

INTERNATIONALL
FITNESS COLLEGE

PILATES. MAT 2

MANUAL

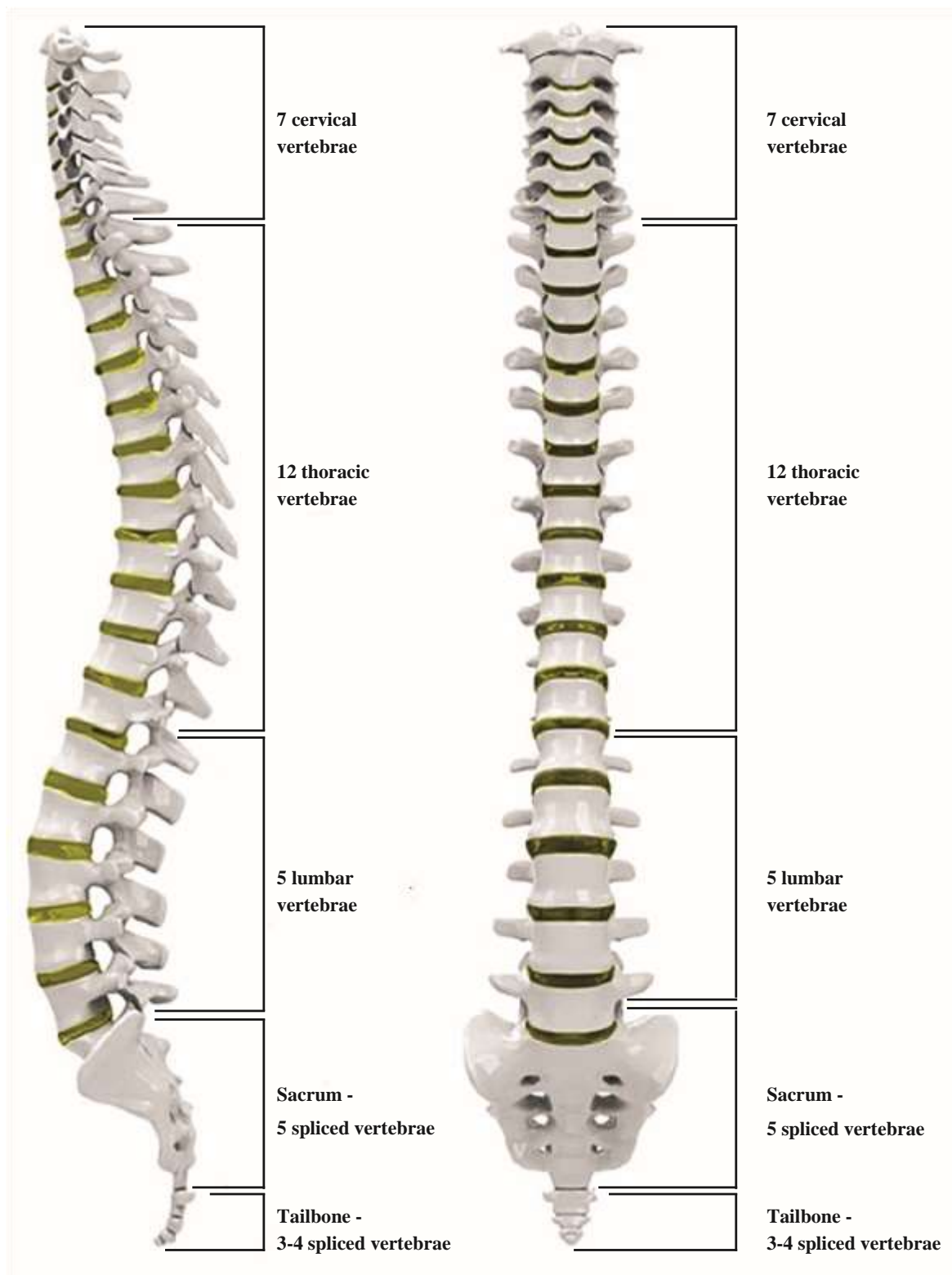


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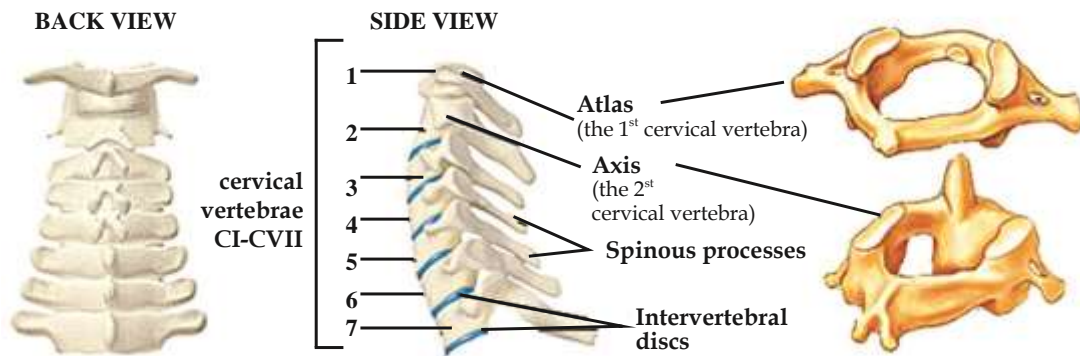
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CHAPTER 1. THE ANATOMY OF THE PILATES SYSTEM. THE VERTEBRAL COLUMN

THE HUMAN SPINE

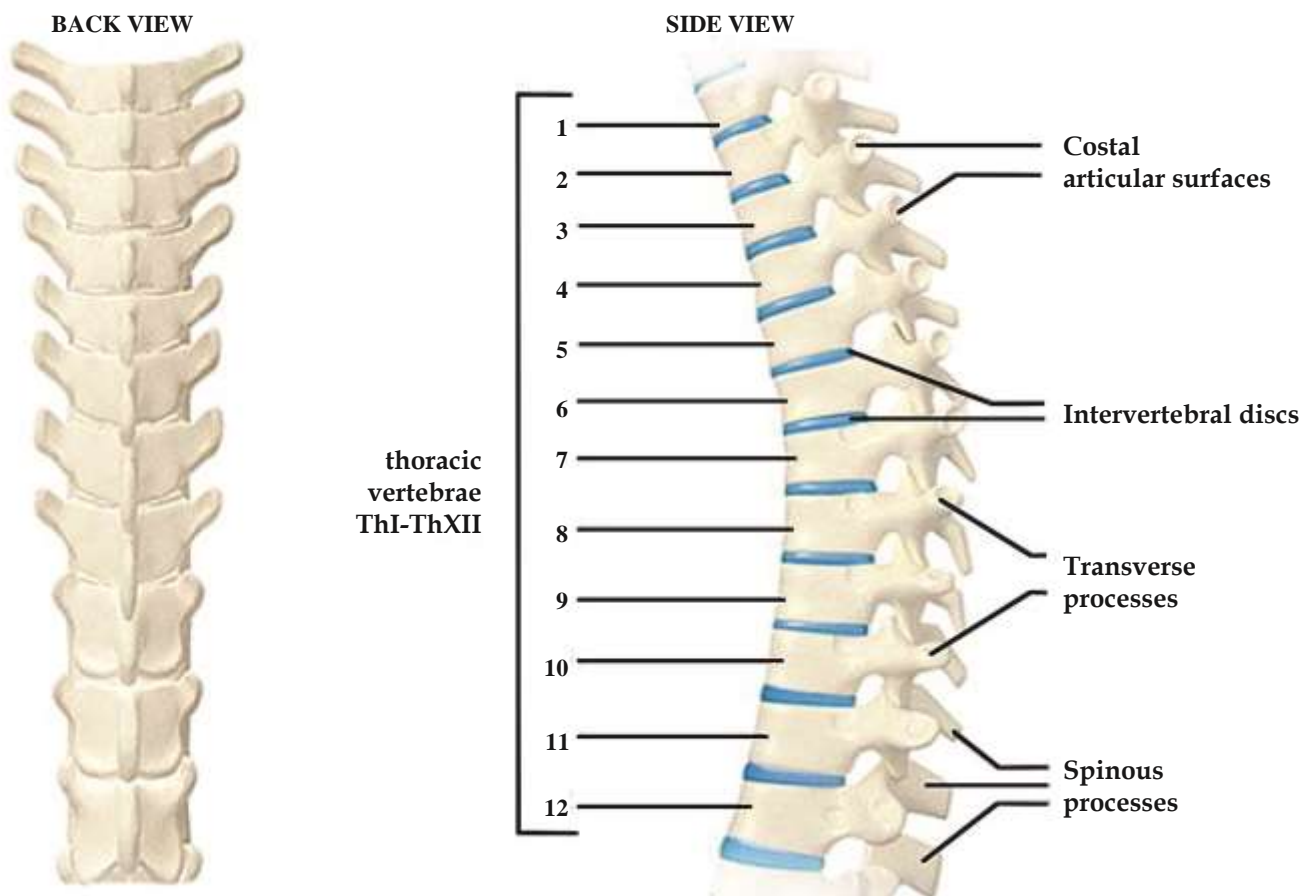


CERVICAL SPINE



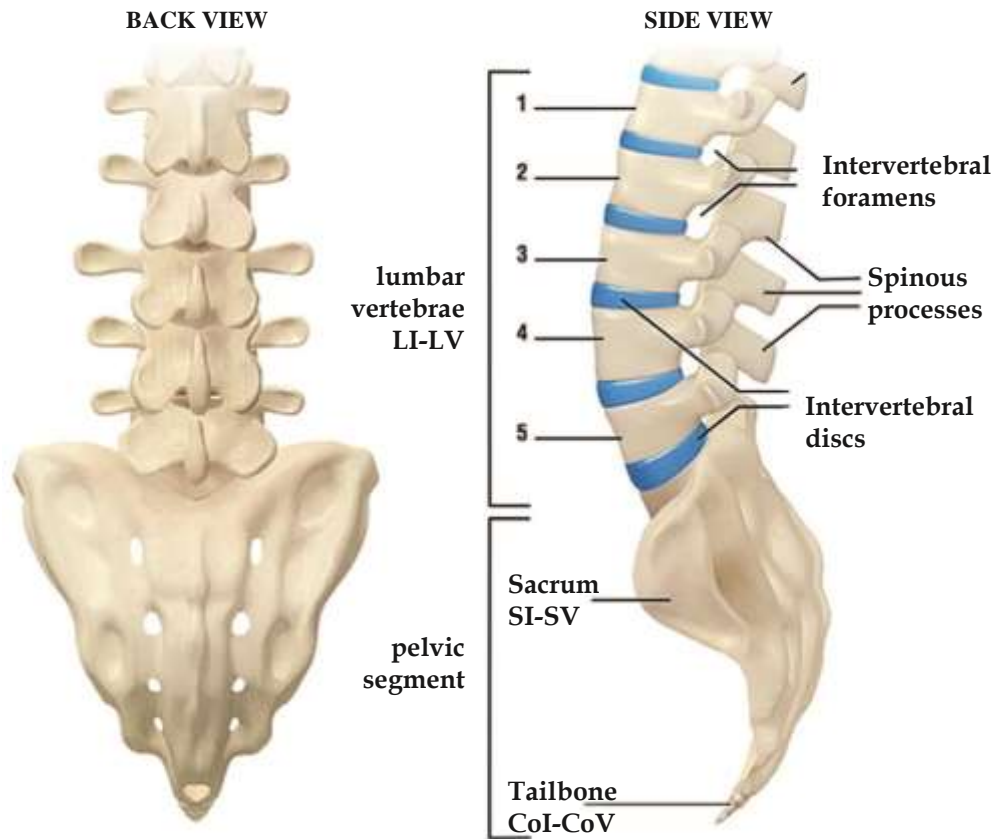
The total amplitude in the direction of «flexion-extension» is 100°, the amplitude of the side flexion is 45°. The rotation is performed approximately within 80-90°.

THORACIC SPINE



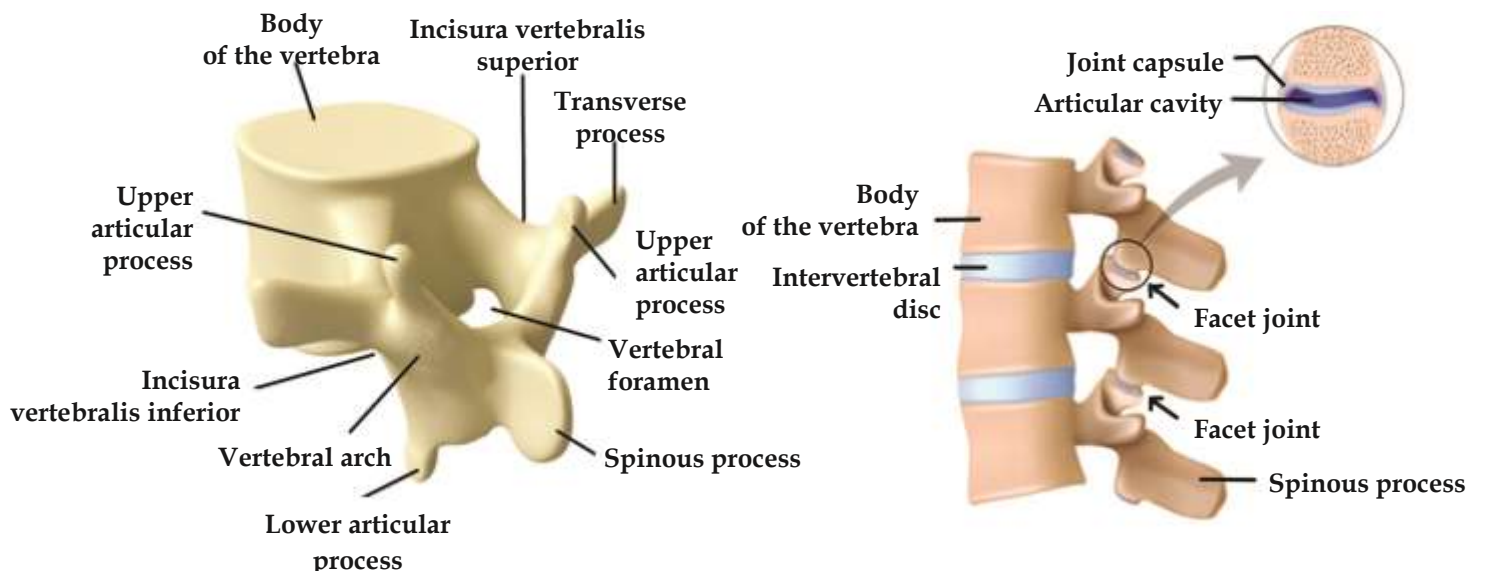
The amplitude in the direction of «flexion-extension» in the thoracic spine is 40°, the amplitude of the side movements is 20° and the amplitude of the rotation is 20-30°.

LUMBAR AND SACROCOCCYGEAL SPINE

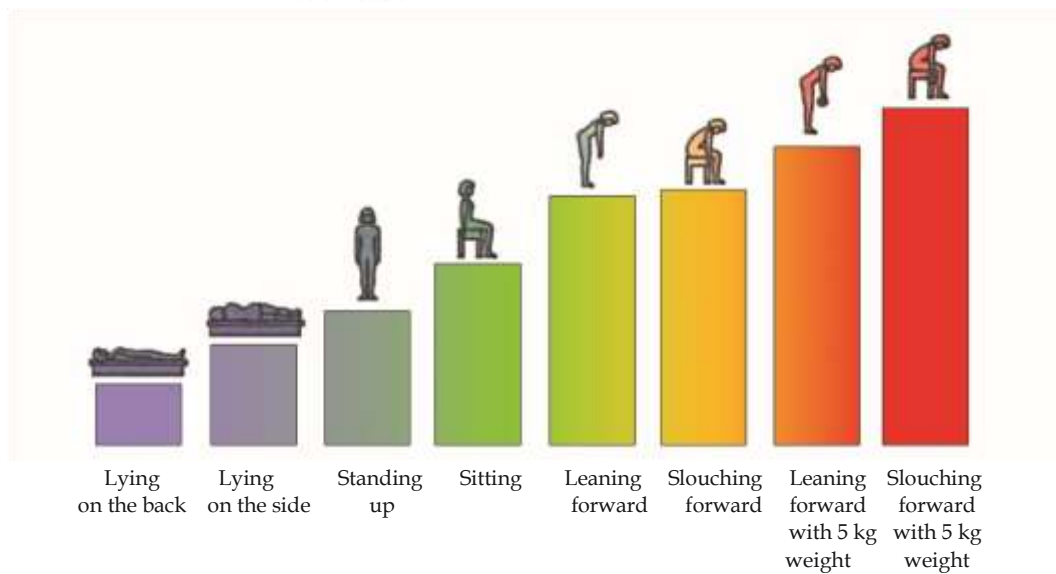
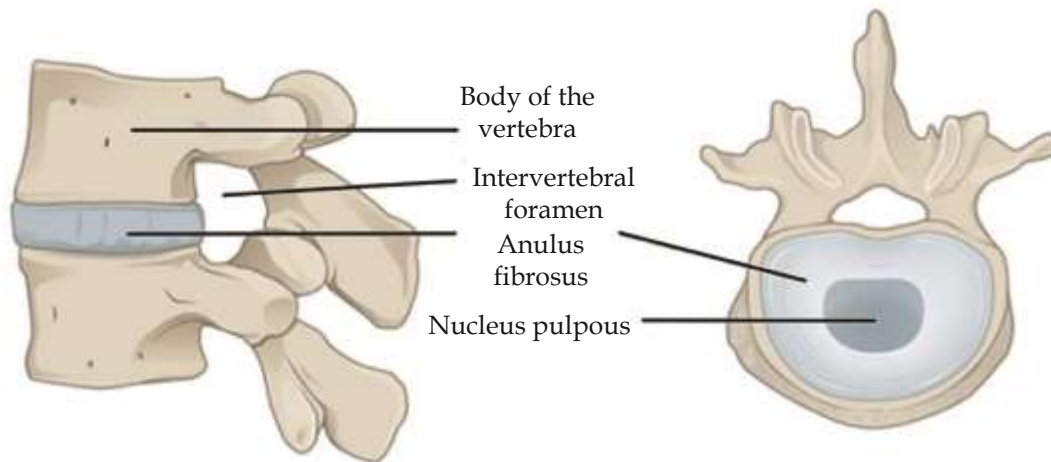


The amplitude in the direction of «flexion-extension» in the lumbar spine is 70°, the amplitude of the side movements is 20-30° and the amplitude of the rotation in the lumbar spine is only 1° for each vertebra, 5° in total for each side for the whole lumbar spine. There is no movement in the sacrococcygeal spine.

VERTEBRAE AND ARTICULAR PROCESSES OF THE VERTEBRAE

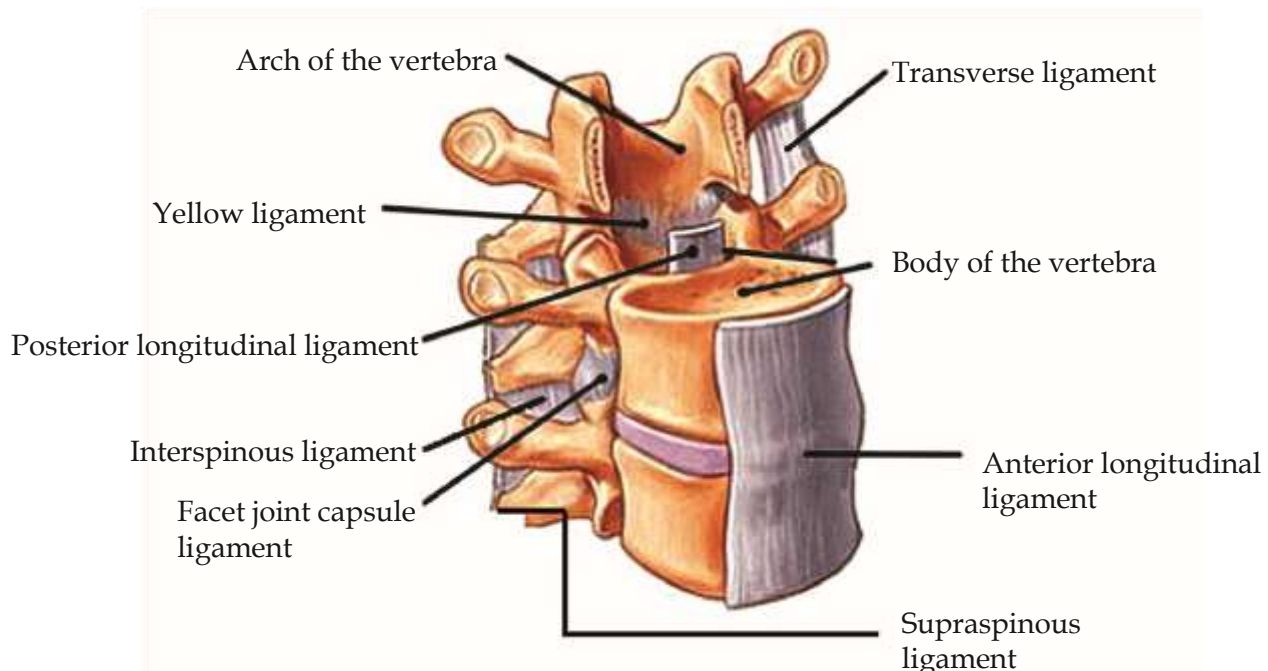


INTERVERTEBRAL DISCS



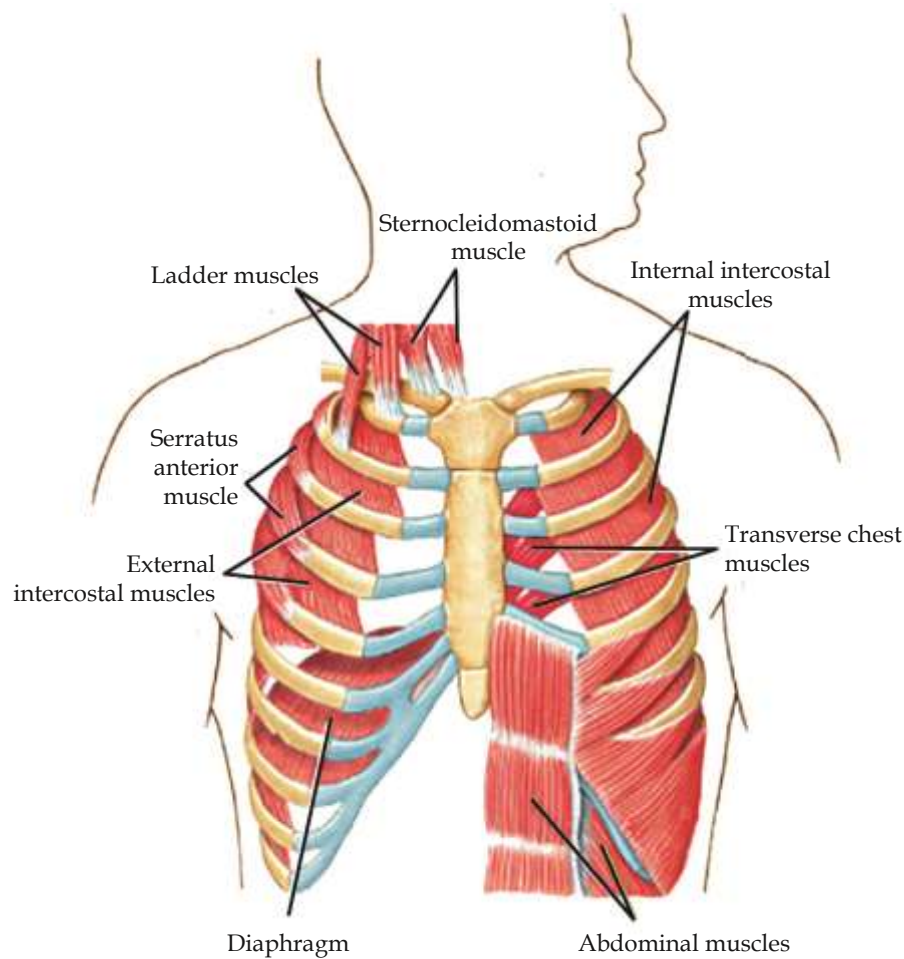
The level of the lumbar spine tension in different body positions.

SPINAL LIGAMENTS



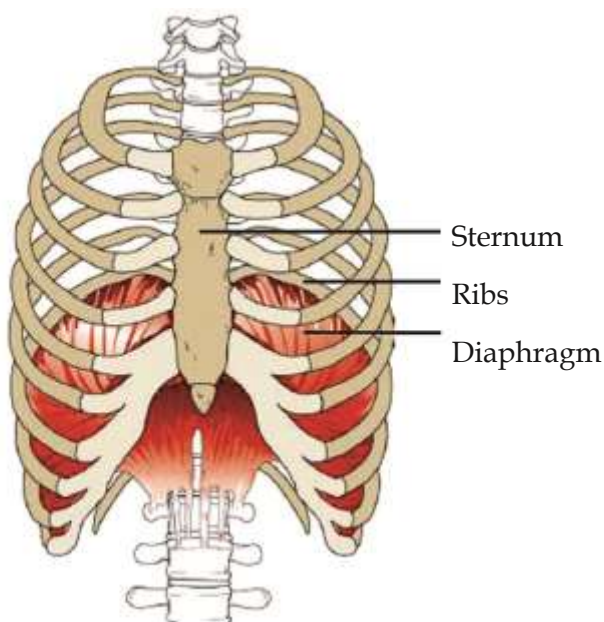
CHAPTER 2. THE ANATOMY OF THE PILATES SYSTEM.

RESPIRATORY MUSCLES



Respiratory muscle system

INSPIRATORY MUSCLES

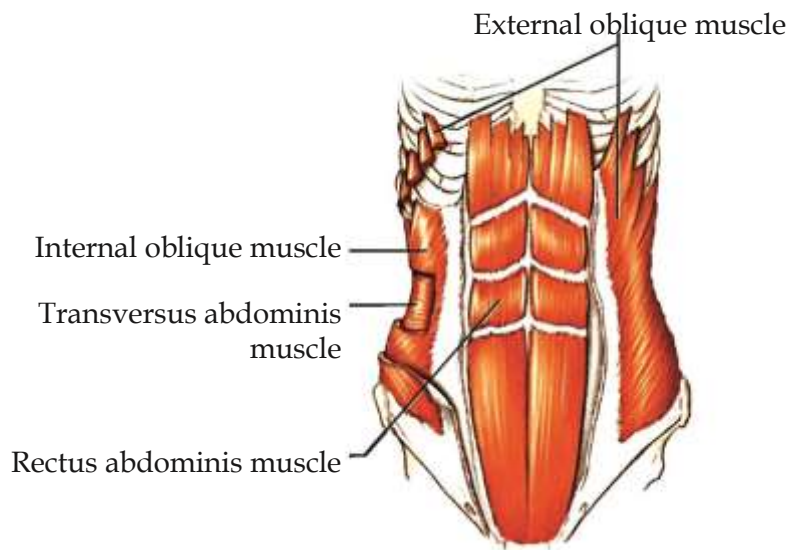


1. DIAPHRAGM

2. Pectoralis minor
3. Pectoralis major
4. Serratus anterior
5. Supracostal
6. Superior posterior dentate
7. Indirect spine erectors
8. Ladder muscles
9. Sternocleidomastoid

EXPIRATORY MUSCLES

1. transversus abdominis muscle
2. internal oblique muscle
3. external oblique muscle
4. rectus abdominis muscle
5. levator ani
6. schiococcygeus muscle
7. quadratus lumborum muscle
8. serratus posterior inferior muscle



MUSCLES THOSE ARE CHANGING THEIR FUNCTION DEPENDING ON THE RESPIRATORY PROCESS TERMS



External intercostal muscles



Internal intercostal muscles

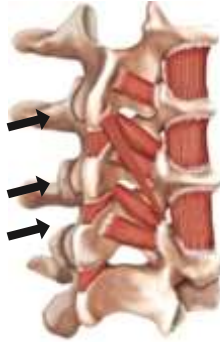
CHAPTER 3. THE ANATOMY OF THE PILATES SYSTEM. THE MAIN TORSO AND UPPER LIMBS MUSCLES PARTICIPATING IN THE PILATES SYSTEM EXERCISES

LAYERS OF MUSCLES OF THE BACK

I. deep layer of muscles of the back



Transverse muscles
of the lower back



Interspinous muscles



Levator rib muscles

II. Transverse spinous muscle group



Muscle rotators



Semispinal muscle of the chest



Multifidus muscles

III. Erector spine



Pectoral spinous muscle



Longissimus thoracis muscle



Musculus iliocostalis

IV. The superficial layer of the back muscles



Superior posterior serratus



Inferior posterior serratus



Rhomboid minor muscle



Rhomboid major muscle



Levator scapulae muscle

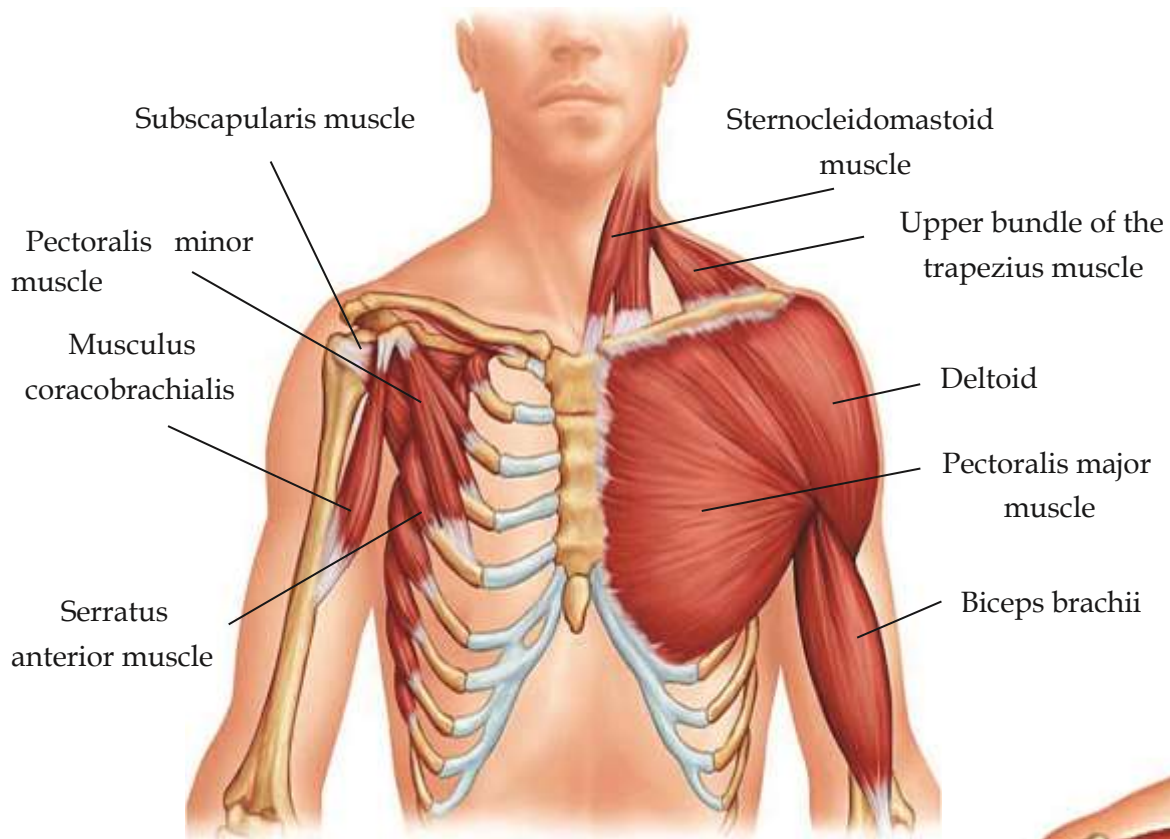


Musculus trapezius

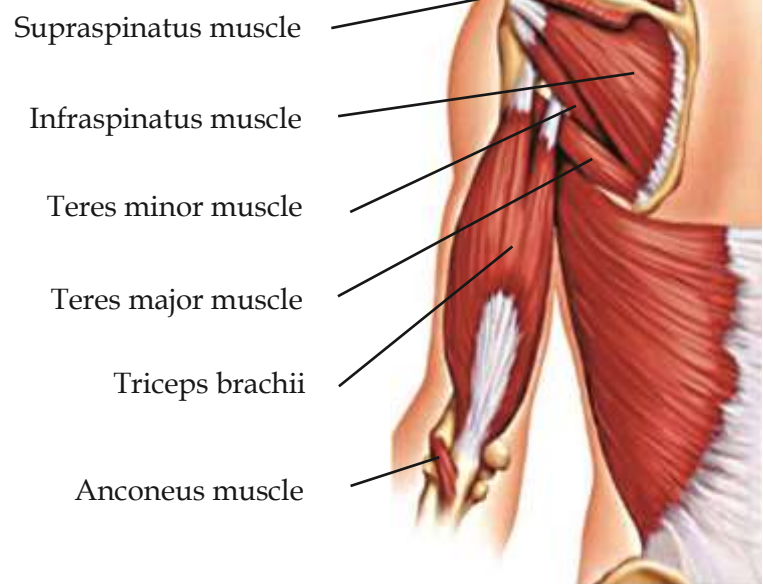


Latissimus dorsi muscle

MUSCLES OF UPPER LIMBS



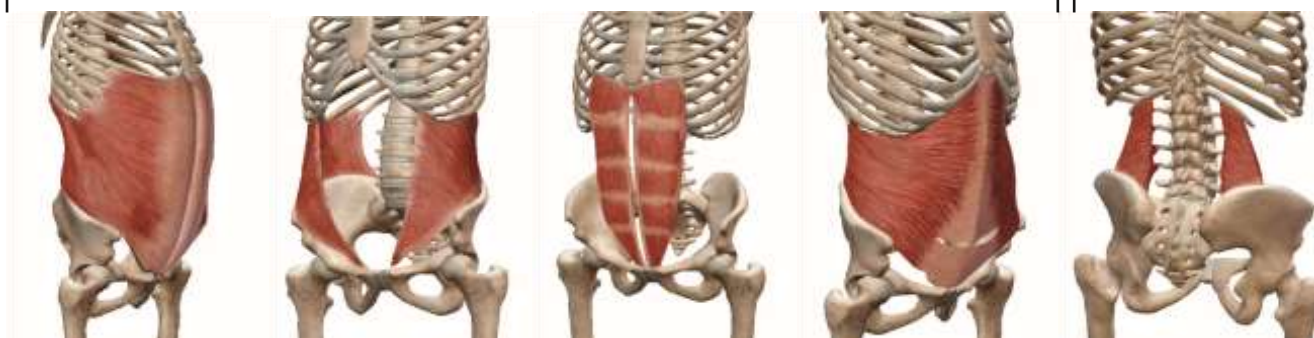
FRONT VIEW



BACK VIEW

ANTERIOR ABDOMINAL WALL

POSTERIOR ABDOMINAL WALL



External oblique muscle
of the abdomen

Internal oblique
muscle of the abdomen

Rectus abdominis
muscle

Transverse abdominal
muscle

Quadratus
lumborum muscle



ABDOMINAL MUSCLES

CHAPTER 4. THE ANATOMY OF THE PILATES SYSTEM. THE MAIN PELVIC AND LOWER LIMBS MUSCLES PARTICIPATING IN THE PILATES SYSTEM EXERCISES

PELVIC MUSCLES



Iliopsoas muscle

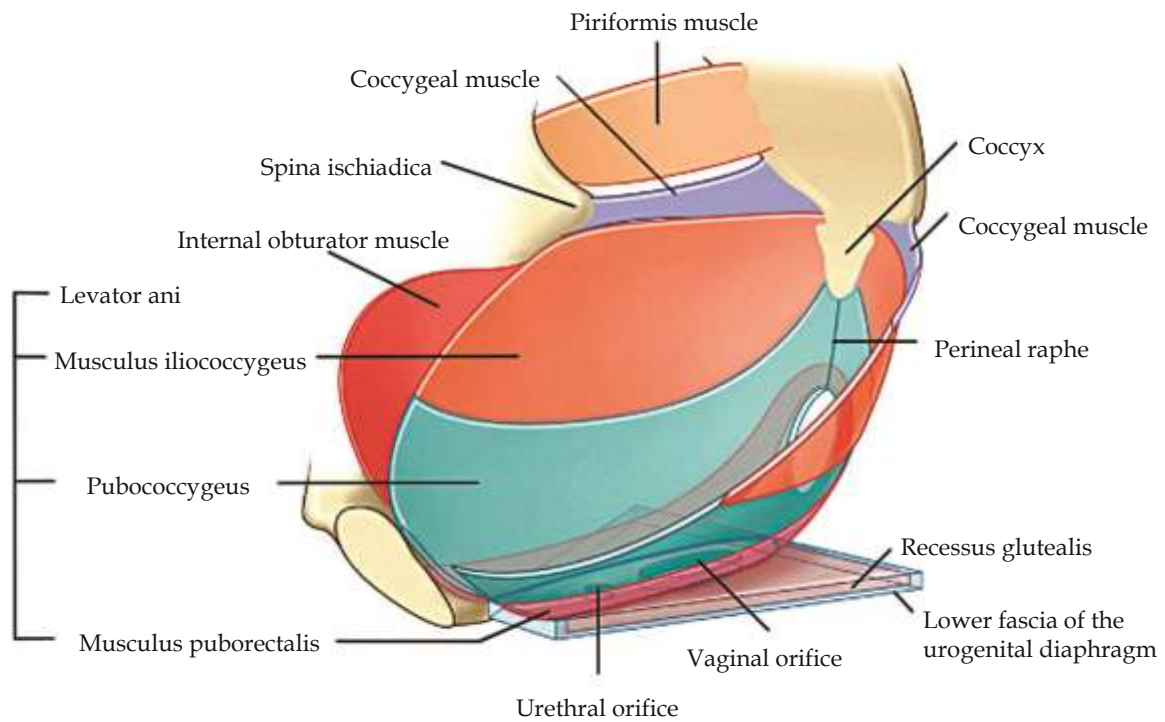


Gluteus maximus muscle

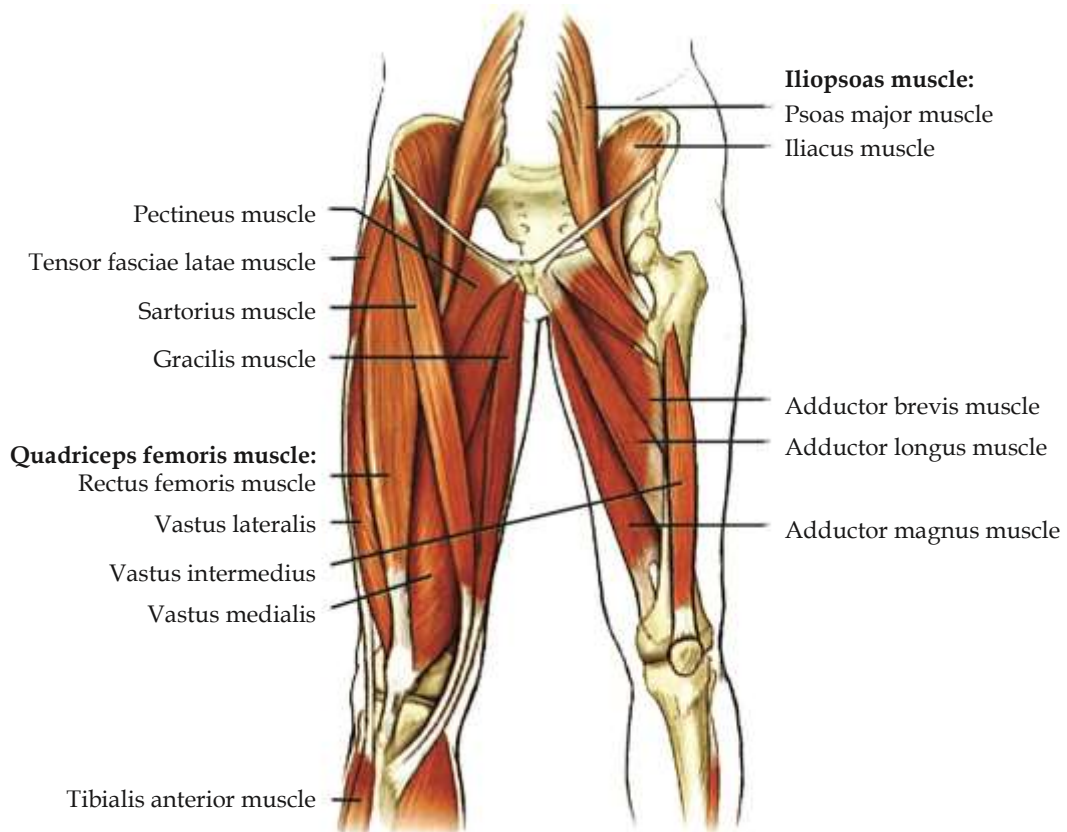


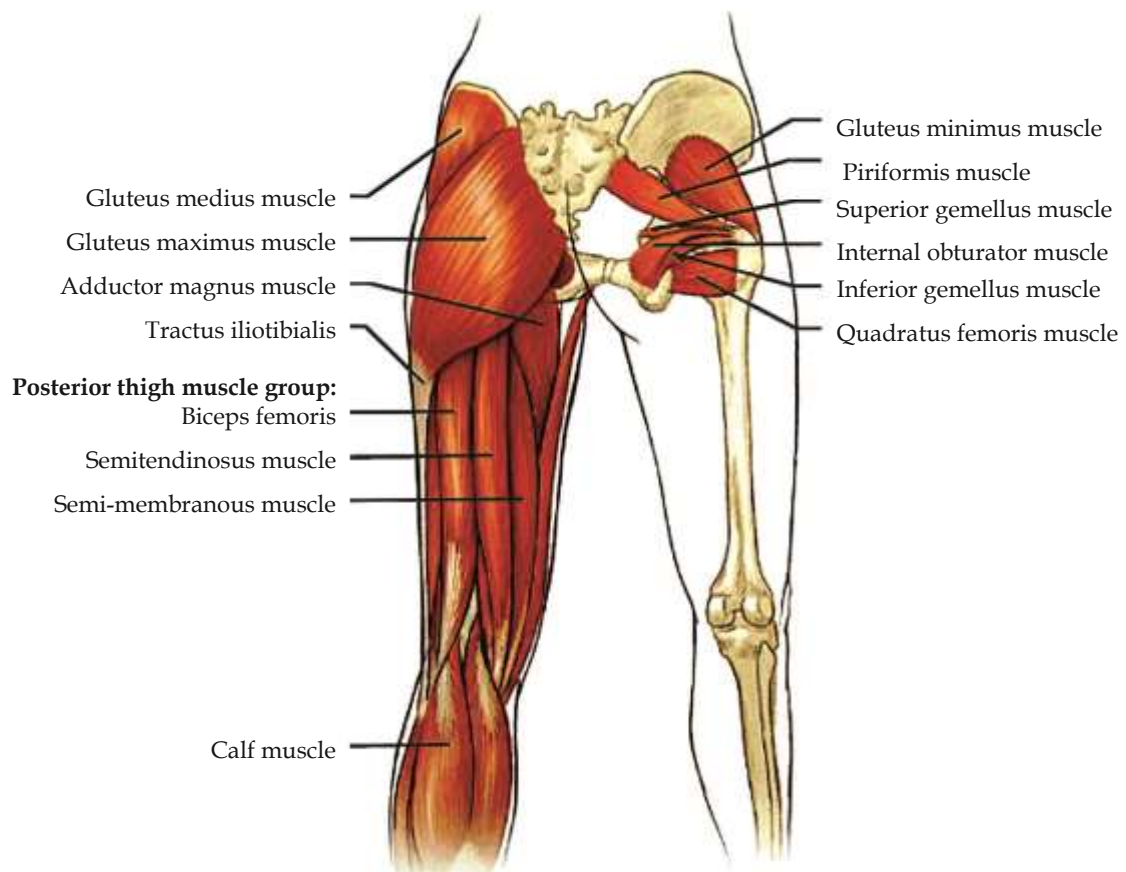
Gluteus medius muscle

PELVIC FLOOR MUSCLES



THE MAIN LOWER LIMBS MUSCLES FRONT VIEW





BACK VIEW

CHAPTER 5. TYPES OF MOVEMENT IN DIFFERENT JOINTS

Table №1. Types of movement in spine and muscles responsible for them.

JOINT MOVEMENT	MAIN MUSCLES	AUXILIARY MUSCLES
FLEXION		
EXTENSION		

LATERAL FLEXION		
ROTATION		

Table №2. Main movements in the lower limb joints and muscles responsible for them.

JOINT MOVEMENT	MAIN MUSCLES	AUXILIARY MUSCLES
HIP JOINT		
FLEXION		
EXTENSION		
ABDUCTION		
ADDUCTION		

LATERAL ROTATION		
MEDIAL ROTATION		
KNEE JOINT		
FLEXION		
EXTENSION		
ANKLE JOINT		
DORSIFLEXION		
PLANTAR FLEXION		

Table №3. Main movements in the upper limb joints and muscles responsible for them.

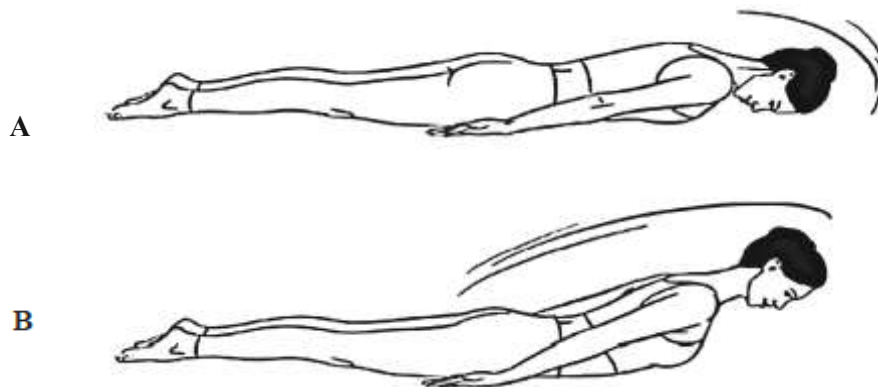
JOINT MOVEMENT	MAIN MUSCLES	AUXILIARY MUSCLES
SHOULDER JOINT		
FLEXION		
EXTENSION		
ABDUCTION		
ADDUCTION		
LATERAL ROTATION		
MEDIAL ROTATION		
HORIZONTAL ABDUCTION		

HORIZONTAL ADDUCTION		
ELBOW JOINT		
FLEXION		
EXTENSION		

Table №4. Main movements of the scapula and muscles responsible for them.

MOVEMENT	MAIN MUSCLES	AUXILIARY MUSCLES
ELEVATION		
DEPRESSION		
ADDUCTION		
LATERAL ROTATION		
MEDIAL ROTATION		

Table №5. An example of a muscle analysis of back extension from a prone position.



MOVEMENT PHASE	MOVEMENT IN THE JOINTS	MAIN MUSCLES	AUXILIARY MUSCLES
A – B Upward movement	Spinal extension	Extensor spine muscle	Semispinal muscle, deep muscle group of the spine
B – A Downward movement	Spinal flexion	Rectus abdominis muscle, external and internal oblique muscles of the abdomen	Do not participate

Table №6. An example of a muscle analysis of the lateral spine flexion.



MOVEMENT PHASE	MOVEMENT IN THE JOINTS	MAIN MUSCLES	AUXILIARY MUSCLES
A – B	Lateral flexion	External oblique muscle (eponymous, further «E»), internal oblique muscle (E), quadratus lumborum muscle (E), extensor spine muscle (all E)	Semispinal (E), group of deep muscles of the spine, rectus abdominis (E), psoas muscle (E)

PRACTICAL APPLICATION 1

Pilates intermediate exercise series

1. SINGLE STRAIGHT LEG STRETCH - SLS

AIM: *working of the center muscles and traction of the back of the thigh.*

PERFORMANCE:

1. **S.P. laying on back (Imprint)** – Begin by lying flat on the mat but with your legs extended toward the ceiling. Legs and heels are together in V-Pilates position, rotated slightly outward from the hips. Pull in your abdominals, and curl your chin and upper body up off the mat. The tips of the shoulder blades touch the mat (1a). Make a cycle of the lateral intercostal breathing* (further LIB) and activate your center muscles.
2. **INHALE** - lengthen your spine.
3. **EXHALE** - grasp your right ankle (or below the knee if you have tight hamstrings). Stretch your left leg out parallel to the floor. Keep your lumbar spine and your sacrum firmly flat on the floor (1b).
4. **INHALE** - switch legs quickly by “scissor”-movement.
5. **EXHALE** - pull your left leg toward you keeping the same breathing pattern as in the previous movement.
6. Repeat 10 times (5 times for each leg), switching legs with an INHALE and lengthening legs with an EXHALE.

ATTENTION:

- Keep your lumbar spine and your sacrum firmly flat on the floor.
- Keep your pelvis and your center stabilized.
- Elbows bend out to the side, connecting the arms to the upper abdominal muscles.
- Center of the body deepens and roots the center to the mat.
- Make sure the upper back remains long and the shoulders do not round forward.
- Control both the lifting and lowering of the legs.
- Flatten your stomach muscles.
- Keep breathing during performance.

REGRESSION:

- If you have tight hamstrings and/or weak and painful hip flexors (pain in the groin) you should bend your knee (1c), or grasp your thigh just below the knee (1d).
- If you have weak neck, use a pillow or your hands to support your head (1c).

PROGRESSION:

- To increase the traction of the back of the thigh you should lower one leg on the floor (1d).
- Extend your both arms along your body parallel to the floor (1e).
- Increase the speed of the performance by changing the breathing pattern: INHALE – switching legs, EXHALE – switching legs or INHALE – 2 leg switchings, EXHALE – 2 leg switchings.
- Pulse the leg toward you twice, increasing your stretch. **ATTENTION!** In this progression you will want to breathe deeply into your back and sides. Try to get a nice smooth rhythm going with the breath and the switching of the legs.

**The principle and technique of the lateral intercostal breathing were described in detail in the tutorial "Pilates. Basic level".*





1a



1b



1c



1d



1e

Muscle analysis of an exercise (the main and auxiliary muscles):

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.....

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.....

.....

.....

2. DOUBLE STRAIGHT LEG STRETCH - DSLS

AIM: *strong working of the center muscles and traction of the back of the thigh.*

PERFORMANCE:

1. **S.P. laying on back (Imprint)** – Begin by lying flat on the mat but with your legs extended toward the ceiling. Legs and heels are together in V-Pilates position, rotated slightly outward from the hips. Pull in your abdominals, and curl your chin and upper body up off the mat. The tips of the shoulder blades touch the mat (2a). Make a cycle of the LIB and activate your center muscles.
2. **INHALE** - keeping abdominals pulled in and pushing your back into the mat, lengthen your legs out of your hips. Begin to lower your legs slowly as far as you can maintaining control and alignment (2b).
3. **EXHALE** - lift your legs to the upright position with a firm and controlled effort, deepening the abs as you return the legs upright.
4. Repeat 5-10 times.

ATTENTION:

- Keep your lumbar spine and your sacrum firmly flat on the floor.
- Elbows bend out to the side.
- Flatten your stomach muscles.
- If your back arches off the mat as you lower your legs, you are taking them too low.
- Lift quickly with an EXHALE but without inertia.

REGRESSION:

- If your center muscles are not strong enough you should reduce the range of up and down movement of your legs.
- If your pelvis and sacrum are not stabilized enough you should place your hands under your buttocks and keep the range of leg movement small (2c).
- If you have weak and painful hip flexors (pain in the groin) you should bend your knees (2d).

PROGRESSION:

- Change the focus of the performance by changing the breathing pattern: lower more actively with an EXHALE and lift more smoothly with an INHALE.



2a



2b

ATTENTION:

- Keep your lumbar spine and your sacrum firmly flat on the floor.
- Keep a lot of length between your shoulders and your ears.
- Stabilize your pelvis during rotation.
- Flatten your stomach muscles.
- As you do the rotations, resist the urge to hold yourself up and do the motion with your shoulders and arms instead of your abs. Make this exercise about the abs.
- Keep your elbows extended and don't fold them inward during the motion.
- You must keep a stable, neutral pelvis as you rotate the spine. No tucking, tilting, or rocking.

REGRESSION:

- If you have a weak neck, abs or sore back, place your feet on the floor and move with caution (3c).
- To engage your center muscles a bit more bring your legs to the Table Top position. Bringing your legs together (3d) or extending them to the high diagonal (3e) perform a rotation.

PROGRESSION:

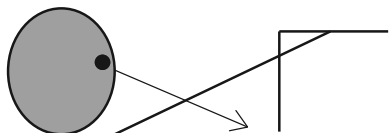
- Increase the speed of the performance by changing the breathing pattern: INHALE – rotation to the right, EXHALE – rotation to the left; or INHALE – rotation to the left and right, EXHALE – rotation to the left and right.



This is the name of the series of 5 exercises those actively strengthen your center muscles and each of them has its additional aim at the same time. The scheme of the series is exposed below for better memorizing. The detailed description of SLS and DLS exercises you can find in the tutorial “Pilates. Basic level”, the description of the others – SSLS, DSLS and CRISSCROSS – you can find above.



AIM: working of the center muscles and traction of the iliopsoas muscle

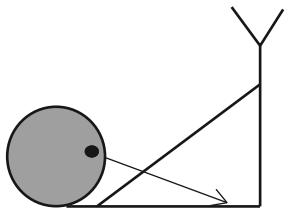

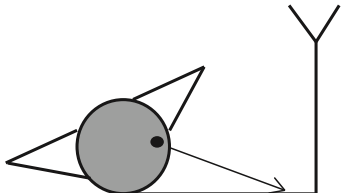

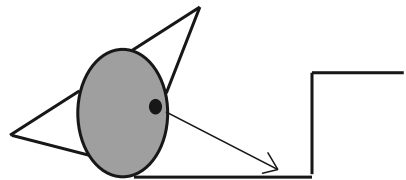



DLS



AIM: working of the center muscles and traction of the whole front surface of the body



STARTING POSITIONS	TITLE	PHOTO
	SSLS	
AIM: working of the center muscles and traction of the back of the thigh		
	DSLS	
AIM: strong working of the center muscles and traction of the back of thighs		
	CRISSCROSS	
AIM: working of the center muscles with a focus on the oblique abdominal muscles		

4. SPINE TWIST

AIM: *breathing exercise targeting spine stretching as well as back and abdominal muscles strength and flexibility.*

PERFORMANCE:

1. **S.P. sitting on buttocks** – start by sitting up tall on your sit bones. Pull your abdominals in so that your upper body is well supported. Flex your feet and bring them into the V-Pilates position. Extend your arms directly out to the sides, keeping them even with your shoulders, so that there is one long line from fingertip to fingertip (4a). Make one cycle of the LIB activating your center muscles.
2. **INHALE** – make an axial traction in central position and elevate yourself on your buttocks engaging these muscles into working process.
3. **EXHALE** - turn your torso and head on the central axis, getting taller as you twist. Control the motion and make sure that your pelvis does not move (4b).
4. **INHALE** – return to the S.P. and make an axial traction.
5. **EXHALE** - take the twist to the other side (4c).
6. Repeat for 4-5 times to each side.

ATTENTION:

- The twist is from the waist, not from the arms, shoulders, or neck. The upper body, including the head, moves as one piece. The pelvis stays stable and does not twist at all. You can check this by making sure that your feet stay even with each other.
- Keep your hands, shoulders and shoulder blades stable during rotation. Don't bring your hands close to your body.
- Engage breathing into rotation and axial traction. You should breath deeply.
- Don't allow your neck to stick out forward during rotation. Gaze forward in S.P. and on your fur palm during rotation.
- Keep your spine extended and don't flex it during rotation.

REGRESSION:

- To accommodate hamstring tightness, you can sit on a folded blanket or bolster. If your psoas (hip flexor) feels tight and seized up, try crossing your legs (4e) or slightly bend your knees bringing legs into the "rhomboid" position (4d).
- If you have any discomfort in your shoulder joints or any difficulties with the axial traction in your neck, you should bring your palms together into the "Namaste" position by pressing your thumbs into the sternum and by pressing your middle fingers on the chin cavity (4f and 4g).

PROGRESSION:

- Switch breathing phases: **EXHALE** – S.P., axial traction, **INHALE** – body rotation. This type of reversing breathing is good for those who have protrusion and hernia.
- Add two pulsing movements during the rotation trying to fully **EXHALE** and fully **INHALE** with the movement.



5. CANCAN (HIP CIRCLES PREPARATION)

AIM: *breathing exercise targeting center muscles strength as well as chest, shoulders and arms' muscles stretching. Developing of the muscle coordination.*

PERFORMANCE:

1. **S.P. sitting, balancing on buttocks with your back straight and slightly leaned backward** – place your arms shoulder-width apart behind you, your fingertips are directing away from you. Bend your knees, bring them firmly together and closer to your chest. Extend your feet away, don't touch the floor with your toes (5a and 5b). Make a cycle of LIB.
2. **INHALE** – keeping your legs together put your weight on the one of your buttocks, leaning your legs to the side, without changing the position of your body and keeping your arms straight (5c). Stretch your knees extending your legs into diagonal in V-Pilates position (5d).
3. **EXHALE** – bend your knees and put your weight on the other buttock.
4. Repeat the movement on the other side.
5. Repeat for 3-4 times to each side.

ATTENTION:

- Remember that your body should balance your legs so try to press your palms firmly to the floor during the legs' movements. Keep extending of the spine in your thoracic and flexing in lumbar spine.
- Don't relax your shoulders, lift them or bend your elbows. Keep your shoulder blades stabilized.
- Concentrate on your abdominal and pelvic muscles in order to ease the tension of the front surface of hips.
- This is a breathing exercise so try to INHALE and EXHALE deeply.
- Keep your legs together. Imagine that you have one leg instead of two.
- Keep your body motionless during switching your weight from one buttock to the other.
- Don't bend your body laterally, rotate in the thoracolumbar spine
- Keep your navel pulled up to the spine. Do not let your belly to stick out forward.

REGRESSION:

- If you have destabilized shoulder blades or weakened center muscles, do not extend your legs to the diagonal. You should put your weight from one buttock to the other with your knees bent.
- You can also keep your toes on the floor (5e) or perform the extension of only one of your legs to the diagonal (5f).
- If you have any discomfort in your shoulder joints or wrists you can do the exercise forearm-supported (5g), in this position you could even perform the full circle by your legs if the strong center allows and you keep stabilizing your body. Try keeping your arms straight placing them wider than shoulder-width apart in order to ease shoulder joint discomfort (5h).

PROGRESSION:

- Perform HIP CIRCLES exercise.





Muscle analysis of an exercise (the main and auxiliary muscles):

6. MERMAID

AIM: *axial traction during the lateral (side) spine bend.*

PERFORMANCE:

1. **S.P. sitting on the right hip** – press your knees to each other, close your heels to your buttocks. Stretch the right straight arm of the same side straight up keeping your shoulder blades stabilized. Grab your ankles with your left hand (6a). Make a cycle of LIB in order to activate your center.
2. **INHALE** – lower your right arm down and lift your left arm simultaneously above your head while performing lateral bending. Keep your weight on your right buttock without switching it to your right arm (6b).
3. **EXHALE** –perform the lateral bending to the other side through the central position switching arms. Now your left arm is supporting and the right one is stretching above your head (6c).
4. Repeat for 3-4 times to each side. Switch legs and repeat the steps 2-4 the same number of times.

ATTENTION:

- Imagine that you perform the lateral bending supported by the wall. Your occiput, back and buttocks are pressing the wall and you are sliding along it to the side and back. Keep the stabilization of your neck, shoulder blades and the whole body.
- Start your side movements with pulling your navel up to your spine.
- Don't lean on your supporting arm while bending.
- Keep your knees and feet firmly pressed to each other and don't allow your body to lean on the side.
- Do not rotate your pelvis.

REGRESSION:

- If you have any discomfort keeping your legs in “Mermaid” position, interchange it to the “Reformer” position: place your right leg in front of your body and align your right shin to the parallel to the front edge of the mat (outward hip joint rotation) so your heel now is closer to your pubic symphysis. Bring your left leg backward (inward hip joint rotation) so your right foot is pressing the hip of your left leg. Lower your both ischial bones to the floor (one of your knees could slightly lift up) (6d). Perform steps 2-4 starting with your right leg in front of you, and then switch legs' position and repeat the movement (6e and 6f).
- You can also keep your legs crossed. In this case you don't have to change the position of your legs and you can perform only the lateral bending.



Muscle analysis of an exercise (the main and auxiliary muscles):

7. SIDE LIFT

AIM: *strengthening of arms and legs' muscles, axial traction, body stabilization and SIDE BAND preparation.*

PERFORMANCE:

1. **S.P. sitting on the side** – bend your knees, place your calf and feet backward, align your hips and shoulders in one plane. One leg is above the other. Your lower arm is leaning on the forearm, your upper arm is in front of your body. Stretch your neck, lower your shoulders and shoulder blades down (7a). Make a cycle of LIB in order to activate your center. INHALE.
2. EXHALE – lift your pelvis up, pushing it forward with your buttocks, rotating your iliac crests backward. Place your upper arm on your upper hip (7b).
3. INHALE/EXHALE – hold the lifted position of your pelvis during 3-5 breathing cycles of LIB. INHALE.
4. EXHALE – lower your body and pelvis to S.P.
5. Repeat for 2-3 sets, switch sides and repeat steps 2-4.

ATTENTION:

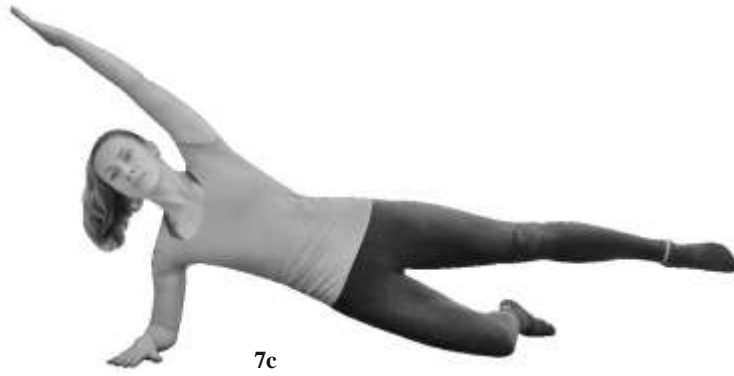
- Stabilize your body, lower your shoulders from ears and stabilize your shoulder blades.
- Don't relax your buttocks. Pull your navel up to your spine.
- Your iliac crests and shoulders should be aligned and in one plane.

REGRESSION:

- In case of weak stabilization of body and pelvis leave your upper arm in front of you for adding support and perform the exercise in dynamics: INHALE – pelvis up, EXHALE – pelvis down. Don't rotate your body forward after the supporting arm. Don't put your weight on it.

PROGRESSION:

- At the top of the movement, stretch your upper leg in the knee joint and lift it a bit higher. Stretch and extend your upper arm above your head (7c). Keep the position 3-5 cycles of LIB.
- Perform the dynamic version of the first progression, making an upper leg lift with an INHALE and lowering it with an EXHALE in the lifted position of your body and pelvis.
- Perform a side plank leaning on the forearm. Stretch your legs and align your body in line. Place your upper leg directly on the lower one. Press your feet together, your toes are directed to your body. Support on your forearm. Place your upper arm on your upper hip (7d). Lift your body and pelvis up with an EXHALE. Hold the position for 3-5 breathing cycles or perform a dynamic version: lift your pelvis and body up with an EXHALE; lift your upper leg with an INHALE (7e), lower it with an EXHALE. Repeat for 3-5 times and lower your pelvis and body to the starting position.



Muscle analysis of an exercise (the main and auxiliary muscles):

8. SIDE BEND

AIM: *axial traction in the lateral flexion, strengthening of arms and shoulders' muscles, as well as the wrist, obliques and thighs.*

PERFORMANCE:

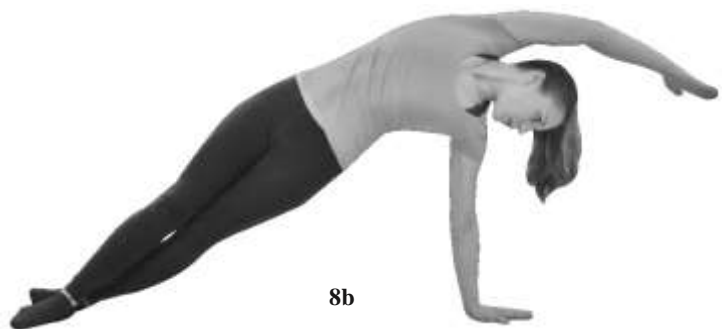
1. **S.P. sitting on the side** – bend your knees at the 100° angle and press them to each other. Place your upper foot a bit forward than the lower one. Supporting lower arm is stretched, your fingers are wide apart, directed to the side and firmly pressed to the floor. Align your palm, knees and upper foot to one level. Place your upper arm on your upper hip. Stretch the whole spine from coccyx to the top of your head (8a). Make a cycle of LIB in order to activate your center.
2. **INHALE** – perform a lateral flexion of the body, lifting your pelvis from the floor and stretching your legs in line simultaneously, and lift your upper arm above your head. At the top of the movement rotate your neck and gaze down on your supporting arm (8b).
3. **EXHALE** – return to the starting position, grab your ankles with your upper arm and perform a lateral flexion to the other side, bringing your legs closer to your buttocks (8c), as in the MARMAID exercise.
4. Repeat for 3-4 times.

ATTENTION:

- Stabilize your body, lower your shoulders from ears and stabilize your shoulder blades.
- Stretch your arm above your head and don't bend its elbow.
- Keep your supporting arm, shoulders and hips in one plane.
- Engage all of the center muscles to work actively.
- Don't use inertia in movements. Make it smoothly and mindfully.
- Don't rotate pelvis.

REGRESSION:

- In case of difficulties with performing the full version of this exercise or with holding the lifted body position supporting on your arm, you should separate the exercise into pieces. Learn the simple pelvic lift and lowering without upper arm engaging into work (you can try dynamic mode as well as static with holding the body in the upper position for several breathing cycles of LIB). The next level is adding stretching of your arm above your head to the body lift, without adding head downward rotation, you should gaze forward. Then unite all the parts, add the head rotation and lateral flexion to the other side.
- In case of pain in wrists, perform the exercise with the forearm's support.
- In case of the lack of balance in the side plank, perform this exercise from your knees. Place palm and knees on one line, place legs one above the other and press them to each other (8d). **INHALE** – with the support on your arm and knees lift your pelvis up (8e). **EXHALE** – lower pelvis down and perform lateral flexion to the other side.



Muscle analysis of an exercise (the main and auxiliary muscles):

9. SIDE KICKS SERIES II

AIM: *strengthening of the inner and outer thighs, hip joints' strength, stabilization and mobility development.*

PERFORMANCE:

1. **S.P. laying on the side I (Neutral)** – stretch your hand and both legs to create one line with your body. Align your body by placing head above the head, knee above the knee, iliac bone above the iliac bone and shoulder above the shoulder. Your toes are directing to your body. Bring your feet to the V-Pilates position. Place your head on your lower arm and bring the lower arm's shoulder joint under body in order to align it with the upper shoulder (as if you wanted to create an arch between the lower side surface and the floor). Put the bent upper arm in front of your chest, pressing the floor with your palm or fingers for added stabilization (9a).

***S.P. laying on the side II (Neutral)** (suitable for an individual training with client) – lay on your side, bring your feet to the V-Pilates position and place them forward at the 45° angle to your body. Toes are directed away from you. The lower arm supports your head. The elbow is on one line with your shoulder. There is an arch in your armpit and waist, ribs are laying on the floor between these two areas.

- 1.1. **FORWARD/BACK.** Take a starting position according to your physical condition level. Lift your upper leg to the hip joint height and rotate it to the V-Pilates position. INHALE – bend your straight leg in the hip joint, leg is moving forward (9b). EXHALE – perform extension/hyperextension in the hip joint, leg is moving backward (9c). Repeat for 5-10 times on each leg.

ATTENTION:

- Keep your body motionless.
- Focus on the leg stretching from the hip joint.
- Don't lower your foot down lower than the hip joint level. Leg is parallel to the floor all the time.
- Start with small amplitude increasing it only with the body stabilization developing.

- 1.2. **LEG BEATS.** Take a starting position according to your physical condition level. INHALE – lift your straight pressed to each other legs not too high from the floor. EXHALE – stabilize your body and engage your central muscles even more. Perform 5 heel beats with an INHALE and 5 beats with an EXHALE (9d). Repeat for 4-5 breathing cycles.

ATTENTION:

- Don't bend your knees but stretch both legs forward from your hip joints as far as you can.
- Keep your body motionless. Don't rock yourself.

- 1.3. **SIDE PASSE.** Take a starting position according to your physical condition level. INHALE – bend the upper knee and hip joint, directing the knee to the ceiling (9e). With the same INHALE stretch your leg in the knee joint and extend it upward vertically. EXHALE – flex your feet directing toes to the body and lower your straight leg down uniting your both legs in the V-Pilates position at the end of the motion. Repeat the exercise for 3-5 times and change the direction performing SIDE PASSE REVERSE.



1.4. **SIDE PASSE REVERSE.** INHALE – lift your straight leg up vertically keeping the rotation in your hip joint (V-Pilates position) (9f). EXHALE bend your knee and lower your foot on the inner thigh of the lower leg. Your knee is directed upward to the ceiling. Slide with your upper foot along the surface of the lower leg continuing an EXHALE. Stretch your leg uniting your feet in the V-Pilates position. Repeat the exercise for 3-5 times and perform the same to the other leg.

ATTENTION:

- Keep your upper body motionless for proper effectiveness of the exercise. Don't flex in your waist and "fall" in shoulders during the upward and downward leg motion.
- Control the leg position, don't rotate your hip, knee and foot inward.
- Keep moving smoothly, don't lift or lower the leg with inertia.

1.5. **INNER-THIGH LIFTS.** Laying on your side place your upper foot in front of the thigh of the lower one, rotate the upper knee directly to the ceiling (9g). **ATTENTION!** If you have any difficulties with holding the leg in vertical position without leaning backward you should lower it on the floor (don't put your weight on the leg at the same time, keep the body stabilization). INHALE – stretch your lower leg and lift it up, rotating the heel upward (V-Pilates position). EXHALE – lower the leg down without touching the floor or relaxing it. Perform 5-10 lifts.

**As an option you can keep the leg upward and perform 10 pulse movements or perform SMALL CIRCLES with your lower leg (see the tutorial "Pilates. Basic level").*

ATTENTION:

- Focus on the upward movement of your leg and don't lower it on the floor. The thigh should be lifted from the floor and leg should be fully straight.
- Keep your upper body straight and motionless.
- Don't put your weight on your upper arm.

9a





9b



9c



9d



9 e



9f



9g

Muscle analysis of an exercise (the main and auxiliary muscles):

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10. HEEL BEATS

AIM: *strengthening center muscles, as well as the back surfaces of thighs.*

PERFORMANCE:

1. **S.P. laying on the belly (Neutral)** – stretch your straight legs from hip joints backward and bring your feet to the V-Pilates position. Put your bent arms in front of you palm above the palm with their backside up. Lower your forehead on them. Relax your shoulders. Make a cycle of LIB in order to activate your center.
2. **INHALE** – squeeze your buttocks and lift your hips up from the floor, keeping your legs straight and pressed to each other.
3. **EXHALE** – holding the position pull your navel up to your spine even more.
4. **INHALE/EXHALE** – perform 5 heel beats with an INHALE and 5 heel beats with an EXHALE (10a and 10b).
5. Repeat for 3-4 LIB breathing cycles.

ATTENTION:

- Perform the heel beats with small amplitude. The movement is performed in your hip joints (abduction/adduction).
- Relax your upper back and shoulders during the leg movement. Keep your body motionless and don't rock yourself at the same time.
- Squeeze your buttocks firmly and flatten your stomach in order to ease the tension of the lumbar spine.
- Don't bend your knees and lower legs. Keep them as high as possible as the body stabilization allow.

REGRESSION:

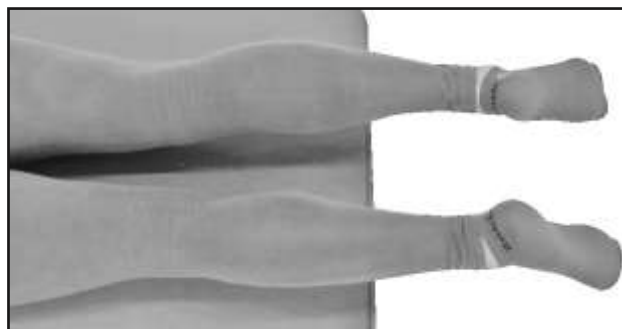
- In case of the lack of balance in the early stage of learning the exercise you can stretch your arms forward in front of you for added support.

PROGRESSION:

- After each cycle of 5 INHALES and EXHALES bring your heels closer to your buttocks, bending knees and keeping thighs upward, trying to stretch legs upward in this position.

** You can use this exercise as an option for switching sides during the SIDE KICKS SERIES performance for basic and intermediate level clients.*





Muscle analysis of an exercise (the main and auxiliary muscles):

11. SHOULDER BRIDGE II

AIM: *strengthening the back surfaces of thighs and gluteus muscles, as well as development of the spine mobility.*

PERFORMANCE:

1. **S.P. laying on the back (Neutral)** – bend your knees and put your feet pelvis-width apart parallel to each other. Stretch your arms along your body and firmly press your palms to the floor. Relax your neck, shoulders and lumbar spine in this position keeping your pelvis in the neutral position (11a). INHALE.
2. EXHALE – pull your navel up to your spine and start tilting your pelvis back. Lift your sacrum, lumbar spine, middle and upper parts of your back up alternately aligning your knees, iliac bones and shoulders to one line (11b).
3. INHALE – stretch your right leg vertically up keeping your pelvis and the whole body in the same position (11c).
4. EXHALE – perform the dorsiflexion of the foot and lower your straight right leg down as your pelvic stabilization allows (11d).
5. INHALE – perform the plantar flexion of the foot and lift your leg vertically up.
6. Perform 3-5 swings with your right leg.
7. EXHALE – lower your bent right leg on the floor.
8. Make an INHALE and lower your spine down vertebra by vertebra with and EXHALE.
9. Repeat the steps 2-8 for the left leg.

ATTENTION:

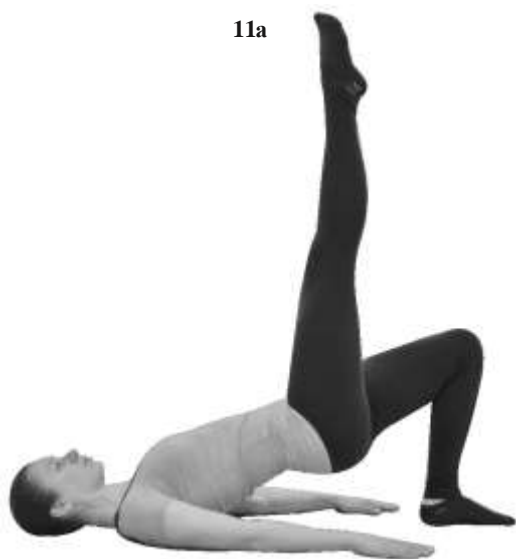
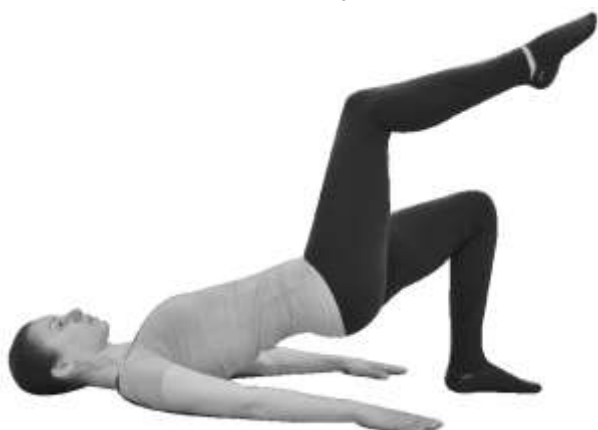
- Perform all the movements smoothly without inertia lifting up and lowering down the spine vertebra by vertebra.
- Keep lifted and motionless pelvic position during lifting the leg up or lowering it down. Press the supporting foot to the floor and squeeze your buttocks for added balance.
- Keep the rib cage stabilized and don't allow it to "roll on the chin", stretch your shoulders and shoulder blades downward and lengthen your neck through the top of your head forward.
- Lengthen your leg forward from the hip joint during swings keeping the pelvis stabilized.
- Focus on the neck position. Don't throw the neck back.
- Avoid the excessive sagging in your lower back and keep it in neutral position by your central muscles.

REGRESSION:

- In case of the lack of pelvic stabilization or if you have tight hamstrings in the upper position of the body you should perform the exercise with the 90° angle in the knee joint (11e). Bend the hip joint with an INHALE keeping the same angle in the knee joint and lower your leg down to the floor with an EXHALE keeping your pelvis stabilized. Repeat for the other leg.
- In case of the general weakness of your legs' muscles, perform this exercise with your legs pressed to each other (see SHOULDER BRIDGE I), making your leg straight in the upper position of the body and keeping the knees pressed to each other (11f).

PROGRESSION:

- Perform the double swing with your leg with the focus to the UPWARD movement.
- Perform 3-5 swings with each leg in the upper position of the body without the pause for the lowering of your body down.

**11a****11b****11c****11d****11e****11f**

Muscle analysis of an exercise (the main and auxiliary muscles):

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12. TEASER – PREPARATION

AIM: *to define the level of the central muscles and leg muscles development. To check the readiness for the next level of intensity and possibility to perform the full version of TEASER I.*

PERFORMANCE:

1. **S.P. laying on the back (Imprint)** – bend your legs to the 90° angle in the knee joint, bring them together and firmly press your feet to the floor. Keeping your shoulder blades stabilized bring your straight arms behind your head (12a). Perform a cycle of the LIB in order to activate your central muscles.
2. **INHALE** – lower your straight arms forward parallel to your legs and start to lift your head, shoulders and shoulder blades up from the floor simultaneously (12b). Stretch your arms diagonally upward until you feel the tension of your abdominal muscles. Lift your body fully to the sitting on the buttocks position creating the letter “V” with your hips and your body (12c).
3. **EXHALE** – lower your back down to the floor with the reverse order fully stretching your spine and keeping your feet on the floor. As soon as your head is on the floor lift your arms up above your head and stretch them maximally up keeping your shoulder blades stabilized.
4. Repeat for 4-5 times.

ATTENTION:

- Perform all the movements smoothly without inertia lifting up the spine vertebra by vertebra.
- In the final point of the “V” position, slightly straighten yourself up in your thoracic spine and bend yourself in your lumbar spine.
- In order to avoid the sagging in your lumbar pull your belly in strongly. The movement should start from the strong center.
- Avoid the lifting of your shoulders and shoulder blades up during the movements of arms.
- Don't lift yourself up with an inertia and fall down abruptly.
- Don't perform the exercise many times in a row due to the hard load for the whole body.
- Don't hold the breath.
- *During the performance of the exercise, you should not experience any painful feelings. You should stop if you feel any pain in your lumbar. Lay on your back and pull your knees to your chest in order to relax your lumbar spine. The full version of the Teaser as well as its' advanced modifications are recommended for performing in case of the high level of preparation because medics assume this exercise as quite risky.*

REGRESSION:

- Stretch one leg diagonally to the 45° angle from the starting position, rotate it to the V-Pilates position, keep your legs pressed to each other (12d) and perform steps 2-4 one your one leg and then to the other.

PROGRESSION:

- If you have tight hamstrings but strong center, bend your knees in order to decrease the torque, to lift your body up higher and to bring it closer to your hips (12e and 12f).



Muscle analysis of an exercise (the main and auxiliary muscles):

13. SINGLE LEG KICKS

AIM: *breathing exercise for hamstrings, upper back and arms strengthening as well as the central muscles.*

PERFORMANCE:

1. **S.P. laying on the belly** – lift your upper body up leaning on your forearms. Your elbows are strictly under your shoulders. Suck in your stomach bringing your navel close to your spine and pressing your pubic bone to the floor simultaneously. Lift your iliac crests up from the floor at the same time. Clench your palms into fists and press them to the floor. Stretch your legs and press them firmly to each other parallel. Stretch your neck forward and upward after the top of your head. The neck is continuing your spine (13a). Perform a cycle of LIB stretching your spine with an INHALE and pulling your navel up to your spine with an EXHALE. Make one more INHALE.
2. EXHALE – bend your right knee and try to touch your buttock with your right leg's heel performing two pulse movements (13b).
3. INHALE – stretch your right to the parallel to the left trying to keep the knees together.
4. EXHALE – bend your left leg.
5. Repeat the exercise 8-10 times for each leg.

ATTENTION:

- Keep your body lifted up from the floor by pushing to the floor with elbows, do not lower your stomach on the floor and over-bend in the lumbar spine.
- During the performance of leg swings, the body must remain motionless.
- Stretch your neck maximally forward and upward, do not “fall” in shoulders, keep your shoulder blades stabilized.
- Firmly squeeze your hips and buttocks to fully engage the hamstrings into work.
- Perform the pulse movements with small amplitude as if you wanted to press the heel to the buttock. Do not just swing your leg back and forth.
- **In case of the pain feelings appearance in your knees decrease the amplitude of the bending in the knee joint; in case of the painful feelings in the lumbar bring the pelvis back to the heels and relax your lumbar spine.**

REGRESSION:

- In case of the lack of body, lumbar spine and/or pelvis stabilization place your bent arms in front of you palm to palm with their backside up and lower your forehead on them (13c). Perform the swings without pulse movements.
- In case of problems with the knee joint, perform the knee banding slowly.

PROGRESSION:

- Add the FOOT WORK as a coordination progression: the first pulse movement – direct the toes to yourself (dorsiflexion of the foot), the second pulse movement – direct the toes away from you (plantar flexion of the foot).



13a



13b



13c

Muscle analysis of an exercise (the main and auxiliary muscles):

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14. DOUBLE LEG KICKS

AIM: *hamstrings, buttocks and lower back muscles strengthening; spinal traction as well as chest and shoulder joint muscles stretching.*

PERFORMANCE:

1. **S.P. laying on the belly (Neutral)** – rotate and lower your head down on one of the cheeks. Lock your fingers together behind your back palms up and place as close to your shoulder blades as possible but you should not experience any discomfort having your shoulders and elbows pressed to the floor. Stretch and press your legs to each other and direct your toes away from you (14a and 14b). INHALE.
2. EXHALE – bend your both knees and try to touch your buttocks with your heels by three pulse movements (14c).
3. INHALE – stretch your legs keeping them firmly pressed to each other and lift your chest up from the floor simultaneously stretching your arms directing backsides of your palms to the heels. Direct your head and gaze forward. Pull your navel up to your spine (14d).
4. EXHALE – lower your chest down to the floor rotating your head to the other side and placing locked palms to the S.P. and bend your knees by three pulse movements simultaneously.
5. Repeat the exercise 3-4 times for each side.

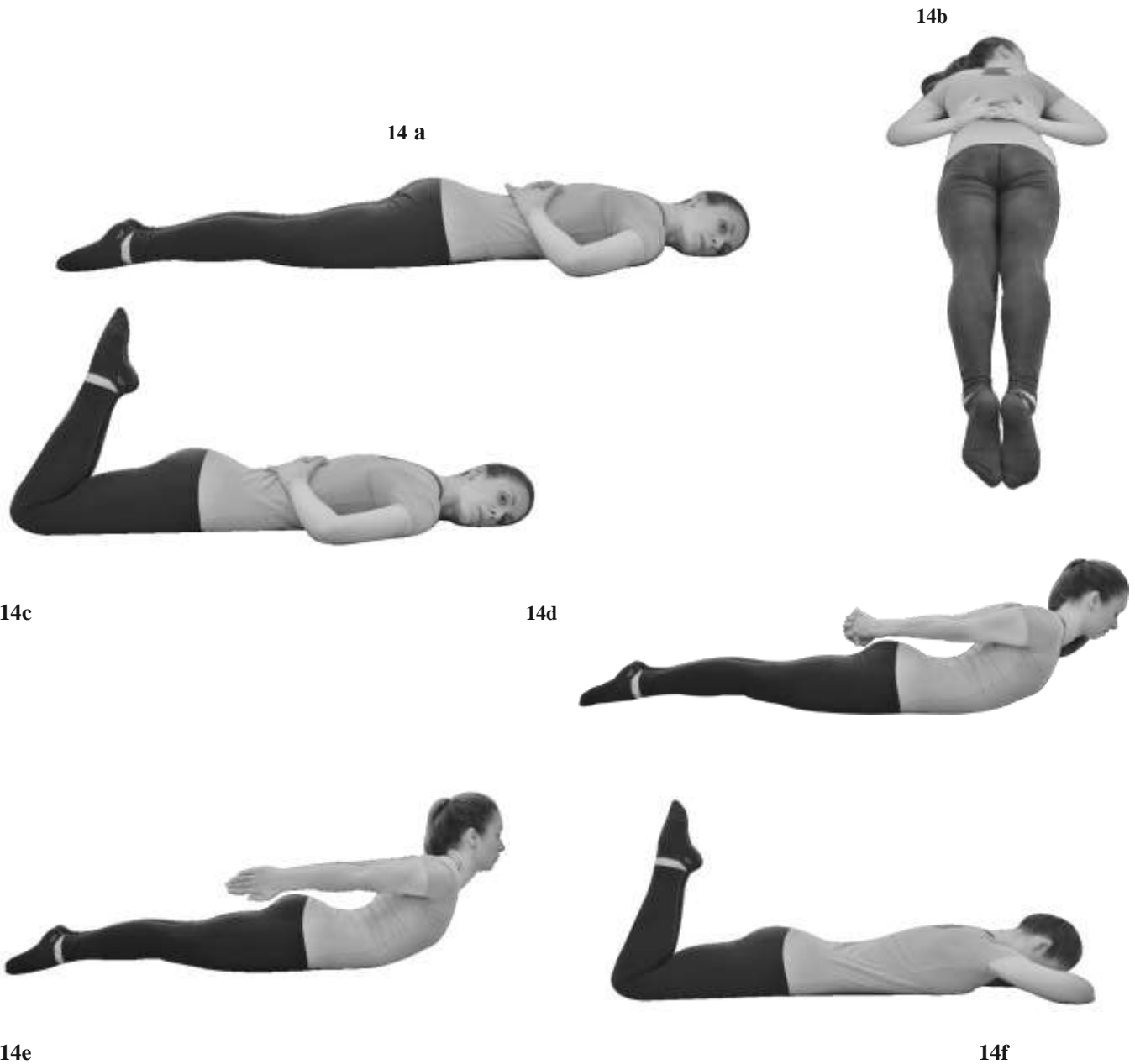
ATTENTION:

- In order to limit the front tilt of the pelvis keep your stomach muscles in tense during the whole time of performance of the exercise.
- Perform all the phases of the motion smoothly, stretch legs and lower your body down on the floor under control.
- Keep your pubic bone firmly pressed to the floor.
- Align your neck in one line with your spine while extending the spine and straighten your arms backward parallel to the floor. Avoid overextension in the cervical spine.
- Try to hold your feet on the floor when stretching your legs in order to decrease the lumbar spine tension.
- Do not lift your pelvis up from the floor during the bending of the legs.

REGRESSION:

- In case of the problems with the knee joints, perform the movement slowly or in the partly amplitude. In case of the pain in the knee joint, perform only the body extension.
- In case of problems with the shoulder joint or impossibility to lock your fingers behind your back, stretch your arms along your body and perform the thoracic spine extension stretching your straight arms parallel to the floor to the heels (14e).
- In case of the discomfort or pain in the lumbar spine, place your bent arms in front of your palm on palm backside up, lower your forehead on them and perform only leg swings (14f).

- In case of problems with the coordinating between the upper and lower parts of the body, perform the exercise separately to each of them: start with bending your knees 3-4 times and then perform body extension 3-4 times to each side.



Muscle analysis of an exercise (the main and auxiliary muscles):

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15. SWIMMING

AIM: *back muscles strengthening and stretching as well as hamstring muscles working.*

PERFORMANCE:

1. **S.P. laying on the belly (Neutral)** – stretch and extend your legs from the hip joints backward. Rotate them into the V-Pilates position and stretch your toes away from you. Stretch your straight arms in front of you shoulder-width apart palms down. Slightly lift your chest and head up from the floor. Extend your whole body. Gaze down and a bit forward (15a). Perform a cycle of LIB in order to activate central muscles.
2. **INHALE** – lift your arms and legs up from the floor simultaneously keeping the whole body extension without “fall” in the lumbar spine (15b).
3. **EXHALE** – slightly lower the right arm and the left leg down.
4. **INHALE/EXHALE** – perform 5 switches of arms and legs diagonally with an INHALE and 5 switches with an EXHALE (15c).
5. Perform 3-4 cycles of arms and legs switches.
6. **INHALE** – pause in the upper position.
7. **EXHALE** – slowly lower your legs and arms down. Perform the “child’s pose” as a compensation.

ATTENTION:

- Actively pull your navel to your spine during the exercise.
- Avoid the shoulder blades and shoulders’ lifting up during the arms’ movements and stretch them down to the legs.
- Strictly coordinate arms and legs’ movements, as they have to work in the opposite mode. Keep them straight and extended.
- Keep your body motionless and only engage your limbs.
- Avoid hyperextension in the cervical spine and stretch your neck forward after the top of your head.
- Do not rock your body and put weight alternately from one side to the other.

REGRESSION:

- In case of the problems with the coordination, perform the movement only with legs (15d) or only with arms, holding legs on the floor in the V-Pilates position. Then try to perform arms and legs’ movements in slow mode simultaneously: INHALE – switch, EXHALE – switch. Gradually increase the number of arms and legs switches up to 5 times.
- In case of problems with the shoulder joint, place your bent arms in front of your palm on palm backside up, lower your forehead on them and perform motion only with legs (15e).

PROGRESSION:

- Increase the speed of performance by increasing the number of arms and legs’ switches (more than 5 times) without losing exercise performance control and keeping coordination as well as increasing the length of an INHALE and EXHALE.



15a



15b



15c



15d



15e

Muscle analysis of an exercise (the main and auxiliary muscles):

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16. NECK ROLL (PREPARATION TO SWAN DIVE)

AIM: *back, shoulders and neck muscles strength and flexibility development as well as the Swan Dive performing preparation.*

PERFORMANCE:

1. **S.P. laying on the belly (Neutral)** – push your palms to the floor strictly under your shoulders, press your elbows to the body. Firmly press your legs to each other and stretch them into the V-Pilates position pressing your feet to the floor (16a). Perform a cycle of LIB in order to activate central muscles.
2. **INHALE** – pulling your navel to the spine start to extend arms and stretch the sternum upward performing the extension of the upper back. Gaze forward, stretch your neck upward holding the iliac crests and pubic bone on the floor (16b).
3. **EXHALE** – rotate your head to the right as if you wanted to look behind the back (16c).
4. **INHALE** – perform the lower roll on the chest with the head and turn your head to the left (16d).
5. **EXHALE** – bring your head to the center and lower your body down to the S.P.
6. Perform 2-4 liftings changing the head movement direction each time.

ATTENTION:

- Press your elbows to your body and do not allow them to move to sides.
- In order to support the lumbar spine keep your buttocks and back parts of your inner thighs firmly squeezed.
- Start the lifting of the body from bringing your shoulder blades to your spine and maximal bringing shoulders from ears.
- Bring your chest forward and up during the lifting keeping your shoulder blades stabilized. Do not throw your head back.
- Stretch your arms out as far as possible.

REGRESSION:

- At the early stage of learning the exercise, lean on the forearms instead of the palms.

PROGRESSION:

- At the upper position of the exercise, perform the half-round movement to each side one or several times depending on your lumbar spine feelings.



16a



16b



16c



16d

Muscle analysis of an exercise (the main and auxiliary muscles):

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17. SWAN DIVE PREPARATION

AIM: *strengthening the back and hamstring muscles, axial traction as well as stretching of the front surface of the body and legs.*

PERFORMANCE:

1. **S.P. laying on the belly (Neutral)** – push your palms to the floor placing them strictly under the shoulders and press the elbows to the body. Firmly squeeze and stretch your legs in V-Pilates position and press your feet to the floor. The neck is stretching forward in the neutral position and gaze directed to the floor (17a).
2. **INHALE** – start stretching your elbows and gradually perform the spinal traction from the neck to the lumbar stabilizing the shoulder blades and bringing the navel to spine at the same time. Direct your gaze in front of you, stretch your neck through the top of your head, lift your iliac crests from the floor and press your pubic bone firmly to the floor (17b).
3. **EXHALE** – turn back to the starting position.
4. Repeat the steps 2 and 3 for 3-4 more times.
5. **INHALE** – perform the step 2.
6. **EXHALE** – perform the roll forward bending the elbows and keeping the body extension (17c).
7. Repeat the steps 2 and 6 for 3-4 more times.
8. Make an **INHALE** and perform the step 2.
9. **EXHALE** – lift your arms up from the floor, bring your palms closer to your shoulders and perform the roll forward keeping your body extension (17d).
10. Repeat the steps 2 and 9 for 3-4 more times.

ATTENTION:

- Perform the extension using your back muscles strength instead of your arms.
- Avoid the hyperextension in your elbows.
- Start the motion from the shoulder blades stabilization and bringing the navel to the spine.
- Do not hold your breathing.
- Keep your legs firmly pressed to each other by squeezing your buttocks and inner thighs' muscles and keeping your hip joints outward rotation.
- Perform the “child's pose” after the exercise necessarily for lumbar relaxation.
- Keep your legs stretched and do not bend the knees.
- The body must keep “an arch” position during the roll.

REGRESSION:

- In case of the discomfort or pain appearing in the lumbar, perform the preparation exercise NECK ROLL.
- In case of the lumbar spine muscles stiffness, place your legs hip-width apart but keep the V-Pilates position of your legs.

PROGRESSION:

- The progression is the performance of the full SWAN DIVE exercise version (see in the tutorial on the course “Pilates. Advanced level”).



17a



17b



17c



17d

Muscle analysis of an exercise (the main and auxiliary muscles):

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THE INTERMEDIATE LEVEL PILATES PROGRAM

3. SINGLE LEG CIRCLES



1. HUNDRED



2. ROLL UP



4. ROLLING
LIKE A BALL



5. SLS



6. DLS



7. SSLS

8. DSLS



9. CRISSCROSS



10. SPINE STRETCH
FORWARD





11. SPINE TWIST



12. NECK ROLL



13. SWAN DIVE PREP



14. SL KICKS



15. DL KICKS



16. SIDE KICKS SERIES

- FORWARD/BACK
- IDE PASSE
- SIDE PASSE REVERSE
- INNER THIGH LIFTS



17. HEEL BEATS



18. TEASER PREPARATION



19. SEAL

OPTIONS OF THE INTERMEDIATE LEVEL PILATES PROGRAMS

Option 1

1. HUNDRED
2. ROLL UP
3. SINGLE LEG CIRCLES
4. ROLLING LIKE A BALL
5. SLS
6. DLS
7. SSLS REGRESSION
8. DSLS
9. CRISSCROSS REGRESSION
10. SPINE STRETCH FORWARD
11. SWAN DIVE PREPARATION
12. DOUBLE LEG KICKS
13. SWIMMING
14. SHOULDER BRIDGE II
15. SPINE TWIST
16. SIDE KICKS SERIES
17. TEASER PREPARATION
18. CANCAN
19. SIDE BAND
20. SEAL

Option 1

1. BREATHING
2. CHEST LIFT PROGRESSION
3. ASSISTED ROLL UP
4. ROLL DOWN
5. DEAD BUG **PROGRESSION**
6. HUNDRED
7. SIDE TO SIDE
8. SHOULDER BRIDGE II
9. SINGLE LEG CIRCLES
10. SLS
11. CRISSCROSS REGRESSION
12. BOOK OPENING
13. SIDE LIFT
14. ROLLING LIKE A BALL
15. SPINE STRETCH FORWARD
16. MERMAID
17. DART PROGRESSION
18. SWAN DIVE PREPARATION
19. QUDRAPTED
20. SEAL

Before starting this course, it is necessary to learn following courses:

The course «**Pilates. Mat 2**» is perfectly combined with the following course:

«Pilates. Props»