



## 9001 Strength - Leg Extension - Info

Education  
How to Use the Machine

How to use the leg Extension machine

Stand with your back against the front of the machine and grab the handles in front. Sit down with your back against the support. Lift the arm of the ankle roll and put your feet under the rolls.

Fasten the belts around your thighs, one for each leg. Choose Extension and set the resistance by tapping the + button. Hold onto the handles on each side.

When you have finished exercising, lower the resistance to 0 (no resistance) by tapping the - button. Loosen the belts around your thighs. Put your feet over the ankle rolls. Grab the handles in front and pull yourself from the machine.



## 9016 Strength - Leg Extension - Test

Leg Extension Strength Test

Maximum isometric strength is measured with the Performance Recorder.

Muscle weakness is the biggest risk factor for falls in the elderly and asymmetries in leg strength affects gait and balance. When strength improves it increases the motivation for training. You can measure possible weakness or asymmetries in muscular strength with the Performance Recorder.

Fix the Performance Recorder onto the leg extension/curl machine or to the leg abduction/adduction machine (it can also be used with other exercise machines). The recordings on the Performance Recorder are in Newton/meter (1 Newton/ meter = 0.101 971 621 3 kilogram). To get the result in kg you multiply by 10 e.g. result on the meter is 7,2 Nm x 10 = 72 kg.

Isometric maximum strength of knee extension is measured with the knee in 60 degree joint angle (the Performance Recorder is always fixed with the knee at the same angle). A maximum of three trials is recorded.

The isometric strength of m. Quadriceps for seniors over 65 should be on average equal to their body weight or more, according to WELMED data.



## 9064 Strength - Leg Extension - Teaching Points

Teaching Points  
Leg Extension Strength

Teaching points:

If the exercise causes knee pain, try to do it on a smaller painfree range of motion. Usually one feels the pain in full extension or flexion.

Note: You can limit the movement in Rehab Line machines using the range limiters.



9020 - A  
Strength - Leg Extension - Fitness Equipment

Strength Exercise  
Leg Extension

Sit straight with your back against the support. Tighten your abdominal muscles. Place your feet under the ankle rolls.  
Choose Leg Extension and set the resistance by tapping the + button to \_\_\_\_ kg.  
Hold on to the handles when doing the exercise.

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9022 - B  
Strength - Leg Extension - Fitness Equipment

Strength Exercise  
Leg Extension

Straighten your legs, left-right in turn, at a moderate pace.  
  
Repeat \_\_\_\_ times.  
Sets \_\_\_\_.

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9063  
Strength - Back Extension - Teaching Points

Teaching Points  
Strength Back Extension

Teaching points:

Straighten your back 'bone by bone'. The roll behind your shoulders is not supposed to roll up to your neck.

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9035 - A  
Strength - Back Extension - Fitness Equipment

Strength Exercise  
Back Extension

Sit with the roll behind your shoulders. Tighten your abdominal muscle.  
Choose Back Extension and set the resistance by tapping the + button to \_\_\_\_ kg.  
When doing the exercise keep your arms at your side.

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9037 - B  
Strength - Back Extension - Fitness Equipment

Strength Exercise  
Back Extension

Straighten your back and push your shoulders back as far as possible.  
  
Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



9066  
Strength - Lat Pull - Teaching Points

Teaching Points  
Strength Lat Pull

Teaching points:

Keep your chest against the support when doing the exercise. Do not lift your shoulders or press your chin forward.



9052 - A  
Strength - Lat Pull - Fitness Equipment

Sit in the machine with your chest touching the support.  
Choose Lat Pull and set the resistance by tapping the + button to \_\_\_ kg.  
Take a good grip on the handles and tighten your abdominal muscles.



9053 - B  
Strength - Lat Pull - Fitness Equipment

Pull your arm back as far as possible with your chest still touching the support.  
Do left-right in turn at a moderate pace.

Repeat \_\_\_ times.  
Sets \_\_\_.



9067  
Strength - Abdominal Curl - Teaching Points

Teaching Points  
Strength Abdominal Curl

Teaching points:

Keep your feet on the floor to prevent hip flexor activation. Press with your breastbone, not with your shoulders. Do not lift your shoulders or press your chin forward.



9029 - A  
Strength - Abdominal Curl - Fitness Equipment

Strength  
Abdomen

Sit behind the roll with your feet on the floor.  
Choose Abdomen and set the resistance by tapping the + button to \_\_\_ kg.  
Hold the roll with both hands.



9031 - B  
Strength - Abdominal Curl - Fitness Equipment

Strength  
Abdomen

Tighten your abdominal muscles and bend forward pressing the roll with your breastbone.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.

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9068  
Strength - Leg Press - Teaching Points

Teaching Points  
Strength Leg Press

Teaching points:

Avoid knee hyperextension. Keep good abdominal control. Alternate one leg at a time or press both legs together.

If the exercise causes pain, try to do it on a smaller range of limit using the range limiters (Rehab Line). Usually one feels the pain in full extension or flexion.

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9025 - A  
Strength - Leg Press - Fitness Equipment

Sit straight with your back against the support. Put your feet on the footrests. Tighten your abdominal muscles.

Choose Leg Press and set the resistance by tapping the + button to \_\_\_\_ kg. Hold on to the handles when doing the exercise.

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9023 - B  
Strength - Leg Press - Fitness Equipment

Straighten your legs, left-right in turn, at a moderate pace.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



9182

## Strength - Leg Curl - Info

### Education

#### How to Use the Machine

#### How to use the Leg Curl machine

Stand with your back against the front of the machine and grab the handles. Sit down with your back against the support.

Place your feet on top of the ankle rolls. Fasten the belts around your thighs, one for each leg. Choose Leg Curl and set the resistance by tapping the + button. Hold onto the handles on each side.

When you have finished exercising, lower the resistance to 0 (no resistance) by tapping the - button. Loosen the belts around your thighs. Put your feet over the ankle rolls. Grab the handles in front and pull yourself from the machine.



9181

## Strength - Leg Curl - Test

### Leg Curl Strength Test

Maximum isometric strength is measured with the Performance Recorder.

Muscle weakness is the biggest risk factor for falls in the elderly and asymmetries in leg strength affects your gait and balance. When strength improves the motivation for training increases. You can measure possible weakness or asymmetries in muscular strength with the Performance Recorder.

Fix the Performance Recorder onto the leg extension/curl machine or to leg abduction/adduction machine (it can be used for measuring strength on most of exercise machines). The recordings on the Performance Recorder is in Newton/meter (1 Newton/ meter = 0.101 971 621 3 kilogram). To get the result in kg you multiply by 10 e.g. result on the meter is 7,2 Nm x 10 = 72 kg.

Isometric maximum strength of leg curl is measured with the knee in 40 degree joint angle (the Performance Recorder is always fixed with the knee in the same angle). A maximum of three trials is recorded.

The isometric strength of leg curl muscles (hamstrings) for seniors over 65 should be on average: female 50% and male 60% of their body weight, according to WELMED data.



9069

## Strength - Leg Curl - Teaching Points

Teaching Points  
Strength Leg Curl

Teaching points:

Avoid knee hyperextension when putting the resistance on and the belts are fastened.

If the exercise causes pain, try to do it on a smaller range of limit using the range limiters (Rehab Line). Usually one feels the pain in full extension or flexion.



9046 - A

## Strength - Leg Curl - Fitness Equipment

Strength  
Leg Curl

Sit straight with your back against the support. Put your ankles on top of the ankle rolls. Fasten the belts around your thighs, one for each leg and tighten your abdominal muscles.

Choose Leg Curl and set the resistance by tapping the + button to \_\_\_\_ kg. Hold on to the handles when doing the exercise.



9047 - B

## Strength - Leg Curl - Fitness Equipment

Strength  
Leg Curl

Bend your knee, left-right in turn, all the way down at a moderate pace.

Repeat \_\_\_\_ times.

Sets \_\_\_\_.



9111

## Strength - Twist - Info

Education  
How to Use the Machine

How to use the Twist machine

Sit with one bar between your thighs and squeeze the bar. Push the arm roll with one arm and put your arm around the other roll to pull when twisting. Choose Twist and set the resistance by tapping the + button.

Before doing the exercise on the other side put the setting on the machine to - (no resistance). Move to the other side of the machine to sit with the other bar between your thighs. Push the arm roll with one arm and put your arm around the other roll when twisting.

Once again choose Twist and set the resistance by tapping the + button.



9061  
Strength - Twist - Teaching Points

Teaching Points  
Strength Twist

Teaching points:

It is important not to sit with your back curled. Do not lift your shoulders. Neck should follow the rotation. Pressing legs against the roll helps to maintain trunk control.

Contraindications: Osteoporosis and severe back problems.

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9038 - A  
Strength - Twist - Fitness Equipment

Sit on the machine with your spine in a straight position and squeeze the bar with your thighs. Push the arm roll with one arm and put your arm around the other roll to pull when twisting. Tighten your abdominal muscles. Choose Twist and set the resistance by tapping the + button to \_\_\_ kg.

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9040 - B  
Strength - Twist - Fitness Equipment

Rotate your upper body as much as you can at a moderate pace.

Repeat \_\_\_ times.

Sets \_\_\_.

Then repeat on the other side.

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9070  
Strength - Heel Raise - Teaching Points

Teaching Points  
Strength Heel Raise

Teaching points:

Calf muscle strength and mobility affects your balance.

Ankle joint mobility is very important when walking e.g. downstairs and up hills.

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9032 - A  
Strength - Heel Raise - Fitness Equipment

Stand with your toes on the edge of the abdomen exercise machine. Support yourself using the abdomen roll. Press your heels down to stretch your calf muscles.



9034 - B  
Strength - Heel Raise - Fitness Equipment

Stand up on your toes. Then press your heels down again.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



9071  
Strength - Rhomboids - Teaching Points

Teaching Points  
Strength Optimal Rhomb

Teaching points:

Keep your chest against the support when doing the exercise.  
Do not lift your shoulders or press your chin forward.



9055 - A  
Strength - Rhomboids - Fitness Equipment

Strength  
Optimal Rhomb

Sit in the machine with your chest touching the support.  
Choose Optimal Rhomb and set the resistance by tapping the + button to \_\_\_\_ kg.  
Take a good grip on the handles and tighten your abdominal muscles.



9057 - B  
Strength - Rhomboids - Fitness Equipment

Strength  
Optimal Rhomb

Pull your arms back as far as possible with your chest still touching the support. Do the exercise at a moderate pace.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.





## 9184 Strength - Hip Abduction - Info

Education  
How to Use the Machine

How to use the leg Abduction machine

Stand with your back against the front of the machine and push the leg supports aside. Sit down with your back against the support.

Place your legs into both leg supports. Choose Abduction and set the resistance by tapping the + button. Hold onto the handles on each side.

When you have finished exercising, lower the resistance to 0 (no resistance) by tapping the - button. Lift your legs from the leg supports and stand up.



## 9080 Strength - Hip Abduction - Test

Abduction Strength Test

Maximum isometric leg abduction strength measurement with the Performance Recorder.

Muscle weakness is the biggest risk factor for falls in the elderly and asymmetries in leg strength affects gait and balance. When strength improves the motivation for training increases. You can measure possible weakness or asymmetries in muscular strength with the Performance Recorder.

Fix the Performance Recorder onto the leg abduction machine (it can also be used with other exercise machines). The recordings on the Performance Recorder are in Newton/meter (1 Newton/ meter = 0.101 971 621 3 kilogram). To get the result in kg you multiply by 10 e.g. result on the meter is 7,2 Nm x 10 = 72 kg.

Isometric maximum strength of hip abduction is measured with the hip in 10 degree hip abduction (the Performance Recorder is always fixed with the hips in the same angle). A maximum of three trials is recorded.

The isometric strength of hip abductors for seniors over 65 should be on average 70% of their body weight or more, according to WELMED data.



## 9060 Strength - Hip Abduction - Teaching Points

Teaching Points  
Abduction Strength

Teaching points:

Strong hip abduction muscles helps to maintain balance. Abduction strength exercises are very important after e.g. hip replacement surgery.



9007 - A  
Strength - Hip Abduction - Fitness Equipment

Strength Exercise  
Abduction

Sit straight with your back against the support.  
Choose Abduction and set the resistance by tapping the + button to \_\_\_ kg.  
Hold onto the handles on each side when exercising. Tighten your abdominal muscles.



9008 - B  
Strength - Hip Abduction - Fitness Equipment

Strength Exercise  
Abduction

Push your legs apart as far as possible. Do the exercise at a moderate pace.

Repeat \_\_\_ times.  
Sets \_\_\_.



9180  
Strength - Hip Adduction - Info

Education  
How to Use the Machine

How to use the leg Adduction machine

Stand with your back against the front of the machine and push the leg supports aside. Sit down with your back against the support.

Place your legs into both leg supports. Choose Adduction and set the resistance by tapping the + button. Hold onto the handles on each side when exercising.

When you have finished exercising, lower the resistance to 0 (no resistance) by tapping the - button. Lift your legs from the leg supports and stand up.



9183

### Strength - Hip Adduction - Test

#### Adduction Strength Test

Maximum isometric leg adduction strength is measured with the Performance Recorder.

Muscle weakness is the biggest risk factor for falls in the elderly and asymmetries in leg strength affects gait and balance. When strength improves the motivation for training increases. You can measure possible weakness or asymmetries in muscular strength with the Performance Recorder.

Fix the Performance Recorder onto the leg adduction machine (it can also be used with other exercise machines). The recordings on the Performance Recorder are in Newton/meter (1 Newton/ meter = 0.101 971 621 3 kilogram). To get the result in kg you multiply by 10 e.g. result on the meter is 7,2 Nm x 10 = 72 kg.

Isometric maximum strength of hip adduction is measured with the hip in 10 degree hip abduction (the Performance Recorder is always fixed with the hips in the same angle). A maximum of three trials is recorded.

The isometric strength of hip adductors for seniors over 65 should be on average 120% of their body weight or more, according to WELMED data.



9062

### Strength - Hip Adduction - Teaching Points

#### Teaching Points Strength Adduction

Teaching points:

Hip external rotation and adduction together with activating pelvic floor muscles are good exercises for incontinence problems.



9011 - A

### Strength - Hip Adduction - Fitness Equipment

#### Strength Exercise Adduction

Sit straight with your back against the support.

Choose Adduction and set the resistance by tapping the + button to \_\_\_ kg. Hold onto the handles on each side when exercising. Tighten your abdominal muscles. Take your legs apart.



9012 - B  
Strength - Hip Adduction - Fitness Equipment

Strength Exercise  
Adduction

Press your legs together. Do the exercise at a moderate pace.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



9065  
Strength - Hip Extension - Teaching Points

Teaching Points  
Strength Body Extension

Teaching points:

Use a pillow under your neck. Do not let your back arch.  
If the exercise causes pain, do not flex your hip more than 90 degrees.

Caution: After hip replacement surgery do not flex your hip more than 90 degrees.

Contraindications: Hip instability.



9014 - A  
Strength - Hip Extension - Fitness Equipment

Strength  
Body Extension

Stand with your back against the front of the machine and hold the handles.  
Pull yourself into a good position on the machine with your legs over the rolls.  
Put the belt around your waist.

Choose Body Extension and set the resistance by tapping the + button to \_\_\_\_ kg.

Tighten your abdominal muscles. Hold onto the handles when doing the exercise.

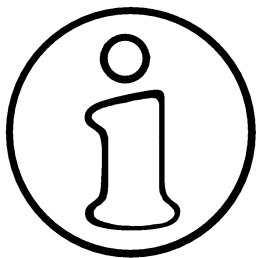


9013 - B  
Strength - Hip Extension - Fitness Equipment

Strength  
Body Extension

Straighten your legs, left-right in turn with the toe touching the floor, at a moderate pace. Do not let your back arch.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



## Senior Strength Training Information

### Basic information about fitness training for seniors Strength Training with HUR Exercise Machines

When you strength train with exercise machine, you are using your muscles to work against the extra pounds (this concept is called resistance). This strengthens and increases the amount of muscle mass in your body by making your muscles work harder than they are used to.

Before you start strength training, you should be checked out by your doctor to make sure it's safe for you to do strength exercises.

When you start strength training, start out slowly so that your body gets use to the increase in activity. The first 2 - 4 times you exercise should be done with low resistance, allowing you to get use to the machine. It's important to learn how to use the machine and how to do the exercises in the correct way. Resistance is always adjusted according to your individual test results, fitness, and health status.

Exercises give the best result when done two to three times a week. Muscular strength grows when the muscle mass increases (Mänty et al 2006). Perform one to three sets of 10 - 15 repetitions (= 70 - 80% of 1RM, repetition maximum) of each exercise. Add more weight after you can successfully perform 15 - 20 repetitions (= 60 - 70% of 1RM) in good form. Take 1 - 2 minute breaks between the sets.

Relation between training load and number of repetitions:

% of RM	No. of reps
100%	1
90%	5
80%	10
75%	15
60%	30

(Holten diagram; Grimsby O, Rivard J, Stensnes R et al: Physiological responses to exercise: exercise physiology. In Rivard J, Goodwin W, editors: Residency course notes, ed 3, San Diego, 1998, Ola Grimsby Institute.)

Warm-up and cool-down activities should be done before and after to avoid soreness or injury. Warm up your muscles by spending 5 - 10 minutes pedaling on a stationary bicycle or by taking a brisk walk around the gym. After finishing your workout, cool down by stretching all the major muscle groups to avoid injuries and keep your muscles flexible.

If you have never done strength exercises before, your muscles may be sore the next day. Because of delayed onset muscle soreness, the pain may be at its worst 2 or 3 days after you first exercise. Your body repairs this damage and builds stronger muscles and tissues as a result. But you need to allow a full day of recovery time for the body to do this.

Important Muscle Groups for Balance;  
- Hip extension muscles  
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- Hip abduction and adduction muscles
- Knee extension and flexion muscles
- Ankle extension and flexion muscles
- Trunk rotator muscles
- Back and abdominal muscles

In case of asymmetry in muscular strength, the weaker side needs to be trained more efficiently, because asymmetry of muscular strength in lower extremities weakens the balance.

Intensive training is done 2 - 3 times a week. You will definitely see results over a period of three months in your ability to progressively do more. To maintain your training result you need to continue exercising regularly 1 - 2 times a week.

Benefits of strength training:

- Increases your strength, physical function, balance and prevents falls.
- Increases muscle mass and reduces body fat.
- Helps to prevent long-term medical problems such as high cholesterol and osteoporosis (weakening of the bone).

Strength and balance training have helped decrease the amount of falls and injuries caused by falls by 15 - 50%. (Carter et al 2001, Robertson et al 2001, Gillespie et al 2003, Chang et al 2004, National Institute for Clinical Excellence 2004, Li et al 2005.)

For more information [www.hur.fi](http://www.hur.fi)



9079

Speed Strength - Leg Extension - Info

Education

How to Use the Machine

How to use the Leg Extension machine

Stand with your back against the front of the machine and grab the handles in the front. Sit down with your back against the support. Lift the arm of the ankle roll and put your feet under the roll.

Fasten the belts around your thighs, one for each leg. Choose Extension and set the resistance by tapping the + button. Hold onto the handles on each side.

When you have finished exercising, lower the resistance to 0 (no resistance) by tapping the - button. Loosen the belts around your thighs. Put your feet over the ankle rolls. Grab the handles in front and pull yourself from the machine.



9072

Speed Strength - Leg Extension - Teaching Points

Teaching Points

Leg Extension Speed Strength

Teaching points:

Resistance should be low (about 20% - 40% of 1RM).

Knee extensor speed strength exercises improves the reaction time when falling. Keep good abdominal control. Breathe normally. Avoid knee hyperextension.

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9103 - A

Speed Strength - Leg Extension - Fitness Equipment

Speed Strength Exercise

Leg Extension

Sit straight with your back against the support. Tighten your abdominal muscles. Place your legs under the ankle rolls.

Choose Leg Extension and set the resistance by tapping the + button to \_\_\_\_ kg.

Hold on to the handles when doing the exercise.

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9104 - B

Speed Strength - Leg Extension - Fitness Equipment

Speed Strength Exercise

Leg Extension

Straighten your legs, left-right in turn, but don't straighten completely. This exercise should be done as fast as possible using the correct technique.

Pretend that you are running.

Repeat \_\_\_\_ times.

Sets \_\_\_\_.

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9073

Speed Strength - Leg Press - Teaching Points

Teaching Points

Speed Strength Leg Extension

Teaching points:

Resistance should be low (about 20% - 40% of 1RM).

Leg speed strength exercises improves the reaction time when falling. Keep good abdominal control. Breathe normally. Avoid knee hyperextension.



9105 - A  
Speed Strength - Leg Press - Fitness Equipment

Speed Strength Exercise  
Leg Press

Sit straight with your back against the support. Put your feet on the footrests. Tighten your abdominal muscles. Choose Leg Press and set the resistance by tapping the + button to \_\_\_ kg. Hold on to the handles when doing the exercise.



9106 - B  
Speed Strength - Leg Press - Fitness Equipment

Speed Strength Exercise  
Leg Press

Straighten your legs, left-right in turn, but don't straighten completely. This exercise should be done as fast as possible using the correct technique. Pretend that you are running.

Repeat \_\_\_ times.  
Sets \_\_\_.



9078  
Speed Strength - Twist - Info

Education  
How to Use the Machine

How to use the Twist machine

Sit with one bar between your thighs and squeeze the bar. Push the arm roll with one arm and put your arm around the other roll to pull when twisting. Choose Twist and set the resistance by tapping the + button.

Before doing the exercise on the other side put the setting on the machine to - (no resistance). Move to the other side of the machine to sit with the other bar between your thighs. Push the arm roll with one arm and put your arm around the other roll when twisting.

Once again choose Twist and set the resistance by tapping the + button.





9074

### Speed Strength - Twist - Teaching Points

Teaching Points

Speed Strength Twist

Teaching points:

Resistance should be low (about 20% - 40% of 1RM).

Trunk speed strength exercises improve the reaction time when falling. It is important not to sit with your back curled. Do not lift your shoulders. Breathe normally. Neck should follow the rotation. Pressing legs against the roll helps to maintain trunk control.

Contraindications: Osteoporosis and severe back problems.



9101 - A

### Speed Strength - Twist - Fitness Equipment

Speed Strength

Twist

Sit on the machine with your spine in a straight position and squeeze the bar with your thighs. Push the arm roll with one arm and put your arm around the other roll to pull when twisting. Tighten your abdominal muscles.

Choose Twist and set the resistance by tapping the + button to \_\_\_ kg.



9039 - B

### Speed Strength - Twist - Fitness Equipment

Rotate your upper body, but not all the way. Do the exercise as fast as possible using the correct technique. Breathe normally.

Repeat \_\_\_ times.

Sets \_\_\_.

Repeat to the other side.



9075

### Speed Strength - Heel Raise - Teaching Points

Teaching Points

Speed Strength Heel Raise

Teaching points:

Ankle speed strength exercises improves the reaction time when falling. Calf muscle strength and mobility also affects your balance. Ankle joint mobility and rapid feet reactions are very important when stumbling or stepping on a slant.



9108 - A  
Speed Strength - Heel Raise - Fitness Equipment

Speed Strength Exercise  
Heel Raise

Stand with your toes on the edge of the abdomen exercise machine. Support yourself using the abdomen roll. Press your heels down to stretch your calf muscles.



9110 - B  
Speed Strength - Heel Raise - Fitness Equipment

Speed Strength Exercise  
Heel Raise

Stand up on your toes. Then press your heels down again as fast as possible.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



9076  
Speed Strength - Weight Shift - Teaching Points

Teaching Points  
Strength Weight Shift

Teaching points:

Resistance should be low (about 20% - 40% of 1RM).  
Forward stepping strength exercises improves the reaction time when falling.  
Moving the arms forward at the same time as stepping encourages grabbing a support when falling or cushions the impact.



9019 - A  
Speed Strength - Weight Shift - Fitness Equipment

Stand in front of the lat pull machine.  
Choose Lat Pull and set the resistance by tapping the + button to \_\_\_\_ kg.  
Hold the handles with both hands.



9018 - B  
Speed Strength - Weight Shift - Fitness Equipment

Take a quick step forward at the same time as pressing arms forward and then take a quick step back. Take alternate steps.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.



9077  
Speed Strength - Weight Shift - Teaching Points

Teaching Points  
Speed Strength Weight Shift

Teaching points:

Resistance should be low (about 20% - 40% of 1RM).  
Forward stepping speed strength exercises improves the reaction time when falling. Moving the arms forward at the same time as stepping encourages grabbing a support when falling or cushions the impact.

Progression: Extend your step.



9027 - A  
Speed Strength - Weight Shift - Fitness Equipment

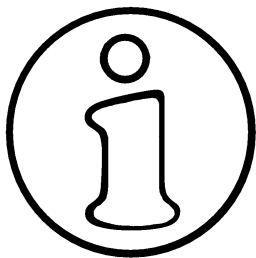
Stand in front of the Optimal Rhomb machine.  
Choose Optimal Rhomb and set the resistance by tapping the + button to \_\_\_\_ kg.  
Hold the handle with one hand.



9028 - B  
Speed Strength - Weight Shift - Fitness Equipment

Take a quick step forward with the opposite foot at the same time as pressing the arm forward and then take a quick step back.

Repeat \_\_\_\_ times.  
Sets \_\_\_\_.  
Repeat on the other side.



### Senior Speed Strength Training Information

Basic information about fitness training for seniors  
Speed Strength Training with HUR Exercise Machines

When you speed strength train with exercise machines, you are using your muscles to work against the extra pounds (this concept is called resistance). Speed strength exercises improves your reaction time and helps in case of a fall.

Before you start speed strength training, you should be checked out by your doctor to make sure it's safe for you to do strength exercises.

When you start speed strength training, start out slowly so that your body gets used to the increase in activity. It's important to learn how to use the machine and how to do the exercises in the correct way. Speed strength is increased by means of nervous mechanisms (Mänty et al. 2006). Speed strength exercises should be done as quickly as possible with the right technique. Do only 5 - 10 repetitions with many sets. Resistance should be low only 20 - 40% of 1RM. Breathe normally when doing the exercise.

Combining strength and speed strength training gives the best result for seniors. You can use 4 - 5 different machines for strength training and 2 - 3 machines for speed strength training.

It is important to train arm forward press speed strength in addition to leg speed strength. In case of a forward fall or stumbling you need a quick step forward and quickly stretch out your arms to cushion the fall. Side way falls require rotation of trunk, which is why training of rotation at a quick pace is also important.

Warm-up and cool-down activities should be done before and after to avoid soreness or injury. Warm up your muscles by spending 5 - 10 minutes pedalling on a stationary bicycle or by taking a brisk walk around the gym. After finishing your workout, cool down by stretching all the major muscle groups to avoid injuries and keep your muscles flexible.

Benefits of speed strength training:

- Increases your physical function, balance and prevent falls.
- Improves you reaction time.
- Helps to prevent hip fractures.

For more information [www.hur.fi](http://www.hur.fi)



9006

Product Information - Evidence/Reference - Info

Fitness Training for Falls Prevention  
Evidence/Reference

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Karinkanta S, Piirtola M, Sievänen H, Uusi-Rasi K, Kannus P. Physical therapy approaches to reduce fall and fracture risk among older adults. Nat Rev Endocrinol. 2010 Jul;6(7):396-407. Epub 2010 Jun 1.

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9004

Product Information - Preface - Info

Fitness Training for Falls Prevention



This module includes strength training, speed strength training and stretching exercises. It also includes basic information on fitness training, fitness machines and how to measure strength. The exercises are suitable for people who need to improve their muscular strength to help prevent falls and fractures. To prevent falls, strength and speed strength skills are needed, for example being able to take a quick step or to quickly grab for support.

The exercises are specifically designed for seniors and can be used for rehabilitation and general fitness. They are used by physiotherapists, professionals working with geriatrics, personal trainers, fitness instructors, sport therapists and researchers.

Includes 78 items.



9005  
Product Information - Author - Info

Product Information  
Author Gerd Laxåback

Gerd Laxåback

This module was created by physiotherapist Gerd Laxåback at the WELMED LABs, Health Science Unit, Kokkola University Consortium Chydenius, Finland. WELMED is a test laboratory for assessment of physical functions and balance. The measurements are made with HUR muscle strength and HUR Labs balance measuring equipment. HUR has collaborated with WELMED LABs and is also the publisher of this module.

For more information go to [www.welmed.fi](http://www.welmed.fi) or [www.hur.fi](http://www.hur.fi).



9088  
Stretch - Trunk Rotation - Stretching

Sit on the edge of a chair with your back straight, do not lean back. Put your hands together and lift your arms horizontally.

Rotate your upper body to the side while looking at your hands. Rotate as much you can without moving your pelvis, stay for 5 - 10 seconds and then try to rotate a little bit more. Repeat the rotation to both sides \_\_\_\_ times.

Contraindications: Osteoporosis and severe back problems.



9082  
Stretch - Calf mm - Stretching

Stand behind a chair. Support yourself using the back of the chair.

Put one leg back, pressing your heel to the floor and your pelvis closer to the back of the chair keeping your knee straight. Feel the stretch in your calf muscle.

Stretch for 20 seconds. Do the same with your other leg. Stretch both legs \_\_\_\_ times.



9084  
Stretch - Hip Flexor mm - Stretching

Sit on the side of a chair without supporting your back, with one knee pointing to the floor.

Push your leg further back. Do not let your back arch. Feel the stretch in the front of your hip.

Stretch for 20 seconds. Do the same with your other leg. Stretch both legs \_\_\_\_ times.



9085

Stretch - Hip Flexor mm - Stretching

Stretch

Hip Flexor mm and Side Bending

Sit on the side of a chair without supporting your back, with one knee pointing to the floor.

Push your leg further back. Do not let your back arch. Lift your arm on the same side and stretch upwards to the ceiling. Feel the stretch in the front of your hip and your side.

Stretch for 20 seconds. Do the same with your other leg and side. Stretch both your legs and sides \_\_\_\_ times.

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9086

Stretch - Gluteus - Stretching

Sit on a chair and place your ankle onto the opposite knee. Press your knee down with your hands. Bend forward as far as possible, keeping your back straight.

Stretch for 20 seconds. Do the same with your other leg. Stretch both legs \_\_\_\_ times.

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9083

Stretch - Quadriceps - Stretching

Sit on the side of a chair without supporting your back, with one knee pointing to the floor. Hold onto your ankle or trouser leg.

Lift your ankle closer to your buttock, while the knee is pointing to the floor. Do not let your back arch. Feel the stretch in the front of your thigh.

Stretch for 20 seconds. Do the same with your other leg. Stretch both legs \_\_\_\_ times.

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9081

Stretch - Hamstring - Stretching

Sit on the edge of a chair with your back straight. Put one leg forward with knee straight and ankle bent.

Bend forward as far as possible, keeping your back straight. Do not over extend your knee. Feel the stretch in the back of your thigh.

Stretch for 20 seconds. Do the same with your other leg. Stretch both legs \_\_\_\_ times.

9087

### Stretch - Hip External Rotator mm - Stretching



Sit on a chair and place your ankle onto the opposite knee. Pull your knee up with your opposite arm. Feel the stretch in the buttock.

Stretch for 20 seconds. Do the same with your other leg. Stretch both legs \_\_\_\_\_ times.

Contraindications: Hip instability. After hip replacement surgery do not bend and rotate the hip inwards at the same time.