

FALL RISK PREVENTION

Learn Idaho Webinar

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Beginnings.....

AGENDA

- Beginnings
- Prevention Strategies
- Your Balance System
- Developing Your Balance
- Developing Your Agility & Coordination
- Balance Training Programs
- Endings



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Beginnings.....

MY STORY



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Beginnings.....

INTRODUCE YOURSELF

HELLO
My name is

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Beginnings.....

FACTS ABOUT FALLS

- Each year, 1 out of 4 older persons fall.
- Annually, 3 million older persons are treated for fall related injuries in hospital emergency rooms.
- More than 95% of all hip fractures are caused by falling and at least 300,000 older persons are hospitalized each year for hip fractures.
- Falls are the most common cause of traumatic brain (TBI) injuries.



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Beginnings.....

WHY DO WE FALL?

- Sedentary Lifestyle
- Architectural Design
- Injury/Health Issues
- Eyesight
 - Digital Myopia
 - Progressive/Bi-Focal Lenses
- Shoes
- Focus on developing the wrong muscles



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PREVENTION STRATEGIES

See your doctor annually

- Review Medications For Side Effects
- Report Any Past Falls OR Near-Misses
- Review Health Conditions



PREVENTION STRATEGIES

Evaluate Your Clothing

- Wear Clothes That Fit & Are Easy To Put On /Take Off
- Wear Sensible Shoes
- Avoid Wearing Socks Without Shoes



PREVENTION STRATEGIES

Assess Your Living Space

- Remove Home Hazards
- Clear Away The Clutter
- Install Assistive Devices
- Light Up Your Space



Your Balance System

BALANCE

- **Static Balance** allows you stay upright when standing still.
- **Dynamic Balance** helps you to move and change direction under various surfaces (i.e. walking or running on uneven surfaces) without falling. Dynamic balance is more complex and it is influenced by other abilities and skills such as flexibility, endurance, strength and speed.

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Balance Defined

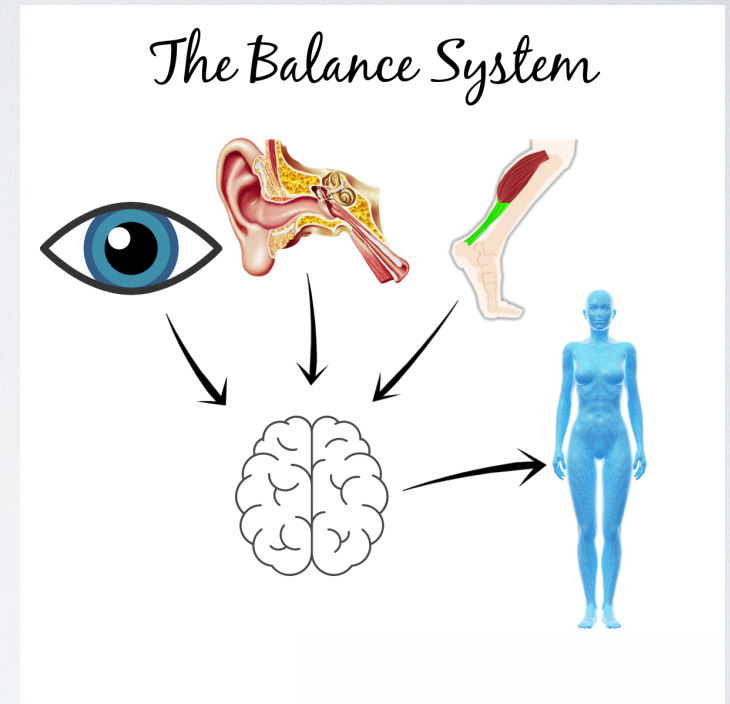
Static Balance

Dynamic Balance



THE BALANCE SYSTEM

- A simple way to think about your balance system is that it works through a constant process of position detection, feedback and adjustment using communication between your eyes, inner ear, muscles, joints, spine and the brain.



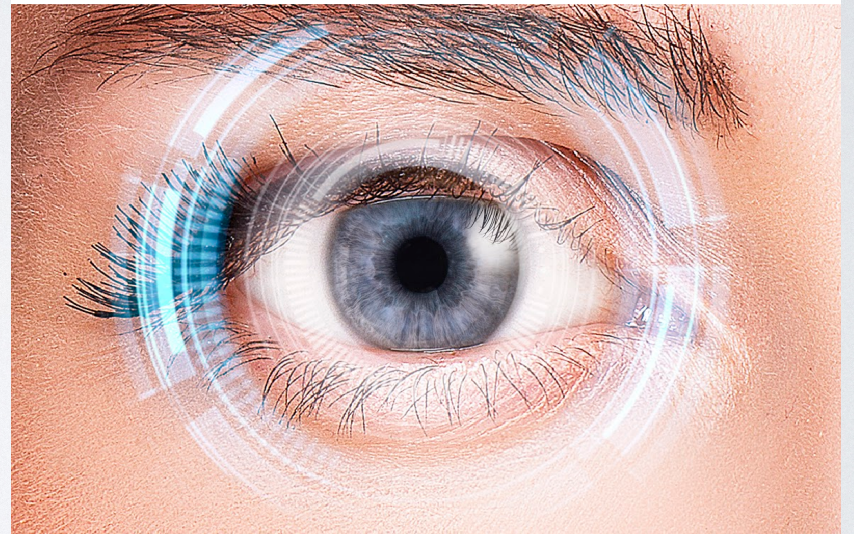
Your Balance System

YOUR EYES

- The Optical Nerve constantly sends visual information to the brain about where you are in relationship to surrounding objects.
- Your peripheral vision plays a big part in this process.

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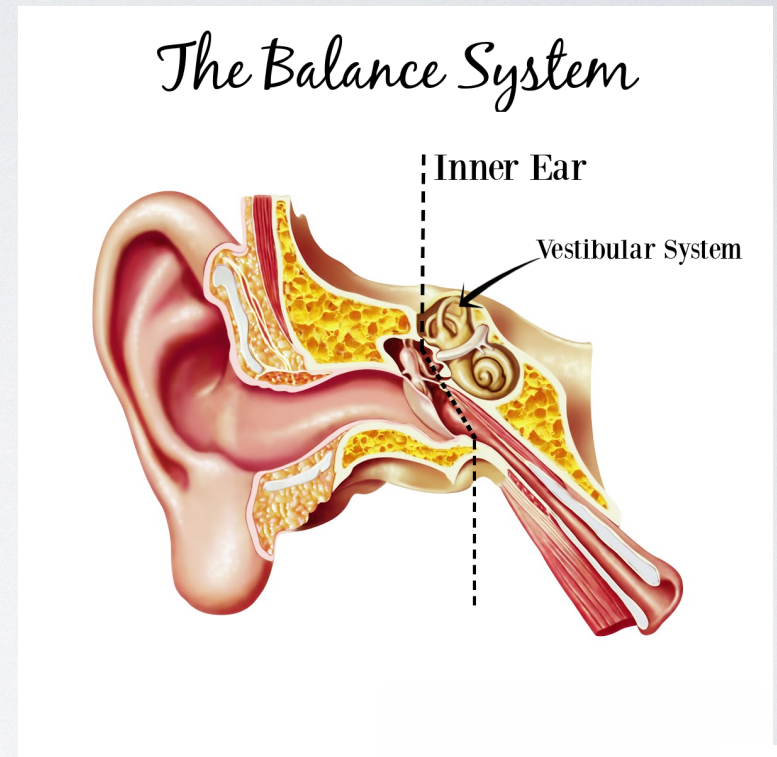
The Balance System



Your Balance System

YOUR EARS

- The Vestibular System is located in the inner ear on both sides.
- Messages sent from this system to the brain, describe the position and rotational movements of your head.
- Two additional sensory organs tell the brain whether you are sitting up, leaning back or lying down as well as when you are moving forward.



Developing Your Balance

YOUR MUSCLES, TENDONS & JOINTS

- Tendons tether your muscles to bone and cartilage—the tissues that cushion the intersection between bones.
- Within muscular/tendon system are nerves that send info to the brain about your body position.

The Balance System



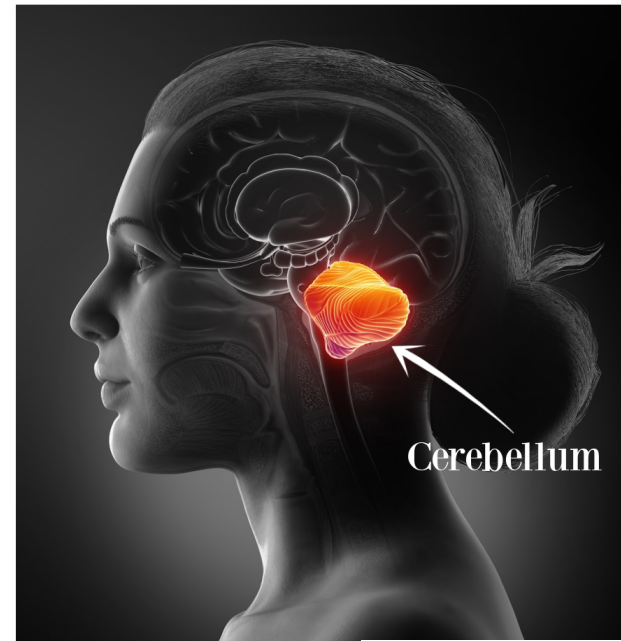
Your Balance System

YOUR BRAIN

- The Cerebellum is your body's movement and balance control center.
- It receives input from eyes, inner ear and muscles/tendons/joints and responds with corrective commands back to the skeletal and muscle systems.

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The Balance System



Developing Your Balance

BALANCE EXERCISES

- **Static:** Single Leg Balance Exercises
- **Dynamic:** Proprioceptive Challenges

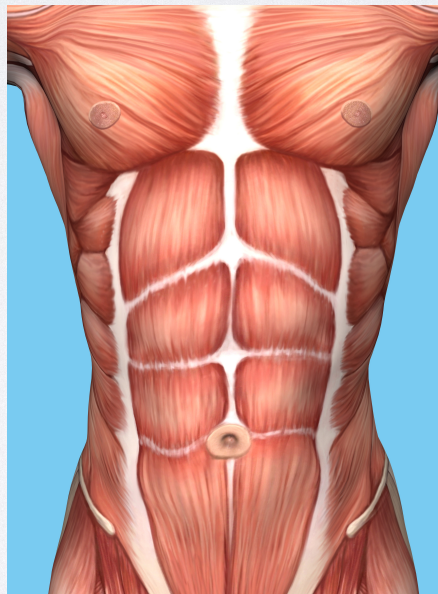


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Developing Your Balance

THE POWER & IMPORTANCE OF YOUR CORE



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YOUR CORE

Your Core Local Stabilization System



Internal Oblique



Transverse
Abdominis



Diaphragm



Lumbar Multifidus



Pelvic Floor
Muscle

- Muscles that attach to the vertebrae
- Create spinal stability, providing support from vertebra to vertebra
- Aid in proprioception and posture control

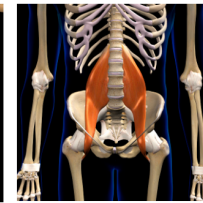
YOUR CORE

- Attach and provide stability from the pelvis to the spine
- Transfer loads between upper and lower extremities
- Provides eccentric control of the core during functional movements

Your Core Global Stabilization System



Quadratus Lumborum



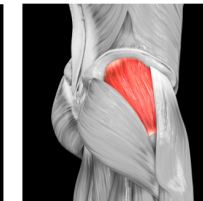
Psoas Major



External Oblique



Rectus Abdominis



Gluteus Medius



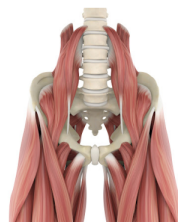
Adductor Complex

YOUR CORE

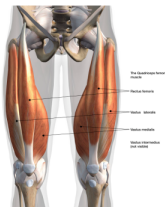
Your Core Movement System



Latissimus Dorsi



Hip Flexors



Quadriceps



Hamstring Complex

- Muscles that attach to the spine and/or pelvis to the extremities
- Provides concentric force production
- Provides eccentric deceleration

Developing Your Balance

YOUR FEET

Your feet play a major role in keeping you balanced. The more rigid your feet, the more difficult it is to balance.

- *Local foot muscles*: Perform fine motor actions of the foot, and they support the arch of the foot and help to maintain balance and stability for proper gait
- *Global foot muscles*: Initiate ankle movement and toe flexing/extension

One of the best places you can start to improve your balance is to improve the strength and dexterity of your feet.



Agility & Coordination Training

AGILITY & COORDINATION

- Agility refers to the ability to start, stop, and change direction quickly while maintaining proper posture and balance.
- Agility training requires neuromuscular efficiency, which is the communication from your brain to all of your muscles, and how well they can work together.
- Agility training gives your body a greater ability to control forces that can knock you off balance and make you feel unstable.

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Agility Training **Developing Your Coordination**



Balance Training Programs

BALANCE TRAINING

- Safe
- Systematic & Progressive
- Unstable Yet Controllable Situations
- Core & Agility Training
- Foot Dexterity & Strength Training



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Endings.....



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