

# Strength Training for RaceRunning Athletes

- All exercises are possible to do at home by the athlete him/herself.
- In general all exercises are repeated 3x10. When in shape the number of repetitions may be increased up to 3x20 or 3x30.
- The combination of the different exercises is individual.

# Strength training

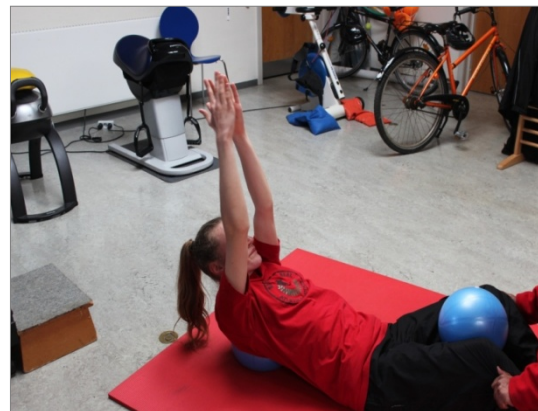
## Chest 1

Lying in supine with a gym ball under the shoulder blades. Knees bended, feet on the ground, optionally also a gym ball between the knees. Optionally also with weight cuffs on the wrists.

Place the arms horizontally to both the sides and then move them to a vertical position above the chest and clap. 3x10 repetitions.

Trains stability in the trunk. The assistant should help the athlete focusing on the symmetry in this exercise. The gym ball between the legs prevents spasticity.

When the arms are going down the movement is stopped when there is no stability left in the trunk.



Using pilates balls is a way of doing a simple and efficient kind of strength training for all muscle groups.

The small pilates balls are very flexible and may be used when doing the exercises in bed.

# Strength training

## Chest 2

Lying in supine with a gym ball under the shoulder blades. Knees bended, feet on the ground, optionally also a gym ball between the knees. Optionally also with weight cuffs on the wrists. Training of the abdominal muscles.

Place the arms up above the head in a horizontal position. Now move them to a vertical position above the chest. 3x10 repetitions.

Training stability for the trunk. The gym ball between the legs prevents spasticity. The assistant should help the athlete focusing on the symmetry in this exercise. The weight of Weight cuffs should be adjusted individually for the athlete.



# Strength training

## Back 1

Prone lying, arms stretched out. The head is held straight. Hold a small gym ball in the hands. Optionally also with weight cuffs on the wrists.

Raise chest and arms from the surface. Slowly lower yourself again. 3x10 repetitions.

Strength training for the back (erector Spina). The assistant focuses on the position of the head, that the hips are keeping contact with the surface and the symmetry of the movement. For some athletes keeping the head still is a challenge in itself.





# Strength training

## Back 2

Prone lying, arms stretched out. The head is held straight. Hold a small gym ball in the hands. Raise your upper body from the surface. The assistant now tries to grab the balls from your hands. Hold the position for 10 seconds. 5 repetitions.

The exercise trains the big muscles in the back and the muscles in the buttocks.



# Strength training

## Back 3

Prone lying.

The assistant rolls the ball over to you. You raise your chest from the surface and rolls it back. 3x10 repetitions.

Strength training for the back and coordination.

The assistant focuses on the distance between the legs, that the hips are keeping contact with the surface and the symmetry of the movement.





# Strength training

## The pelvic lift

Lying in supine. Knees bended, feet on the ground, optionally also a gym ball between the knees. The assistant holds the feet.

Raise the buttock as high as you can and lower it again. 3x10 repetitions.

Pelvic stability and strength in the back of the thighs. The assistant focuses on the right and straight position of the pelvis.



# Strength training

## Abdominal muscles 1

Lying in supine with a gym ball under the loins. Hands on the ground parallel with the body. Slowly lift one leg and then the other. Try to keep the balance right. 3x10 repetitions for each leg.

Stability for the trunk, the abdominal muscles and back stabilizers muscles. Weight cuffs may be used for the legs.



# Exercises with resistance band



# Exercises with resistance band

## Training with resistance bands

The following slides present examples of how to do exercises for certain muscle groups using a resistance band. The resistance depends on the specific resistance band and this is the basic way of varying the difficulty of the exercises.



## A simple training program

Using resistance bands is a good way for beginners to get started with strength training – and for other athletes after a longer break.

Choose a resistance band with the right resistance, i.e. a resistance that allows you to do exactly 20 repetitions.

Have a break of 1-3 minutes and then repeat the exercise. After three repetitions of this series you continue to the next exercise.

The whole program is carried out three times a week.



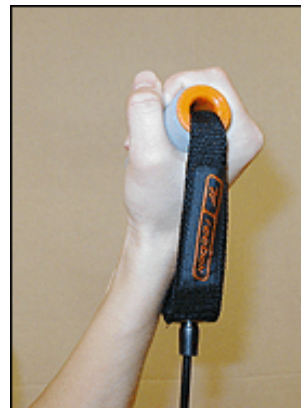
# Exercises with resistance band

## Take care of your wrist

When using the resistance band it is important to position your wrist correctly. The back of the hand should be forming a straight line through the underarm. Keep this position when doing all exercises.

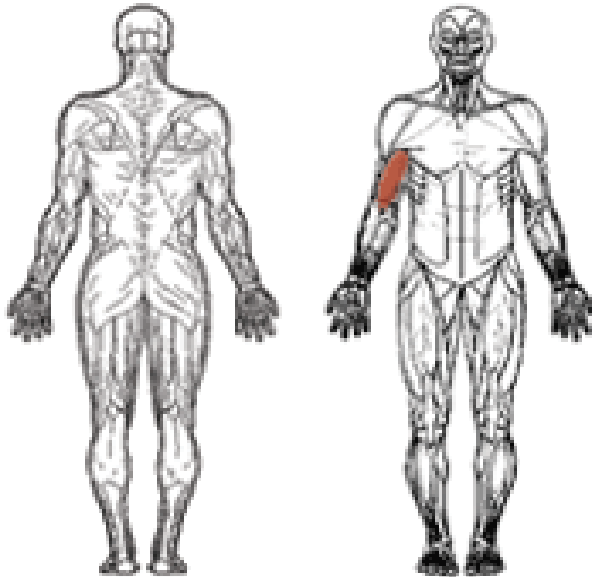
The resistance band may be attached to the overarm in on order to avoid this problem.

The same problem arises if the athlete pulls askew. The coach then needs to consider if the exercise should be skipped or an alternative exercise may be done instead.





# Exercises with resistance band



**Name:**

**The two-headed arm bender –  
biceps brachii**

**Anatomical position:**

**Frontside of the upper arm**

**Origin:**

**Both heads of the biceps arise from  
the scapula in the shoulder, and the  
muscle attaches to the radius in the  
forearm.**

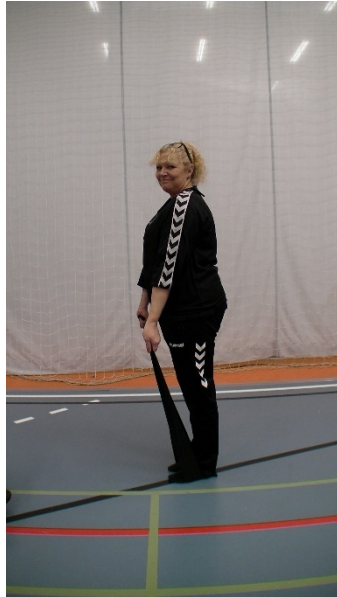
**Insertion:**

**Radial tuberosity and bicipital  
aponeurosis into deep fascia on  
medial part of forearm.**

**Primary action:**

**Flexes elbow**

# Exercises with resistance band



A



B

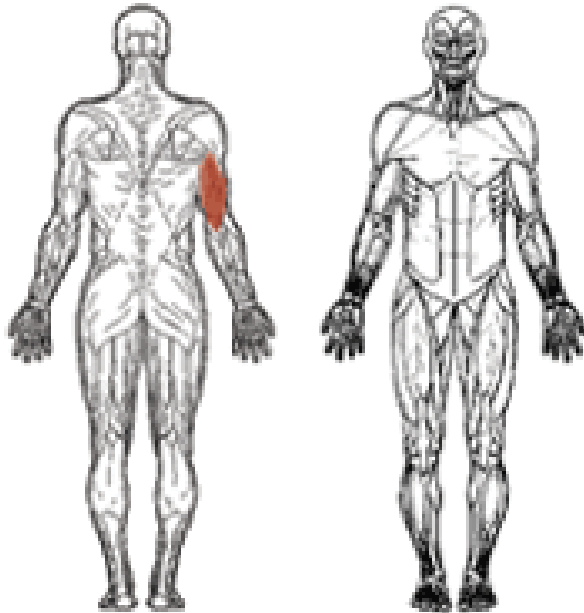


## Description

The resistance band is attached to under the feet by stepping on it. Grab the handle bar of the resistance band. Keep the elbows close to the body while bending the arms. From picture B to A the arms are being lowered slowly. The exercise may be carried out with both arms simultaneously or with one arm after another.

# Exercises with resistance band

## Training of the three-headed arm muscle



**Name:**

**The three-headed arm muscle - triceps brachii**

**Anatomical position:**

**The back of the upper limb.**

**Origin:**

**Long head: infraglenoid tubercle of**

**scapula Lateral head: above the radial**  
**sulcus**

**Medial head: below the radial sulcus**

**Insertion:**

**Olecranon process of ulna**

**Primary action:**

**Extends forearm**

# Exercises with resistance band



## Description

The resistance band is attached to the ceiling, a door or a wall bar. Keep the elbows close to the body. From picture A to B the arms are being stretched and from B to A the arms are being bended back to position A. The exercise may be carried out with both arms simultaneously or with one arm after another.

# Strength training with resistance band and weights

***The resistance band is placed under the legs of the sitting athlete.***

***The resistance band is being pulled by holding on to one of the ends at the loin while simultaneously pulling the resistance band with the other arm askew behind the back.***

1h. The resistance band is being pulled upwards in straight lines.

2h. The resistance band is being pulled upwards with the elbows kept closely together.

1h. Trains elbow stretchers (triceps brachii) and back stability.

2h. Trains elbow benders (Biceps Brachii)





# Strength training with resistance band and weights

3x10 repetitions.

**The athlete sitting on a chair or in a wheel chair.**

***The resistance band goes around the assistant who is standing in front of the sitting athlete.***

1f. Start with stretched arms held closely together. The resistance band is pulled backwards in a straight line.

2f. Start with stretched arms held closely together. The resistance band is pulled diagonally downwards.

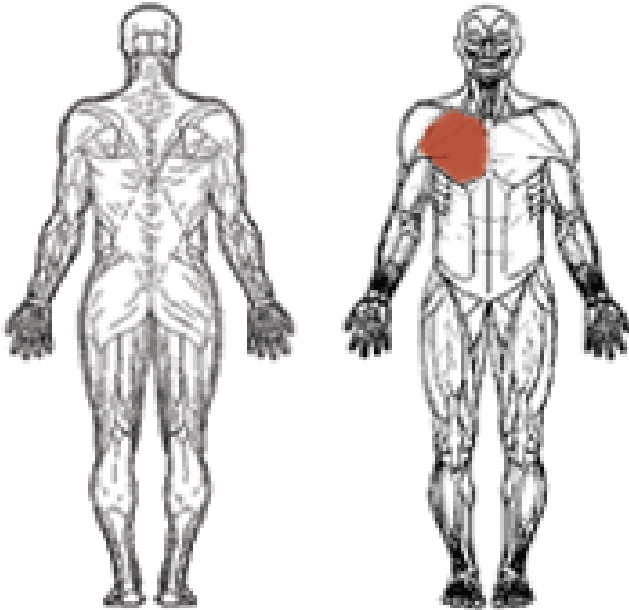
3f. Start with stretched arms held closely together. The resistance band is pulled diagonally upwards.

1f. Trains stability above shoulder blades (Scapulae). 2f. Trains elbow stretchers (Triceps Brachii) and shoulder stability. 3f. Trains strength in shoulder stabilizers.



# Exercises with resistance band

## Training the pectoralis major muscle



**Name:**

The big chest muscle – m. pectoralis major

**Anatomical position:** On the chest

**Origin:**

**Clavicular head:** anterior border of the medial half of the clavicle.

**Sternocostal head:** anterior surface of the sternum, the superior six costal cartilages, and the aponeurosis of the external oblique muscle

**Insertion:**

Lateral lip of the bicipital groove of the humerus.

# Strength training with resistance band and weights

***The resistance band goes around the assistant who is now standing behind the sitting athlete.***

1g. The resistance band is being pulled in a straight line back to stretched arms held closely together.

2g. The resistance band is being pulled diagonally downwards back to stretched arms held closely together.

3g. The resistance band is being pulled diagonally upwards back to stretched arms held closely together.

1g. Trains the major chest muscle (Pectoralis Major).

2g. ----- 3g. Trains shoulder stability.



# Exercises with resistance band



A

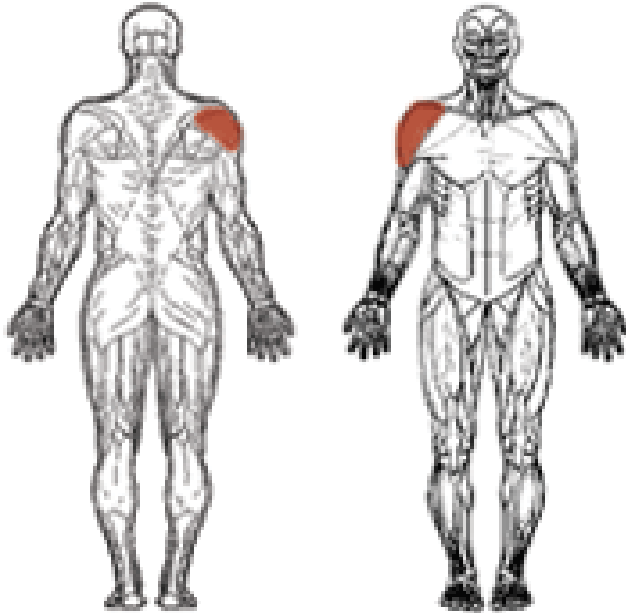
B her mangler billedet fra søndag – et af mig og to af Helle med mig bagved som elastik holder

## Description

The resistance band is attached to a radiator, a door or a wall bar. The elbow is slightly bended during the exercise. From picture A to B both arms are moved to the front side of the body at the level of the chest. From picture B to A both arms are moved gently back to the starting position A.

# Exercises with resistance band

## Training the deltoid muscle



**Name:**

The deltoid muscle – m. deltoideus

**Position:**

The shoulder

**Origin:**

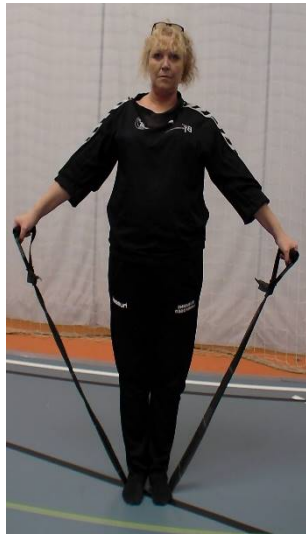
the anterior border and upper surface  
of the lateral third of the clavicle,  
acromion, spine of the scapula.

**Insertion:**

deltoid tuberosity of humerus.



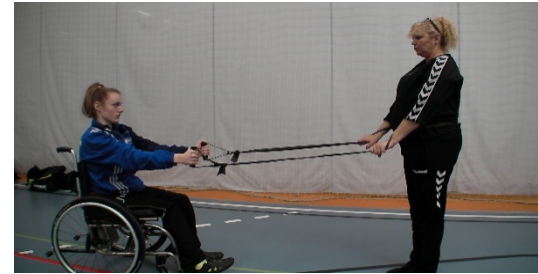
# Exercises with resistance band



A



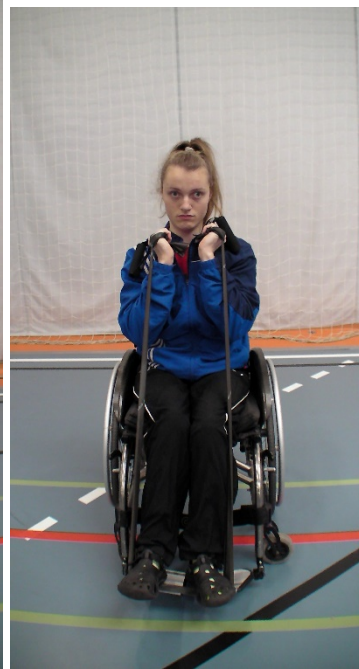
B



## Description

The resistance band is attached under the feet by stepping on it. Grab the handle bar of the resistance band. Keep the elbows slightly bended during this exercise (difficult to see in the picture above). From picture A to B both arms are raised as high as possible. From picture A to B both arms are slowly being lowered.

# Exercises with resistance band

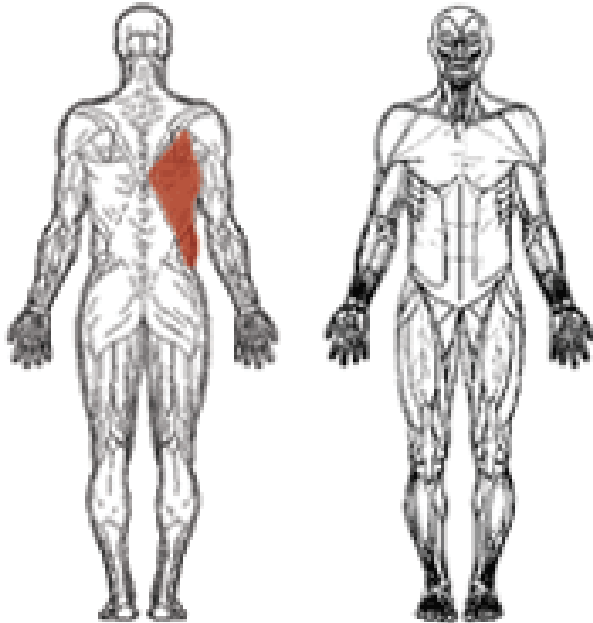


## Description

The exercise is conducted sitting on a chair or in a wheel chair. The resistance band is attached under the feet by stepping on it. Grab the handle bar of the resistance band. From picture A to B both arms are raised in a straight line direction above the head. From picture A to B both arms are slowly being lowered.

# Exercises with resistance band

## Training the broad muscle of the back



**Name:**

**The broad muscle of the back – m. latissimus dorsi**

**Anatomical position:**

**The back**

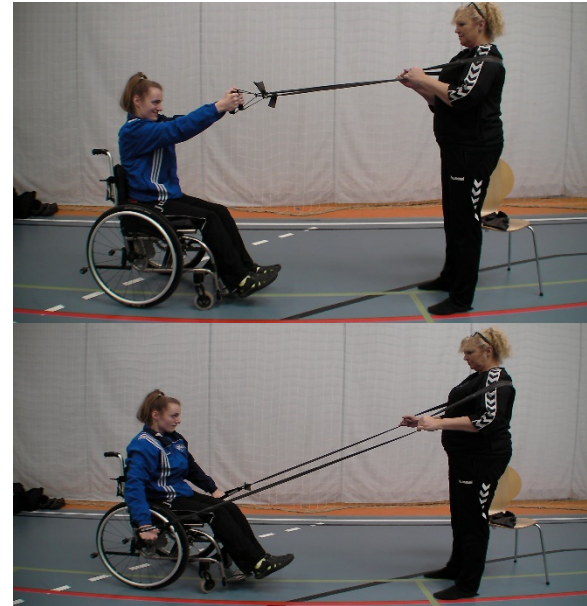
**Origin:**

**Spinous processes of vertebrae T7-L5, thoracolumbar fascia, iliac crest, inferior 3 or 4 ribs and inferior angle of scapula**

**Insertion:**

**Floor of intertubercular groove of the humerus.**

# Exercises with resistance band



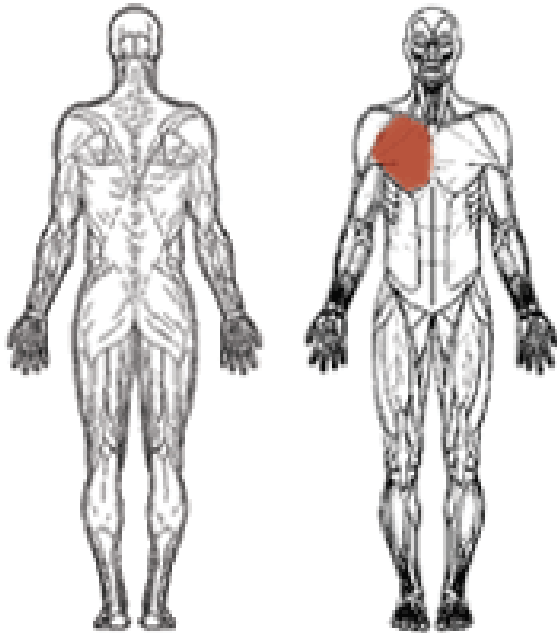
## Description

The resistance band is attached to the ceiling, a door or a wall bar. Grab the handle bar of the resistance band. From picture A to B the arms – in a slightly bend position – are being moved as far back as possible. From picture B to A both arms are moved gently back to the starting position A. The exercise may be carried out with both arms simultaneously or with one arm after another.

# Exercises with resistance band

A

## Training the pectoralis major chest muscle



**Name:**

**The pectoralis major chest muscle –  
m. pectoralis major**

**Anatomical position:**

**The chest**

**Origin:**

**Clavicular head: anterior border of the  
medial half of the clavicle.**

**Sternocostal head: anterior surface of  
the sternum, the superior six costal  
cartilages, and the aponeurosis of the  
external oblique muscle.**

**Insertion:**

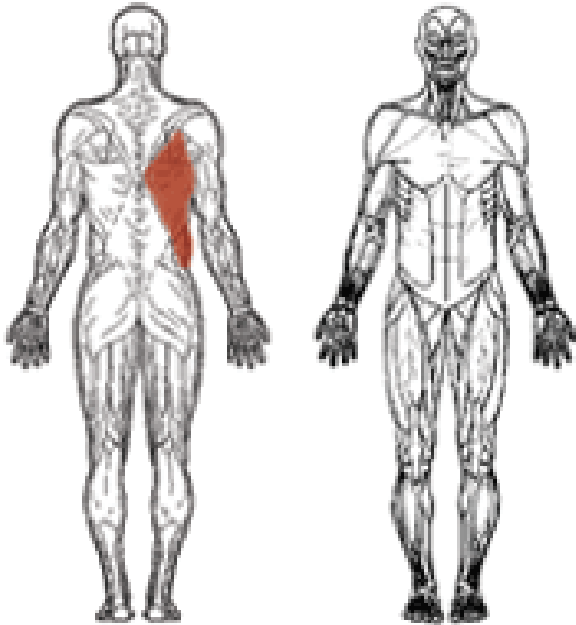
**Lateral lip of the bicipital groove of the  
humerus.**



# Exercises with resistance band

B

## Training the broad back muscle



**Navn:**

**The broad back muscle – m.  
latissimus dorsi**

**Anatomical position:**

**The back**

**Origin:**

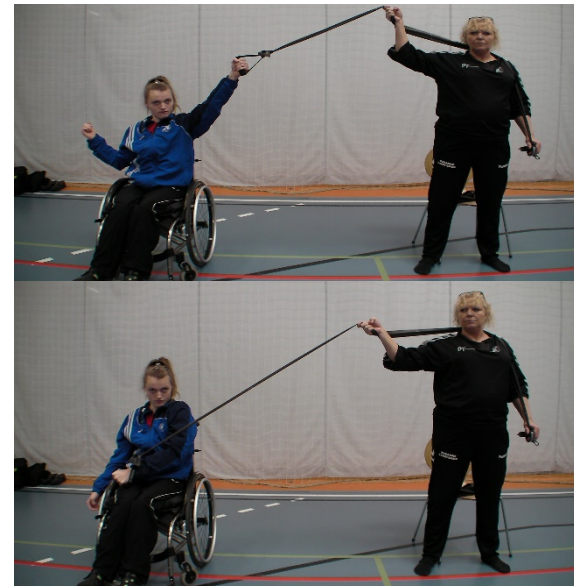
**Spinous processes of vertebrae T7-L5,  
thoracolumbar fascia, iliac crest,  
inferior 3 or 4 ribs and inferior angle of  
scapula**

**Insertion:**

**Floor of intertubercular groove of the  
humerus.**



# Exercises with resistance band



A

## Description

The resistance band is attached to the ceiling, a door or a wall bar. Slightly bended knees and with the side turned towards the attachment of the resistance band. Grab the handle bar of the resistance band. From picture A to B the arm – in a slightly bend position – is being moved in front of the body to the opposite side, while twisting the upper body. From picture B to A the arm is moved gently back to the starting position A. This exercise is also good for the diagonal abdominal muscles.

# Exercises with resistance band



B

## Description

The resistance band is attached to the ceiling, a door or a wall bar. Slightly bended knees and with the side turned towards the attachment of the resistance band (left side in picture A). Grab the handle bar of the resistance band (Right hand in picture A). From picture A to B the arm is being moved in front of the body to the opposite side, while twisting the upper body. From picture B to A the arm are moved gently back to the starting position A. This exercise is also good for the muscles around the spinal column.

# Strength training with weight cuffs

## Training with weight cuffs

### Supine lying.

### Slowly lift the weight cuffs while lying in supine.

- 1i. Slow lifts from the floor and up above the head.
- 2i. Slow lifts from the floor and to each sides.
  - 1i. Training the stability in the upper body.
  - 2i. -----



# Training exercises on the RaceRunning bike

## **Back thigh:**

Standing, in the RaceRunning bike. Weight cuffs around the ankles. Lift the heels up high to the Buttocks/back thighs.

3x10 repetitions.

## **Buttocks/back thighs:**

Standing, in the RaceRunning bike. Weight cuffs around the ankles. Move the legs backwards in an outstretched position as far as possible.

3x10 repetitions.

## **Bending the hips:**

Weight cuffs around the thighs.

Bend as much as possible in the hips.

3x10 repetitions.



# Exercises with resistance band

## Training the great extensor muscle of the knee



**Name:**

The great extensor muscle of the knee – m. quadriceps femoris

**Anatomical position:**

The front side of the thigh

**Origin:**

Combined rectus femoris and vastus muscles.

**Insertion:**

Tibial tuberosity.



# Training exercises on the RaceRunning bike

Lower the saddle. Double set off with the legs, rapidly, as fast as possible. 3x10 repetitions. The exercise may be difficult since the athlete often does not want to change the settings of the bike.

Tie the resistance band to the RaceRunning bike. Begin with the resistance band loosened, then accelerate until the resistance band brakes the bike.

Tie the resistance band to the RaceRunning bike. Begin with the resistance band stretched out. Keep the resistance band stretched out, walk a few meters.

This exercise is good for both sides of the thigh muscles and also the back.

