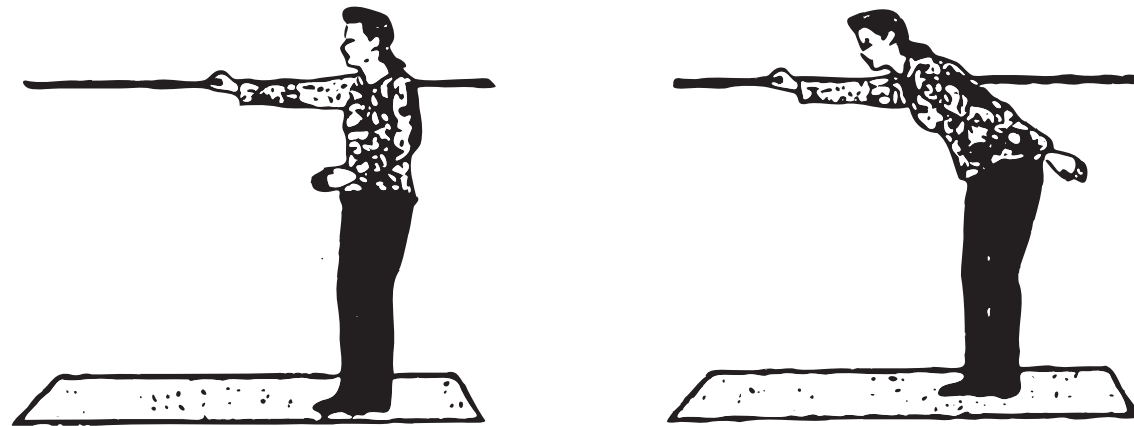


Safe Life at Home<sup>SM</sup> Fall Prevention Program

# Vestibular Rehabilitation Track

# Functional Reach Test/Exercise



Subject stands with one shoulder against wall. Subject extends arm closest to wall at shoulder level and makes a fist. A yardstick, tape measure, or ruler is secured against the wall at the fist level. The subject reaches forward as far as possible without stepping or losing balance. The tester must guard the subject closely. Measure the forward reach distance.

Distance = \_\_\_\_\_ inches

## Interpretation

Greater than 10 inches: Unlikely to fall

6–10 inches: 2 times more likely to fall

1–6 inches: 4 times more likely to fall

Unwilling or unable to reach: 28 times more likely to fall

# Vestibular Rehabilitation

## Exercises to Improve Balance: PAGE 1 OF 3

The purpose of these exercises is to assist you to develop strategies of performing daily activities even though you may have decreased visual, somatosensory, or vestibular function. The activities are designed to help you develop confidence and establish functional limits. As with all balance retraining the goal is to find activities which are challenging but which can be performed with a fair amount of accuracy. These exercises will challenge your balance and you should take extra precautions so that you do not fall.

1. Stand with your feet shoulder width apart, with both hands helping you keep your balance by touching a wall (or countertop). Take your hands off the wall for longer periods of time while keeping your balance. Try moving your feet closer together. Practice for 5 minutes 3 x a day.
2. Stand with your feet shoulder width apart, eyes open, looking straight ahead at a target on the wall. Progressively narrow your base of support (move your feet one inch at a time) from:
  - feet apart to
  - feet together to
  - a semi heel-to-toe position to
  - heel-to-toe (one foot in front of the other) to
  - heel-to-toe onto tip-toes.

### Do the exercise first:

- with arms folded across you chest, then
- with arms close to your body, and then
- with arms outstretched.

Hold position for 15 seconds, and then move to the next most difficult position.

## Exercises to Improve Balance: PAGE 2 OF 3

3. Repeat exercise #2 with the head bent forward 30 degrees and then bent back 30 degrees.
4. Repeat exercise # 2 with the eyes closed, at first intermittently and then continuously, while making an effort to mentally visualize your surroundings.
5. Repeat exercises #2 and/or #4 while standing on a foam pillow.
6. Stand with your feet a comfortable distance apart and eyes open. Now sway forward and back so that weight shifts from your toes to your heels. Make sure there is no bending at the hips. Practice this for 5 minutes or so. Now stop and close your eyes and stand as still and steady as possible.

### To progress this activity:

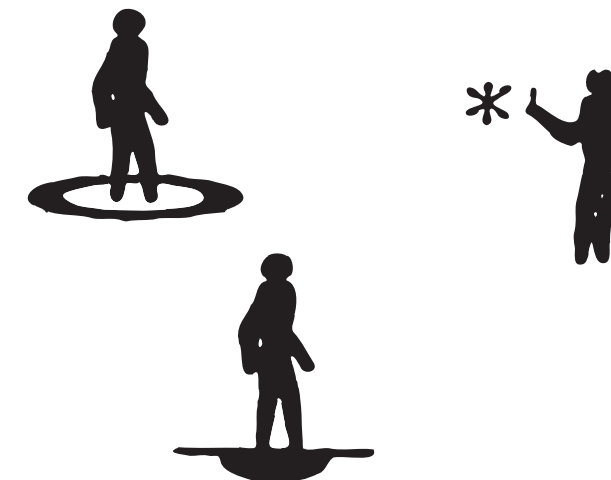
- practice the swaying activity with eyes closed
  - practice with narrow base of support
  - practice on compliant surfaces. You may have to start with thin foam and gradually increase the thickness
7. Walk close to the wall with your hand available for balancing. Walk with a narrower base of support. Finally, walk with heel-to-toe. Do this with your eyes open / closed. Practice for 2 minutes.
  8. Walk close to a wall with your hand available for balancing. Start with your eyes open for 2 steps, then close your eyes for 10 steps. Open your eyes and repeat 10 times.

## Gaze Stabilization – Varied Surfaces

While the patient is standing on an uneven or movable surface (i.e., trampoline, vestibular board, foam mat) have him or her focus on an object that you move in front of their field of vision.

Instruct the patient to maintain his or her balance while focusing on the object.

As the patient becomes confident in this activity vary the exercise by moving the object in a vertical or diagonal motion.



# Focusing While Turning Head

1. Have the patient sit in a comfortable position and bring his or her index finger to approximately 10 inches from the front of the nose.
2. While focusing on the finger, have the patient turn his or her head from side to side.
3. Gradually have the patient increase the speed of the head turns.

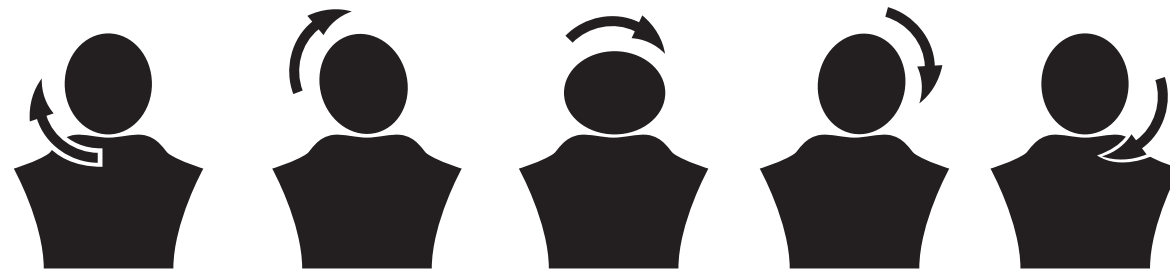


## Exercises to Improve Balance: PAGE 3 OF 3

9. Walk close to a wall and turn your head to the right and left as you walk. Try to focus on different objects as you walk. Turn your head every 5 steps. Gradually turn your head further and faster. Practice for 2 minutes.
10. Practice turning around while you walk. At first, turn in a large circle but gradually make smaller and smaller turns. Be sure to turn in both directions.
11. Take 5 steps and turn around to the right (180 degrees) and keep walking. Take 5 more steps, turn left (180 degrees) and keep walking. Repeat 5 times, rest, and repeat the entire sequence.
12. Sit in a chair, stand up, take 10 steps and turn around to the right (180 degrees). Walk back to the chair and sit down. Repeat, but turn to the left (180 degrees). Repeat 5 times, rest, and repeat the entire sequence.

# Head Circles

1. Sitting in a comfortable position, begin moving your head in a circular motion with your eyes open.
2. Repeat step one with/your eyes closed.
  - Repeat 15 – 20 times
  - Reverse direction &
  - Repeat 15 – 20 times.
  - Do both directions 2 – 3 times daily.



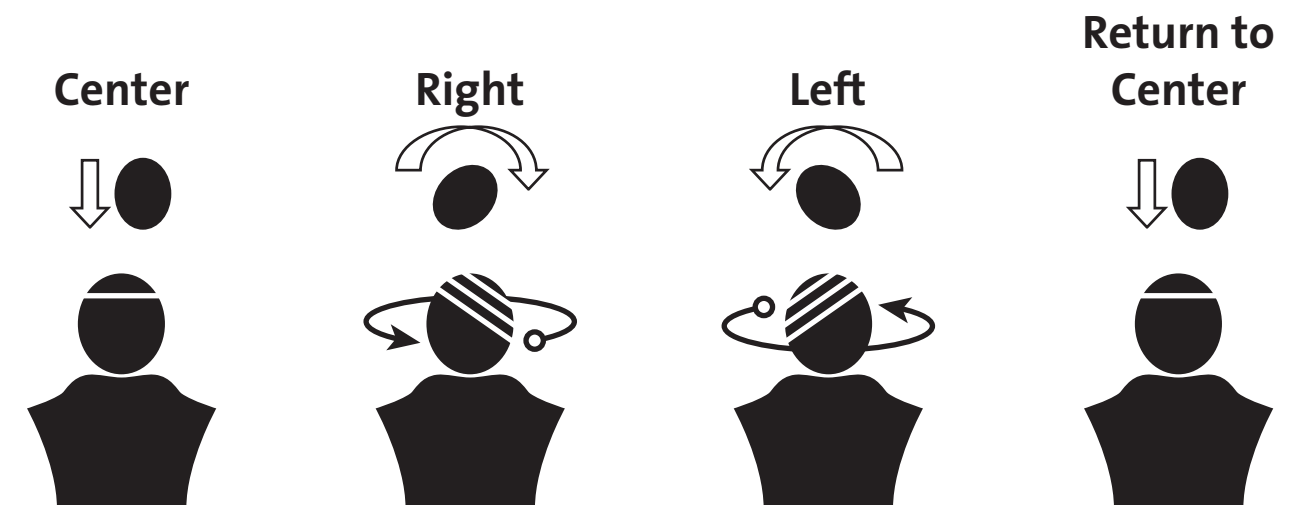
Eyes Open



Eyes Closed

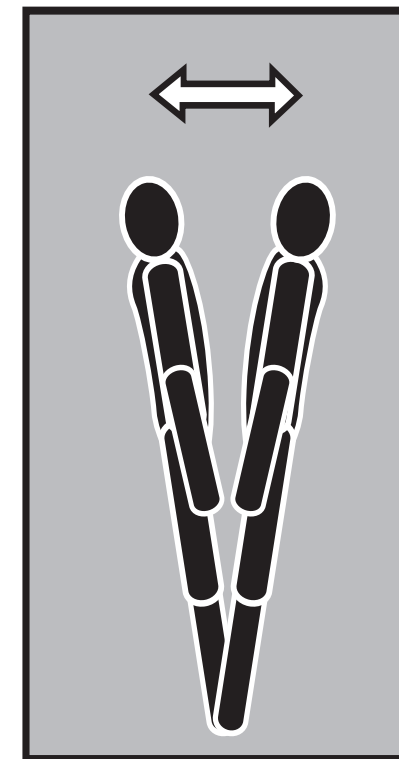
# Horizontal Head Movements

1. Sit in a comfortable position, with your feet flat on the floor and your hands on your thighs.
2. Keeping your trunk still, quickly turn your head and look to the right, then turn your head and look to the left, and then return to center and look directly in front of you. Hold for 5 seconds. Pause, and then repeat the entire exercise.
3. For best results, focus your eyes on an object or target in each direction you turn your head, including when facing forward.
  - Repeat **15 – 20** times.
  - Do **2 – 3** times daily.



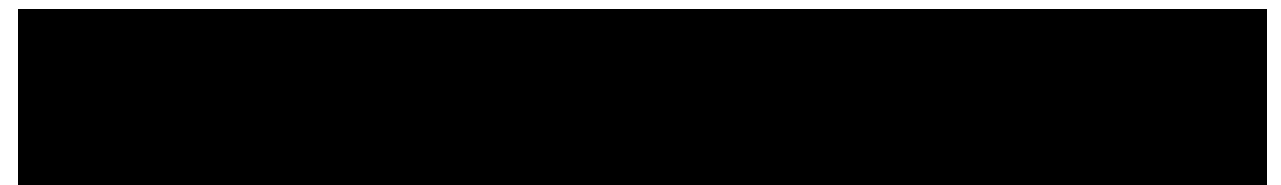
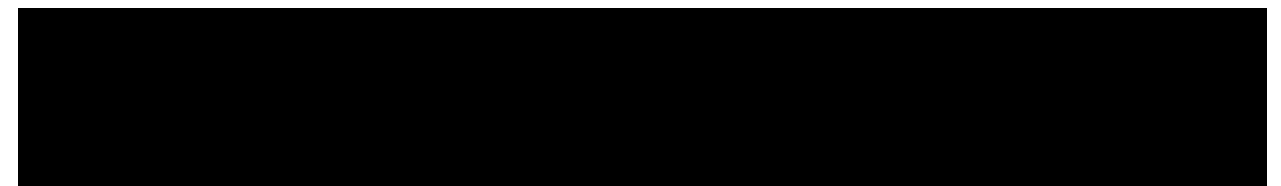
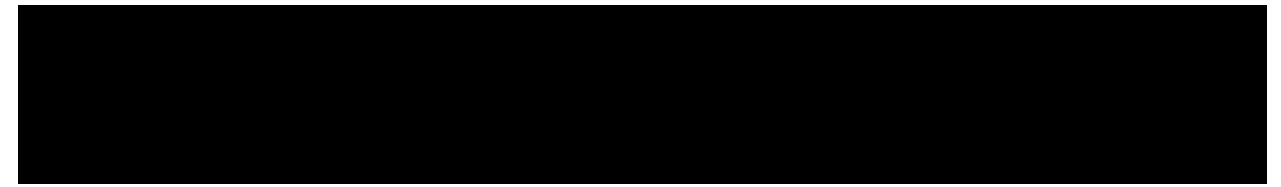
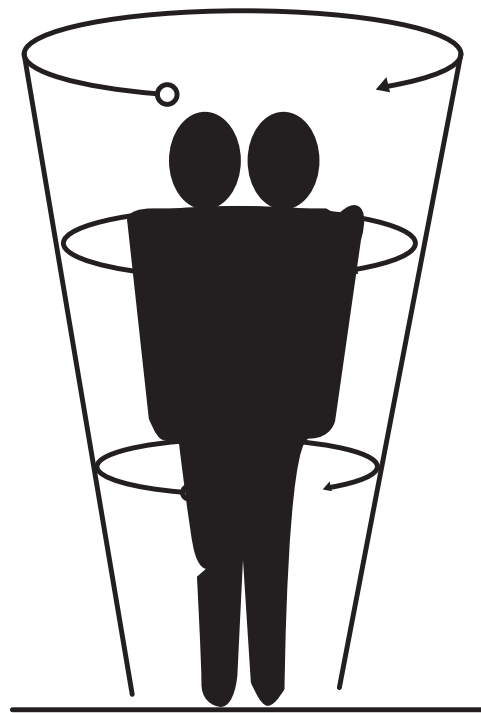
# Ankle Sways

1. Have the patient stand with his or her feet shoulder width apart, equal weight on both feet, and arms relaxed at the side. Placing the patient's back near a wall will provide additional stability and security.
2. While looking strait ahead, have the patient slowly shift his or weight forward and backward. Keep the amount of movement forward and back restricted to prevent bending at the hips. All movement should be at the ankles.
3. Next have the patient shift his or her weight from side to side, placing more weight first to the right side, then to the left. Again, preventing any bending at the hips.
4. This protocol may be performed first with eyes open and then closed.



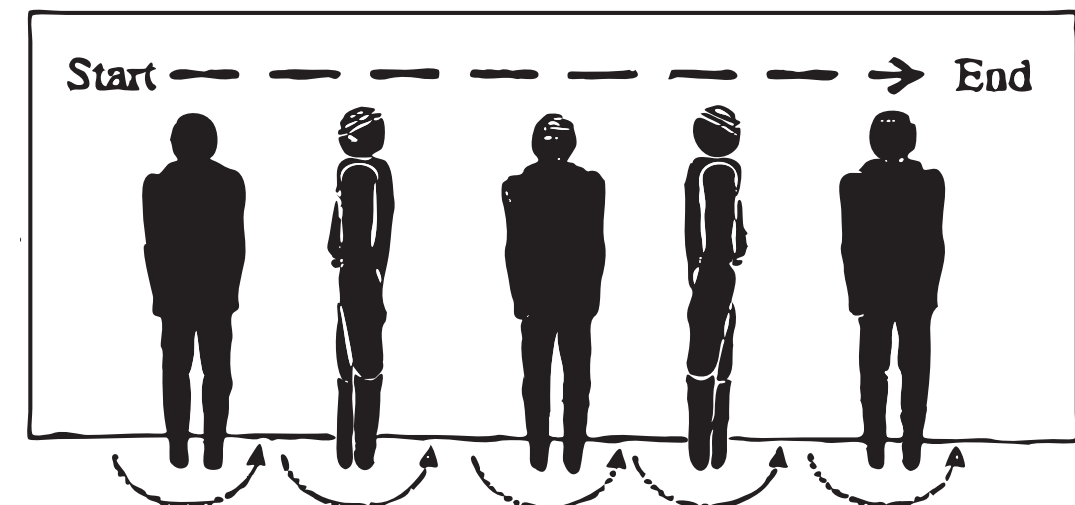
# Circle Sways

1. Have the patient stand with his or her feet shoulder width apart. Placing the patient's back near a wall will provide additional security.
2. Patient should breathe deeply and be encouraged to relax. The patient is to focus his or her attention on the feeling of his or her feet in contact with the floor.
3. Without bending at the hips the patient is to practice swaying his or her body in a small circle. The patient is to repeatedly sway forward, to the right side, to the rear, to the left side, and forward again.
4. Have the patient gradually increase the size of the circle by moving the body farther each way, and without bending at the hips or taking a step.
5. This protocol may be performed first with the eyes open and then with the eyes closed.



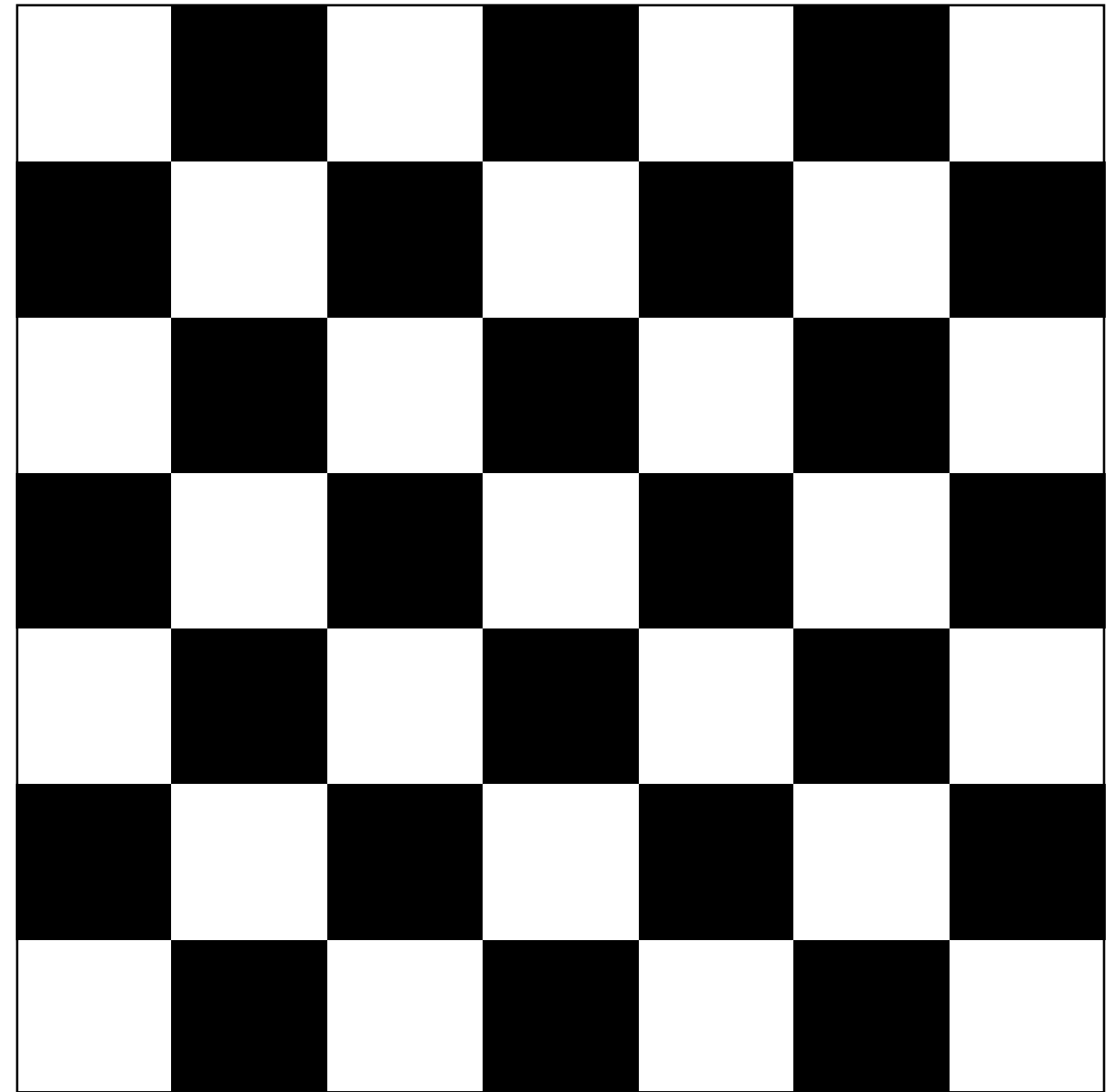
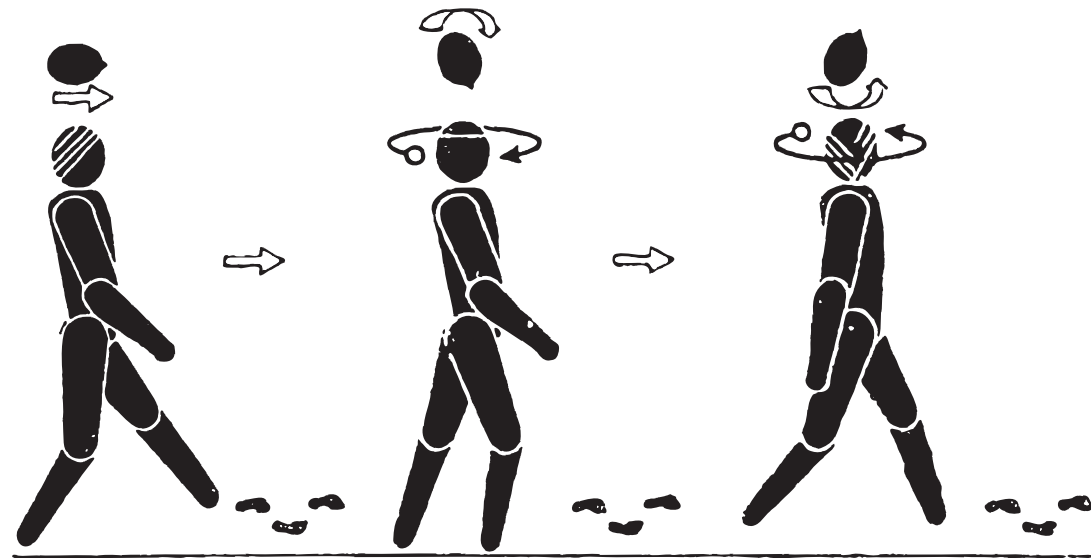
# Roll Body Against Wall

1. Have the patient stand with his or her back against the wall. Instruct the patient to take their right shoulder off the wall and turn to the left until the front of their body is against the wall.
2. In a similar manner have the patient take their left shoulder off the wall and turn to the left until their back is again against the wall.
3. Have the patient continue steps 1 and 2 until they have moved down the wall to its end. At this point instruct the patient to stop and regain their balance.
4. Have the patient return to the starting position and repeat this activity for a specific number of times.



# Gait with Head Movements

1. Instruct the patient to begin walking at normal speed.
2. After three steps have the patient turn his or her head and look to the right while continuing to walk straight ahead.
3. After three steps have the patient turn his or her head and look to the left while continuing to walk straight ahead.
4. Have the patient repeat this activity a specified number of times.

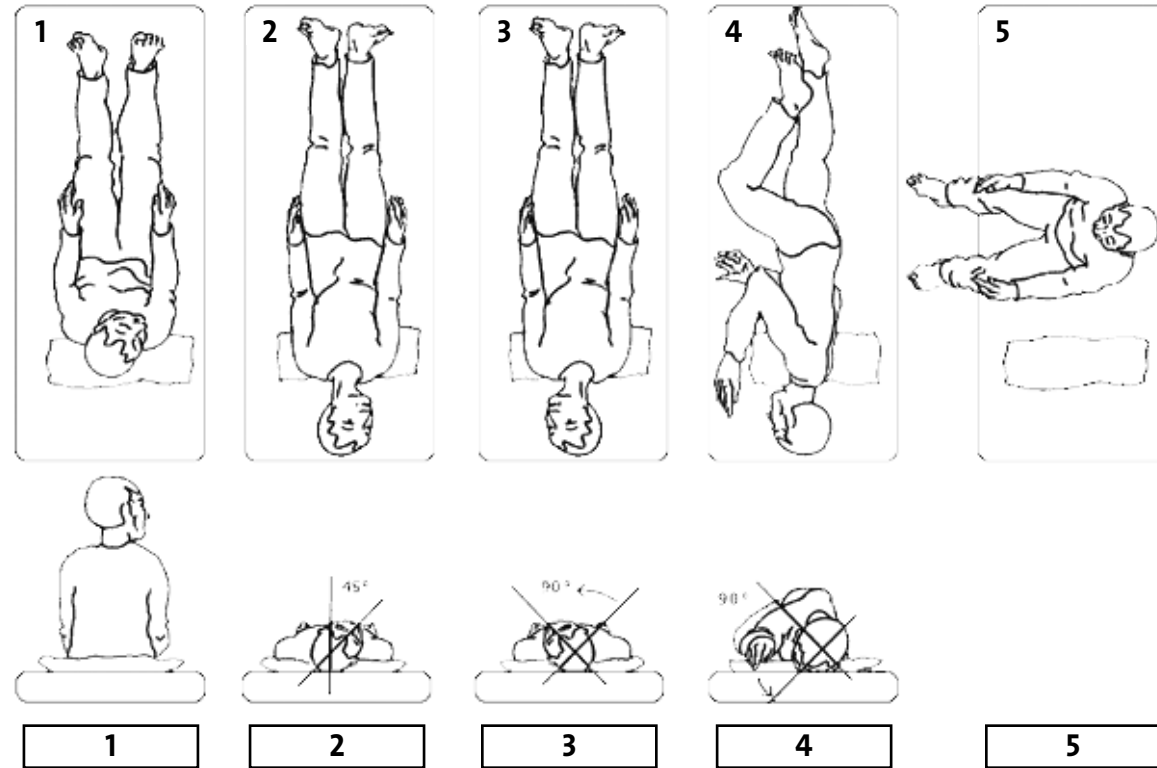


# Exercises for Benign Paroxysmal Positioning Vertigo

1. Sit on the edge of the bed with eyes open/closed. Turn your head 45 degrees to the left/right and quickly lie down on your left/right side.
2. Wait at least 30 seconds to see if any symptoms occur. If so, wait until the symptoms subside plus an additional 30 seconds and then sit up quickly. Again, wait for the symptoms to occur and subside. Keep your head turned the entire time.
3. Repeat to the other side with your head turned to the left/right.
4. Wait at least 30 seconds to see if any symptoms occur. If so, wait until the symptoms subside plus an additional 30 seconds and then sit up quickly. Again, wait for the symptoms to occur and subside. Keep your head turned the entire time.
5. The entire sequence is repeated 10 – 15 times and is performed three times a day. Continue to do the exercises until you have two days in a row in which you have no symptoms (vertigo or nausea) or for two weeks, whichever comes first.



# Self-Treatment of Benign Positional Vertigo (Right)



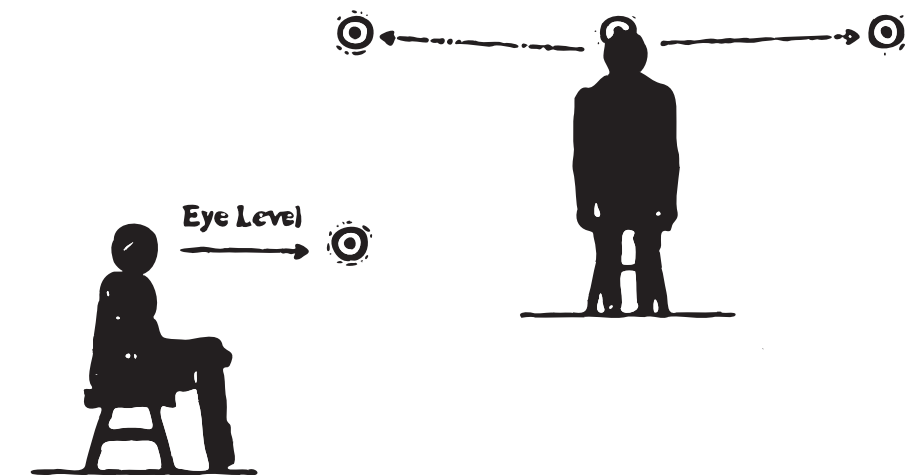
1. Start sitting on a bed and turn your head 45 degrees to the right. Place a pillow behind you so that on lying back it will be under your shoulders.
2. Lie back with shoulders on the pillow and head reclined onto the bed. Wait for 30 seconds.
3. Turn your head 90 degrees to the left (without raising it) and wait again for 30 seconds.
4. Turn your body and head another 90 degrees to the left and wait for another 30 seconds.
5. Sit up on the left side.

This maneuver should be carried out three times a day. Repeat this daily until you are free from positional vertigo for 24 hours.

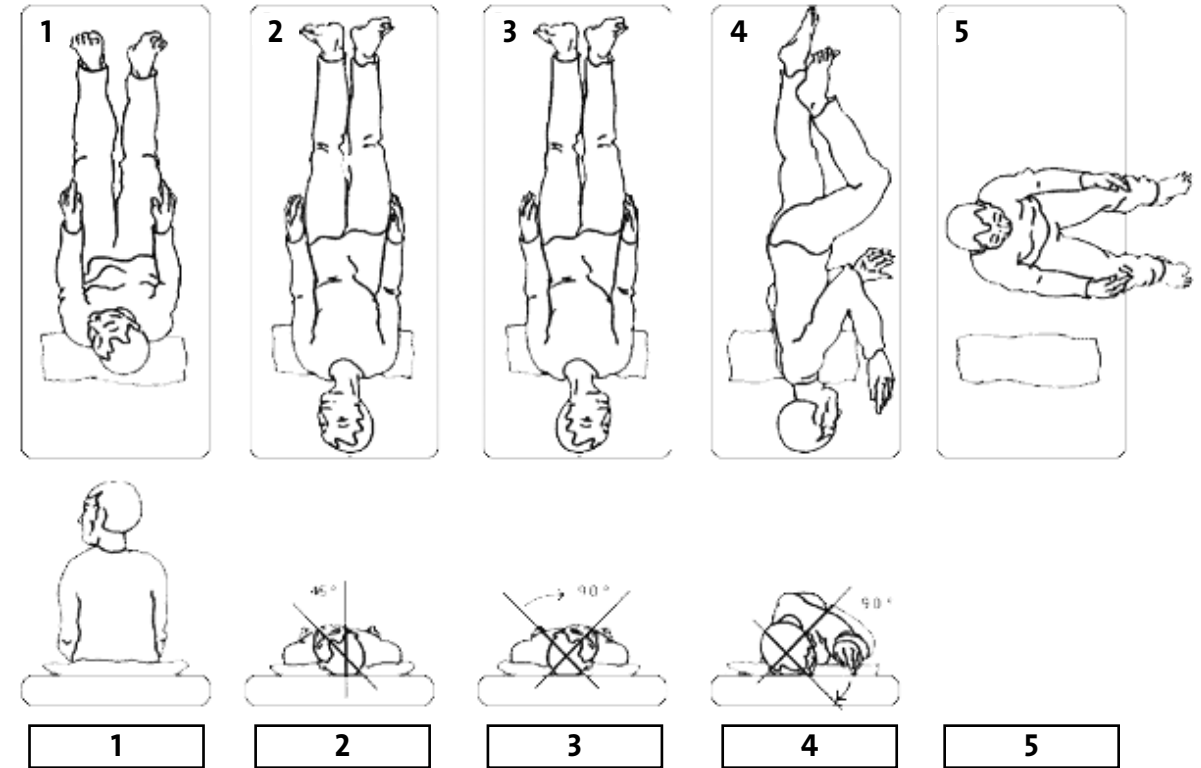
Repeat this exercise once a day as a preventative measure.

## Targets

1. Place the first of three targets 48 inches from the floor, on a wall opposite a chair located in the room. The remaining two targets should be positioned at the same height to the extreme right and to the extreme left of the chair, but not behind the chair.
2. Seat the patient in the chair referenced in Step 1.
3. Point out the three targets to the patient. Have the patient, turning only his or her head, look at the target to the left, then the one at center, and then to the target located to the right.
4. Have the patient repeat this activity 10 to 15 times without stopping.
5. When the patient is ready have him or her repeat the same exercises but stop at each target.



# Self-Treatment of Benign Positional Vertigo (Left)



1. Start sitting on a bed and turn your head 45 degrees to the right. Place a pillow behind you so that on lying back it will be under your shoulders.
2. Lie back with shoulders on the pillow and head reclined onto the bed. Wait for 30 seconds.
3. Turn your head 90 degrees to the right (without raising it) and wait again for 30 seconds.
4. Turn your body and head another 90 degrees to the right and wait for another 30 seconds.
5. Sit up on the left side.

This maneuver should be carried out three times a day. Repeat this daily until you are free from positional vertigo for 24 hours.

Repeat this exercise once a day as a preventative measure.

# Vestibular Rehabilitation

## Habituation Exercises

- 1.** While sitting, turn your head quickly from right to left 5 times. Look in the direction you are turning. Wait for your symptoms to subside. Repeat 3 times.
- 2.** While sitting, alternate looking up at the ceiling and down at the floor quickly 5 times. Look in the direction you are moving your head. Wait for your symptoms to subside. Repeat 3 times.
- 3.** Sit on the edge of your bed. Turn your head about 45 degrees to the left. Now quickly lie on your right side. Wait for any symptoms to pass. Keeping your head turned, quickly sit up. Again, wait for the symptoms to pass. Now turn your head approximately 45 degrees to the right. Quickly lie on your left side. Wait for the symptoms to pass. Quickly sit upright. Wait for the symptoms to pass. Repeat 5 times.
- 4.** Lie on your back. Quickly roll to the right side. Wait for symptoms to pass. Return to your back. Quickly roll to the left side. Wait for symptoms to pass. Return to your back. Repeat 5 times.
- 5.** While sitting in a chair, bend your head forward about halfway toward your knees. Now quickly sit upright. Wait for the symptoms to pass. Repeat 5 times.
- 6.** Stand in a corner with your back to the wall. Now make a quick turn so that you are facing the wall. Stop and wait for symptoms to pass. Now make a turn in the opposite direction so that your back is again facing the wall. Repeat 5 times.

## 2. Active Eye-Head Movements Between Two Targets

- (a) Horizontal targets: Look directly at one target being sure that your head is also lined up with the target.
- (b) Look at the other target with your eyes and then turn your head to the target. Be sure to keep the target in focus during the head movement.
- (c) Repeat in the opposite direction
- (d) Vary the speed of the head movement, but always keep the targets in focus.

**NOTE:** Place the two targets close enough together that when you are looking directly at one, you can see the other with your peripheral vision. Practice for 5 minutes, resting if necessary. This exercise can also be performed with two vertically placed targets.

## 3. Imaginary Targets

- (a) Look at a target directly in front of you.
- (b) Close your eyes and turn your head slightly, imagining that you are still looking directly at the target.
- (c) Open your eyes and check to see if you have been able to keep your eyes on the target.
- (d) Repeat in the opposite direction. Be as accurate as possible.
- (e) Vary the speed and the amount (stopping point) of head rotation.
- (f) Practice for 5 minutes, resting if necessary.

**NOTE:** This exercise can be performed actively or passively while looking at a near target (within 2 feet) or at a distant target (across the room); it can also be performed vertically.

# Vestibular Rehabilitation

## Exercises to Enhance Vestibular Adaptation

### 1. Vestibular Stimulation Exercise (x1 Viewing)

- (a) Tape a business card or letter on the wall in front of you so that you can read it. Rotate your head side to side, keeping the word or letter in focus. Move your head as quickly as possible, keeping the word or letter in focus. Continue to do this for 1 – 2 minutes without stopping.

Repeat this exercise moving your head up and down.

- (b) Perform this exercise with a larger letter or word placed across the room (8 to 10 feet away).



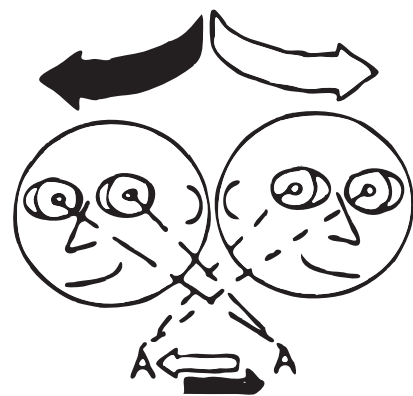
- (c) Perform this exercise with the letter or word placed in front of a patterned background such as a checkerboard or a large piece of wrapping paper.
- (d) Perform this exercise in sitting.
- (e) Perform this exercise while standing. Start with your feet apart, and gradually work toward standing with one foot in front of the other.



## 2. Visual-vestibular Interactions (x2 Viewing)

Hold a business card or letter in front of you so that you can read it.

- (a) Move the card and your head side to side in opposite directions keeping the words or a letter in focus. Move your head as quickly as possible, keeping the words or letter in focus. Continue to do this for 1–2 minutes without stopping.
- (b) Repeat this exercise moving your head up and down.
- (c) Perform this exercise with the letter or word placed in the middle of a patterned background such as a checkerboard or a large piece of wrapping paper.
- (d) Perform this exercise in sitting.
- (e) Perform this exercise while standing. Start with your feet apart and gradually work toward standing with one foot in front of the other (as in the previous exercise).



# Vestibular Rehabilitation

## Exercises to Promote Alternative Strategies for Gaze Stabilization

### 1. Vestibular Stimulation Exercise (x1 Viewing)

- (a) Tape a business card or letter on the wall in front of you so that you can read it. Rotate your head side to side, keeping the word or letter in focus. Move your head as quickly as possible, keeping the word or letter in focus. Continue to do this for 1 – 2 minutes without stopping.

Repeat this exercise moving your head up and down.

- (b) Perform this exercise with a larger letter or word placed across the room (8 to 10 feet away).



- (c) Perform this exercise with the letter or word placed in the middle of a patterned background such as a checkerboard or a large piece of wrapping paper.

- (d) Perform this exercise in sitting.

- (e) Perform this exercise while standing. Start with your feet apart, and gradually work toward standing with one foot in front of the other.

