

THE ANKLE TRAINER





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TABLE OF CONTENTS

UNPACKING INSTRUCTIONS	04
PRODUCT OVERVIEW	04
SPECIFICATIONS	04
BENEFITS	04
LIST OF PRECAUTIONS FOR THE ANKLE TRAINER	05
IDENTIFYING THE PARTS OF THE ANKLE TRAINER	06
INSTRUCTIONS FOR USE	08
MAINTENANCE	13
SAMPLE EVALUATION	13
OTHER NEUROGYM® TECHNOLOGIES PRODUCTS	14

UNPACKING INSTRUCTIONS

The Ankle Trainer comes fully assembled in a 2'x2'x1' box. Simply attach your chosen method of resistance to isolate a specific motion and begin training. The unit comes with one Adjustable Resistance Assembly (ARA). (See Figure #1) You could alternatively use a Theraband or a Wall Pulley.

PRODUCT OVERVIEW

Strengthen weak, parietic, sprained or post-surgical ankles by isolating and training targeted muscle groups through a complete range of motion. The NeuroGym® Ankle Trainer is a lightweight, portable device with an axle and foot platform that can be locked into place. In conjunction with a wall pulley, Theraband, or the ARA that ships with the unit, this unique machine permits strength and control training in dorsiflexion, plantar flexion, inversion, eversion, internal and external rotation—motions that are difficult to isolate and specifically strengthen.

Visit www.neurogymtech.com to access Application notes and training videos

SPECIFICATIONS

- 20" l x 15"d x 15" h
- Weighs 18.4 lbs

BENEFITS

- Improves standing balance and stability.
- Improves weight bearing and weight transferring capabilities.
- Improves safety when ambulating.
- Facilitates gait retraining expediting a return to more independent ambulation.
- Movement specific training enables an individualized approach to program design and delivery.



IMPORTANT

Read all instructions and precautions prior to using the Ankle Trainer

LIST OF PRECAUTIONS FOR THE ANKLE TRAINER:

1. Do not use the Ankle Trainer after ankle/foot surgery unless and until training for strength and range of motion has been cleared by a physician.
2. Ensure resistance is not excessive. Due to the limited weight of the Ankle Trainer, heavy resistance from a pulley may pull the machine (and attached ankle) forward. When operating with heavy resistance, it is recommended to have the therapist step down on the base plate arms to secure the position of the Ankle Trainer.
3. When used in standing, ensure that the user is stable on his/her contralateral leg and supported by an upper extremity.
4. When adjusting the foot plate angle with the adjustment knob it is advisable to rotate the foot plate such that the knob is not directly over the metal base plate arm to avoid catching the fingers between the base plate and the adjustment knob.

IDENTIFYING THE PARTS OF THE ANKLE TRAINER TRAINER: FIGURE 1

- Foot and Heel Straps – 2
- Heel Slider Plate
- Heel Slider Plate Adjustment Knob
- Base Plate
- Base Plate Arms – 2
 - Anterior
 - Posterior
- Base Plate Resistance Attachment Points (on Base Plate Arms) – 2
 - Anterior
 - Posterior
- Foot Plate
- Foot Plate Arms – 4
 - Medial/Lateral
 - Posterior
 - Anterior
- Foot Plate Resistance Attachment Points (on Foot Plate Arms) – 4
 - Medial
 - Lateral
 - Anterior
 - Posterior
- Foot Plate Angle Adjustment Knob and Arm
- Adjustable Resistance Assembly (ARA)

FIGURE 1: ANKLE TRAINER





Medial & Lateral
Foot Plate Resistance
Attachment Points

Anterior Foot Plate
Resistance Attachment
Point (on Anterior
Foot Plate Arm)

Anterior Base Plate
Resistance Point



Foot and Heel Straps

Foot Plate

Heel Slider Plate
(Posterior Lip)

Base Plate
Arm

Posterior Foot
Plate Resistance
Attachment Point
(on Posterior Foot
Plate Arm)

Base Plate Arm

Medial & Lateral
Foot Plate Resistance
Attachment Points (on
Medial & Lateral
arms of the Foot Plate)

Base Plate Resistance
Attachment Points

Base Plate Resistance
Attachment Points

Base Plate

Foot Plate Angle
Adjustment Arm

INSTRUCTIONS FOR USE

COMPLETE THE FOLLOWING PRIOR TO TRAINING

Seat the client behind the Ankle Trainer, either on a chair or in a wheelchair. If the client is in a wheelchair, swing the foot rest of the affected ankle to the side.

Place the desired foot onto Foot Plate and slide the heel back until it is in contact with the posterior lip of the foot plate. With the Heel Slider Plate Adjustment Knob, adjust the length of Heel Plate according to training goals (longer heel leverage would be biomechanically easier). Buckle Foot Strap firmly.

Position the Base Plate such that the front and back arms are parallel to and directly below the front (anterior) and back (posterior) arms of the Foot Plate respectively, or orthogonal to that position.

You may use a variety of methods to create resistance for a specific motion while engaging a client with the Ankle Trainer.

- Theraband – not supplied
- Wall Pulley – not supplied
- Adjustable Resistance Assembly (ARA) – provided with the unit

Choose a motion to train and attach your method of resistance to the appropriate Resistance Points. When using a Theraband, tie one end of the Theraband to the appropriate Base Plate Resistance Point and the other end to the appropriate location on the Foot Plate. When using the ARA, clip the carabiner that is attached to the pulley assembly end of the ARA to the appropriate Base Plate Resistance Point, and connect the other carabiner to the appropriate location on the Foot Plate. To increase resistance using a Theraband simply stretch the Theraband and tie the end. To increase the resistance in the ARA, pull the free end of the bungee until the desired resistance is achieved. To release the resistance push up on the mechanism's metal tab located within the pulley assembly. When using a Wall Pulley simply connect the clip/carabeener on the Wall Pulley to the appropriate location on the footplate.

ISOLATING TRAINING RANGE OF MOTION

Internal Rotation

Loosen the Footplate Angle Adjustment Arm (counterclockwise) and position the Foot Plate such that it is parallel to the floor. Tighten the Foot Plate Angle Adjustment Arm (clockwise) to secure the Foot Plate in the parallel plane.

Attach the one end of the elastic resistance method to the Anterior Base Place Resistance point and the other end to the Medial Foot Plate Resistance Attachment Point. (See Figure #2)

If a wall pulley system is available to provide resistance, the pulley can be attached directly

to the medial arm of the Foot Plate, eliminating the need for any a Theraband or ARA. Once connected, pulley should run approximately parallel to the ground.

Remember, the more tension that is placed on the resistance method, the greater resistance it will offer during the training of the internal rotation movement.

Instruct client to rotate foot inwards (direct big toe towards the midline of body). If client is unable to independently initiate and complete this movement, the trainer can assist the client by directing the Foot Plate inwards using the anterior resistance attachment arm. Complete the movement by allowing the Foot Plate to return to the starting position.

Perform a series of repetitions to fatigue ankle muscles and initiate the training effect.

Suggested Intensity: 10 repetitions maximum (RM) (i.e. resistance against which user is able to complete 8-10 repetitions maximum OR as recommended by physical therapist.

FIGURE 2



External Rotation

Position Foot Plate parallel to the floor as outlined above under Internal Rotation.

Attach the one end of the resistance method to the Anterior Base Plate Resistance point and the other end to the Lateral Foot Plate Resistance Attachment Point closest to the baby toe and outside edge of the working foot (See Figure #3).

Maintain the Lateral Foot Plate Resistance Arm at right angles to the anterior arm of the base plate when attaching the resistance method.

Remember, the more tension that is placed on the Theraband, Wall Pulley or ARA, the greater resistance it will offer during the training of the external rotation movement and the more difficult it will be for the client to initiate the movement.

If a pulley system is available to provide resistance, the pulley can be attached directly to the Lateral Foot Plate Resistance Attachment Point. Once connected the pulley should run approximately parallel to the ground.

Instruct client to rotate foot outwards (direct big toe away from midline of body) assisting the client by directing the Anterior Foot Plate Arm first outwards and then back to the starting position. Repeat movement. As fatigue sets in, repetitions will be harder to perform and range of motion will decrease as client will be able to contribute less to the movement effort.

FIGURE 3

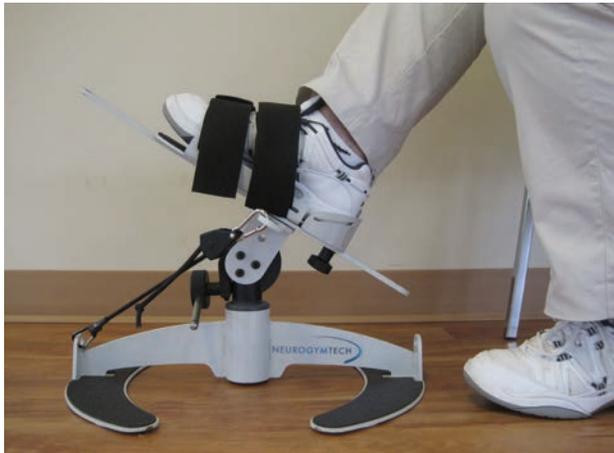


Inversion

Position the Foot Plate at a 45-degree angle to the floor (or at an angle as acute as recommended by physical therapist) by loosening Foot Plate angle adjustment arm and tipping toe upwards. Tighten adjustment arm to secure Foot Plate in that plane. Attach the one end of the resistance method to the Anterior Base Plate Resistance point and the other end to the Medial Foot Plate Resistance Attachment Point (arm that is closest to the midline of the client's body). (See Figure #4)

If a wall pulley system is available to provide resistance, the pulley can be attached directly to the medial arm of the Foot Plate, eliminating the need for any a Theraband or ARA. Once connected, pulley should run approximately parallel to the ground.

FIGURE 4



Eversion

Position Foot Plate at 45-degree angle to the floor (or at an angle as acute as recommended by physical therapist) by loosening Foot Plate Angle Adjustment Arm and tipping toe upwards. Tighten the adjustment arm to secure Foot Plate in that plane.

Attach the one end of the resistance method to the Anterior Base Place Resistance point and the other end to the Lateral Foot Plate Resistance Attachment Point closest to the baby toe and outside edge of the working foot. (See Figure #5) Maintain the Lateral Foot Plate Resistance Arm at right angles to the anterior arm of the base plate when attaching the resistance method.

Remember, the more tension that is placed on the Theraband, Wall Pulley or ARA, the greater resistance it will offer during the training of the internal rotation movement and the more difficult it will be for the client to initiate the external rotation movement

FIGURE 5



Dorsiflexion

Loosen Foot Plate Angle Adjustment Arm. Attach the resistance to the Anterior Foot Plate Arm tightening to the desired level of resistance and maintaining the Anterior Arm of the Foot Plate directly above and aligned with the anterior arm of the base plate. (See Figure #6)

If a pulley system is available to provide resistance, the pulley can be attached directly to the anterior arm of the Foot Plate.

Instruct client to pull their toe directly upwards toward the ceiling with no deviation of the foot to the left or the right. If client is unable to independently initiate and complete this movement, the trainer can assist the client by directing the Foot Plate upwards using the anterior resistance attachment arm. Complete the movement by allowing the Foot Plate to return to the starting position.

Perform a series of repetitions to fatigue ankle muscles and initiate the training effect.

Adjust heel slider position forward/backward to increase/decrease resistance.

FIGURE 6



Plantar Flexion

Loosen Foot Plate Angle Adjustment Arm. Attach the resistance to the posterior base plate attachment point. Attach the other end of the resistance to the Posterior Arm of the Foot Plate. (See Figure #7) Ensure that the anterior arm of the Foot Plate is directly above and aligned with the anterior arm of the base plate.

If a pulley system is available to provide resistance, the pulley can be attached from behind and above the user's shoulder and directly to the anterior arm of the Foot Plate

Instruct client to push their toe directly downwards toward the floor with no deviation of the foot to the left or the right. If client is unable to independently initiate and complete this movement, the trainer can assist the client by directing the Foot Plate downwards using the posterior resistance attachment arm.

Complete the movement by allowing the Foot Plate to return to the starting position. Perform a series of repetitions to fatigue ankle muscles and initiate the training effect.

FIGURE 7



MAINTENANCE

The Ankle Trainer should be dusted/wiped regularly to keep it clean. Inspect bungees for signs of thinning or fraying. Replacement bungees are available from NeuroGym Technologies Inc.

SAMPLE EVALUATION

When pulley is available, the suggested training intensity, for example 10 RM, becomes a valid measure of ankle strength. Other measures could be active range of movement in a given direction, or the functional measure of timed single leg stance.

OTHER NEUROGYM® PRODUCTS

SIT-TO-STAND TRAINER

Actively assist the standing motion with support at the knee, trunk and arms to promote early mobility. The NeuroGym® Sit-to-Stand Trainer uses a counter-weight mechanism to provide a safe and effective way to strengthen weight-bearing muscles and increase standing stability and endurance.



PENDULUM STEPPER

The NeuroGym® Pendulum Stepper is a self-assisted trainer of reciprocal stepping designed to specifically target the antigravity muscles that are so important for maintaining balance and gait. Even in individuals with significant muscle weakness, it is designed to make improving the strength and endurance of the stepping motion simple and convenient.



BUNGEE MOBILITY TRAINER

The NeuroGym® Bungee Mobility Trainer is a versatile body weight support mechanism enabling safe, intensive motor retraining. The unique patented design enables the re-training of gait and natural protective reactions by counteracting loss of stability as naturally as possible. Comparable to a pool environment in terms of support, the Bungee Mobility Trainer allows graduated weight bearing while normal protective reactions such as sidestepping are re-developed. The Bungee Mobility Trainer provides graduated support from underneath, rather than a harness mechanism that provides the support from above. Supporting the patient from above does not allow this 'natural' graduated support, particularly upon loss of balance. The Bungee Mobility Trainer enables more realistic safe practice of gait, and most importantly, the protective reactions necessary to prevent falls.



EXERCISE WHEELCHAIR

The NeuroGym® Exercise Wheelchair converts from a standard wheelchair into a variable resistance flexion and extension exercise machine for the trunk and lower extremities. With the flick of a switch, the wheelchair seat, backrest or both can be enabled to allow for flexion and extension exercises of trunk, hips and knees. The special footrest apparatus, which is stored under the seat, pulls out smoothly for use in exercise and folds back up easily so that it does not interfere with standard use of the wheelchair.



NEUROGYM®™ TIMTRAINER

The NeuroGym® TIMTrainer creates an engaging and motivational environment for re-learning motor abilities using a combination of camera-captured movement technology and NeuroGym®'s patented computer algorithms for movement training. The location of coloured sensors held by or attached to the user is recorded by the camera and interfaced with computer games. Desired movements such as reaching, standing up from a seated position, weight shifting or stepping can then control a computer game. The range, speed and general complexity of the game can be changed to allow for the user's ability and progress. Three games are included: Ski, Pong and Pinch.



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