

## Your Body's Balance System

Your sense of balance comes from many different systems working together to create stability of your body and your vision. Good balance depends on correct sensory information, proper use of that information by the brain and the right response from the muscles. The sensory information that is needed comes from three different systems:

### Visual System

The visual system provides information to the brain about your environment, specifically where your body is in relation to the horizon while still or moving.

### Somatosensory System

Within your muscles, tendons, joints, and skin, you have special sensors that are sensitive to stretch, pressure, vibration and touch that help your brain know how your body is positioned.

### Vestibular System

Within your inner ear there are balance organs that tell the brain about your head movements and it's position. This systems helps to keep your eyes focused while you move your head. It can tell the brain when your head is moving in a straight line (riding in a car or going up/down an elevator) and sense the position of your head even when it's still (upright or tilted)

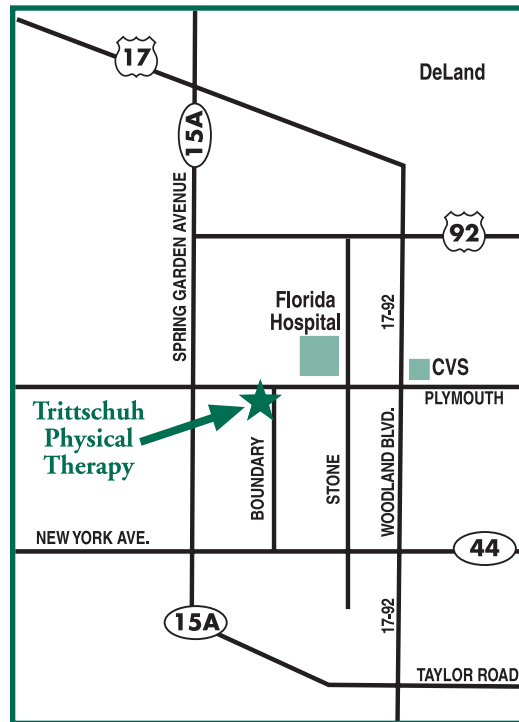


## Trittschuh Physical Therapy

Trittschuh is a participating provider for most major insurance plans.

All you need is a referral from your physician to start treatment.

You have the right to choose your physical therapist, the decision as to where you seek treatment is yours!



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### References

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Tinetti, New Eng J Med, 1988  
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Sterling, J Trauma-Inj Infection and Critical Care, 2001  
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Manual, Download Instructions - Software Upgrade v3.01 for Balance System SD and BioSway

## Preventing Falls, Minimizing Risk

Have you fallen in the last year?

Are you afraid you might fall?

Do you have difficulty getting around?



**Trittschuh Physical Therapy  
can help!**

With new technology, Trittschuh Physical Therapy can help to reduce your risk of falls or prevent the likelihood of additional falls

## Physical Therapy and Fall Prevention

- 1 of every 3 people 65 years and older fall every year
- Those who have fallen are at least twice as likely to fall again
- 1 out of 5 falls causes a serious injury
- People who are 75 years and older who fall are 4 to 5 times more likely to be admitted to Long Term Care for 1 year or longer
- Poor balance contributes highly to falls (BIODEX manual)

## What Can Physical Therapy Do?

- Maintaining physical activity is critical in helping prevent falls
- Physical therapists recommend activities of any fitness level, including gardening, line dancing and yoga to help improve balance and movement
- After the physical therapist reviews your medical history and completes a thorough examination, they will design an individualized plan of care just for you, including exercises and functional activities
- This program may focus on strength, flexibility, balance, coordination and walking

## Biodes

Biodes is the “only static and dynamic system that provides fast and accurate Fall Risk Assessment and Conditioning.”

Designed to meet the needs of anyone who is looking to improve balance, increase agility and develop muscle tone.

### Modified Clinical Test of Sensory Integration of Balance (m-CTSIB) Test

The m-CTSIB is a standardized test for balance assessment on a non-movable surface. The protocol is well documented in research as an effective test for identifying individuals with mild to severe balance problems.

This test consists of 4 conditions:

- 1) Eyes open on firm surface
- 2) Eyes closed on firm surface
- 3) Eyes open on foam surface
- 4) Eyes closed on foam surface

### Fall Risk Test

This test assists physical therapists to identify potential fall candidates. The test results are compared to values obtained from individuals in the same age range.

## Examples of Exercises

### Balance Exercises

#### 1) Single Leg Balance

Stand in front of a counter, stable chair or wall if needed to maintain balance. Lift one leg off the ground so as to stand on the affected leg without losing your balance.



#### 2) “Star” Toe Taps

Stand next a table, solid chair or countertop. Place your hand on the surface to keep your balance. Lift the opposite foot off the floor. Touch the floor with the toes in front of you, next to you, then behind you. Do not put any weight on your toes.



#### 3) Standing Leg Raises

Hold onto the back of a chair. Lift your right leg out to the side while keeping your knee straight. Hold for 2 seconds and bring it back down. Repeat with the left leg.



### Leg Strengthening Exercises

#### 1) Sit to Stands

Sitting with the back straight, stand up then sit down while keeping the weight evenly distributed on both legs and without helping yourself with your arms.



#### 2) Heel Raises

Hold onto the back of a steady chair. Stand on your toes.

