

How Does the Balance System Work?

Author: Shannon Hoffman PT, DPT; Sara MacDowell, PT, DPT

Patient Fact Sheet

Produced by



A Special Interest
Group of



Contact us:

ANPT

Phone: 952.646.2038

info@neuropt.org

www.neuropt.org

a component of



Many systems work together to help you keep your balance.

Sensory Systems:

1. Vision: Vision helps you see where your head and body are in relationship to the world around you.
2. Sensation: We use the feeling from our feet against the ground and special sensors in our joints to know where our feet and legs are positioned. It also gives information about where your head is positioned in relationship to your neck and shoulders.
3. Vestibular system: Balance organs in the inner ear tell the brain about the movements and position of your head. This helps keep your body and vision stable when your head moves.

Central Processing:

Information from these 3 systems described above is sent to the brain for processing. The brain combines multiple sources of information from your sensory systems and from past experiences to help you maintain your balance.

Your brain can help control balance by using the information that is most important for a certain situation. For example, in the dark, when you can't rely on your vision, your brain will use more information from your legs and feet and your inner ear (vestibular system). If you are walking on a slippery surface like ice, your brain will use your vision and your inner ear more than the information from your feet and legs.

Motor output:

Once your brain sorts out this information, it tells your muscles how to move to help you stay balanced and tells your eyes how to stay focused while you move. If you feel off balance or dizzy, one of these systems may not be working well.

A physical therapist can help you determine which system or systems are affected and instruct you on exercises that can improve how your body uses all these systems together. This will help improve your balance and reduce any symptoms you might be experiencing.