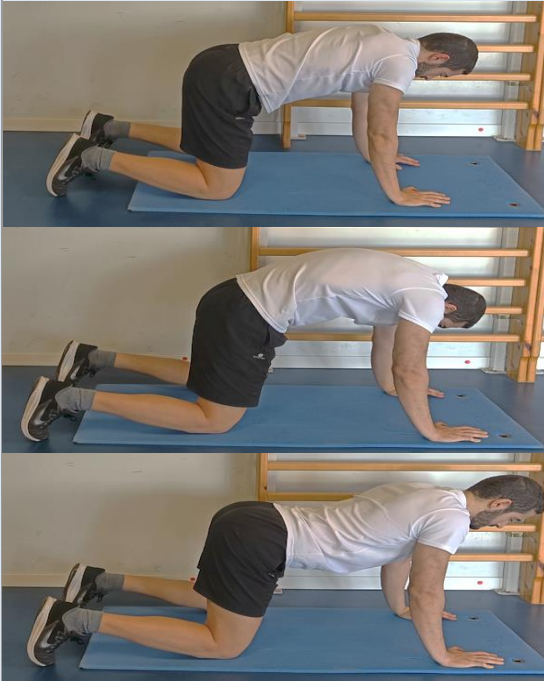


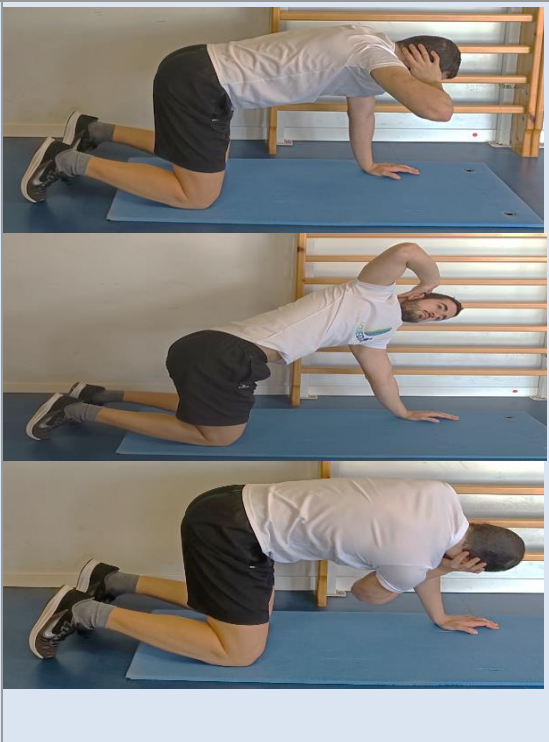
# File A5. Resistance exercise program of the AGUEDA trial: Paper guide

Below are descriptions of the exercises implemented in the AGUEDA project. Three trainings session per week with eight different exercises per session were provided to the participants. The training session lasted 60 minutes. The time between the training sessions was at least 48 hours. The exercises were divided into three levels and after 8 weeks the trainers increased the level of the exercises. In total, the training program took 24 weeks.

Necessary materials	Intensity recommended without supervision																																																																																																																									
<ul style="list-style-type: none"><li>Elastic resistance bands of different intensities*:<ul style="list-style-type: none"><li>Yellow-Soft</li><li>Red-Medium</li><li>Green-Strong</li><li>Blue-Extra Strong,</li><li>Black-Strong Special</li><li>Silver-Athletic</li><li>Gold-Olympic</li></ul></li><li>Step or drawer</li><li>Training mat</li><li>Chair</li><li>Tennis ball</li><li>4 points of elastic support or similar support: at the knee, hip, head and above our head</li></ul> <p>*The exercises with elastics bands should be carried out with a higher intensity of the elastic band in the second and three level.</p>	<ul style="list-style-type: none"><li>Three sets of each exercise with an intensity of 4-5 on the subjective perception of exertion scale (RPE; Figure 1) was recommended.</li><li>60 seconds of rest between sets.</li></ul> <div><p>How intense was the exercise?</p><table><tr><td>0</td><td>Rest</td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>1</td><td>Extremely easy</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>Very easy</td><td>😊</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>Easy</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td>Somewhat easy</td><td>😊</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>Hard</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td>Somewhat hard</td><td>😊</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td>Very hard</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>Really really hard</td><td>😊</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td>Extremely hard</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td>Maximal</td><td>😓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div>	0	Rest		1	2	3	4	5	6	7	8	1	Extremely easy										2	Very easy	😊									3	Easy										4	Somewhat easy	😊									5	Hard										6	Somewhat hard	😊									7	Very hard										8	Really really hard	😊									9	Extremely hard										10	Maximal	😓								
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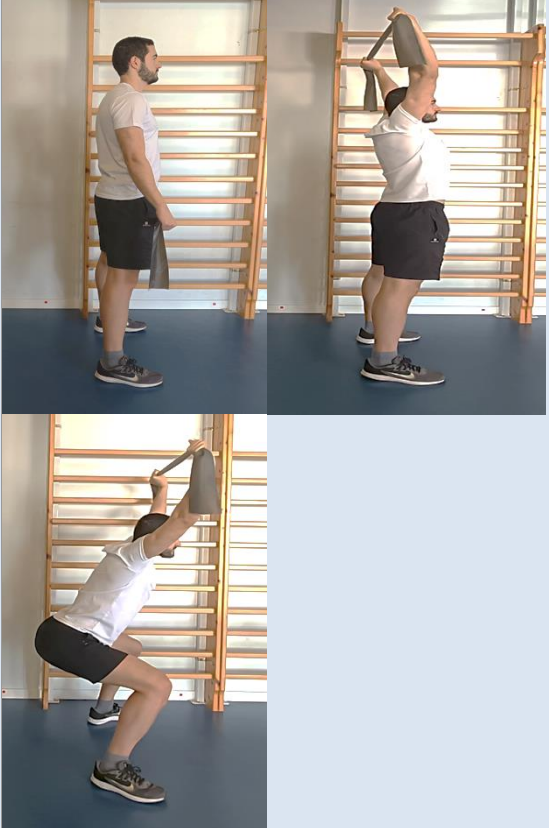
## Warm-up (8 minutes)

Exercise	Target muscle	Graphical presentation	Instruction
Cat-camel	Lumbar, thoracic, and cervical muscles		<p><b>Starting position:</b> Start on all fours on the mat and ensure that the knees are below the hips (bent at 90°) and the hands below the shoulders.</p> <p><b>Execution:</b> Go from a position of lumbar, thoracic and cervical neutrality to maximum positions of flexion (kyphosis and retroversion) raising the spine. Continue with the extension (lordosis and anteversion), moving the spine down.</p>



<p><b>Thoracic mobility</b></p>	<p>Extensor of the vertebral column</p>		<p><b>Starting position:</b> Start on all fours on the mat (knee bent at 90 °). Keep the arms straight. One hand is resting on the ground under the shoulder, while the other is placed on the lower part of the head near the neck.</p> <p><b>Execution:</b> Rotate the thorax as much as possible towards the straight arm while keeping the hand attached to the head.</p>
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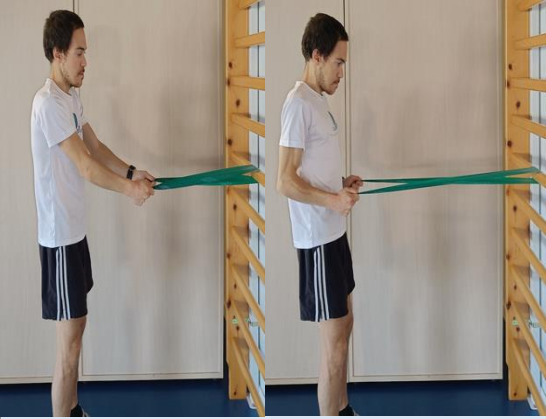



Ankle mobility	Dorsi flexors and plantar flexors		<p><b>Starting position:</b> Standing position with the hands placed on the hips and the feet in front of each other pointing towards the wall or a flat object.</p> <p><b>Execution:</b> Bend the front knee and the ankle as much as possible forward and try to touch the wall or object with the knee. The difficulty is increased by putting the feet more backward.</p>
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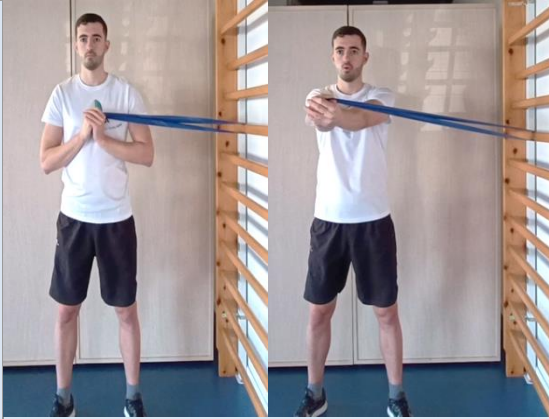

<p><b>Shoulder and hip mobility</b></p>	<p>Shoulder, spinal and hip flexors and extensors</p>		<p><b>Starting position:</b> Standing position.</p> <p><b>Elastic band position:</b> The elastic band is stretched to the maximum without exerting tension with straight arms.</p> <p><b>Execution:</b> Move the straight arms from the hips to above the head. Abducting the arms to generate tension in the elastic band. When the arms are above the head, perform a squat.</p>
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Exercise training (45 minutes)


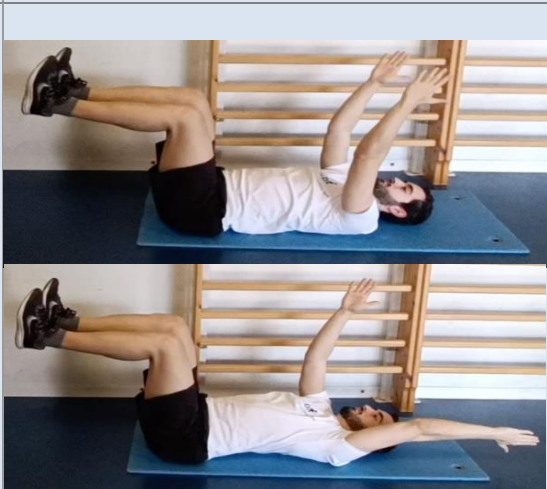
Level 1 – Training session 1			
Exercise	Target muscle	Graphical presentation	Instruction
Wall push up	Pectoral		<p><b>Starting position:</b> Standing position one meter in front of the wall. The hands are placed at the wall on shoulder height and width.</p> <p><b>Execution:</b> Bend the arms, so that the face approaches the wall as much as possible.</p> <p><b>Key points:</b> Maintain the plank position, push with the hands, and align the gluteus muscles with the trunk.</p>
Lunge	Quadriceps and gluteus		<p><b>Starting position:</b> Standing position with one foot in front of the other with the distance of approximately 0.6 m. Place the hands on the hips.</p> <p><b>Execution:</b> Bend both knees to approximately 90°. With this movement, the back knee is hovering just off the floor and the front knee and ankle are aligned. Return to the starting position by extending the knees. Perform 20" continuously with each leg</p> <p><b>Key points:</b> Align the front knee and the foot and push the feet against the floor.</p>


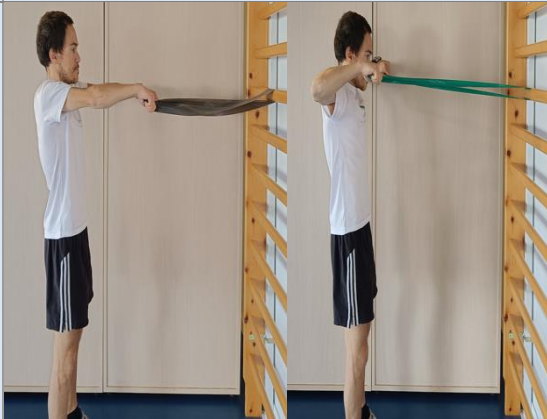
<p><b>Standing row*</b></p>	<p>Dorsal</p>		<p><b>Starting position:</b> Standing position with legs on hip-width. Elastic band in maximum elongation without tension and keep the arms straight.</p> <p><b>Elastic band position:</b> Umbilicus level.</p> <p><b>Execution:</b> Pull the elastic band towards the sides by bending the elbows. Roll the shoulders backwards. Perform a scapular retraction.</p> <p><b>Key points:</b> Keep the shoulders in a neutral position. Retract and try to bring the scapula together at the end of the movement.</p>
<p><b>Standing hip extension on step</b></p>	<p>Gluteus</p>		<p><b>Starting position:</b> Stand behind a step.</p> <p><b>Execution:</b> Step up on the step with one leg. Extend the back leg and maintain the back neutral. Perform 20'' continuously with each leg.</p> <p><b>Key points:</b> Push the foot against the step, squeeze the gluteus muscles of the back leg and maintain the alignment of the back during the extension.</p>




<p><b>Press Pallof</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Standing position with the elbows bent at 90° and the feet at hip-width. Grab the elastic band on the side at the maximum elongation without tension.</p> <p><b>Elastic band position:</b> Chest level.</p> <p><b>Execution:</b> Exhale, stretch the arms and hold for 3 seconds. Return to the starting position while inhaling. Focus on breathing when stretching the arms. Perform 20” continuously to each side.</p> <p><b>Key points:</b> Control the breathing, move slowly, and controlled during the eccentric phase.</p>
<p><b>Lat Pulldown*</b></p>	<p>Latissimus dorsi and trapezius</p>		<p><b>Standing position:</b> Standing position with the feet on hip-width. The elastic band is in maximum elongation without tension with the arms straight.</p> <p><b>Elastic band position:</b> Above the head.</p> <p><b>Execution:</b> Pull the hands towards the hips with the elbows slightly bent. The hip is slightly tilted forward.</p> <p><b>Key points:</b> Keep the elbows in a fixed position and pull from the elbow.</p>



<p><b>Isometric glute bridge for hamstring</b></p>	<p>Hamstring and gluteus</p>		<p><b>Starting position:</b> Supine position with bent knees and feet at hip-width, heels on the mat and toes pointing at the ceiling.</p> <p><b>Execution:</b> Move the hip towards the ceiling while keeping the spine neutral and the scapulas flat against the floor. Hold the contraction at the point of maximal hip extension. Then lower the hip to starting position in a controlled manner.</p> <p><b>Key points:</b> Perform pelvic retroversion and squeeze the gluteus muscles when hip is high. Push the feet and hands against the floor.</p>
<p><b>Modified dead bug</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Supine position with straight arms pointing towards the ceiling. Knees are bent at 90°.</p> <p><b>Execution:</b> Move one arm back with the elbow straight and return to the starting position. Repeat with the other arm.</p> <p><b>Key points:</b> Keep the lumbopelvic controlled, the spine neutral and maintain the abdominal muscles contracted.</p>

Level 1 – Training session 2			
Exercise	Target muscle	Graphical presentation	Instructions
Squat with crossed arms	Quadriceps and gluteus		<p><b>Starting position:</b> Standing position in front of the chair with the legs at hip-width and the hands crossed on the chest.</p> <p><b>Execution:</b> Lower into a squatting position and lightly touch the chair, then get up from the chair.</p> <p><b>Key points:</b> Push with the legs to get up from the chair, keep the knees aligned with the legs during the whole exercise.</p>
Standing face pull *	Trapezius		<p><b>Starting position:</b> Standing position with the feet at hip-width and grab the elastic band with straight arms in pronation with maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Nose height.</p> <p><b>Execution:</b> Pull the elbows towards the face and bend the elbows to 90°. Keep the elbows on shoulder-height.</p> <p><b>Key points:</b> Keep the elbows at shoulder-height, and the shoulders down.</p>

<p><b>Calf-raise</b></p>	<p>Calf</p>		<p><b>Starting position:</b> Standing behind the chair or in front of the wall.</p> <p><b>Execution:</b> Raise the heels as far as possible and hold for 1 second. Return to the starting position in a controlled manner.</p> <p><b>Key points:</b> Push the feet against the floor and perform the full range of motion. The chair or wall are only there to maintain balance.</p>
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### Modified Turkish get-up





**Starting position:** Standing position on the mat.

**Execution:** Move one leg back, place both hands on the floor (for support) and sit on the mat. Then, stretch the legs. Finally, move the legs back and stand up.



**Key points:** Bend the front knee at 90° and push the front leg against the floor.



<p><b>Woodcutter *</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width, and the arms straight with one arm crossed in front of the body. Hold the elastic band in maximum elongation but without tension laterally.</p> <p><b>Elastic band position:</b> Knee height.</p> <p><b>Execution:</b> Push the hands from the hip (near the anchor) to the opposite shoulder. The arms are straight during the movement. Perform 20'' continuously to each side.</p> <p><b>Key points:</b> Strengthen the core and exhale when performing the concentric phase.</p>
<p><b>Glute bridge</b></p>	<p>Gluteus</p>		<p><b>Starting position:</b> Supine position with bent knees and feet at hip-width.</p> <p><b>Execution:</b> Move the hip towards the ceiling and keep the spine neutral and the scapulas flat against the floor. Hold the contraction at the maximum height of the hip extension. Then, lower the hip in a controlled manner to the starting position.</p> <p><b>Key points:</b> Perform pelvic retroversion, squeeze the gluteus muscles at the top, and push the feet and hands against the floor.</p>




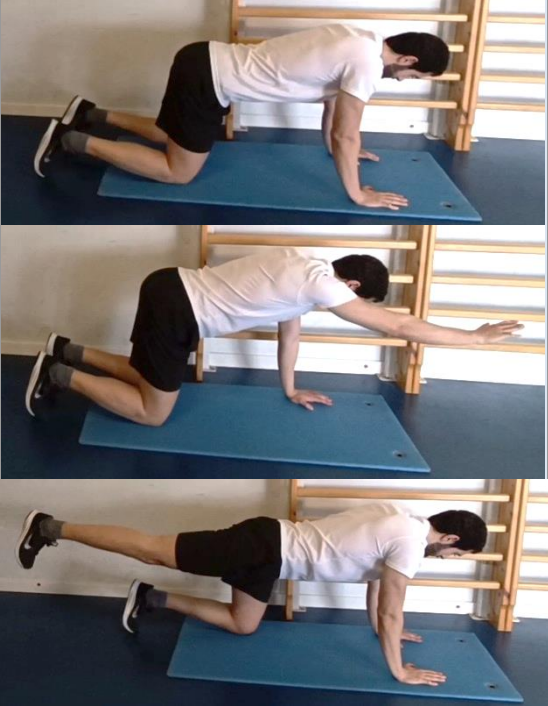
<p><b>Kneeling plank</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Prone position with the forearms supported on the mat. The knees and feet are at hip-width on the mat.</p> <p><b>Execution:</b> Raise the hip and keep the knees and feet on the mat. The trunk is parallel position with the mat and the elbows are bent at 90°. Hold the position for 10 seconds and return to the starting position.</p> <p><b>Key points:</b> Strengthen the gluteus muscles and core and maintain the lumbopelvic in a neutral position. Exhale during the concentric phase.</p>
<p><b>Bilateral press *</b></p>	<p>Pectoral</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width, elbows bent and the back towards the anchor point. Grab the elastic band in pronation with maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Chest height.</p> <p><b>Execution:</b> Push the hands forward by extending the arms. Elbows are pointing to the floor. Then, return to starting position.</p> <p><b>Key points:</b> Strengthen the core during the exercise. Keep the shoulders at the same height and push with the chest muscles.</p>



<p><b>Lateral lunge</b></p>	<p>Quadriceps, gluteus and abductor.</p>		<p><b>Starting position:</b> Standing position with the legs spread at 0.5m.</p> <p><b>Execution:</b> Bend one of the knees to approximately 90° and accompany the movement with the trunk. Push with the bent leg to return to the starting position. Perform 20'' continuously with each leg.</p> <p><b>Key points:</b> Keep the legs wide to allow to bend the leg. Align the knee with the foot and while returning push from the floor with the leg.</p>
<p><b>Triceps kickback *</b></p>	<p>Triceps</p>		<p><b>Starting position:</b> Standing position with the elbows bent at 90° and keep them close to the body. Grab the elastic band in a neutral manner at maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Elbow height.</p> <p><b>Execution:</b> Pull the hands backward and extend the elbows until the arms are straight.</p> <p><b>Key points:</b> Keep the elbows and shoulders in a fixed position.</p>

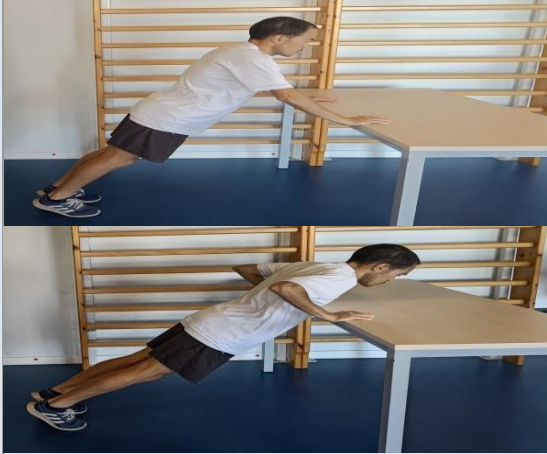

<p><b>Deadlift *</b></p>	<p>Hamstring and gluteus</p>		<p><b>Initial position:</b> Standing position with the feet at hip-width. Place the elastic band underneath the feet and grasp it crossed. The knees are semi-bent.</p> <p><b>Elastic band position:</b> Underneath the feet.</p> <p><b>Execution:</b> Perform a hip hinge by pushing the hips backwards, flexing it until the back goes to tilt. Return to starting position by moving the hips forward.</p> <p><b>Key points:</b> Maintain the spine in neutral position and push the feet against the floor during the exercise.</p>
<p><b>Seated shoulder press *</b></p>	<p>Deltoid</p>		<p><b>Starting position:</b> Sitting position with legs fully supported. Pass the elastic band under the seat of the chair and grab it neutrally.</p> <p><b>Elastic band position:</b> Under the chair seat.</p> <p><b>Execution:</b> Push the arms up until elbows are straight. Align the wrists with the arm during the exercise.</p> <p><b>Key points:</b> Push from the feet to the shoulder.</p>

<p><b>Hip abduction</b></p>	<p>Abductor and gluteus</p>		<p><b>Starting position:</b> Lying on the mat in lateral decubitus position. Core is supported by the elbow, which is bent at 90°. The other hand is placed on the hip.</p> <p><b>Execution:</b> Raise the upper leg. Maintain the alignment of the trunk and hips to keep the upper body in the initial position. Perform 20'' continuously with each leg.</p> <p><b>Key points:</b> Squeeze the gluteus muscles at the end of the movement and maintain the alignment of the foot with the knee.</p>
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<p><b>Modified bird-dog</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Start on all fours with the knees bent at 90° and the arms straight. The hands are at shoulder-width.</p> <p><b>Execution:</b> Move one arm up, exhale during the movement, and return to starting position. Repeat the exercise with the other arm. Then, extend one leg, exhale during the movement, and return to starting position. Repeated with the other leg.</p> <p><b>Key points:</b> Maintain lumbopelvic in neutral position. Keep the balance throughout the movement and strengthen the core. Push from the foot.</p>
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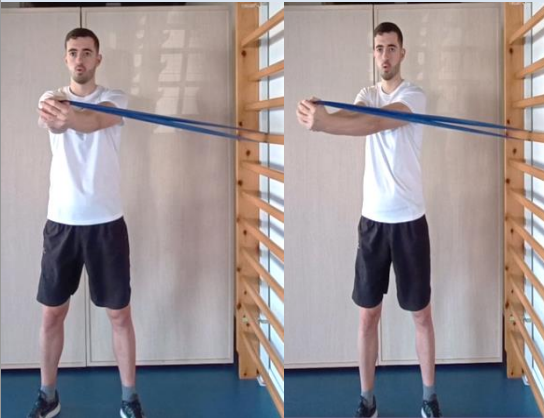
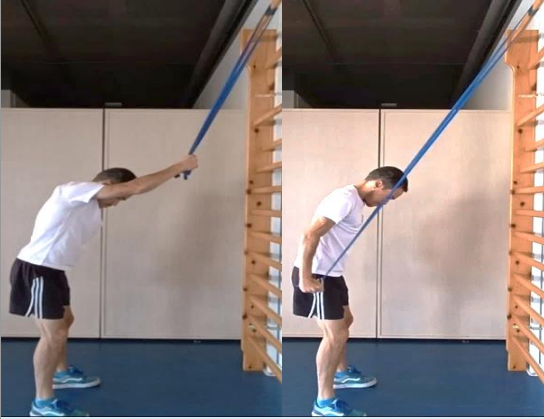




<b>Modified superman</b>	Lumbopelvic musculature		<p><b>Starting position:</b> Lying and in prone position. The arms are on the ground with the hands in front of the face. Elbows are bent about 45°, and the head is resting on the floor.</p> <p><b>Execution:</b> Raise the trunk in a controlled manner, and exhale. Return to the starting position and inhale.</p> <p><b>Key points:</b> Control the breathing and movement and keep the neck neutral.</p>
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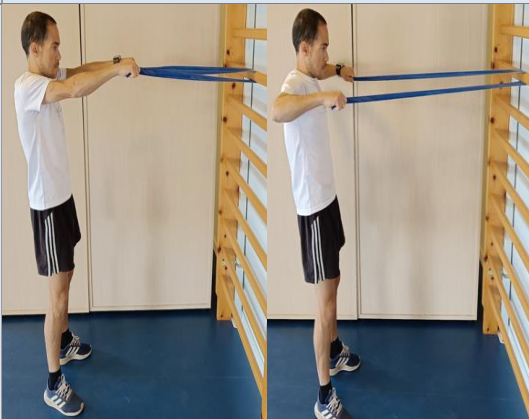
Level 2- Training session 1			
Exercise	Target muscle	Graphical presentation	Instructions
Incline push up	Pectoral		<p><b>Starting position:</b> Standing position one meter in front of the object (e.g., a table). Place the hands on the edge of the table slightly wider than shoulder-width. Arms are straight.</p> <p><b>Execution:</b> Bend the arms, so that the chest approaches the object as much as possible. Hold for a second, extend the arms and return to starting position.</p> <p><b>Key points:</b> Maintain a plank position, push with the hands, and align the gluteus muscles and the trunk.</p>
Walking lunge	Quadriceps and gluteus		<p><b>Starting position:</b> Standing position, with one leg in front of the other and with approximately 0.6m. Back leg stands on the toes and the hands are placed on the hips.</p> <p><b>Execution:</b> Bend both knees to 90°. Stand back up and lift the back foot from the ground. Swing the back foot forward and step forward. Repeat the movement by alternating both legs.</p> <p><b>Key points:</b> Align the front knee and leg, push the foot against the floor, and push with the front leg.</p>




<p><b>Standing row*</b></p>	<p>Dorsal</p>		<p><b>Starting position:</b> Standing position with legs on hip-width. Elastic band in maximum elongation but without tension and keep the arms straight.</p> <p><b>Elastic band position:</b> Umbilicus level.</p> <p><b>Execution:</b> Pull the elastic band towards the sides by bending the elbows. Roll the shoulders backwards. Perform a scapular retraction.</p> <p><b>Key points:</b> Keep the shoulders in a neutral position. Retract and bring the scapula together at the end of the movement.</p>
<p><b>Standing hip extension on step*</b></p>	<p>Gluteus</p>		<p><b>Starting position:</b> Stand behind the step. Put one foot on the step and stand on the end of the elastic band.</p> <p><b>Elastic band position:</b> Ends of the elastic band under the foot and the loop around the back ankle.</p> <p><b>Execution:</b> Extend the front leg and move slightly forward. Extend the back leg while maintaining the back straight. Perform 25'' continuously with each leg.</p> <p><b>Key points:</b> Push the foot against the step, squeeze the gluteus muscles of the back leg and keep the back straight during the extension.</p>

<p><b>Press pallof *</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Standing position with the elbows bent at 90° and the feet at hip-width. Grab the elastic band on the side at its maximum elongation but without tension and hold against the chest.</p> <p><b>Elastic band position:</b> Chest level.</p> <p><b>Execution:</b> Exhale and slowly press the band away by extending the arms. Perform 3 small bounces to the opposite side. Return to the starting position while inhaling. Focus on breathing when extending the arms. Perform 25'' continuously to each side.</p> <p><b>Key points:</b> Control the breathing. During the eccentric phase, move slowly and controlled.</p>
<p><b>Lat Pulldown*</b></p>	<p>Latissimus dorsi and trapezius</p>		<p><b>Standing position:</b> Standing position with the feet on hip-width. The arms are straight, and the elastic band is in maximum elongation without tension.</p> <p><b>Elastic band position:</b> Above the head.</p> <p><b>Execution:</b> Pull the hands towards the hips with the elbows slightly bent. The hip is slightly tilted forward.</p> <p><b>Key points:</b> Keep the elbows in a fixed position and pull from the elbow.</p>

<p><b>Single leg glute bridge hamstring</b></p>	<p>Hamstring and gluteus</p>		<p><b>Starting position:</b> Supine position with one bent knee and the other straight in the air. Feet are at hip-width.</p> <p><b>Execution:</b> Move the hip towards the ceiling, keep the spine neutral and the scapulas flat against the floor. Lift the hips as high as possible. Then, lower the hip in a controlled manner to the starting position. Perform 25” continuously with each foot.</p> <p><b>Key points:</b> Perform pelvic retroversion, squeeze the gluteus muscles at the top, and push the feet and hands against the floor.</p>
<p><b>Dead bug</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Supine position with straight arms pointing towards the ceiling. Knees are bent at 90°.</p> <p><b>Execution:</b> Move one arm backwards with the elbows straight. Simultaneously, extend the opposite leg, and return both the hand and leg to starting position. Repeat with the opposite side.</p> <p><b>Key points:</b> Keep the lumbopelvic controlled, the spine neutral, and the abdominal muscles contracted.</p>

Level 2 – Training session 2			
Exercise	Target muscle	Graphical presentation	Instructions
Squat	Quadriceps and gluteus		<p><b>Starting position:</b> Standing position with the legs hip-width.</p> <p><b>Execution:</b> Lower into a squatting position and keep the lumbar in a neutral position. During this movement, the hip, knee and ankle are bent. After this, extend the legs and return to starting position.</p> <p><b>Key points:</b> Push with the legs to get up and keep the knees aligned with the legs during the whole exercise.</p>
Standing face pull *	Trapezius		<p><b>Starting position:</b> Standing position with the feet at hip-width and arms straight. Grab the elastic band in pronation with maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Nose height.</p> <p><b>Execution:</b> Pull the elbows towards the face and bend the elbows at 90°. Keep the elbows on shoulder-height.</p> <p><b>Key points:</b> Keep the elbows at shoulder-height and the shoulders down.</p>

<p><b>Single leg standing calf-raise</b></p>	<p>Calf</p>		<p><b>Starting position:</b> Standing behind a chair or in front of the wall. Stand on one leg and keep the foot in the air.</p> <p><b>Execution:</b> Raise the heel as far as possible and hold. Return to the starting position in a controlled manner. Perform 25” continuously with each foot.</p> <p><b>Key points:</b> Push the foot against the floor and perform the full range of motion. The chair or wall are only there to keep the balance.</p>
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## Turkish get-up





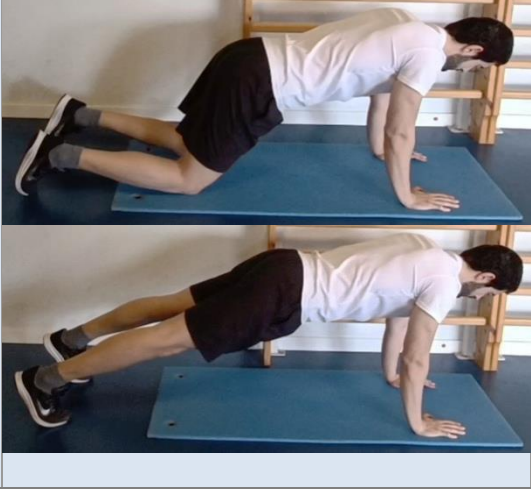

**Starting position** (performed with the right arm):  
Supine position on the mat with the right leg bent at 45°. Straight left arm and leg on the side with an angle of 45°.



**Execution:** Get up with the help of the left forearm. Next, use the arms to support and raise the hips until the right thigh is parallel to the mat. Raise the trunk and slide the left leg behind with the foot pointing to the right. When an upright position is established, push with the front leg to get up. Reverse the order of the movement to complete a repetition and return to starting position.



**Key points:** Keep stability in every step of the movement and push with the front foot against the ground while getting up.



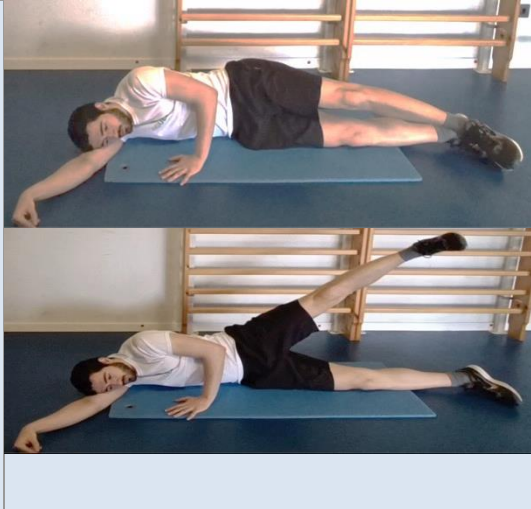

<p><b>Woodcutter rotation*</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width, and the arms straight. On the side, grab the elastic band in maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Knee height.</p> <p><b>Execution:</b> Push the hip near the anchor to the opposite shoulder. The arms are straight during the movement. Simultaneously, perform a 90° body rotation, and finish with the back towards the anchor. Perform 25” continuously to each side.</p> <p><b>Key points:</b> Strengthen the core and exhale during the concentric phase.</p>
<p><b>Single leg glute bridge</b></p>	<p>Hamstring and gluteus</p>		<p><b>Starting position:</b> Supine position with one bent knee and the other straight in the air. Feet are at hip-width.</p> <p><b>Execution:</b> Move the hip towards the ceiling, keep the spine neutral and the scapulas flat against the floor. Lift the hip as high as it possible. Then, lower the hip in a controlled manner to the starting position. Perform 25” continuously with each leg.</p> <p><b>Key points:</b> Perform pelvic retroversion, squeeze the gluteus muscles at the top, and push the foot and hands against the floor.</p>

<p><b>Modified plank</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Prone position with straight arms at shoulder-width. Feet are at hip-width.</p> <p><b>Execution:</b> Bend one knee and rest the knee on the mat. Repeat on the other side. After this, extend both legs to return to starting position.</p> <p><b>Key points:</b> Strengthen the gluteus muscles and core, keep the lumbopelvic in neutral position and exhale during the concentric phase.</p>
<p><b>Unilateral press *</b></p>	<p>Pectoral</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width. The back is turned towards the anchor point and the arms are straight. Grab the elastic band in pronation at its maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Chest height.</p> <p><b>Execution:</b> Bend one elbow to 90° and push this arm forward to the starting position. Perform 25'' continuously with each arm.</p> <p><b>Key points:</b> Strengthen the core during the exercise, keep the shoulders at the same height, and push with the chest.</p>

<p><b>Walking lateral lunge</b></p>	<p>Quadriceps, gluteus and abductor.</p>		<p><b>Starting position:</b> Standing position with the legs 0.5m apart.</p> <p><b>Execution:</b> Take a step to the side, feet parallel and look straight ahead. Next, bend the leg 90°. Extend the bent leg and place next to the opposite leg causing a lateral displacement. Perform 25'' continuously with each leg.</p> <p><b>Key points:</b> Distance the step to allow the bending of the leg, push off the floor with the bent leg and align the knee with the foot.</p>
<p><b>Triceps kickback with inclination *</b></p>	<p>Triceps</p>		<p><b>Starting position:</b> Standing position with knees slightly bent and the hip and arms bent at 45° and 90°, respectively. Elbows are close to the body. Grab the elastic band in a neutral grip at maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Elbow height.</p> <p><b>Execution:</b> Push the hands backwards by extending the elbow until the arms are straight.</p> <p><b>Key points:</b> Keep the elbows and shoulders fixed.</p>

<p><b>Deadlift *</b></p>	<p>Hamstring and gluteus</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width and the knees slightly bent. Step on the middle of the elastic band and grab it cross-manners.</p> <p><b>Elastic band position:</b> Underneath the feet.</p> <p><b>Execution:</b> Perform a hip hinge by moving the hip backward and forward. Return to the starting by standing up straight.</p> <p><b>Key points:</b> Keep the spine in neutral position and push the feet against the floor during the exercise.</p>
<p><b>Seated shoulder press *</b></p>	<p>Deltoid</p>		<p><b>Starting position:</b> Sitting position and pass the elastic band under the seat of the chair. Grab the elastic band neutrally.</p> <p><b>Elastic band position:</b> Underneath the seat of the chair.</p> <p><b>Execution:</b> Push the arms above the head until the arms are straight. Align the wrists with the arm during the movement.</p> <p><b>Key points:</b> Push from the feet to the shoulder.</p>





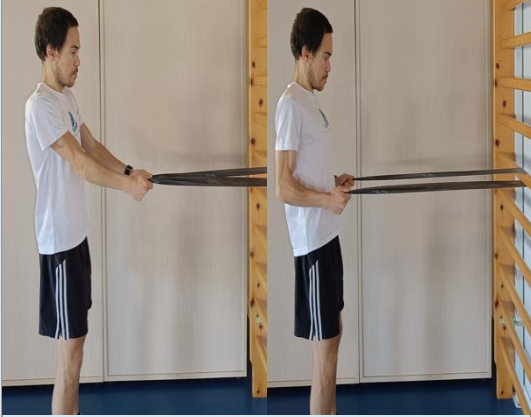

<p><b>Side lying hip abduction</b></p>	<p>Gluteus and abductor</p>		<p><b>Starting position:</b> Lateral decubitus. One elbow supports the body and is bent at 90°. The other hand is placed on the hip.</p> <p><b>Execution:</b> Raise the upper leg and keep the upper body in the same position and still. Lower the leg and return to the starting position. Repeat the exercise. Perform 25'' continuously with each leg.</p> <p><b>Key points:</b> Squeeze the gluteus muscles at the end of the movement. Keep the alignment of the tip of the foot with the knee. Move the foot as high as possible.</p>
<p><b>Bird-dog</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Start on all fours (knees bent at 90°) with the arms straight. The hands are at shoulder-width.</p> <p><b>Execution:</b> Move the arm up, exhale during the movement. Simultaneously, extend the opposite leg while keeping the ankle at 90°. Return to the starting position. Repeat on the opposite side.</p> <p><b>Key points:</b> Keep the lumbopelvic in neutral position. Keep the balance throughout the movement and strengthen the core.</p>






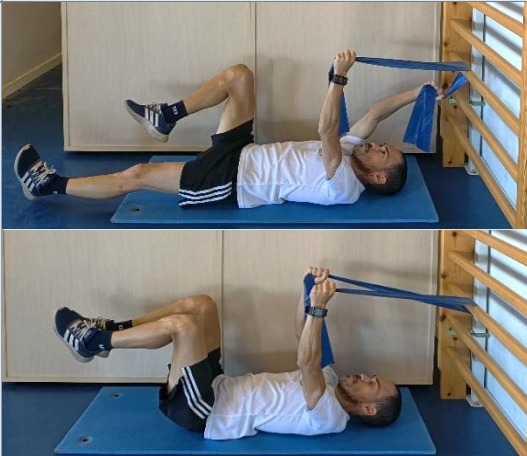
Superman	Lumbopelvic musculature		<p><b>Starting position:</b> Prone position with the legs and arms straight. Arms are above the head on the floor. The head is resting on the floor.</p> <p><b>Execution:</b> Raise the arms and legs until the feeling that the lower back muscles are contracting. Engage the glutes, the core, and the muscles between the shoulder blades simultaneously.</p> <p><b>Key points:</b> Control the breathing, contract the gluteus muscles at the end of the movement and keep the neck neutral.</p>
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Level 3 – Training session 1			
Exercise	Target muscle	Graphical presentation	Instructions
Push ups	Pectoral		<p><b>Starting position:</b> Prone position. Knees and hands resting on the mat at shoulder-width. The elbows are bent 90°.</p> <p><b>Execution:</b> Bend the arms, so that the chest approaches the mat as much as possible. Hold and extend the arms. Return to the starting position and repeat.</p> <p><b>Key points:</b> Maintain the plank position, push with the hands and align the gluteus muscles and the trunk.</p>
Bulgarian squat	Quadriceps and gluteus		<p><b>Standing position:</b> Standing position, with one foot on the step and the other on the floor. Distance between the feet is 0.5 m.</p> <p><b>Execution:</b> Bend both knees. The back knee is bent as much as possible and return to the starting position. Perform 30'' continuously with each leg.</p> <p><b>Key points:</b> Push with the front leg, and keep the knees aligned with the legs.</p>

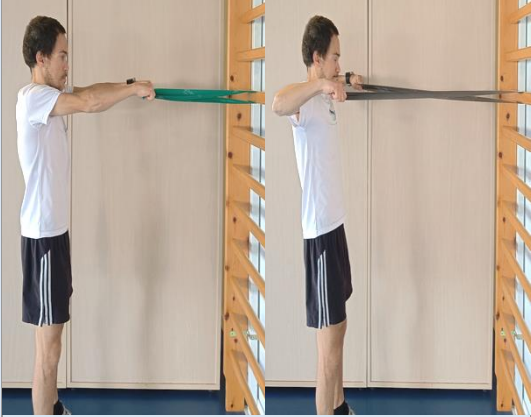

<p><b>Standing row</b> *</p>	<p>Dorsal</p>		<p><b>Starting position:</b> Standing position, legs at the hip-width and arms straight. Elastic band in maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Umbilicus level.</p> <p><b>Execution:</b> Pull the elastic band with the elbows close to the sides. Roll the shoulders back and perform a scapular retraction.</p> <p><b>Key points:</b> Keep the shoulders in a neutral position, retract and bring the scapulas together at the end of the movement.</p>
<p><b>Step-ups</b></p>	<p>Quadriceps and gluteus</p>		<p><b>Starting position:</b> Standing position before the step.</p> <p><b>Execution:</b> Step up the step with one leg. Swing the back leg forward and bend the hip and knee with 90°. Simultaneously, bend the arm of the standing leg at 90° in which the "runner's position" is stood. Perform 30" continuously with each leg.</p> <p><b>Key points:</b> Push the feet into the step when the movement is starting. Strengthen the core and maintain the spine in neutral position.</p>

<p><b>Press Pallof *</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Standing position with the elbows bent at 90° and the feet at hip-width. Grab the elastic band on the side, at its maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Chest level.</p> <p><b>Execution:</b> Exhale and slowly press the band away by extending the arms. Inhale, and move the straight arms above the head while exhaling. Inhale and return to starting position. Perform 30'' continuously to each side.</p> <p><b>Key points:</b> Control the breath. During the eccentric phase, move slowly and controlled.</p>
<p><b>Lat Pulldown*</b></p>	<p>Latissimus dorsi and trapezius</p>		<p><b>Standing position:</b> Standing position with the feet on hip-width. The elastic band is in maximum elongation without tension with the arms straight.</p> <p><b>Elastic band position:</b> Above the head.</p> <p><b>Execution:</b> Pull the hands towards the hips with the elbows slightly bent. The hip is slightly tilted forward.</p> <p><b>Key points:</b> Keep the elbows in a fixed position and pull from the elbow.</p>

<p><b>Single leg glute bridge *</b></p>	<p>Gluteus and hamstring</p>		<p><b>Starting position:</b> Supine position with one bent knee and the other straight in the air. Feet are at hip-width. The hands are pushing the elastic band on the mat.</p> <p><b>Elastic band position:</b> Hip-height.</p> <p><b>Execution:</b> Move the hip towards the ceiling, keep the spine neutral position and the scapulas flat against the floor. Lift the hip as high as it possible. Then, lower the hip in a controlled manner to the starting position. Perform 30'' continuously with each leg.</p> <p><b>Key points:</b> Perform pelvic retroversion, squeeze the gluteus muscles at the top and push the foot and hands against the floor.</p>
<p><b>Advanced Dead bug *</b></p>			<p><b>Starting position:</b> Supine position with arms extended and knees flexed 90°. Grabbing the elastic band in a neutrally at each end, exerting tension.</p> <p><b>Elastic band position:</b> Hands height</p> <p><b>Execution:</b> Bringing one arm back with this elbow extended. Simultaneously, extending the opposite leg. Then returning the hand and leg to the starting position. Repeating interspersed.</p> <p><b>Key points:</b> Lumbopelvic control. Keeping the spine neutral. Maintaining abdominal contraction.</p>

<p><b>Unilateral shoulder external rotation*</b></p>	<p>Shoulder external rotator</p>		<p><b>Starting position:</b> Standing position with the arm the furthest of the anchor point bent at 90°. Grab the elastic band on the side at both ends with a supine grip. The elastic band is at its maximum elongation but without tension. Keep the bent elbow close to the body.</p> <p><b>Elastic band position:</b> Elbow height.</p> <p><b>Execution:</b> Rotate the bent arm outwards, keep the elbows fixed and bent. Perform 30" continuously to each side.</p> <p><b>Key points:</b> Keep the shoulders down, and the elbow fixed.</p>
<p><b>Squat jump</b></p>	<p>Quadriceps and gluteus</p>		<p><b>Starting position:</b> Standing position with the legs hip-width apart.</p> <p><b>Execution:</b> Lower in a squatting position and bend the hip, knee and ankle. Lower until a height that allows to maintain the lumbar neutrality. After this, extend the legs, jump and return to starting position. The end of the jump is the start of the next repetition.</p> <p><b>Key points:</b> Cushion the jump and keep the knees aligned with the legs.</p>



<p><b>Standing face pull *</b></p>	<p>Trapezius</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width and the arms straight. Grab the elastic band in pronation with maximum elongation, but without tension.</p> <p><b>Elastic band position:</b> Nose height.</p> <p><b>Execution:</b> Pull the elbows towards the face and bend the elbows at 90°.</p> <p><b>Key points:</b> Keep the elbows at shoulder-height and the shoulders down.</p>
<p><b>Single leg standing calf-raise on step</b></p>	<p>Calf</p>		<p><b>Starting position:</b> Standing position with one leg on the step and the other in the air. Use a chair or the wall for support.</p> <p><b>Execution:</b> Raise the heel as far as possible and hold. Return to the starting position in a controlled manner. Perform 30" continuously with each foot.</p> <p><b>Key points:</b> Push the foot against the step and perform the full range of motion. The chair or wall are only there to keep the balance.</p>





### Turkish get-up with ball

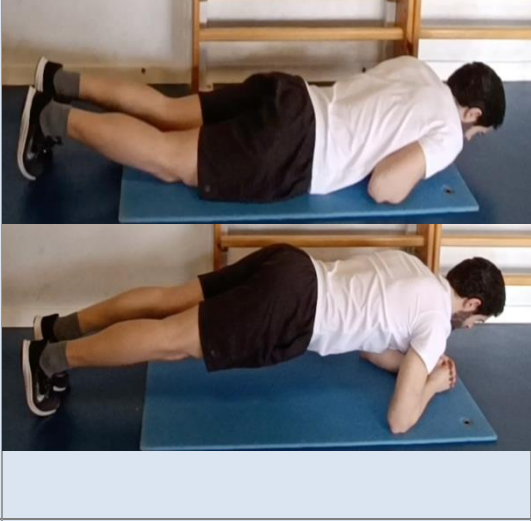
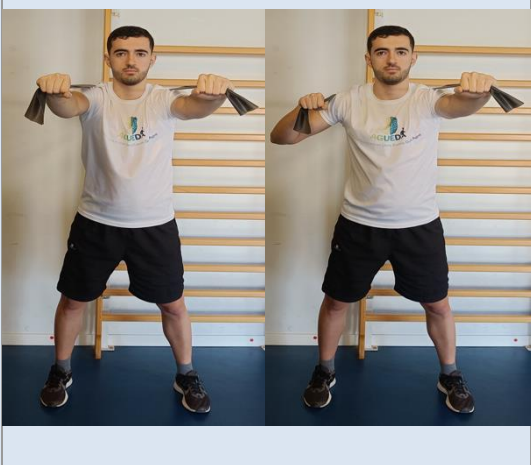




**Starting position** (perform with the right arm):  
Supine position on the mat with a straight right arm holding the ball and the right leg bent. Left arm and leg are straight and lying on the mat with an  $45^\circ$  angle.

**Execution:** Get up with the help of the left forearm. Next, raise the hips until the right thigh is parallel to the mat. Raise the trunk and slide the left leg behind with the foot pointing to the right. When in an upright position, push with the front leg to get up. Reverse the order of the steps to complete a repetition and return to starting position.



**Key points:** Look at the ball and keep the arm straight and hold the ball. Keep the stability in every step of the movement and push the front foot against the ground when getting up.



<p><b>Woodcutter rotation*</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Standing position with the feet at hip-width, and the arms straight with one arm crossing the body. Hold the elastic band in maximum elongation but without tension on the side.</p> <p><b>Elastic band position:</b> Knee height.</p> <p><b>Execution:</b> Push the hip near the anchor to the opposite shoulder. The arms are straight during the movement. Simultaneously, perform a 90° body rotation and finish with the back towards the anchor. Perform 30'' continuously to each side.</p> <p><b>Key points:</b> Strengthen the core and exhale during the concentric phase.</p>
<p><b>Single leg glute bridge hamstring on step</b></p>	<p>Hamstring and gluteus</p>		<p><b>Starting position:</b> Supine position with the knees bent and feet at hip-width apart. One foot is on the step and the other in the air.</p> <p><b>Execution:</b> Move the hip towards the ceiling. Keep the spine neutral, the scapulas flat against the floor, and exert the force against the floor to stabilize. Lift the hip as high as possible and hold. Lower the hip in a controlled manner to return to the starting position. Perform 30'' continuously with each leg.</p> <p><b>Key points:</b> Perform a pelvic retroversion, squeeze the gluteus muscles at the top and push the feet and hands against the step and floor.</p>

<p><b>Front plank</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Prone position with the forearms on the mat supporting the body and elbows at 90°. The knees and feet are at hip-width.</p> <p><b>Execution:</b> Raise the hip and knees until the trunk is parallel to the mat. Hold the position for 10 seconds and return to the starting position.</p> <p><b>Key points:</b> Contract the gluteus muscles and abdomen, keep the lumbopelvic neutrality and exhale during the concentric phase.</p>
<p><b>Unilateral press *</b></p>	<p>Pectoral</p>		<p><b>Starting position:</b> Standing position with the back to the anchor point, the legs on hip-width and the arms straight. Grab the elastic in pronation at its maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Chest height.</p> <p><b>Execution:</b> Bend one elbow to 90° and push the arm forward back to the starting position. Perform 30'' continuously with each arm.</p> <p><b>Key points:</b> Stand still and strengthen the core during the exercise. Keep the shoulders at the same height and push with the chest.</p>

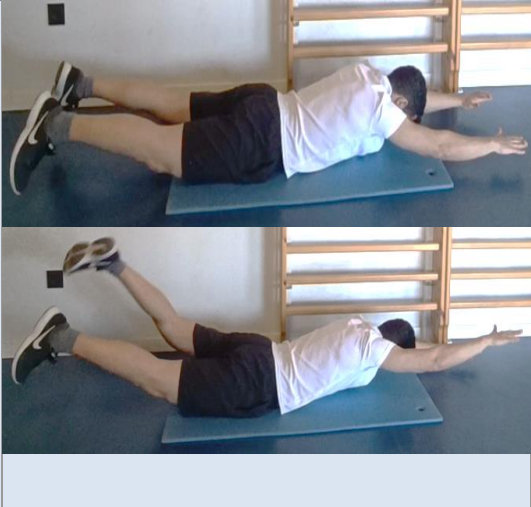
<p><b>Lateral lunge with elevation</b></p>	<p>Quadriceps, gluteus and abductor</p>		<p><b>Starting position:</b> Standing position with legs 0.5m apart.</p> <p><b>Execution:</b> Take a step to the side, feet parallel and look straight ahead. Next, bend the leg at 90°. Extend the bent leg and bend to the front at the hip height. Perform 30" continuously with each leg.</p> <p><b>Key points:</b> Push off the ground with the bent leg and return to starting position and align the knee and the foot.</p>
<p><b>Unilateral triceps kickback with inclination *</b></p>	<p>Triceps</p>		<p><b>Starting position:</b> Standing position with knees slightly bent and the hip and arms bent at 45° and 90°, respectively. Elbows are close to the body. Grab the elastic band with a neutral grip at maximum elongation but without tension.</p> <p><b>Elastic band position:</b> Elbow height.</p> <p><b>Execution:</b> Push one hand backwards by extending the elbow until the arm is straight. Perform 30" continuously with each leg..</p> <p><b>Key points:</b> Keep the elbows and shoulders fixed.</p>





<p><b>Single leg deadlift *</b></p>	<p>Hamstring and gluteus</p>		<p><b>Initial position:</b> Standing position with one foot forward and the knees slightly bent. Place the elastic band underneath the feet and grab the ends with the hand.</p> <p><b>Elastic band position:</b> Underneath the feet.</p> <p><b>Execution:</b> Perform a hip hinge by moving the hip backwards and keep the back straight. Return to the starting position by moving the hip forward. Perform 30" continuously with each leg.</p> <p><b>Key points:</b> Keep the spine in neutral position and push the feet against the floor during the exercise.</p>
<p><b>Seated shoulder press *</b></p>	<p>Deltoid</p>		<p><b>Starting position:</b> Sitting position and with the elastic band under the seat of the chair. Grab the ends of the elastic band neutrally.</p> <p><b>Elastic band position:</b> Underneath the seat of the chair.</p> <p><b>Execution:</b> Push the arms above the head until the arms are straight. Align the wrists with the arm during the movement.</p> <p><b>Key points:</b> Push from the feet to the shoulder.</p>

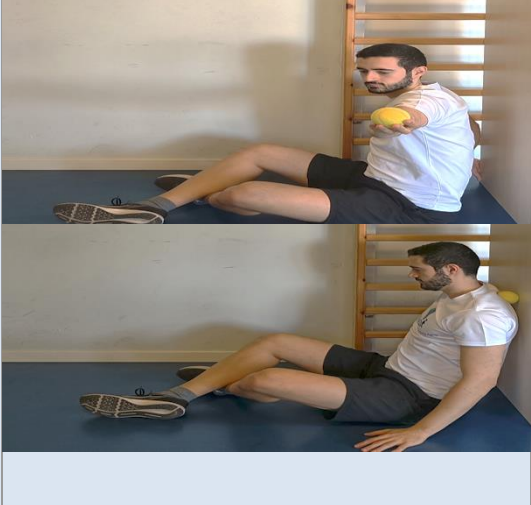

<p><b>Standing hip abduction</b></p>	<p>Gluteus and abductor</p>		<p><b>Starting position:</b> Standing position with one foot standing on the elastic band. Use the wall or another object to support and to keep the balance.</p> <p><b>Elastic band position:</b> Around the ankle.</p> <p><b>Execution:</b> Push the ankle to the side and contract the abdominal muscles. Keep the trunk aligned. Perform 30'' continuously with each leg.</p> <p><b>Key points:</b> Push the foot of the standing leg against the floor and strengthen the core.</p>
<p><b>Advanced bird-dog</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Start on all fours (knees bent at 90°) with the arms straight. The hands are at shoulder-width.</p> <p><b>Execution:</b> Move the arm up, and exhale during the movement. Simultaneously, extend the opposite leg while keeping the ankle at 90°. Return to the starting position. Continue the movement and touch the opposite knee with the elbow. Repeat on the opposite side.</p> <p><b>Key points:</b> Keep the lumbopelvic in neutral position and push from the foot. Keep the balance throughout the movement and strengthen the core.</p>



<p><b>Swimmer</b></p>	<p>Lumbopelvic musculature</p>		<p><b>Starting position:</b> Prone position with the arms straight above the head lying on the floor. The head is resting on the floor.</p> <p><b>Execution:</b> Simultaneously, raise one arm and the opposite leg.</p> <p><b>Key points:</b> Control the breathing, contract the gluteus muscles at the end of the movement, and keep the neck neutral.</p>
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Cool-down (7 minutes)

Exercise	Target muscle	Graphical presentation	Instructions
Gluteus muscle myofascial massage	Gluteus		<p><b>Starting position:</b> Sitting on the floor. On leg straight and the other bent. The ball is under the gluteus of the straight leg.</p> <p><b>Execution:</b> Make circles with the ball on the gluteus. Lift the bent leg off the ground, to create more tension release in the gluteus by increasing the weight.</p>
Pectoral muscle myofascial massage	Pectoral		<p><b>Starting position:</b> Standing position with the ball on the chest. Use the opposite arm to massage the chest</p> <p><b>Execution:</b> Make circles with the ball on the pectoral muscles.</p>

<p><b>Upper back myofascial massage</b></p>	<p>Trapezius</p>		<p><b>Starting position:</b> Sitting position against the wall. Place the ball between the wall and the upper part of the back.</p> <p><b>Execution:</b> Make circles and raise and lower the ball according to the zone which is more needed. Push against the wall or tilt the back to increase the pressure.</p>
<p><b>Low back myofascial massage</b></p>	<p>Lumbar</p>		<p><b>Starting position:</b> Standing position with the back against the wall or flat object. Place the ball between the wall or object and lower back.</p> <p><b>Execution:</b> Make circles and raise and lower the ball according to the zone which is more needed. Push against the wall to increase the pressure. Separate the feet to allow a stronger push.</p>