

Understanding balance may help athletes, seniors

By Shirley S. Wang, Wall Street Journal

New research into how we maintain our balance could help athletes and prevent falls among older people.

Scientists are finding that maintaining stability and balance with each step we take requires complex coordination of foot placement, arm movement, trunk angle and neck and head motion. That's because every step is different from the one before it. There are slight variations in stride length and width and the angle at which the foot hits the ground, as well as small shifts of weight in the torso. People's bodies when walking must constantly make minuscule adjustments to accommodate these variations.

Other research is exploring how the brain controls our balance, which isn't well understood. A recent study identified a pocket of motion-detector neurons deep in the brain that sends out an alert when the body moves in unexpected ways, such as after stumbling on a crack in the sidewalk. The alert triggers compensating reactions throughout the body aimed at helping us to not fall down.

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