NeuroGym® Technologies Inc.

The Exercise Wheelchair
Product Manual
Unpacking Instructions

The Exercise Wheelchair is shipped fully assembled on a 4x4 skid. Remove the protective wrapping and it is ready to use.
Product Overview

The NeuroGym® Exercise Wheelchair converts from a standard wheelchair into a variable resistance flexion and extension exercise machine for the trunk and lower extremities. By releasing a switch, the wheelchair seat and backrest can be enabled to allow for flexion and extension exercises of trunk, hips and knees. A 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.

Specifications (Standard Configuration)

- MODEL # E-EW-A
- Breezy 600 wheelchair
- Seat width 18”, seat depth 18”, seat height 16”
- Seat to floor height range 15”-20 ½
- Forest green
- Weighs 80 lbs

Benefits

- Allows for effective functional strengthening of trunk and lower extremities – critical antigravity muscles for stabilizing posture and enabling standing and transfers. Improved trunk strength also allows for improved ability to turn over in bed more independently.
- Does not require transfers
- Can be used to improve endurance in weak, wheelchair-bound users
- Doubles as a comfortable wheelchair
Precautions for using the Exercise Wheelchair

1. Always ensure the wheelchair breaks are securely engaged before using the chair for exercise. When pulling out the leg mechanism, make sure to grasp the end of the mechanism near the front of the seat. Do not reach under the seat to grab the inside of the leg mechanism.

2. When locking/unlocking the chair back/seat mechanism, do so by pressing the lever down or pulling it up from the end closest to the seat back cushion.

3. During exercise, user should keep hands on arm supports or resting on the lap – away from moving parts.

4. Do not exceed full (180 degrees) trunk extension; it is recommended to gradually increase the exercise range until full extension is achieved.

5. Do not extend the neck past neutral during the extension phase.

6. The user may require assistance to pull out and set up the sliding leg mechanism; if user is attempting to do so independently, ensure user is securely fastened in chair with seatbelt.

7. Discontinue the exercise and consult a physician if sharp pain or discomfort is experienced any time during the training.
Identifying the Parts of the Exercise Wheelchair

Exercise Wheelchair in Regular Mode

Exercise Wheelchair in Exercise Mode

Back Seat Cushion

Chair Back/Seat Locking Lever

Seat Cushion

Foot Plates

Velcro Straps

Sliding Leg Mechanism

Bungee Cords

Carabiner

Wheelchair Brake
Identifying the Parts of the Exercise Wheelchair

- Safety Wheels
- Rear Bungee Cords
- Slot for Attaching Carabiner
- Sliding Leg Mechanism in Stored Position
Instructions for Use

A. Getting Started

1. Ensure that the Exercise Wheelchair (WC) brakes are securely engaged.

2. Transfer user to the Exercise Wheelchair (WC) or, if already seated on the WC, remove legs from foot supports and rotate supports sideways (or remove foot supports)

3. Have user part knees slightly. Grasp sliding leg mechanism at front as shown below. Take care to grasp the front of the mechanism. Do not reach underneath or further under the chair.

4. Pull leg mechanism out fully until it rests on the ground in-front of the chair.

5. Grasp the posterior heel notch of the foot plate and slowly guide the collapsed arm of the leg mechanism from under the seat. Note that it may be necessary to tilt the foot plates slightly so they clear the underside of the seat.
6. Disconnect the carabiner, to which the bungee cords are attached, from the lower ring on the moving arm, and connect it to the slot at the front of the seat cushion.

7. Lift foot-plates with one hand and mount user’s legs, one at a time, on the foot plates. Secure Velcro straps over the feet.

8. For leg exercises only, do not unlock the chair back/seat locking levers. The chair is now ready for performing isolated leg exercises.

9. To perform trunk exercises in addition to hip and knee flexion, the 2 chair back/seat locking levers located on the back of the chair behind the user’s shoulders must be released.
B. Exercising

- Ensure that the WC breaks are securely engaged.

- Simultaneously push legs forward (extension of knees and hips) and trunk back (extension). Begin with limited range movement to get a feel for the movement and resistance.

- Reverse direction by flexing the trunk and lower extremities. Ensure that the user attempts to return all the way to full sitting position.

- If resistance for either trunk or legs is not satisfactory, change it by removing/adding bungees as needed to increase/decrease resistance. MAKE SURE TO SECURE THE CHAIRBACK/SEAT LOCKING LEVERS WHEN CHANGING THE BUNGEE CORDS.

- Always begin with slow movements and attempt to resume original sitting position with each flexion.

- Progress range and speed of movement as suggested by instructor/trainer; remove hands from arm support as an additional step up in exercise progression.
C. Additional Exercise Options

- To target legs alone, secure both chair back/seat locking levers, then train one or both legs at the range, level of resistance and speed desired. To better enable hip flexion, add additional bungee cords.

- Trunk flexion/extension exercises can be performed alone without engaging the sliding leg mechanism. With the original wheelchair foot plates in place, the chair back/seat locking levers can be released and trunk flexion and extension exercises performed with the feet remaining on the original wheelchair footplates. In the absence of original footplates, a low stool can be placed in front of the user on which to rest the feet. To vary the pace or speed sensitivity of the exercise, music or biofeedback video games may be added (a sensor on the back rest would best detect the motion).

- To add a level of difficulty to trunk extension, an elastic band could be used to involve scapular retraction (via horizontal abduction of the arms.)
D. Tucking Leg Mechanism Back under the Wheelchair

- Remove user’s legs from Foot Plates and place on ground

- Detach resistance bungee from notch at the front of the seat by unattaching the carabener and reattach the carabener to the loop on the moving arm

- Collapse foot plates and lateral arm of sliding leg mechanism in the direction of the chair, then grasp the base from the ground and slowly slide it back onto track under the wheelchair. Note that the foot plates may need to be tilted slightly to fit under the chair.

- Caution: hold the sliding leg mechanism only as indicated. Do not reach under WC to adjust the position. If the apparatus does not slide smoothly, pull it back out to adjust the angle slightly, then try again.
Maintenance

Use disinfectant wipes or spray to clean the exercise wheelchair after use.

The metal frame and sliding leg mechanism should be kept clean and free from dust or dirt.

Inspect bungees for signs of thinning or fraying. Replacement bungees are available from NeuroGym Technologies Inc.