Walker, J. (1999). "Hormonal Changes Throughout the Menstrual Cycle and Increased Anterior Cruciate Ligament Laxity in Females". *Journal of Athletic Training* (National Athletic Trainers Association) **32** (2): 144–149. [PMC 1322903](#). [PMID 16558557](#).)

By applying Adjustable Compression Technology™ via the Ziivaa belt, the pelvic bones are stabilized and slightly compressed towards each other to allow for more normal uterine contractions without excessive tension or stretching. In most cases, the end result is a reduction in, or total elimination of the pain associated with menstrual cramps.

Contracted uterus during menses, decreasing size of the uterus and increasing tension upon its supporting ligaments causing pain.



Application of adjustable compression technology (ACT) with the Ziivaa belt, slightly narrowing the distance between the pelvis, relaxing the tension placed upon the ligaments, reducing/eliminating the pain.



In most cases, the user will begin to feel relief within minutes of tightening the belt. The recommended treatment time is 10 – 15 minutes and is long enough to provide extended relief. There is no significant benefit to wearing the belt for a longer period of time, and some users have reported falling asleep with the device in place.

The Ziivaa device is unique because it addresses the source of the pain – uterine contractions and supporting ligaments – to reduce and eliminate menstrual pain. Not all women respond to pharmaceuticals that act on the prostaglandins and not all women’s menstrual cramp pain is related to prostaglandins. Ziivaa addresses the excess tension on the suspensory ligaments at their attachment sites on the pelvis, sacrum, soft tissues and uterus. Regardless of the cause, Ziivaa effectively reduces and eliminates menstrual cramp pain.

Stephen D. Lee, DC

Inventor/Chief Clinical Officer:
Ziivaa, Sarasota, FL

Owner/President:
Lee Chiropractic Center, Inc

Chief of Chiropractic Services:
MacDill Air Force Base, Tampa FL

Associate Professor of Anatomy and Physiology:
Keiser University, Sarasota, FL