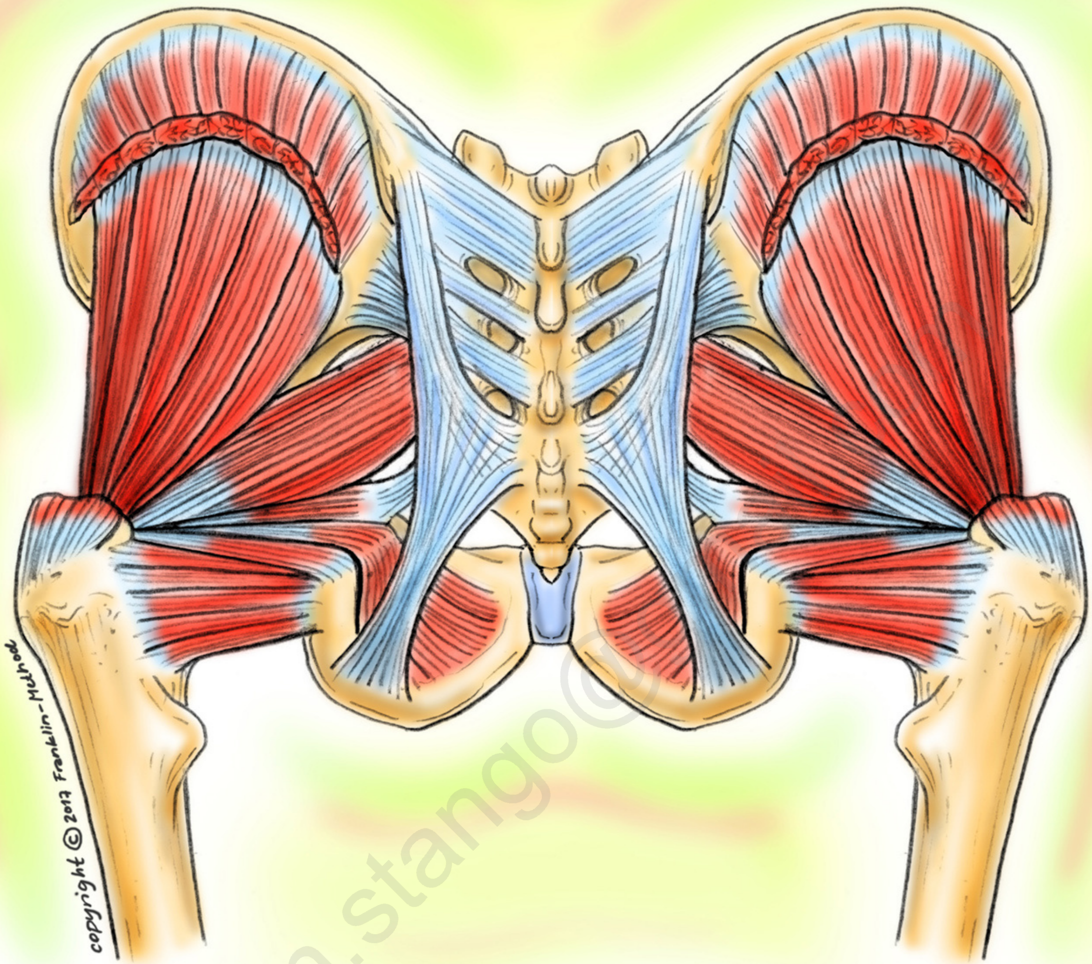
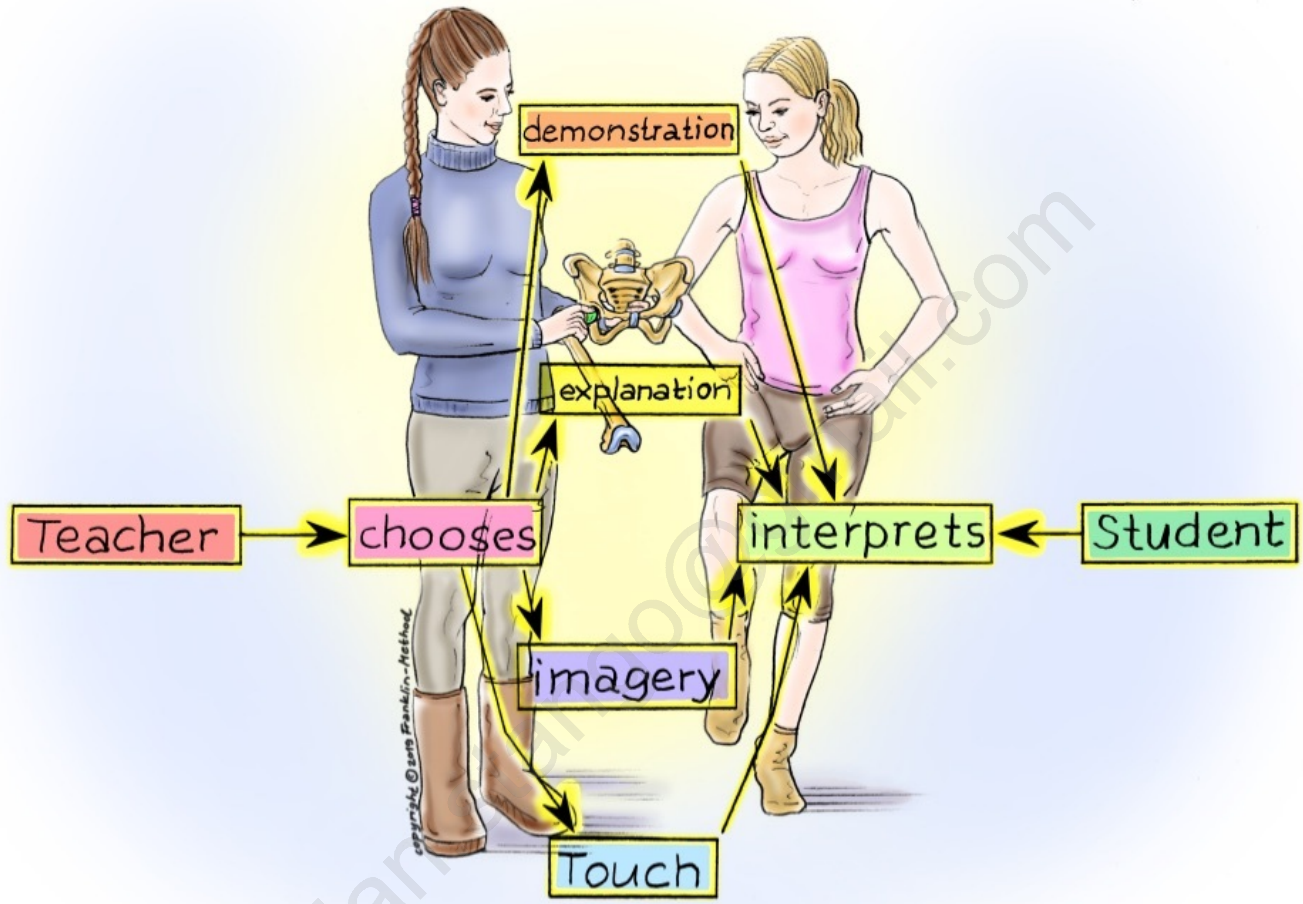


FRANKLIN METHOD INSTITUTE

FRANKLIN METHOD®

Embodiment of Pelvic Fascia

Training program to become a certified Franklin Method®
Pelvic Floor Fascia Trainer


demonstration
explanation
Teacher
chooses
interprets
Student
imagery
Touch

The basic principles of the Franklin Method®

These 6 basic principles are designed to serve as a warm-up for mind and body. They are intended to provide an introduction to imagery in a group, though they can also be used occasionally in more advanced groups. The focus is on preparing the thinking mind for true body-mind training and understanding what that actually means.
"Working in while you work out": Remaining mentally active during physical training – and also noticing that the use of imagery without movement can also have an effect on the physical plane. Fundamental principles are taught as part of this process – the exercises are only intended to serve as a way of experiencing and understanding these principles. The exercises are therefore interchangeable, but the principles behind them remain the same.

This lesson is not taught in one go, but is instead essentially intended as an ongoing process of "filling the mental toolbox".

The first couple of points are fixed, and the others can be selected as required.

1. Concentration – Focusing your attention within your body for one minute

Stand in a circle and hold hands (or briefly touch hands and then let go again). It's up to you if you have your eyes open or closed but stay with your body.
Concentration and focus are basic prerequisites for positive action and change.

Let's start with the most difficult exercise: Can we do nothing but concentrate on our body for one whole minute? What we won't do is this: Analyze, judge our perceptions or drift mentally into the past or future. Instead, we concentrate solely on the body and remain in the moment.
How did you do? We notice: It really isn't very easy! Another way of describing concentration is "focused attention".
Why is it important to have well focused attention? If somebody calls you up with a problem, do you immediately offer advice or do you listen to what they have to say first?
In order to improve something, the best way to start is by perceiving what is happening within us right now. You are the only ones that can do that for yourself – by feeling within!

Key statement: Concentration is the basic prerequisite for positive change.

2. Self-effectiveness – The art of change (the four steps)

Raise/lower your shoulders (or perform another repeatable movement)

We repeat the movement a couple of times. How was it? Were you satisfied with how it felt? Who found that really pleasant?
You can assess the quality of your own movement using a scale of 1-10:
1 = That was awful. 10 = That was nirvana expressed through movement.
How would you assess the experience you just had?

Remember: This is your body, you will not get a replacement in this lifetime – how do you want to feel in this body?
Who wants to feel mediocre? Who wants to feel great? Who would be prepared to do something to improve how it feels?
Something to make it a little more pleasant, looser, freer and enjoyable? Let’s try it again. Who has the feeling that it got better?
Congratulations! You have the ability to improve your movement. What did you do? Performed it slower, more pleasurably, changed your perception, breathed slower, ...
What we did was: 1. Status quo, 2. Planning, 3. Realization, 4. Comparison – (SPRC).

Key statement: We all have the ability to change our experience by using the mind, but we often only do this randomly and unconsciously.

Now we want to physically experience the impact of the words we dress our thoughts in. The following 3 points each illuminate one aspect of our “inner dialogue” – the order can be changed:

Metaphorical imagery: A geyser from below deepens the arch of the foot
Image from Eric Franklin: “Dynamic Alignment”

3. Metaphorical imagination

The next tool can also be called “metaphorical images”.

Raise/lower your shoulders or perform another repeatable movement.
Let’s take an image from our experience that encapsulates the desired quality of a movement, in this case: “Smooth gliding”.
We imagine that our shoulder blades are two pieces of soap sliding up and down our back. We can also accompany this image by imagining foam, liquid and slippiness. We perform the movement a couple of times.
Did this improve the experience of lifting your shoulders?
Metaphorical means: we imagine something that does not actually exist but matches the movement we are performing.
We (or parts of our body) immediately slip into the new role – and we experience new perceptions through this role. In other words, there’s a positive feedback effect: The imagery improves mobility – and the improved mobility changes our perception.

Key statement: The image is not the goal – the change is the goal! The image that brings about change is the right image for a specific person in a specific moment.

4. Anatomical imagination

The next tool can also be called “anatomical images”.

Raise/lower your shoulders (or perform another repeatable movement).

When we lift and lower our shoulders, our shoulder blades rise and fall with them. But if we don’t know where our shoulder blades are located, then the image cannot work. Anatomical images require an

introduction!
We now want to raise our awareness of this aspect of the anatomy by looking at the model of a shoulder blade. We pay particular attention to the smooth, slightly curved inside.
Then we return back to the starting circle and raise and lower the shoulders again, now with improved perception of the shoulder blades: Does anyone notice any change?

Key statement: Anatomical images are neutral and highly effective – but they require an introduction. In contrast, metaphorical images are individual, but can sometimes prove ineffective due to their individuality.

In the FM, we often dovetail anatomical and metaphorical images.

5. Positive / negative inner dialogue

"Good morning, how are you?" Answering this question with "good" is often enough. Positivity is rarely embellished with details in everyday life, while negativity is often described in great detail.

We will now expand our ability to bring about positive changes using various imagery tools.
We begin with words, i.e. we describe what we want to experience: e.g. relaxed shoulders, smooth movement. We call that "positive inner dialogue", e.g.:
"Our featherweight arms will soon rise up"
We compare the movement with before and check if there has been an improvement. Raise/lower your shoulders (or perform another repeatable movement).
We could also try the opposite, e.g. "Our arms are tired and as heavy as lead". Did you notice a difference? The problem with the imagination is: It has an effect! To conclude this section, we bathe the body in comforting inner dialogue.

Key statement: We want to enlarge the part of the brain that is responsible for the positive details.

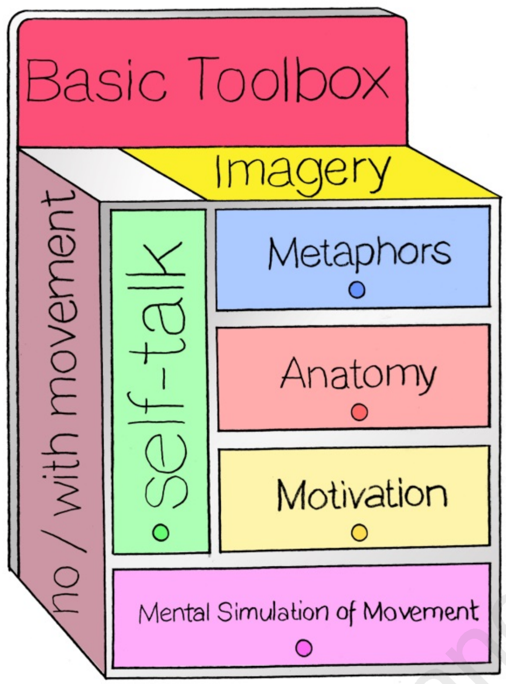
6. Proprioception – The importance of self perception

Pat yourself down: one arm and then your whole body.

Introduction to proprioception/self-perception. The effect of proprioception on learning and teaching movement.
Proprioception expresses the sense of movement, the sense of position, the sense of exertion, the sense of power (this can also be summarized with the expression "deep sensibility") and balance.
We can awaken these senses by patting down one side of the body with our hands: We start with one leg and end with the arm on the same side, finishing by stroking down the arm. Now compare it with the other side. Why is there a difference? Because we have improved the proprioception on the side we patted!
The nervous system is getting more feedback from this half of the body.

How does that side feel? More voluminous, warmer, tinglier...
This comparison is also possible with top/bottom or before/after.

Key statement: Better proprioception means better coordination. Improved coordination prevents injuries and makes movement more fun.



The mental toolbox – can always be extended.
Image: ©Eric Franklin 2014 Image: Eric Franklin

Diagram1 The imagery tool box

The fasciae of the human body

In recent years, research and interest in fascia has exploded. This is certainly a pleasing development, but it has also led to a confusing flood of programs and offerings intended to train our fasciae. Even the definition of fascia remains somewhat unclear.

Fascia is connective tissue, one of the four basic types of tissue in the body, alongside epithelial tissue, muscles and nerves. Generally speaking, there are two definitions for fascia: The biological/anatomical definition and systemic/functional definition.

In the biological definition, not all fasciae can be considered the same as connective tissue, because tendons look quite different under the microscope than loose connective tissue, for instance. For an anatomist, it is not possible to use the terms connective tissue and fasciae interchangeably. Tendons, ligaments, muscular connective tissue and loose connective tissue are all structured very differently and have different functions.

Other ways of viewing fasciae highlight its network-like structure, i.e. recognizing fascia as all-encompassing, all-penetrating connective tissue. This way of understanding fascia also forms the basis for many types of training. In the systemic definition, the focus is instead on the ability of fascia to mechanically transfer force. An example can illustrate this concept better: The pericardium, the fascia surrounding the heart, is connected with the fasciae of the diaphragm, which is – in turn – connected with the fasciae of the psoas muscle, right down into the thigh and the fasciae of the rectus femoris. Within this fascial chain or sling, there are many different types of tissue and functions, but yet these are still interconnected and can transfer mechanical power between them.

Anatomical insights and connections like these are fascinating and the goal has to be to translate them into something useful for our health. And to do that, we need more than just knowledge – we need embodiment. Embodiment takes place when you have felt and recognized a clear understanding of the fasciae with your inner eye. Simply knowing something in your mind has never been enough to improve posture and movement.

By the same token, we should remain suspicious of any training that was never previously declared fascia training but now refers to itself as such. This would essentially mean that all types of training can be designated as fascia training and there is no need for specific fascia training because everything trains the fascia anyway – we were just never aware of it. And this is certainly the case. Every type of training influences the fascia, as every exertion requires a response from the body's tissue, e.g. the depositing of more collagen.

There are certainly types of training out there that offer specific programs for fasciae. But these often lose sight of other fundamental principles of healthy training. It would be easy to get the impression that the still relatively shallow knowledge of fascia training is the only thing that counts these days. Rocking on your feet, for instance, is said to stimulate certain fascia. The Achilles tendon, for example, requires very strong stimulation to even deposit collagen. This may be the case, but rocking and hopping are also training types that can easily lead to injury among inexperienced people.

Instead, fascia training needs an embodied understanding of fasciae as well as knowledge of all other aspects which are important for performing healthy training.

The four basic fascia types

Generally speaking, there are four main types of fascia or fascial structures. Fascia superficialis (superficial fascia under the skin), deep fascia (which exists as muscle fascia and tendinous fascia), visceral or organ fascia, and nerve-brain fascia (meninges).

However, it is important to remember that these fascia types are also closely connected. Superficial fascia, for instance, is connected with deep fascia in many places, such as on the sole of the foot, the linea alba or the spinous processes. The kidney "hangs" from the diaphragm within fasciae and is connected with the anterior longitudinal ligament of the spinal column.

Fascia superficialis consists of loose tissue and fat, and it is important for heat insulation, perception and it guides many blood vessels and lymphatic channels.

The deep fasciae that surround the limbs are very solid and can transmit force effectively. The muscular deep fasciae are looser, allowing them to move in step with the movements of the muscles.

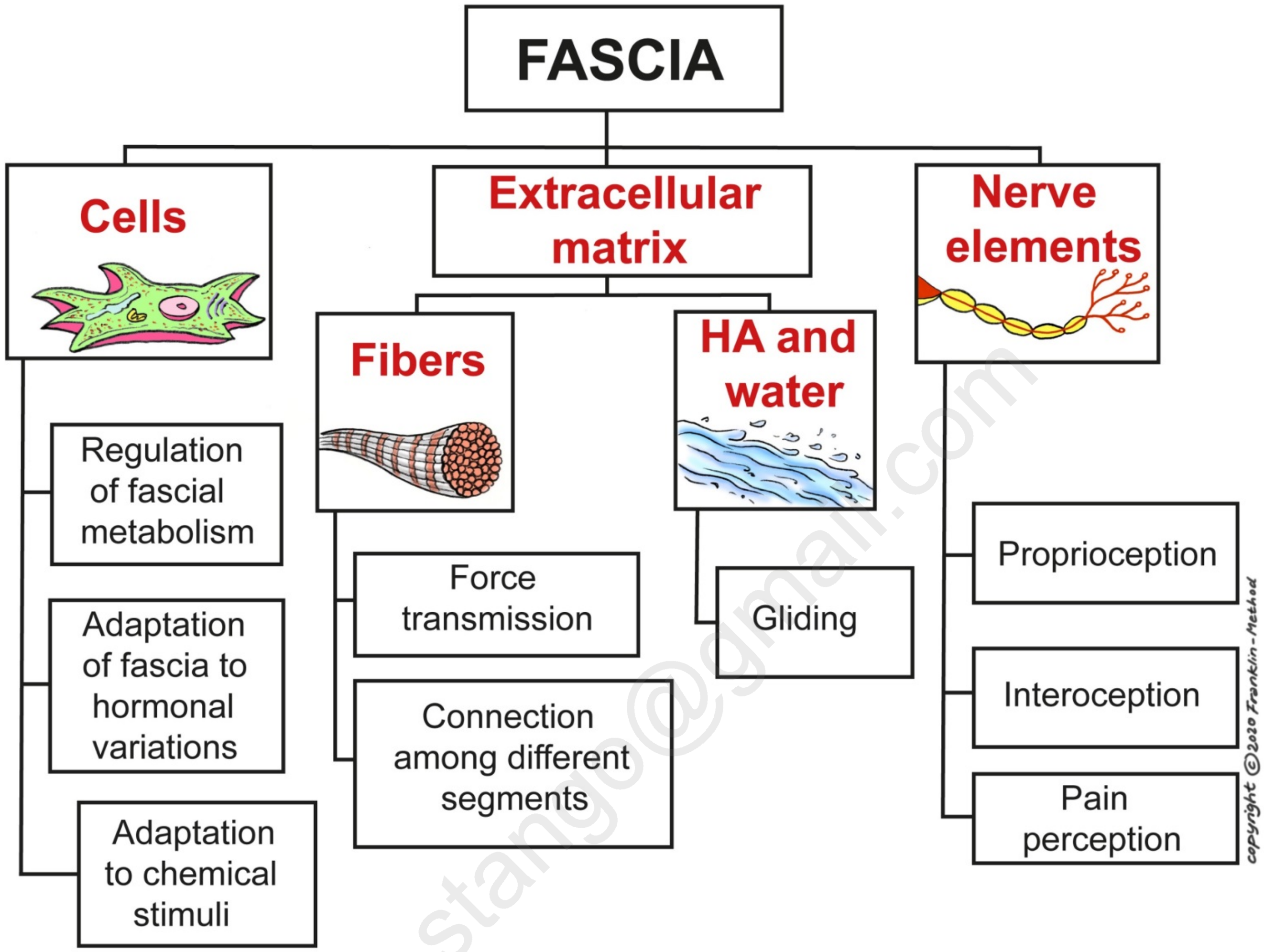
Fascia consists of cells and an extracellular matrix (ECM), which is very extensively developed compared to other tissues. The fibroblast is the most important cell type within fascia, and it is responsible for the structure of the tissue and particularly the fibers. Another type of cell that occurs in all fasciae is the "fasciacyte". These cells produce hyaluronan, which ensures the sliding capacity between the fascial layers.

The extracellular matrix consists of fibers and water, which is primarily bound by large molecules, so-called glycosaminoglycans (GAGs). To help you imagine this correctly: Only 1% of fascia consists of cells, and the rest is ECM. Ninety percent of the water is bound by GAGs and other molecules. The rest of the water flows through the tissue in so-called perilymphatic canals and is very important for nutrition, purification and exchange of information among the cells.

Together with proteoglycans and connective proteins, GAGs form large structures that can hold a lot of water. You can imagine these proteoglycan aggregates as large pillows of water. HA is one of the most important components of the fascial ECM and it is also found in synovia. It serves as lubrication in both cases to enable joints and fasciae to glide properly. If you don't get enough exercise, an excess of HA is produced and the molecules can start to stick together and reduce the mobility of the tissue. This is referred to as "macromolecular densification".

The most important fibers in fascia are collagen and elastin. Collagen provides tensile strength and aids the mechanical transfer of force, while, as its name suggestions, elastin ensures the elasticity of the tissue. Collagen exists in various forms, with type 1 collagen responsible transferring force, working like the body's internal steel cable so to speak, while type 3 collagen is more responsible for impact absorption.

Fasciae are also well connected with nerves, though not uniformly. The retinacula, for instance, have a lot of proprioceptors, while a fascial expansion like the Lazertus Fibrosus has fewer nerve endings. This can be explained by the fact that the retinacula in the wrist, for instance, help perceive the position of the joint.



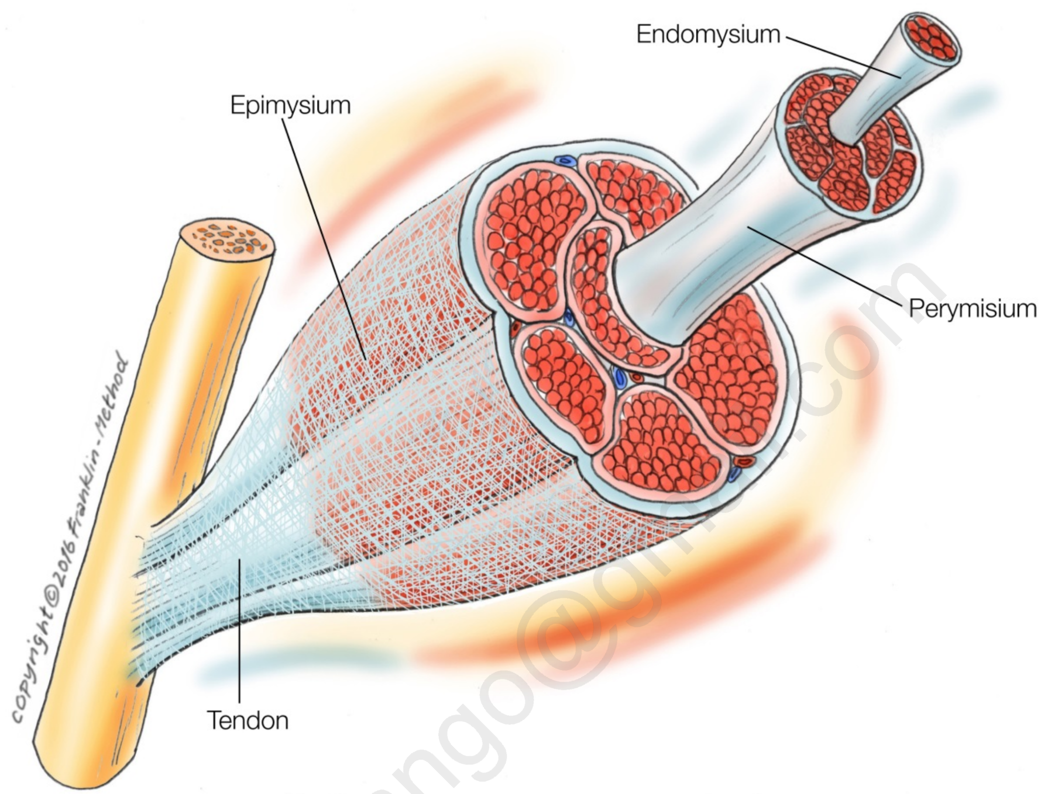
Fascial structure around muscles:

The outermost envelope, the epimysium of a muscle, consists of thick connective tissue interwoven in various directions surrounding the venter of the muscle. Within this system, collagen forms a sliding lattice-like structure that can adapt well to movement. From this epimysium, septa (separating walls) then separate the venter of the muscle into fasciculi. This sheath is called the perimysium. From the perimysium, fasciae then run deeper and surround the individual muscle fibers. This wrapping is called endomysium. The endomysium contains plenty of HA, allowing the individual muscle cells to glide against each other.

The situation is similar with ligaments, aponeuroses and tendons, which are encased in an epitenon. In areas where a tendon emerges from a muscle, the epimysium is connected to the epitenon. In places where the tendon connects to a bone, the epitenon is joined to the periosteum of the bone.

As a result, the fasciae encasing all muscles are connected with the body's tendons, ligaments, aponeuroses and bones.

Diagram 2 Muscle fasciae



The pelvis

The pelvis' functions include movement, carrying organs and babies, acting as a muscle attachment point, connecting the spinal column and legs, and absorbing force while walking and jumping. In contrast to animals, humans have a very dynamic pelvis: Human birth involving the large baby's head and the bouncy gait on our "hind legs" mean that humans require an elastic pelvis. An elastic pelvis is also needed for bowel movements and breathing.

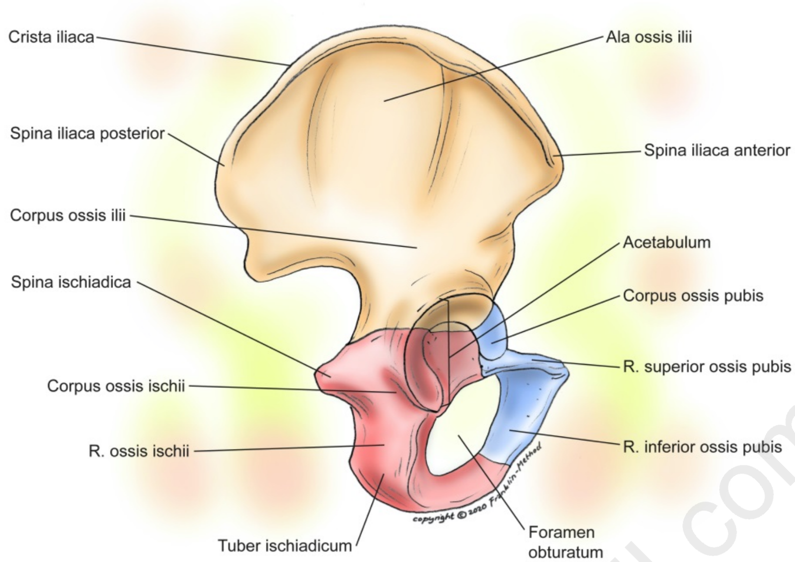


Diagram3 The pelvis from the front

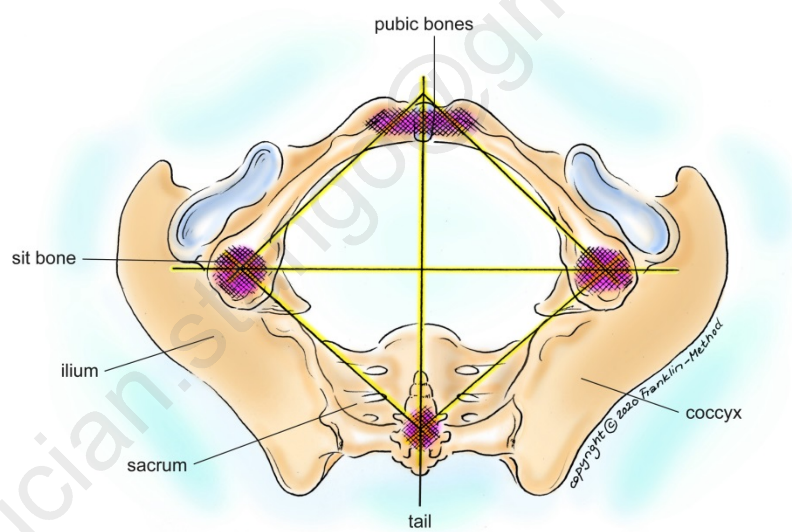


Diagram 4 The pelvis from below

The two halves of the pelvis are connected to the sacrum at the sacroiliac joint and come together at the front in the symphysis pubis. Each half of the pelvis consists of the ilium bone, the ischium (also known as the sit bone) and the pubic bone (os pubis). The linea terminalis forms the dividing line between the greater pelvis and lesser pelvis. The tangible bone points in the pelvis are: The spinous process of the ilium, pubic bones, symphysis, coccyx, the alas of the iliac bone and ischiums. The sacroiliac joint only has little but very crucial mobility, as it serves to release pressure, absorbing shock. The pelvic outlet broadens during bowl movements, but particularly during child birth.

The movement of the sacrum is called nutation, which represents a flexion, and counternutation, which is an extension movement. These movements also encompass minimal sliding within the joint. Nutation is primarily driven by the M. errector spinae, while counternutation is powered by the M. levator ani. These muscles work against each other in this regard. Nutation tenses many ligaments within the pelvis (lig. sacrotuberale, lig. sacrospinale). These ensure that the pelvis is efficiently cushioned. In other words, the weight of the spinal column is on the ligaments/fascia of the pelvis. All ligaments have myofascial connections. The gluteus is attached along the entire length of the lig. sakrotuberlale, and the ischiocrural muscles also connect to this ligament in the area around the ischium. The lumbar fasciae extend on into the lig. iliolambale.

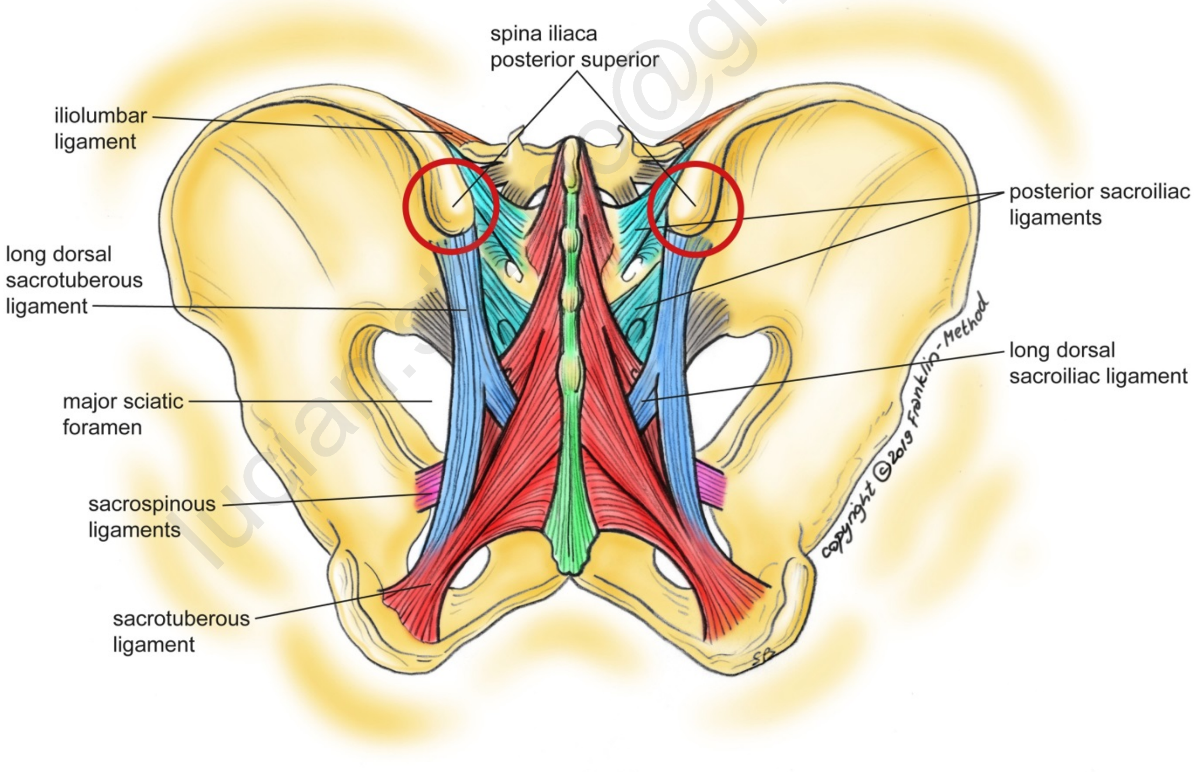


Diagram 5 Pelvic ligaments

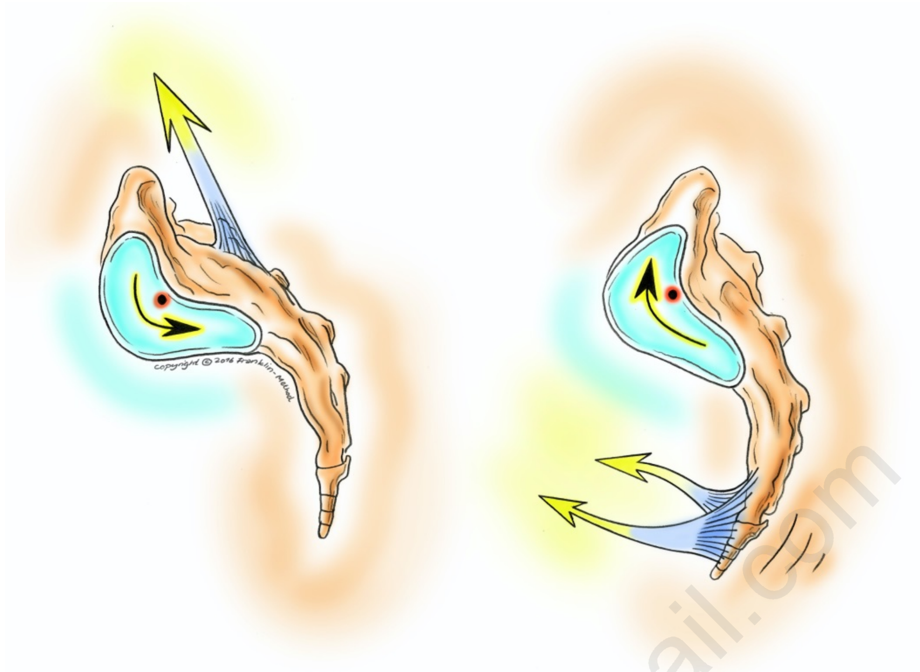


Diagram 6 M. errector spinae and M. levator ani move the sacrum

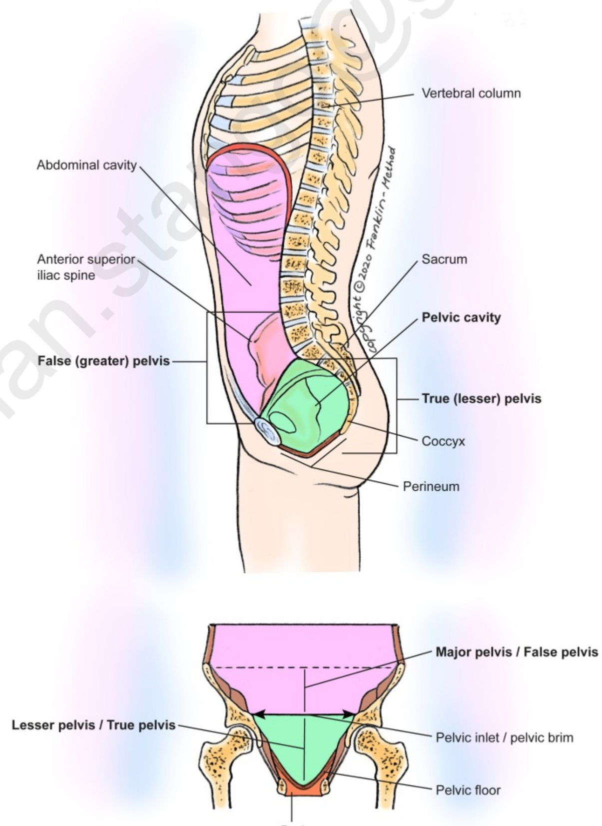


Diagram 7 The greater pelvis and lesser pelvis.

When bending the hips, creating nutation, the sit bones move apart slightly, moving back together when you stretch. As a result, every time you bend your hips, you are training your pelvic floor, as the pelvic floor muscles and fasciae stretch somewhat and then contract again. The pelvic floor muscles can be trained most effectively concentrically (shortening) and eccentrically (lengthening). The pelvic floor fasciae react similarly to load bearing and elastic movements. Isometric training alone (tensing) does not build up as much power and also reduces the mobility of the hip joints. Coordinated muscle and fascia activity influences leg position and contributes to taking the pressure of the knees and back.

Each half of the pelvis looks like a twisted plate, a spiral, a figure 8, a propeller, a wheel and a double arch is also recognizable. These images help us to better embody the pelvis when moving.

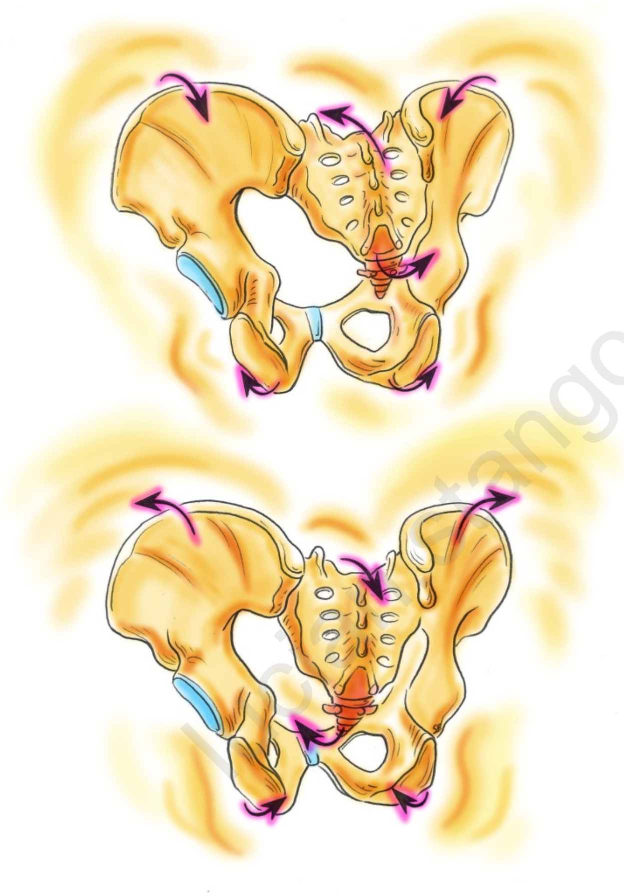


Diagram 8 Movement of each half of the pelvis and the ischiums in nutation and counternutation

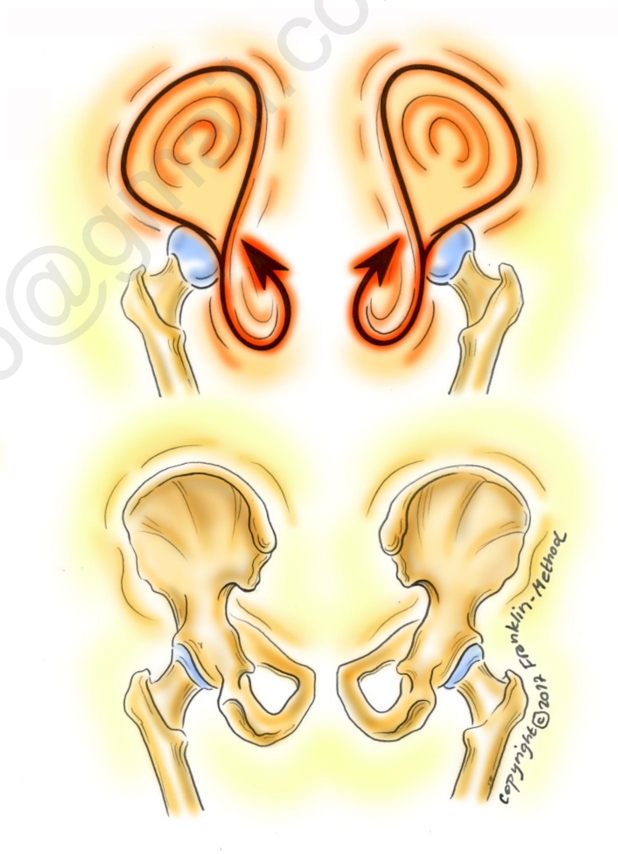


Diagram 9 The spirals of each half of the pelvis

Pelvic fasciae

The fasciae of the pelvis are divided into five layers, or five floors. In order to optimize training the muscles, fasciae and organs, it is important to be able to imagine these layers. To do this, let's move into the pelvis from the top layer to the deepest layer. The top (cranial) layer is the base of the peritoneum, and below it is the pelvic fascia layer, the endopelvic fasciae. Below that, we reach the classical pelvic floor (diaphragma pelvis), the levator ani, the coccygeus and its muscle fasciae. Below it, there is the deep and superficial perineal space (perineum) in the anterior of the pelvis with its fasciae, and the superficial anal area posterior to the perineal body. At the deepest level (caudal), we find superficial fat and fascial tissue with strong fascial lamina – Colles' fascia. All this fascia is connected to the rest of the body, e.g. through the fascia of the abdomen, the thighs and the back.

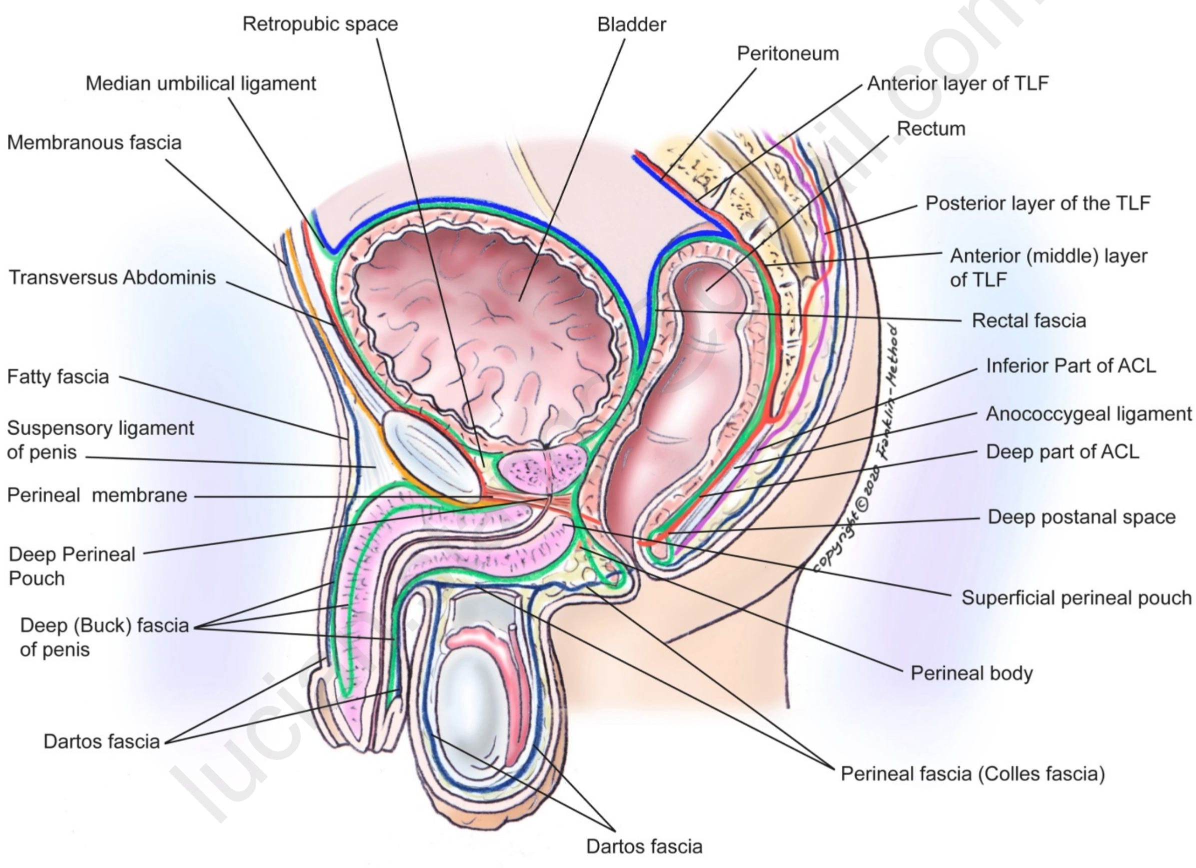


Diagram 10 Cross-section of the male pelvis

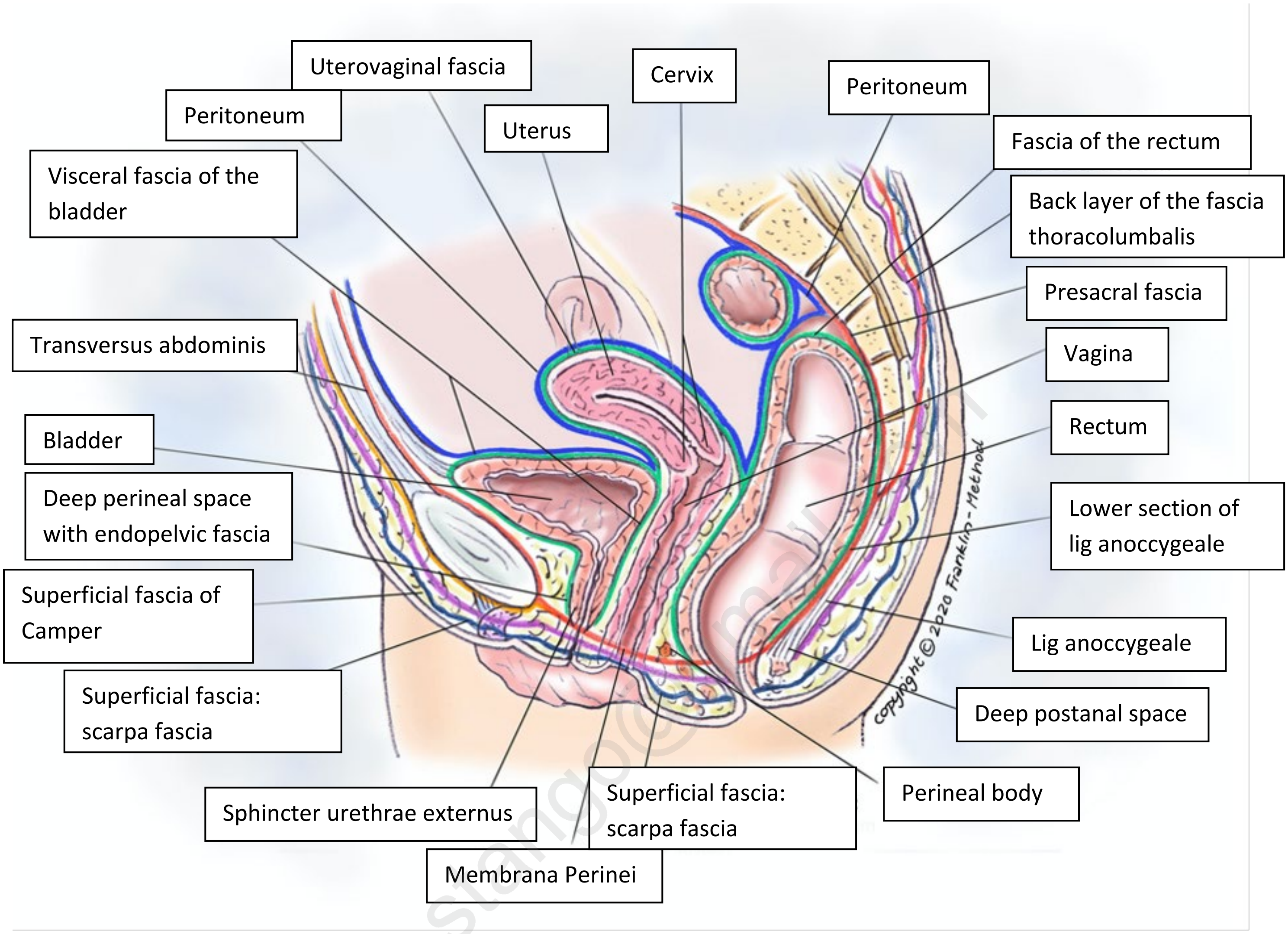


Diagram 11 Cross-section of the female pelvis

The peritoneal layer / the floor of the peritoneum

You can imagine the peritoneum like a soft blanket covering the organs of the pelvis. It also reaches deep between the organs in specific points and envelopes them. In the female pelvis, the peritoneum covers the apex of the urinary bladder and from there moves to the front side of the uterus, the fallopian tubes and the ovaries. The peritoneum reaches downwards to the posterior vaginal vault and from there extends over to the front side of the rectum. The uterus, fallopian tubes and ovaries are connected with the lateral pelvic wall by lines of fascia (parametrium) in the shared broad ligament of the uterus (lig. latum Uteri). The peritoneal cavity is divided into an anterior and posterior peritoneal pouch – the excavatio vesicouterina and the excavatio rectouterina (pouch of Douglas). Various ligaments made up of peritoneal folds support the female pelvic organs, like the lig. teres uteri and ligamentum suspensorium ovarii. Many of these structures referred to as ligaments are actually mesenteries, meaning that they actually contain blood vessels and nerves.

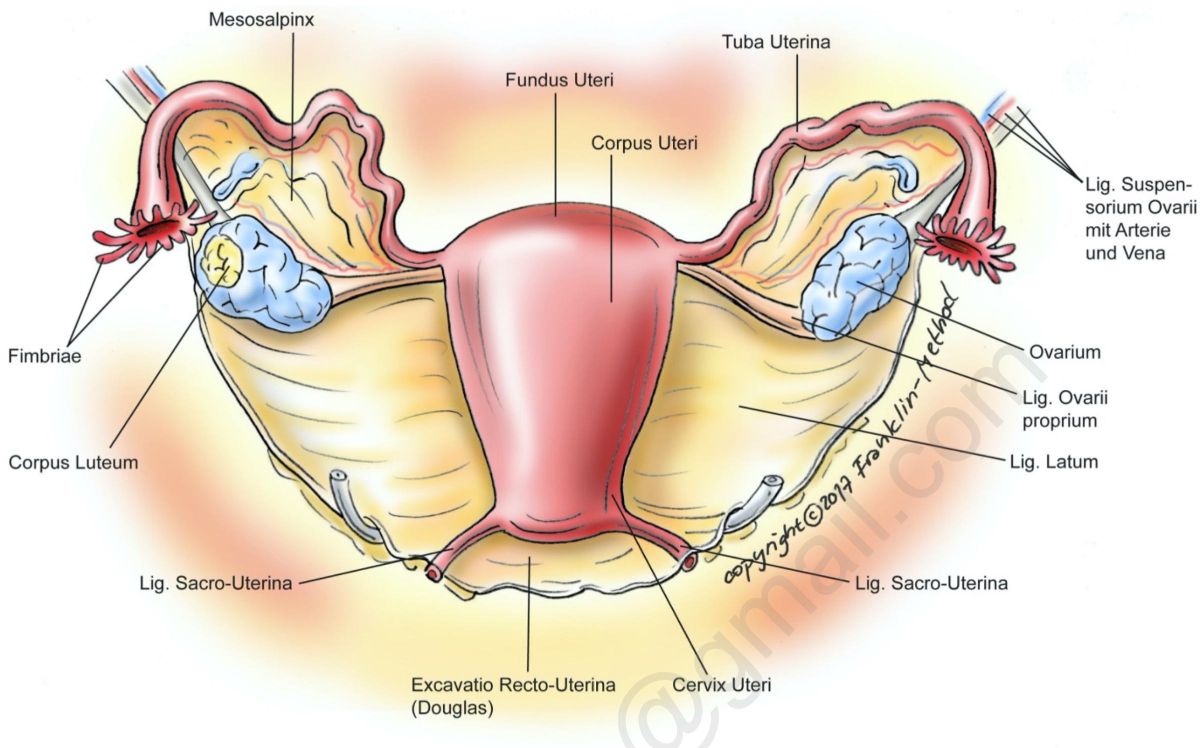


Diagram 12 Peritoneal layer lig. latum

In males, the parietal peritoneum extends from the anterior abdominal wall to the apex of the urinary bladder and covers its entire surface area. The peritoneum reaches around the sides of the urinary bladder, wrapping around the bladder like a woolen hat pulled right down. Moving downwards, the peritoneum extends down to the mouths of the urinary ducts. At this point, the peritoneum reaches into a pouch called the excavatio rectovesicalis, which runs from the rear wall of the bladder to the anterior wall of the rectum. This excavatio is the lowest part of the peritoneum, both in men and women. From this lowest point, a fascia called the septum rectovesicale (Denonvilliers' fascia) extends back to behind the prostate.

The pelvic fascia layer

Now we have arrived in the subperitoneal space and the layer of pelvic fasciae. Parts of the peritoneum layer directly overlay the fascia layer structures, while other parts have a layer of fat between them. Here we differentiate between parietal fascia, pelvis parietalis, and visceral pelvic fascia (fascia pelvis viserzalis), which holds and connects the organs. In some areas, there is a thin layer of fat between the peritoneum and the fascia pelvis viszeralis, while in others they hug very closely together. The fascia parietalis covers the pelvic muscles, while the fascia viszeralis covers the organs and their neurovascular connections. First, let’s look at the surrounding walls and then the fascial connections to the organs. The posterior wall primarily consists of the piriformis, but also the lig. sacrotuberale, lig. sacrospinale and M. coccygeus. The anterior and side walls are formed by the obturator internus and its fasciae, while M. levator ani makes up the floor.

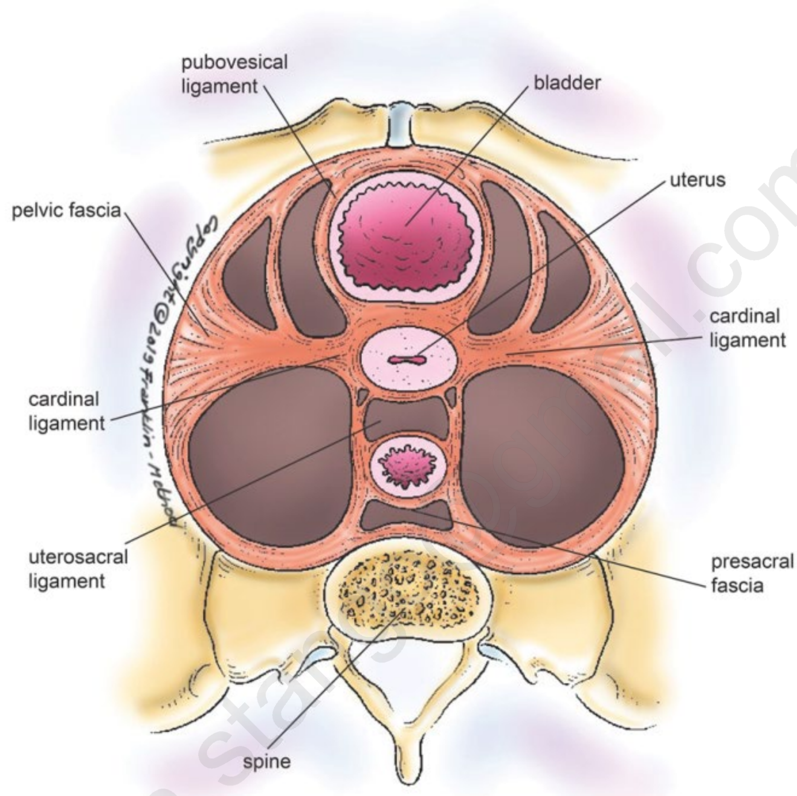


Diagram 13 The fascial layer of the pelvis

The fasciae of the obturator internus

The fasciae of the obturator internus are very strongly developed in part and connect with the linea arcuata of the ilium bone and the fasciae of the M. Iliacus. These fasciae wrap around the canalis obturatorius and connect with the back of the pubic bone. The canalis obturatorius is an opening in the membrana obturatoria of the pelvis, which connects the lesser pelvis and the thigh. Behind this canal, the fascia is strongly aponeurotic (sinewy) and forms the attachment point for the iliococcygeus (see arcus tendineus levator ani below). To the posterior, it also forms part of the side wall of the fossa ischio-analis. In the perineum and to the anterior, it connects with the fasciae of the deep perineal space. The fasciae of the obturator are connected with the periosteum of the pelvis and the fasciae via the M. piriformis. As both muscles are hip rotators, leg position is significantly responsible for changes in tension in the fascia of the pelvic floor.

The fasciae of the piriformis

The fascia covering the piriformis is very thin and is connected with the periostium on the anterior of the sacrum and the edges of the anterior of the foramina sacralis. It envelopes the sacral nerves that emerge from these foramina. The nerves are therefore located behind the fascia, while the large blood vessels of the pelvis (A.V. iliaca interna) are positioned in front of it. These vessels expand this fascia into the extraperitoneal space above and below the M. Piriformis.

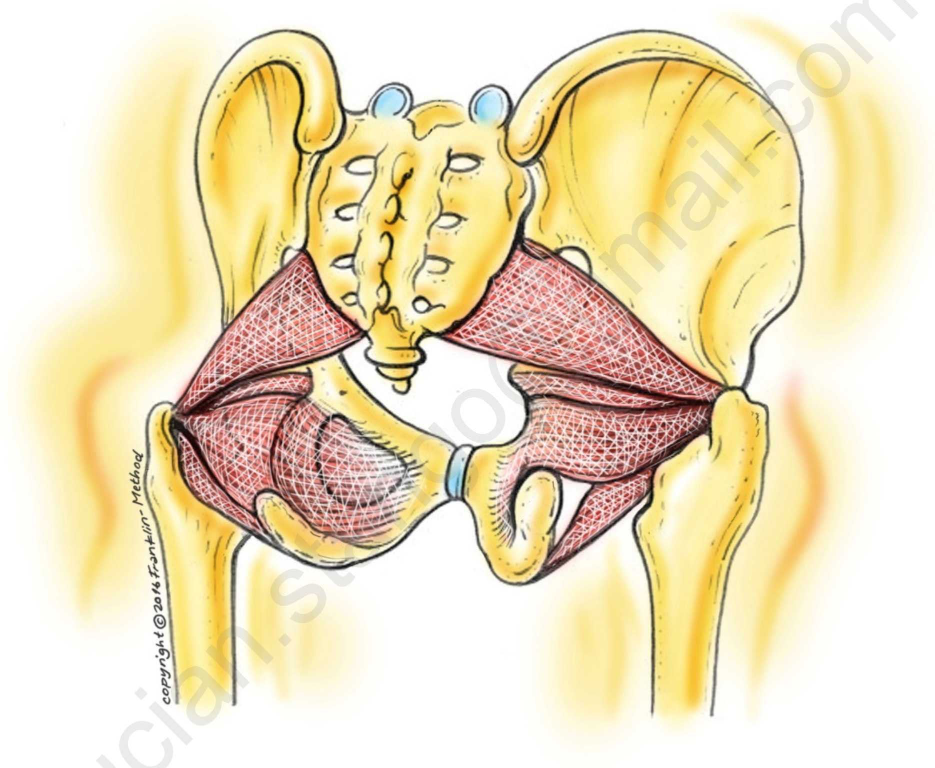


Diagram 14 Piriformis and obturator internus

Fasciae in front of the sacrum and behind the pubic bone

In both men and women, the presacral space is located in front of the sacrum. This space is filled out by the powerful fascia presacralis, which is the parietal fascia in this area. The fascia presacralis is connected with the anterior longitudinal ligament of the spinal column and continues to the middle layer of lumbar fasciae. Following this fascia further up, we reach the pre-renal Gerota's fascia. In males, the rectum is separated from the urinary bladder and prostate by the fascia rectoprostatica (Denonvilliers' fascia). The space between the pubic symphysis and urinary bladder, spatium retrobubicum, is filled out with fascial thickenings, the lig. pubovesiclale and lig. puboprostaticum lower down. In females, there are strong ligaments intended to support the uterus and cervix – the lig. uterosakrale (uterosacral ligament), lig. pubovesicale, and the well-developed lig. cardinale.

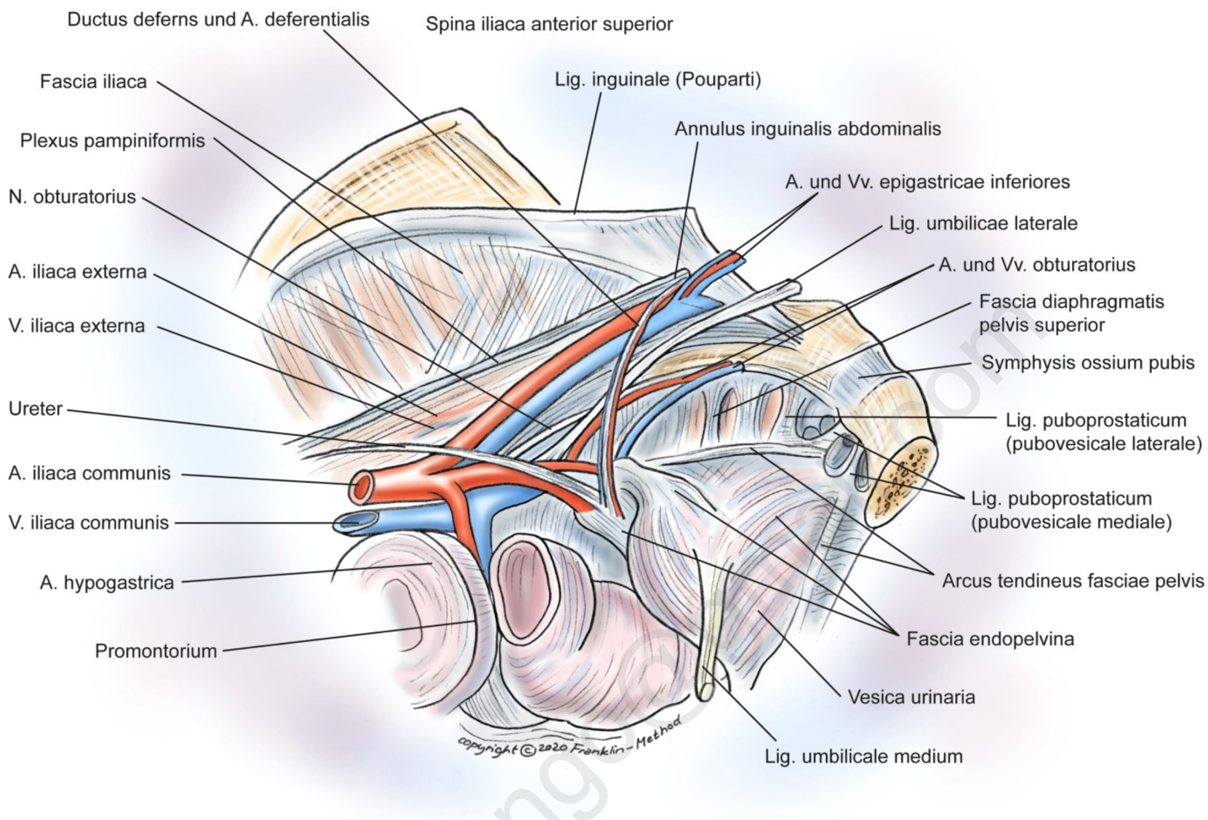


Diagram 15 View into the pelvis from above

The muscular pelvic floor/diaphragma pelvis

The pelvic floor, or pelvic diaphragm, is the muscles of the pelvic floor that seal the exit to the pelvic cavity. Its main task is to support the organs of the pelvis. The diaphragma pelvis resembles a rounded hammock and consists of in-part overlapping layers of muscles, sandwiched between upper and lower fasciae (fascia diaphragmatica pelvis superior and inferior). The individual muscles here are not always easy to separate from each other. The diaphragma pelvis is made up of the M. levator ani and M. ischiococcygeus, sometimes only referred to as the coccygeus. To the anterior, the two sides of the levator ani split to create the hiatus levatorius. In males, this is the area the urethra passes through, and the location for the urethra and vagina in women. The diaphragma pelvis is of vital importance for urinary and faecal continence.

We can visualize the entire musculature of the diaphragma pelvis as a large, rounded fan which spreads forwards from the lower sacrum, coccyx and lig. anoccygeale (LAC). The LAC is a ligament or a raphe that connects both sides of the M. levator ani as well as the anal sphincter with the coccyx.

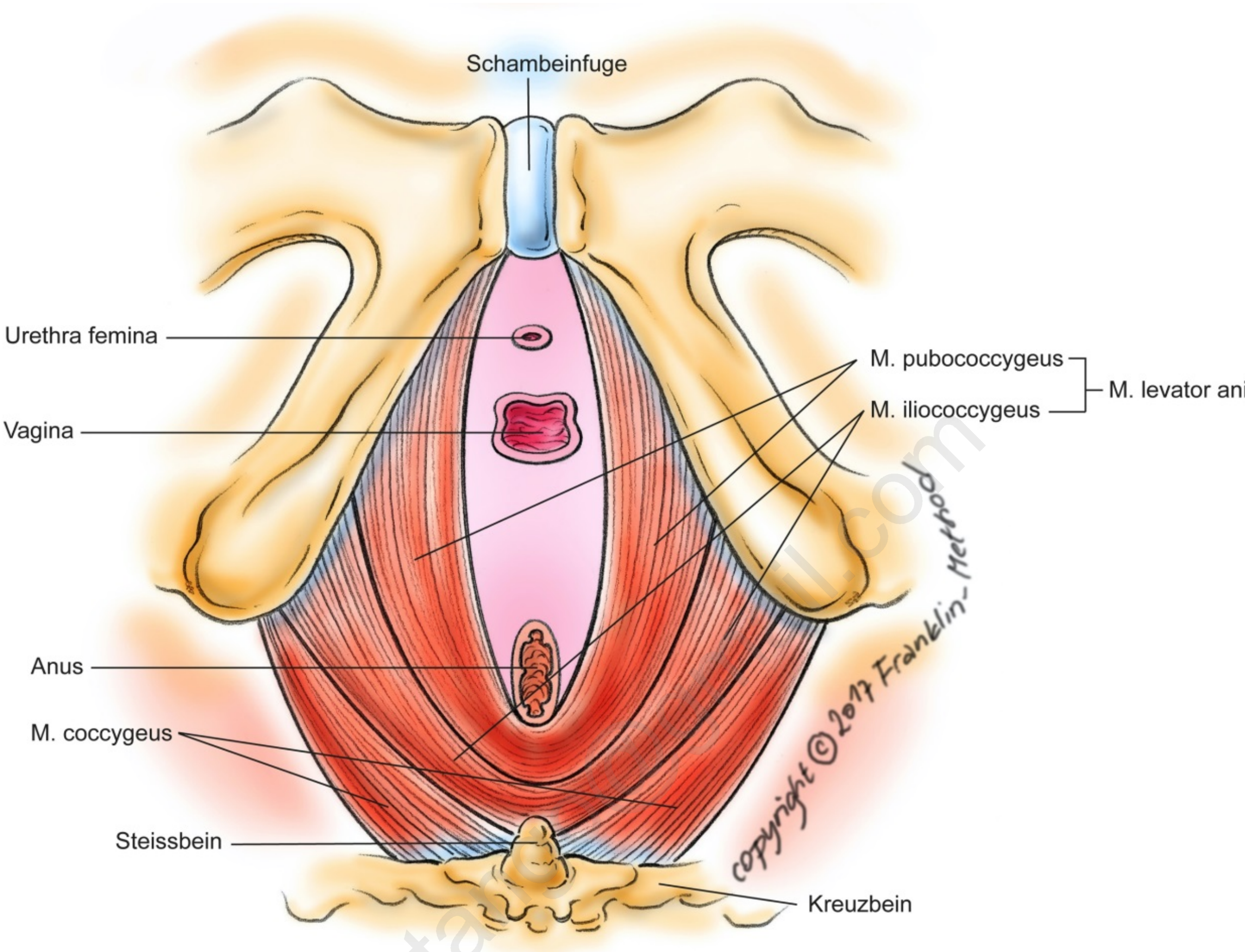


Diagram 16 Levator ani

The Tendinous Arch of the Levator Ani (TALA)

The TALA is a structure of dense fascia in the fasciae of the obturator internus. The TALA is aponeurotic and resembles a white band stretching from the lower ischial spine to the obturator internus. The fascia of the obturator itself is connected with the fasciae of the inner abdominal wall and the M. iliacus, and also extends further below the TALA. The tendinous arch of the pelvic fascia (TAPF) is located alongside the TALA and it forms an attachment point for the visceral pelvic fasciae that supports the urethra and bladder, as well as the vagina in females.

Ischioccygeus

The most posterior muscle in the pelvic floor fan is the M. coccygeus, which extends from the spina ischiadica and the bottom surface of the lig. sacrospinale to the coccyx and the fifth sacral vertebrae. The coccygeus also forms a small fan itself, fanning out from the spina ischiadica.

Ilioccygeus

The levator ani consists of the iliococcygeus, pubococcygeus and the puborectalis. The iliococcygeus emerges next to the coccygeus, below the spina ischiadica and out of the tendinous arch of the levator ani (TALA). The name “iliococcygeus” is an interesting choice because the muscle is not actually connected to the ilium and is also not located on a level with said bone. To the rear, the iliococcygeus is connected with the coccyx and sacrum, as well as via the ACL to the fibers of the same muscle on the other side. In other words, the muscle is mirrored on the LAC.

Puboccygeus

The puboccygeus emerges from the inside of the pubic bone and runs almost horizontally downwards. The deepest part of the muscle runs right alongside the urethra and its sphincters. In this case, this muscle is sometimes called the pubourethralis or puboperinealis. As we can see, the nomenclature in the pelvic floor is complex and often inconsistent, which is why it is often best to not just remember the names, but also memorize the architecture of the muscles and fascia. In males, the same sections of the puboccyggeus are located alongside and under the prostate, and are therefore called the puboprostaticus or levator prostatae. In both males and females, the puboccygeus is connected with the centrum perineum tendinei, the nodal point for all fasciae and muscles in the pelvic floor. Several fibers, known as puboanalis, are connected with the longitudinal muscle of the rectum and the fascial elements in order to strengthen the longitudinal axis of the anal canal. Behind the rectum, the fibers of the M. pubococcygeus connect with the LAG. Elements of the puboccygeus, as well as the M. pubovaginalis, M. puboprostaticus and M. puboanalis are often referred to collectively as the pubovisceralis.

Puborectalis

The puborectalis is located next to the puboccygeus and emerges on both sides from the inside of the connection between the pubic bone and ischial bones, right next to and sometimes connected to the membrana perinei. The membrana perinei is connected with the fascia of the levator ani here. The fibers run loop-like around the rectum. The puborectalis causes a kink in the anorectal junction, supporting continence. The crouching position stretches this section out and is therefore ideal for bowel movements.

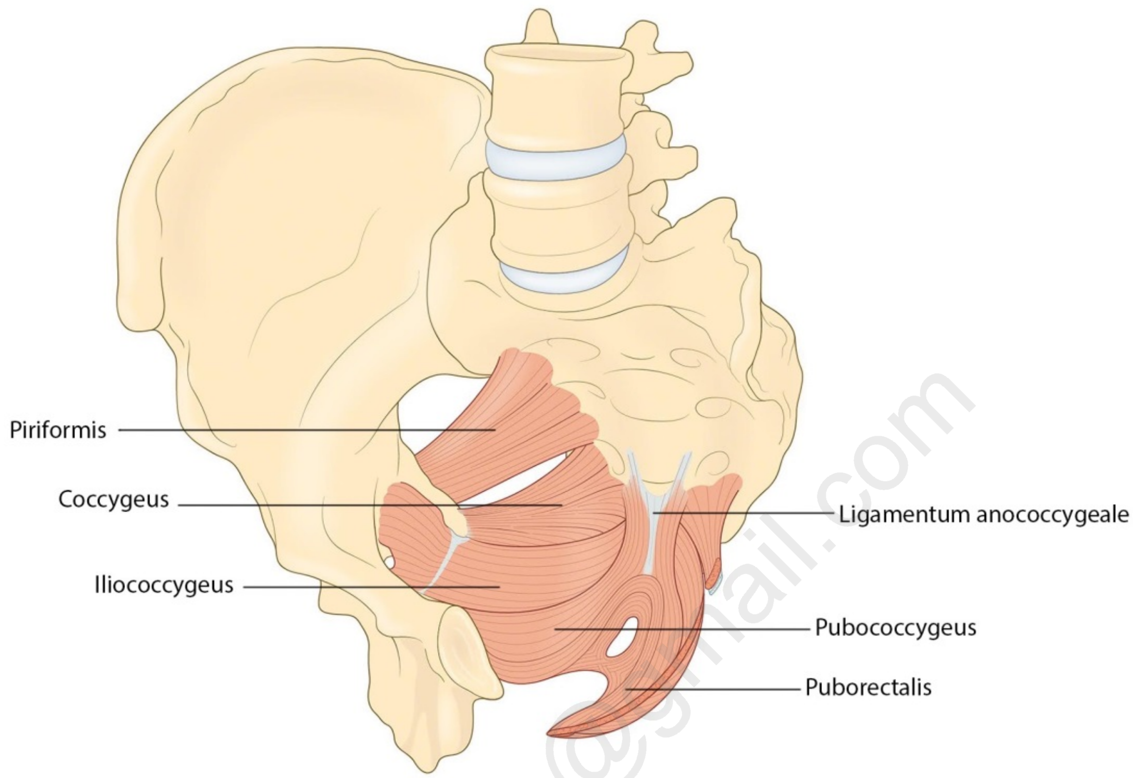


Diagram 17 Diagonal side view

Fascia diaphragmatica

The fascia diaphragmatica inferior (FDI) forms the side wall of the fossa ischio-analis and the upper wall of the anterior part of this fossa. The FDI is only thin and is connected with the lower section of the obturator fascia and the TALA. The FDS is connected with the fascia of the sphincter urethrae as well as the fasciae of the internal and external anal sphincter.

The levator ani is only separated from the bladder, prostate or uterus above by the fascia diaphragmatica superior (FDS) and the visceral endopelvic fascia. The FDS is considerably thicker than the FDI and is connected to the inside of the pubic bone, around 2 cm above the FDI. It extends sideways over the pubis, and joins with the fasciae of the obturator. To the posterior, the FDA is connected with the spina ischiadica, the fasciae of the piriformis and the LAC. Medially, the FDS connects with the visceral pelvic fascia and in doing so strengthens the endopelvic fasciae.

The deep perineal space (spatium profundum perinei)

The deep perineal space, the spatium perinei profundum, is located between the fascia diaphragmatis urogenitalis inferior (membrana perinealis) and the fascia diaphragmatis urogenitalis superior. The deep perineal space in males is primarily filled out with the M. transversus perinei profundus. The M. sphincter urethrae externus extends from the latter to the urethra and prostate. The bottom wall of the muscle is formed by a strong fascia – the membrana perinei. In females, the M. perinei profundus isn't quite as robust, as the short urethra ends directly in the vestibulum of the vagina, where it is surrounded by M. sphincter urethare externus and M. sphincter urethrovaginalis. This area as a whole is sometimes referred to as the urogenital diaphragm, as opposed to the pelvic diaphragm of the Levator Ani muscles.

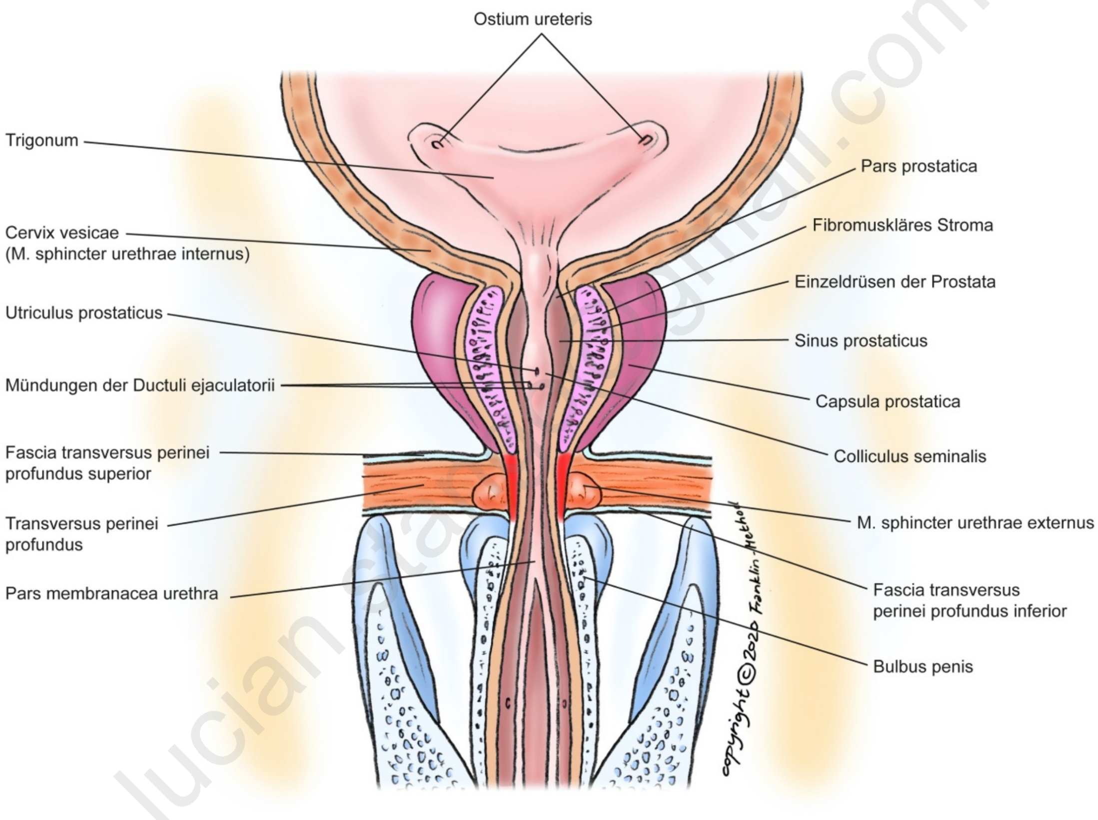


Diagram 18 Deep perineal space and prostate in males

The superficial perineal space (spatium superficiale perinei)

The superficial perineal space joins the membrana perinei on its outside and contains the M. transversus perinei superificalis, M. ischiocavernosus and M. bulbospongiousus. The fascia perinei separates the superficial perineal space from the superficial fascia and the subdermal fat layer.

The ischioanal fossa (fossa ischionalis)

The pyramid-shaped fossa ischioanalis is located behind the perineal region, which is filled out with fat. The upper (cranial) wall of this space is formed by the M. levator ani externus and its fasciae, while the outer side wall is made up of the sit bone and M. obturator internus. The perineal body (corpus perineale) is located right at the front of this space, and the LAC runs from the sphincter ani to the coccyx. The entire area is covered by superficial fascia (Colles' fascia).

Superficial fascia of the pelvic floor (Colles' fascia)

The membranous layer of superficial fascia in the perineum is also known as the Colles' fascia. This refers to the deeper layer of superficial perineal fasciae. Colles' fascia is thin, aponeurotic and boasts considerable strength. It serves to hold the muscles at the root of the penis in place. Colles' fascia extends out from the underside of the membrana perinei and continues along the lower penis, without covering the scrotum.

To the anterior, it is continuously connected to the dartos fascia of the penis and the scarpa fascia of the anterior wall of the abdomen; It is attached on both sides to the edges of the pubis and the ischium, to the crus penis at the sides and to the tuberosity of the ischium. In the posterior area, it curves around the superficial transverse perineal muscle and joins the bottom edge of the membrana perinei. In the middle, it is connected to the septum of the M. bulbospongiosus. To the rear, it is connected with the superficial fasciae of the back as well as the superficial abdominal fascia, the scarpa fascia, to the front.

Connections with the posterior lamina of the lumbar fascia, TLF and M. obliquus externus

The pelvic floor fascia is connected with the thoracolumbar fascia (TLF). Depending on which definition you read, the fascia thoracolumbalis has either two or three layers. The posterior layer is primarily made up of the aponeurosis of M. latissimus dorsi. The TLF is connected with the aponeurosis of the M. errector spinae and M. multifidus lower down. This lower, compact part of the TLF is connected with the deep layer of the LAC and therefore continues into the external anal sphincter and the fasciae of the pelvic floor. From there, these fasciae are in turn connected with the fasciae of the M. obliquus externus and internus, moving full circle, so to speak.

Connections with the middle layer of the fascia thoracolumbalis and the lower abdominal muscles

The middle lamina of the TLF continues downwards in the ligaments of the pelvis, in the lig. iliolumbale and lig. iliosakrale. There are connections from here to the presacral fasciae and the deep lamina of the LAC. The fasciae of the M. levator ani, the fascia endopelvina and membrana perinei continue from here, then, in turn, connect with the fasciae of the M. obliquus internus abdominis and M. transversus abdominis. As a result, the central lamina of the TFL is connected to the fascia of the diaphragma pelvis and to the anterior lower abdominal muscles.

Connections between the adductors, the gluteus and the pelvic floor

Strong connections exist here, most notably between the gluteus maximus and the LAC & lig. sacrotuberale. As a result, tension in the gluteus is directly transferred to the pelvic floor.

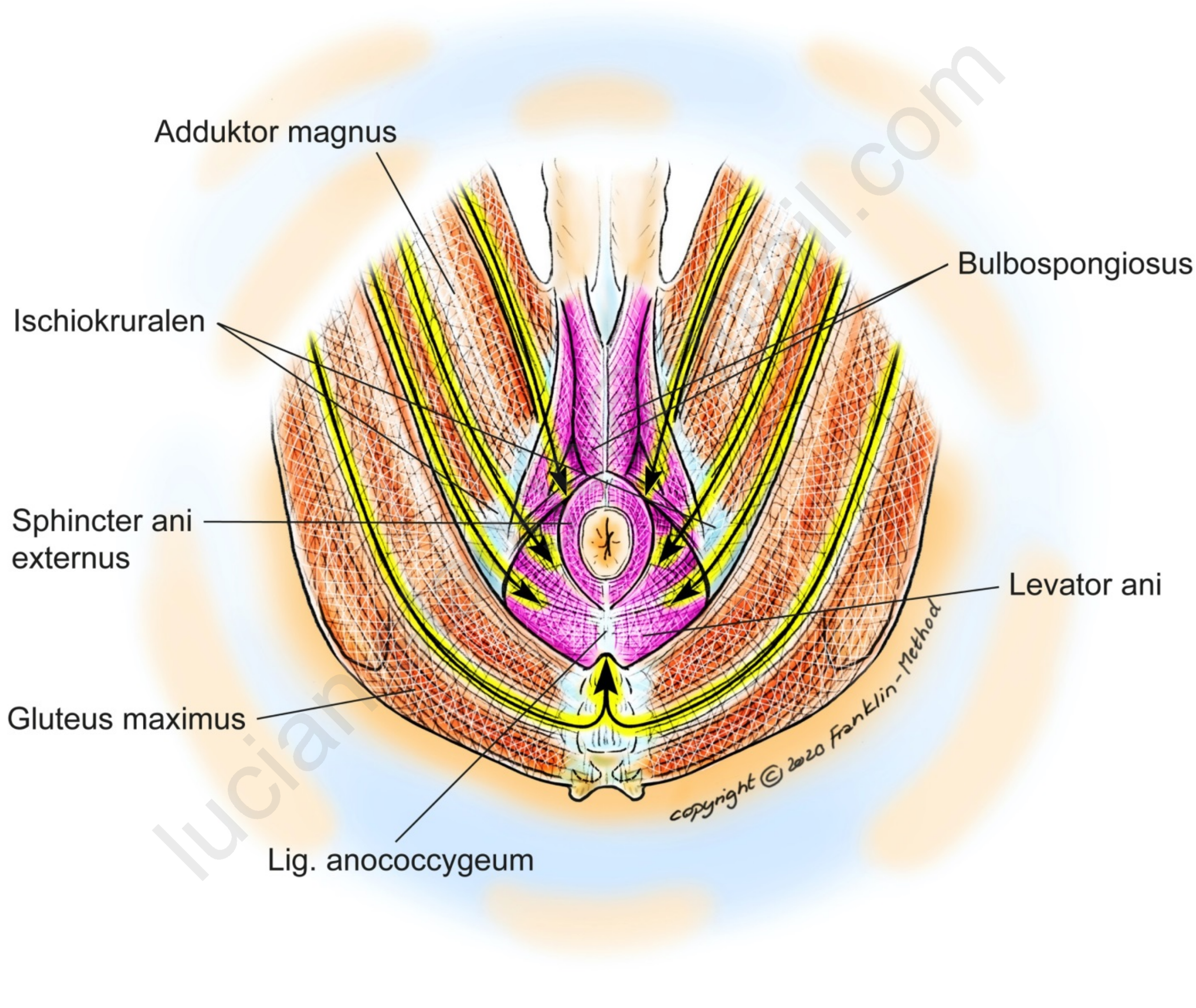


Diagram 19 Connections between the gluteus & adductors and the pelvic floor

Fascial connections to the bladder

To the posterior, the bladder is connected with the kidneys via the ureters. The ureters are surrounded by strong fascia originating in the psoas fascia. To the anterior, the bladder is held by the lig.

umbilicale medianum, which is connected with the lig. teres and lig. falciforme of the liver. From here, there are also connections to the pericardium of the heart. The bladder is also joined to the pubic bone via the lig. pubovesicale.

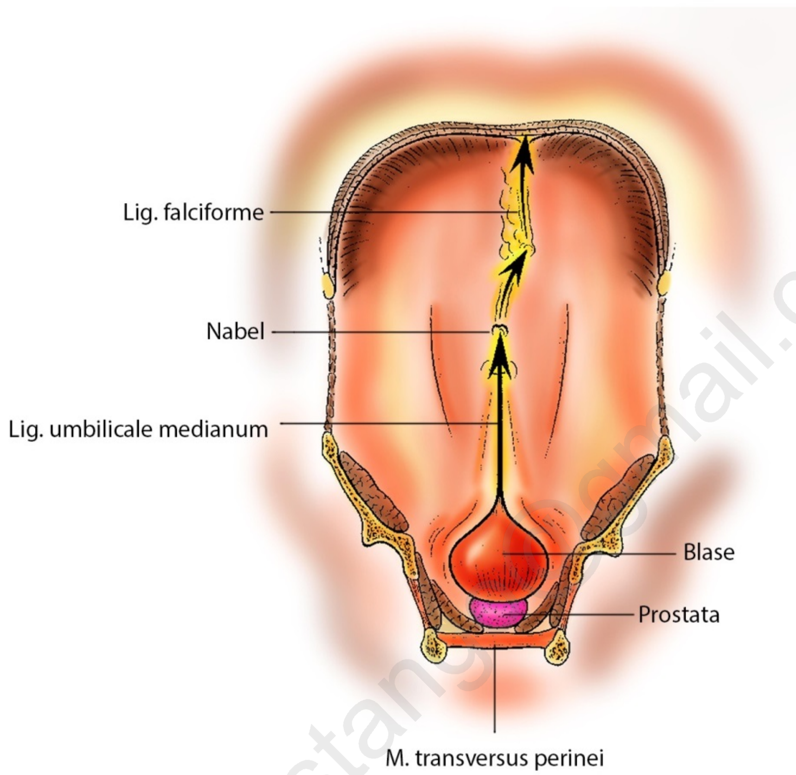


Diagram 20 The bladder's connections to the liver

Training goals

- Positive attitude towards the pelvis
- Optimal visualization and perception of the structures within the pelvis and pelvic floor for better training control
- Enhance strength: Stamina and explosive strength
- Balanced tone (normal tension)
- Build up coordination: Diaphragm-pelvic floor
- Achieve symmetry within the pelvis
- Reduce over-activity in the abdominal muscles
- Harmonize tense, overactive pelvic floor muscles

Keeping the pelvic floor working optimally is dependent on the smooth and striped muscles as well as the load-bearing and elastic elements of the fasciae and ligaments. In females, the levator ani helps stabilize the neck of the bladder, and presses the urethra against the pubic bone. It also forms a solid surface which, in combination with abdominal pressure, can compress the urethra.

The muscles and fascia of the pelvic floor coordinate with the abdominal muscles and diaphragm. When breathing in, the diaphragm lowers together with the pelvic floor. This results in the diaphragm performing a concentric action and the pelvic floor performing an eccentric action. The abdominal muscles work eccentrically when breathing in.

The pelvic floor and its fasciae are vital for carrying the organs, sealing the anus and the urethra, helping to modulate intra-abdominal pressure and stabilizing the sacroiliac joint. The pelvic floor tenses before movement in anticipation, i.e. it tenses before every step and leap.

The pelvic floor has to work harmoniously with the abdominal muscles and the diaphragm. Effective interaction is often disrupted by back and pelvic floor issues. Pain in the pelvic floor is regularly connected with over-activity in the pelvic floor muscles.

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