



Exercises to Improve Balance for all ages

WHAT HELPS US KEEP OUR BALANCE?

Defined by A S Pollack in a clinical Rehabilitation journal, “**Postural control is the act of maintaining, achieving or restoring a state of balance during any posture or activity.** Postural control strategies may be either predictive or reactive, and may involve either a fixed-support or a change-in-support response.” So for the purpose of this article when we refer to postural control, we are really talking about balance.

Postural control is a group effort. Each team member plays an important role on balance in different situations. The 3 systems that are involved are: **The visual system, Vestibular system (Inner ear) and the somatosensory system (Proprioception)** . In order for us to optimize our balance we need all 3 of these systems to work together. As you go through your daily life your body is constantly using a combination of these 3 systems to keep your body in its proper position.

Examples of each system:

Visual System : This is the most important one as we utilize up to 50% of our brain for visual processing! A good example of why training our visual system in regards to balance might be important would be the need to wake up in the middle of the night and navigate our way around to the washroom! Another good example would be hiking in dimly lit areas that have lots of shadows and uneven terrain. Here is a more in-depth answer using a curb as an example!

“When you look at a curb for example when walking, nerve endings from your eyes that are sensitive to light transmit signals towards the back of your eye. From there, a large nerve in the back of your eye, known as the optic nerve, continues to transmit that signal up to the part of your brain that interprets vision (the visual cortex), which then interprets the size, distance, shape, and all aspects of that specific curb, so you can actively negotiate your foot up that part of your environment without missing your step! If your visual system is not working optimally, then your brain will not be able to interpret the correct information for you needed to maintain postural control.” -Prehab Guys

Somatosensory System (Proprioception): This system refers to self-movement and body position. It is sometimes described as the "sixth sense". When we alter our proprioception (stand on an unstable surface) we have to work harder to balance because we are making it harder for your body to know where it is in space.

This system is also an important component in establishing joint proprioception which is a fancy way of saying the ability of knowing where the body is in space as we are performing movements. Poor proprioception could lead to issues like bumping into people and objects frequently or losing the ability to ride a bicycle or having to rely greatly on a rail for balance to go up and down stairs.

Unfortunately, As we age, our ability to detect our body position naturally declines. Why? The literature has shown a connection between aging and a decrease in the **amount and the speed** of our motor units. This ultimately leads to a lack of optimal muscle recruitment and control. Before we get upset over this though, remember that we can work on slowing down that decline and improving our mind-muscle connections through daily practices and workout routines! This is also why within your programs with Benecore we teach you to work on tempo for many exercises. For example, during a squat you want to work on coming up quickly and lowering down under control. This allows you to work on increasing the **AMOUNT** of muscle recruitment plus the **SPEED** in which those muscles respond! This will indirectly have a significant impact on building better balance.

Vestibular System: This system is kinda like the GPS system for the body and is located within our inner ear. While it plays a role in the transmission of sound, this system is also important for postural control. The tiny hairs within our ears contain the ability to send signals to the brain and tell it where it is in space. Things

like being able to turn your head side to side and not fall over or look up and down can be taken for granted but if your vestibular system is affected those movements can become quite challenging.

Also, this system allows us to maintain eye tracking! We have all likely felt what it feels like when the vestibular system is “off its game”. The sensation is feeling unbalanced or dizzy. Boats, paddleboards, bosu balls, would be examples of a situation where that may arise. The system is receiving altered signals and confuses the brain resulting in a dizzy-like feeling in some individuals.

All three of these systems are fighting to keep your body at equilibrium and in the proper upright position. So it makes sense that we should train each balance system to build ourselves a strong and well-balanced body! A good way to get started on improving our postural control would be to examine which of the 3 systems is the weak link and apply the 80/20 principle. For instance, if your vestibular and somatosensory systems are A+, but the visual system is lacking, we should aim our first efforts towards the visual system and that will bring the whole team up to a new level. With that said, most of the time when training your balance you are using more than one system at the same time.

Below is a collection of exercises that fit the bill for each system. It is not a complete list of all balance exercises but rather a collection of ones we think are helpful!

Now is a good time to add a important note:

Always ensure that you set up a safe environment to practice your balance drills!

-Have a chair or a kitchen counter nearby in case you lose your balance or start to get tired.

-Remove any tripping hazards from the designated area.

-In the beginning it would also be smart to also remove any distractions however, when your balance gets better it can be advantageous to add them back in things like (TV noise, anything that is in motion, conversations, etc).

How often should I do balance work?

We believe that balance work can and should be done daily as we age. These exercises require low amounts of exertion but will certainly be mentally challenging. This means that you will recover quite quickly from a balance or stability workout and therefore can do more of them when compared to a strength workout which will be limited by a need for rest days.

What we recommend:

4-6 x a week

+ 5-20mins each session

+ 30seconds -1 min mastery of each level before we upgrade to the next!

Use the below template for Visual as well as somatosensory + a piece of foam. Eyes are open for all somatosensory exercises until you can confidently master each level and then from there you could try to do them together as a combo!

Start with:

Feet Together - Eyes Closed



Feet Semi-Staggered - Eyes Closed



Feet in Tandem- Eyes Closed



Feet in Tandem -Front Foot on Toes- Eyes Closed



Feet In Semi Staggered -Front Foot on Toes- Eyes Closed



Single Leg - Eyes Closed



Vestibular Balance exercises:

These ones can be a little bit tougher and you will likely need to allow more rest than you would on the other two versions because there is the possibility that they can create a feeling of dizziness or nauseousness. This is normal. However, over time with enough practice you will notice it gets better and better as your body adapts. In the meantime, it would be ideal to limit the amount of this type of balance training to 15sec-30secs at a time and build from there. If you do get feelings of dizziness that is an indicator that your vestibular system needs a break!

Here are some good exercises:

Vestibular 1 (Vertical): Head moving. Thumb stays in place.



While looking at your thumb directly in front of you, move your head from up- down and repeat.

Vestibular 2: Head moving. Thumb moving in the opposite direction.



Begin in a seated position looking at your thumb directly in front of you. Bring your head up towards the ceiling as you move your thumb down towards the floor, then move your head down while bringing your thumb up and repeat.

Conclusion:

Yep, no use in beating around the bush. As we age we lose some of our balance due to a loss in motor control, speed of recruitment and muscle mass. Good news is that we can delay or prevent this decline by proper exercise! If you consider your balance to be poor, don't let that discourage you from working on it! It can be improved. We don't need to look far to see examples of people exhibiting great balance and strength even into their senior years. Who knows, maybe you'll be the next great example! Keep up the daily habit of being just a little better than yesterday.

Feel free to share this with any friends or family that you think could benefit from it! Also, we are happy to answer any questions that you may have.

Lastly! Please remember our referral program:

10% off any program we provide when you have family member or friend join one of our programs!