

Gravity: Our Silent Partner in Treatment



Gravity is integral to life

Gravity is such an integral part of life on this planet that most of us are oblivious to it – until something goes wrong with our vestibular system. As adults that mostly manifests as vertigo or Menier's disease, both of which are severely debilitating. But what is it about gravity that is so essential to human development and function?

All life on Earth evolved in a gravity environment, making our phylogenetic and ontogenetic development integral with the influence of gravity. The vestibular system evolved to maintain this connection with our environment in functional terms. It's not a coincidence that vestibular dysfunction is often identified as a culprit when we see developmental dysfunction. The vestibular system has vast influence throughout the nervous system and since A. Jean Ayres identified it's relationship to many areas of development including learning and sensory processing disorders, has been studied extensively.

Vestibular function is important to muscle and reflex development

There are many fine courses dealing with intervention for vestibular processing/dysfunction. Intervention often involves equipment that intensifies movement through space with the goal to achieve activation of various aspects of the vestibular system. Not a lot of attention has focused on the importance of vestibular functions on muscle and reflex development. Vestibular activation is helpful in these areas, but just getting activation does not automatically improve motor development and skill. In fact, most treatment activities jump from vestibular input to motor planning tasks that require core strength, proximal stability balanced with mobility, head, neck, and eye coordination and anti-gravity control. For example: obstacle courses, climbing walls, trapeze swings, etc. require head stability for vision and posture, upper body strength and coordination, midline (core) stability and so on.

I'm a believer in establishing muscle development and coordination by working against gravity in the way nature has provided. By engaging in anti-gravity activities we can help our children work to strengthen essential muscles and avoid compensatory patterns that prevent efficient use and lead to musculoskeletal problems in the future. It takes creativity to implement such activities that will keep children willing to engage, but is well worth the effort. While sensory input is critical in treatment, remember, gravity IS a sensory input. As clinicians we must be attentive to kinesiological and motor learning principles and consider the role of gravity in these processes when intervening for sensory motor dysfunction.

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