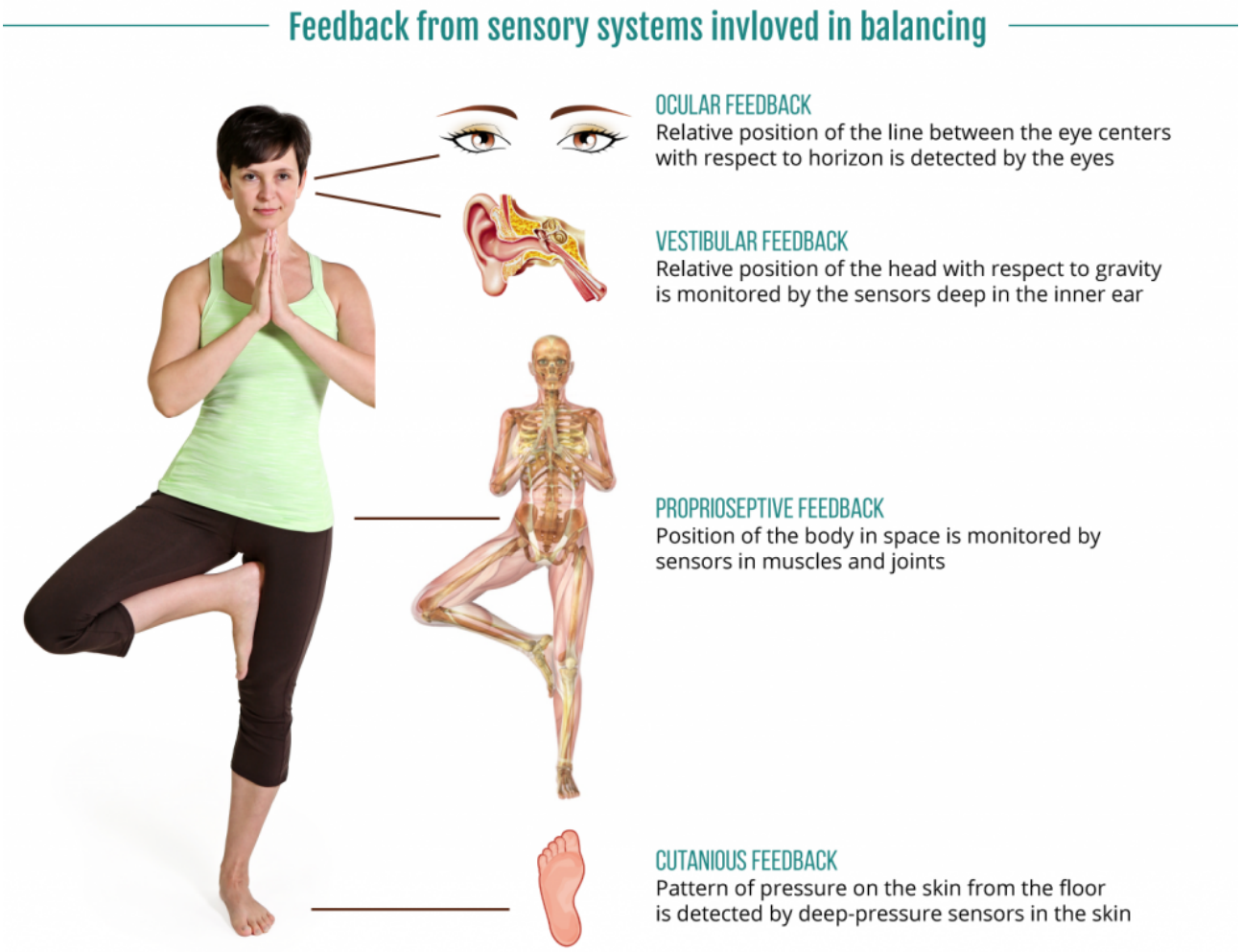
INTRODUCTION. What it takes to maintain our sense of equilibrium

"Simply standing in place requires contributions from our eyes, ears, brain, nerves, joints, ligaments, blood, and bones in a symphony of coordination. Take away one factor and the body can usually compensate. Take away two, and we may end up in a heap on the floor." (1)

Here is how the actual process of balancing works.

1. Sensory systems figure out where the body is in space (chart below).



2. The brain processes the information and sends a signal to the muscles and joints to adjust their activity. The brain needs to process this information quickly. In some neurological disorders, this process fails, leading to balance problems.

3. Muscles and joints receive this information and make necessary modifications. They must be able to complete the assigned task, which requires a delicate dance between stability and flexibility.

The balancing reflex becomes quicker and more refined with practice.

Resources

1. Balance: A Dizzying Journey Through the Science of Our Most Delicate Sense by Carol Svec