



# BALANCE AND FALLS:

## JOINING THE PUZZLE PIECES

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Education & Support Services  
Parkinson Society BC

# WHY IS BALANCE SO IMPORTANT?



- 60% of PwP fall with 39% of these falls being recurrent (1)
- Higher likelihood of falls in PD (2, 3)
- Falls may result in hospitalization (4), reduced mobility (5), reduced quality of life (6), fear of falling (7), caregiver stress (8,9), fractures and subsequently, reduced life expectancy (10)
- PD expected to double 2005–2030 (11) –falls is a big problem!





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- Cognitive impairment (14,-16)
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- Disease severity (12 14, 21)
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- Increased Levodopa dosage, DBS, polypharmacy\* (14,20,25,26)  
\*NOT causation!
- Depression (12,14,24)
- Axial rigidity (26)
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Balance is a complex multifactorial issue that is not caused by just one problem and is not a "reflex". No one-size-fits-all approach to treatment.



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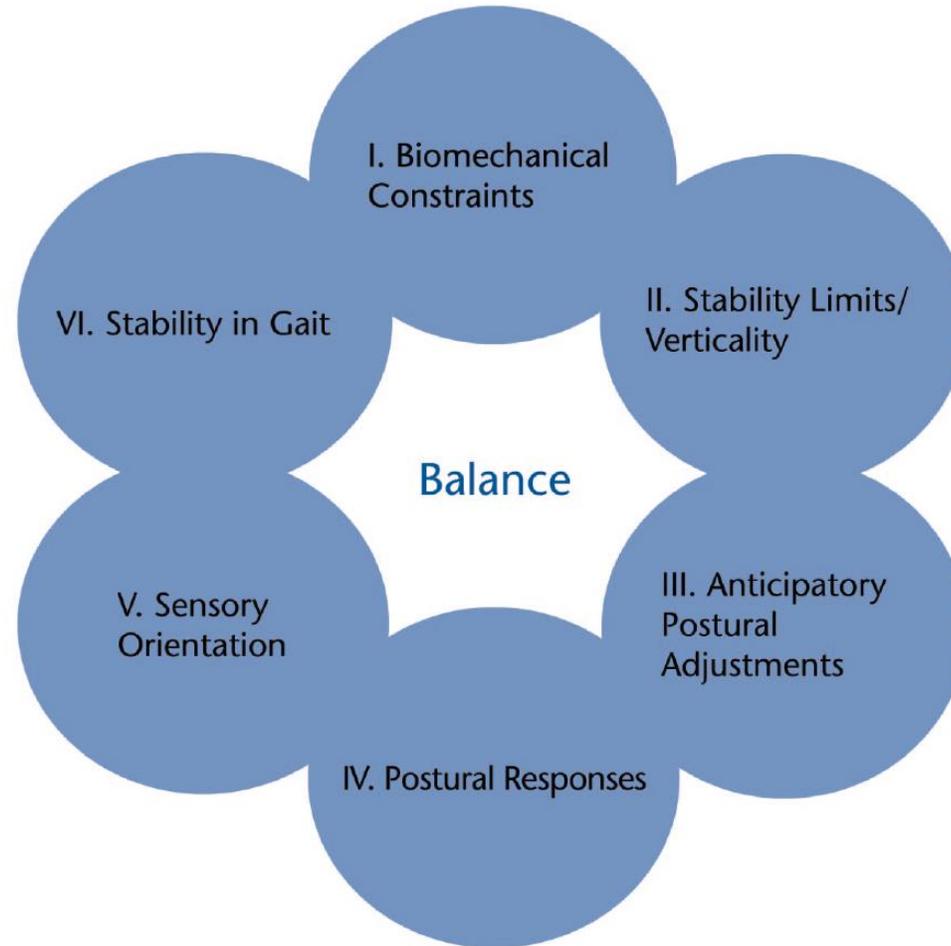
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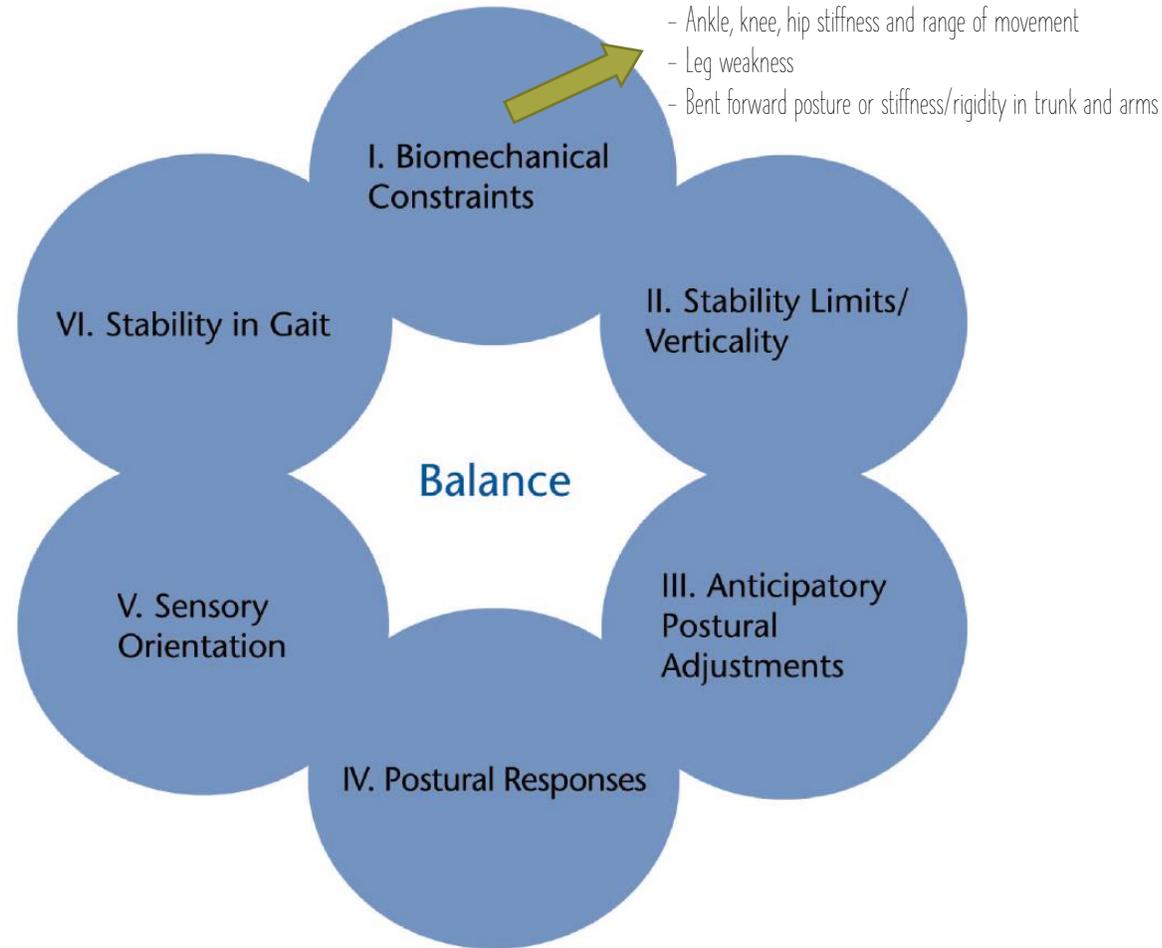
# POSTURAL INSTABILITY: THE PUZZLE PIECES

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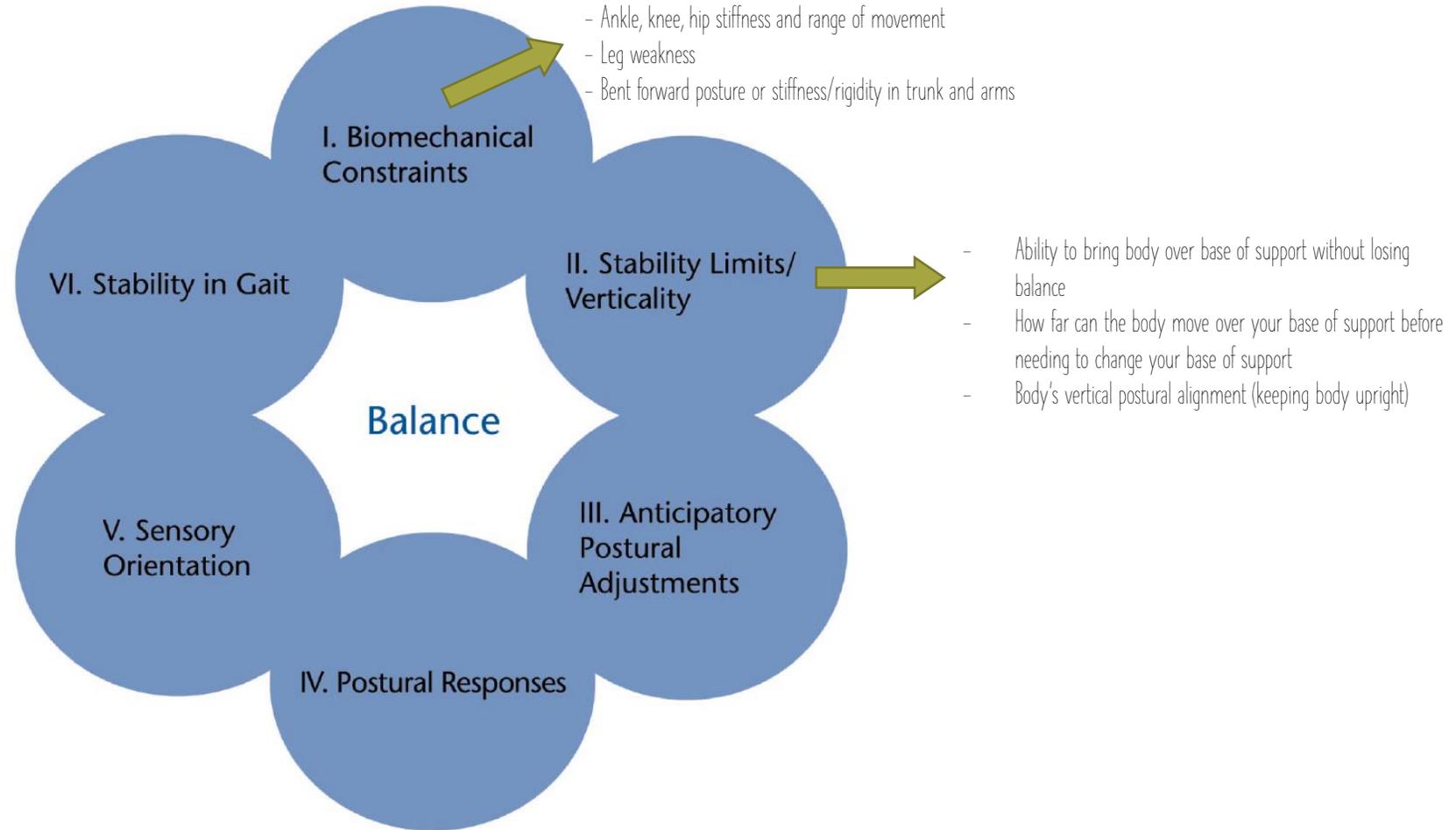


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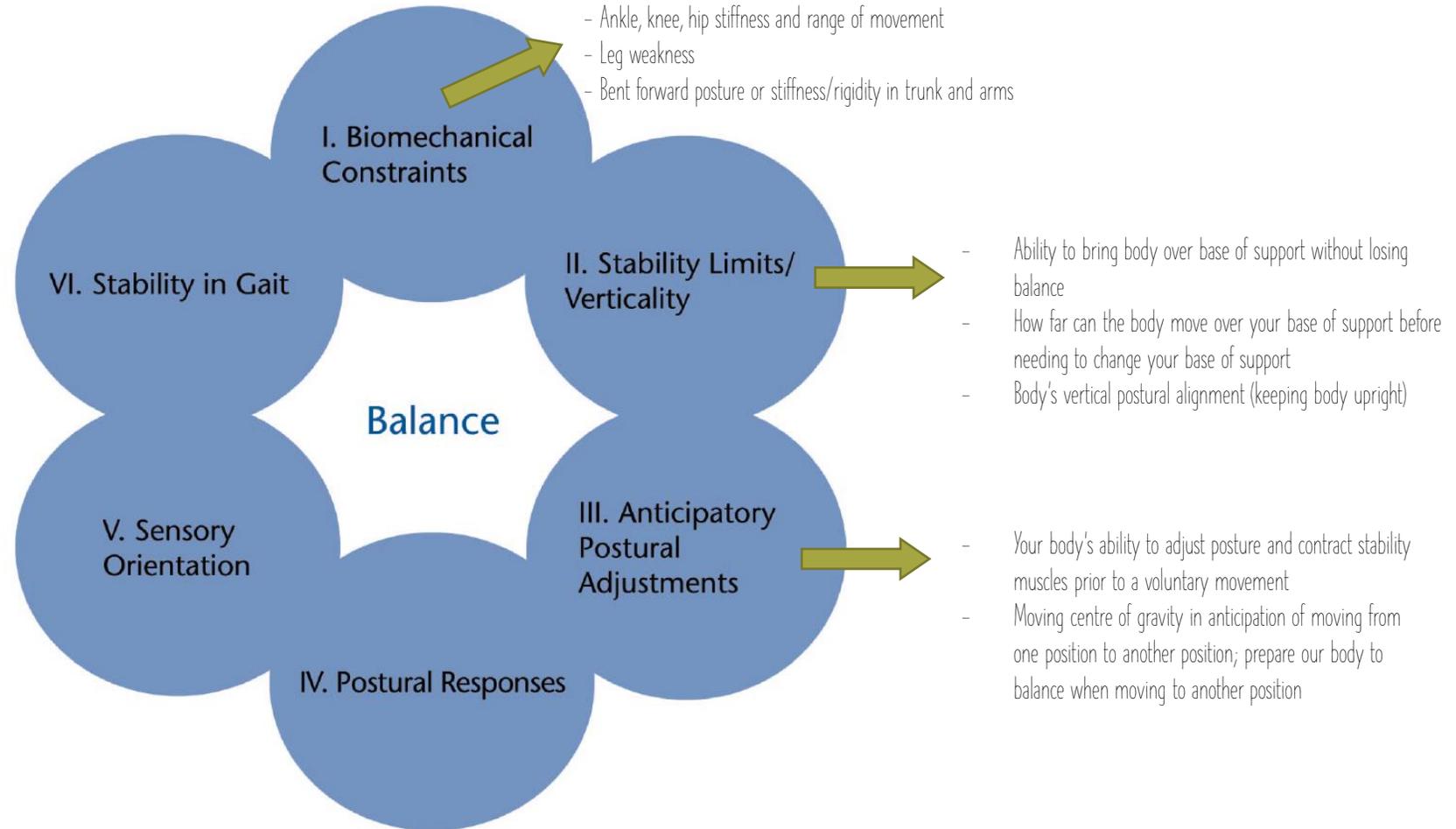
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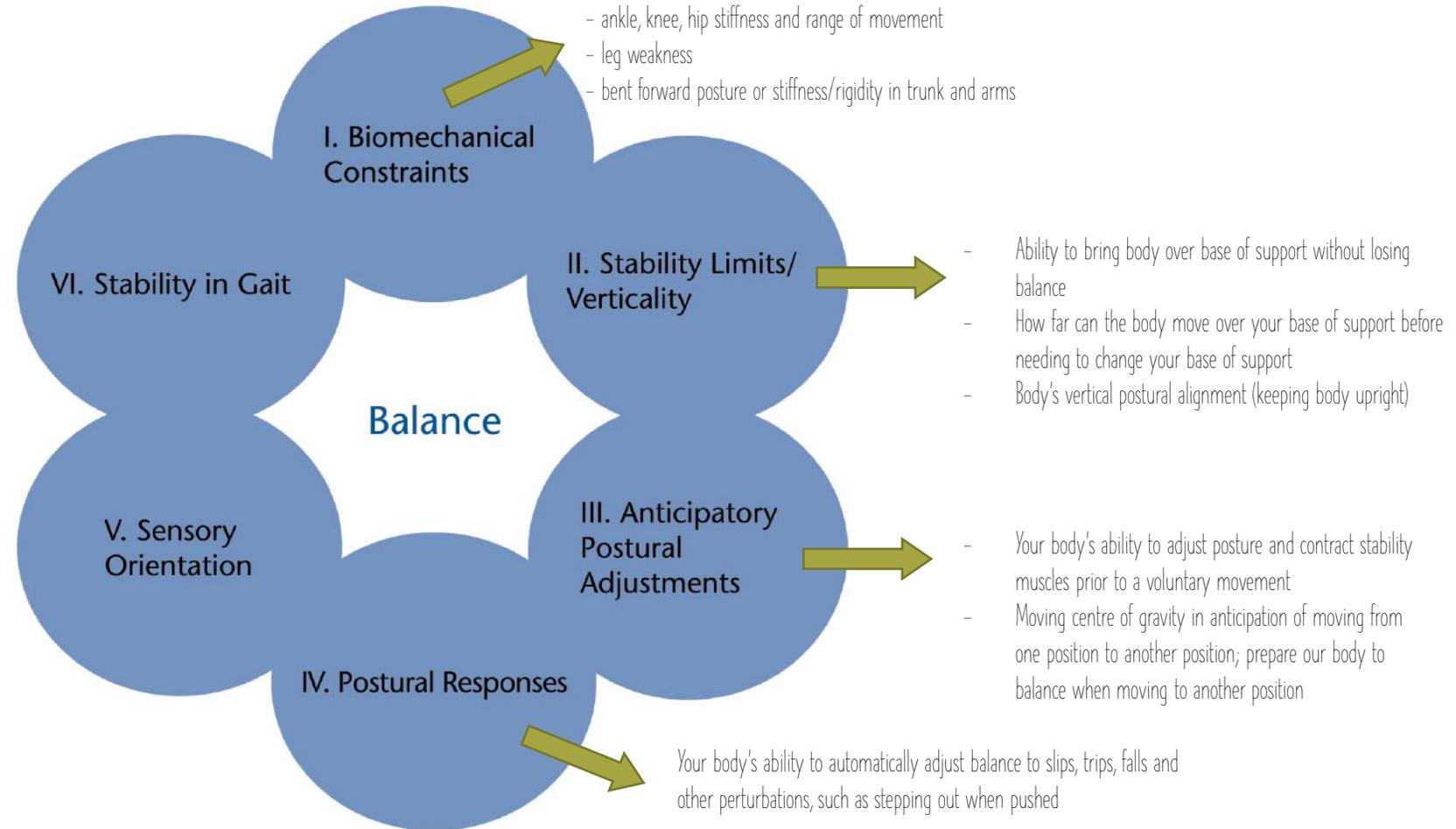
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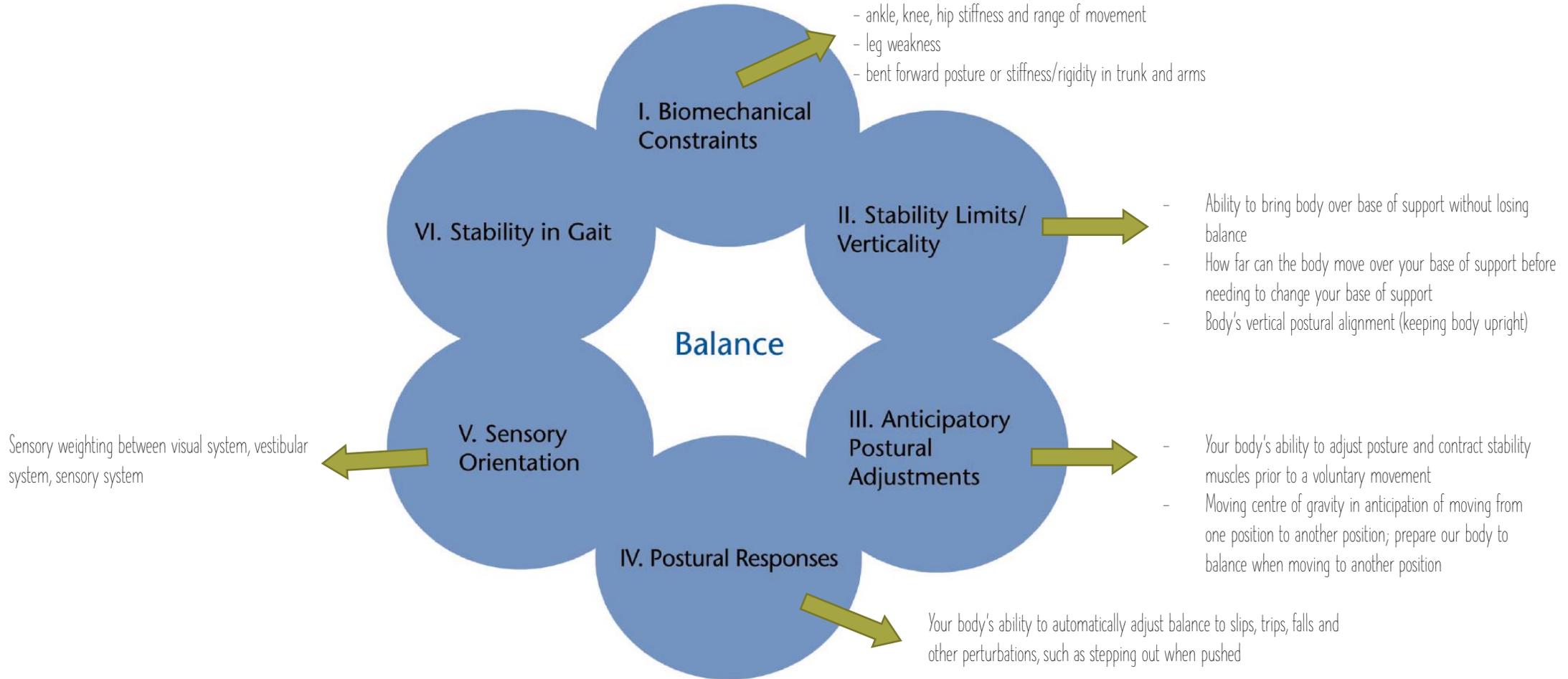
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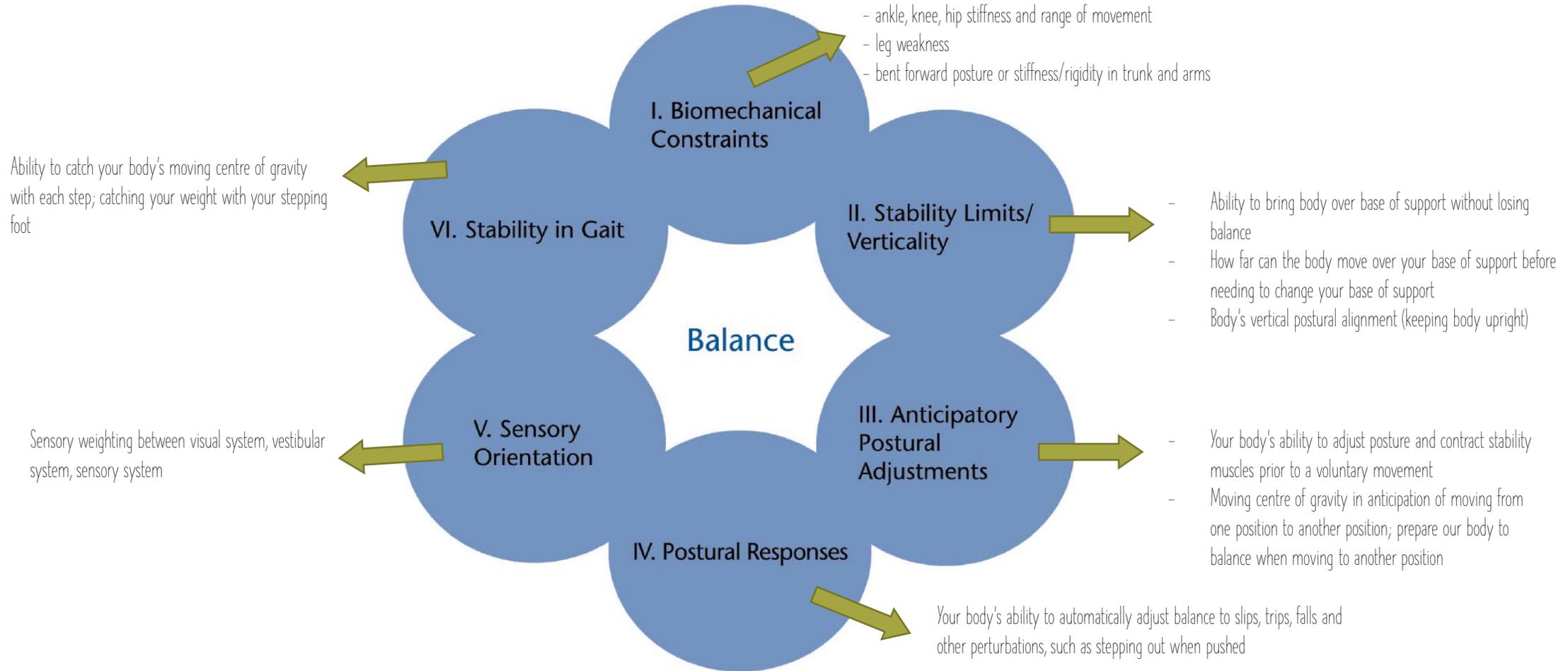
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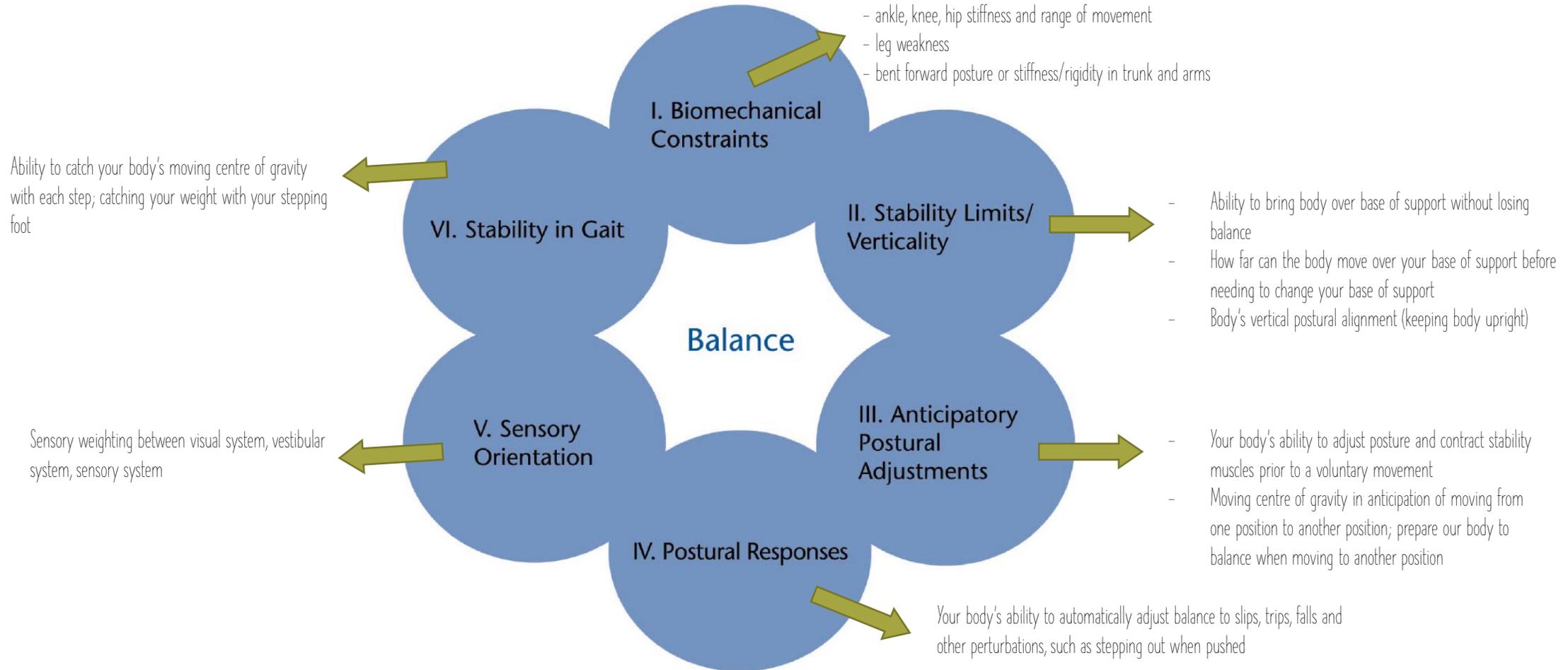
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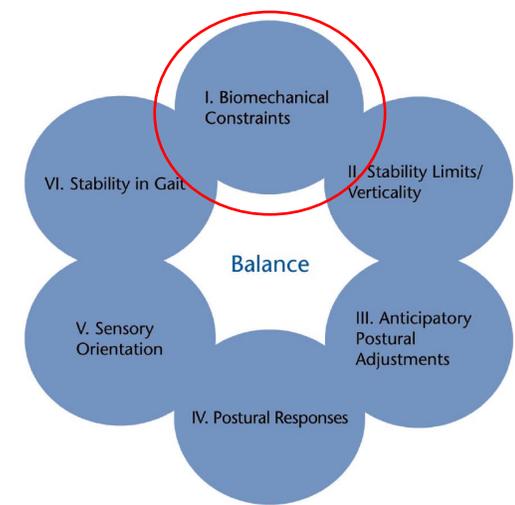
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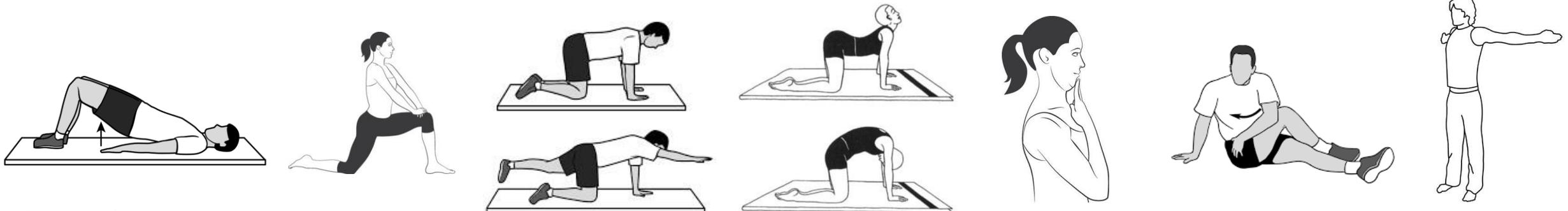
# POSSIBLE SOLUTIONS?



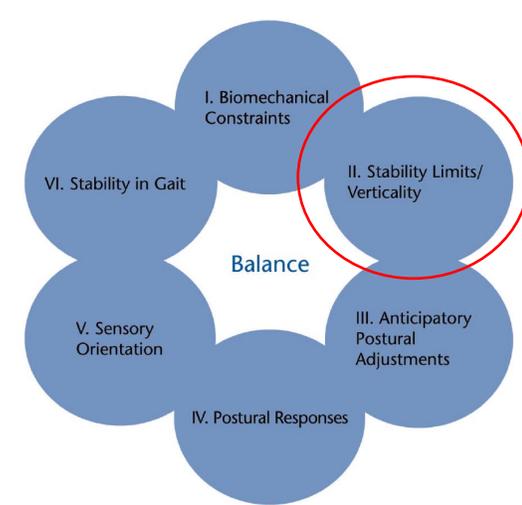
# 1. BIOMECHANICAL SYSTEM



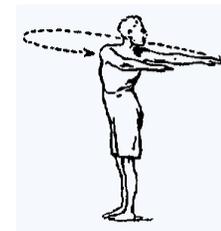
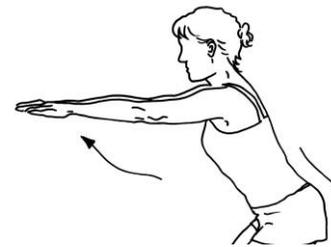
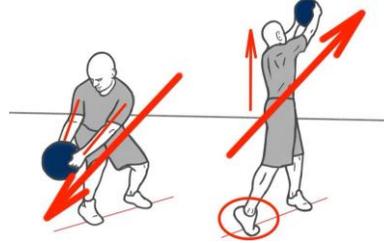
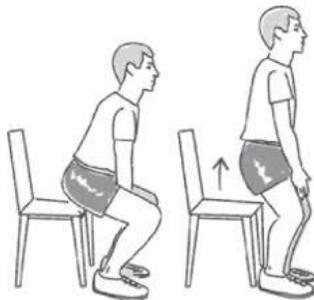
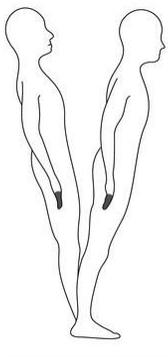
- Ankle, knee, hip, trunk, hand, elbow, shoulder, neck mobility/range of movement exercises
- Leg strengthening exercises
- Trunk strengthening exercises
- Hip and trunk stretches



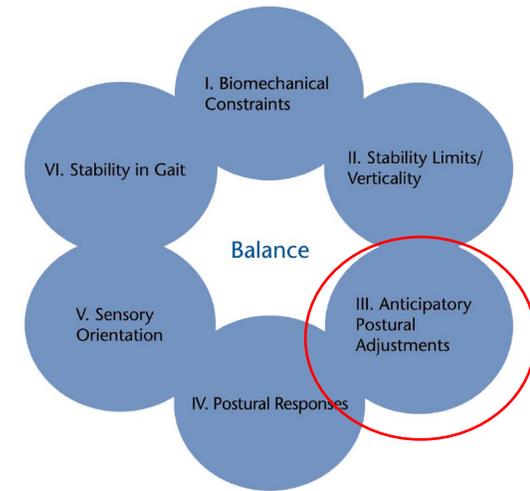
# 2. LIMITS OF STABILITY/ VERTICALITY



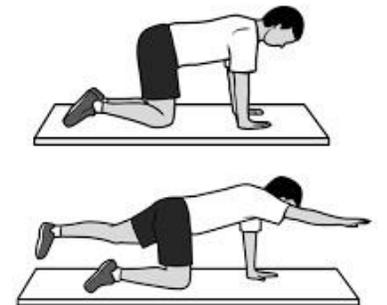
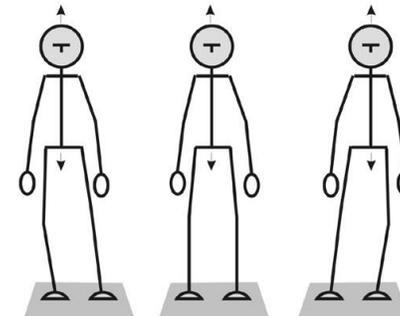
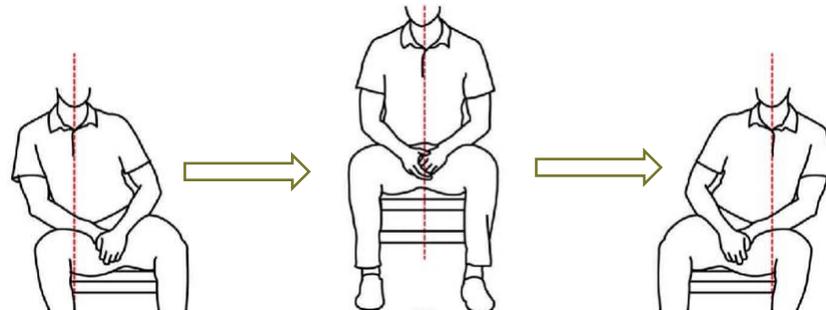
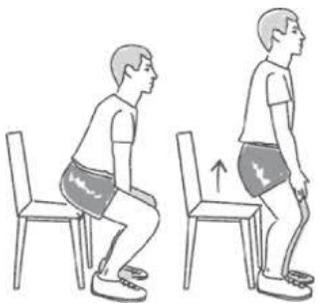
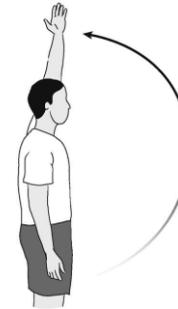
- Postural exercises (axial extension, keep body in perceived vertical, standing upright against gravity etc.)
- Reaching exercises
- Swaying exercises



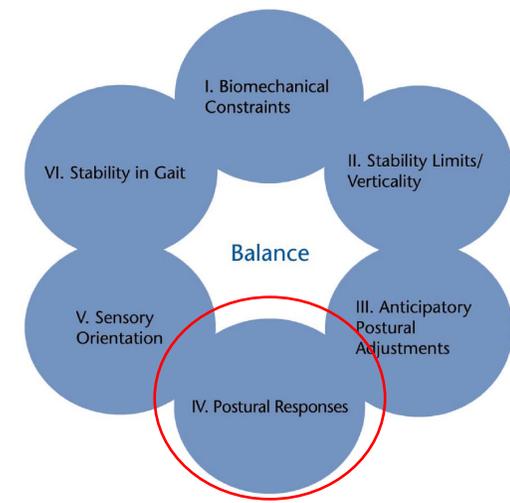
# 3. ANTICIPATORY POSTURAL ADJUSTMENTS



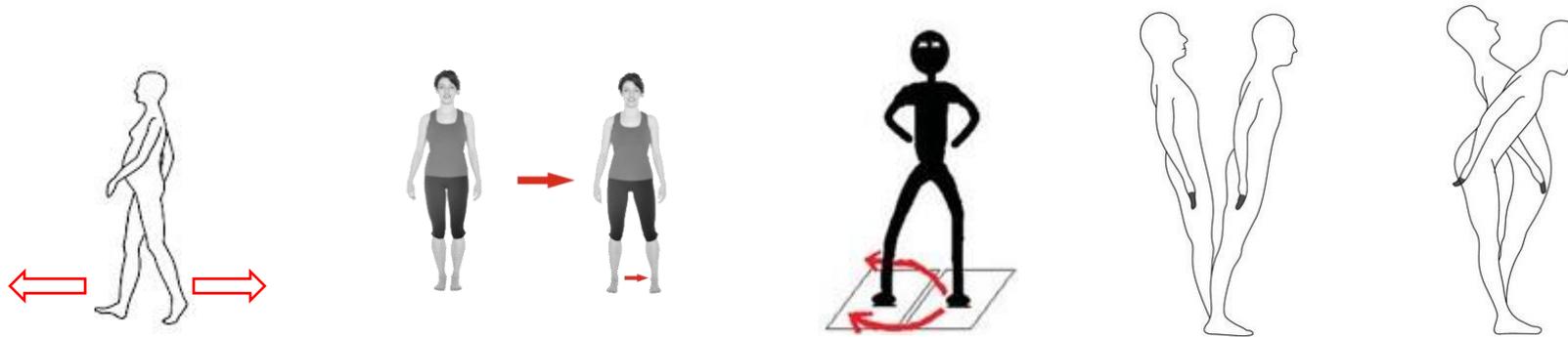
- Weight shifting (in preparation for movement) exercises
- Trunk control exercises
- Limb dissociation exercises



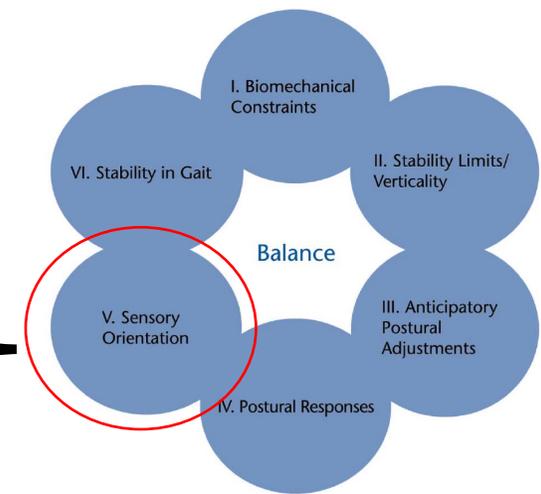
# 4. REACTIVE POSTURAL RESPONSES



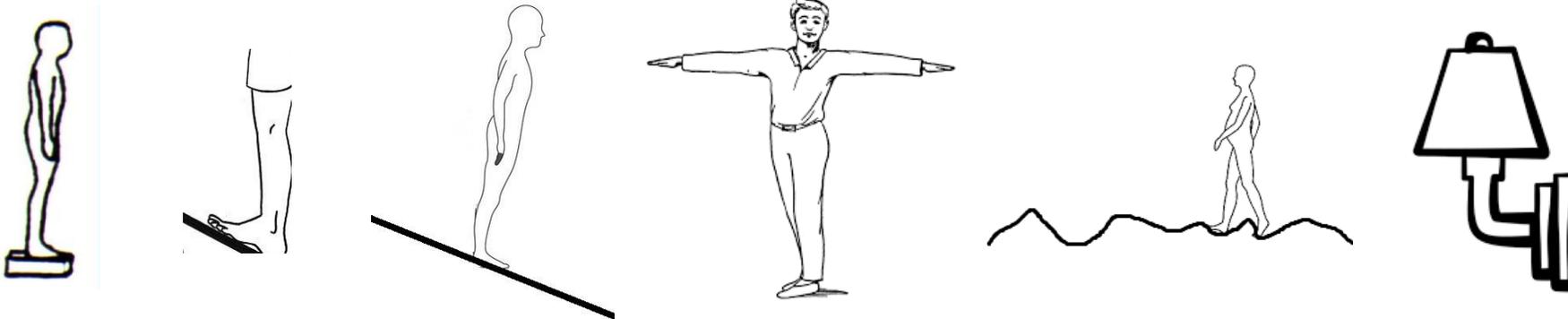
- Stepping exercises (forward stepping, side stepping, backward stepping)
- Weight shifting exercises



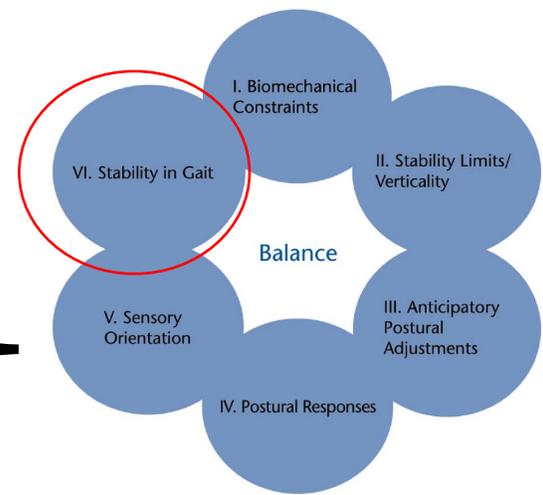
# 5. SENSORY ORIENTATION AND REWEIGHTING



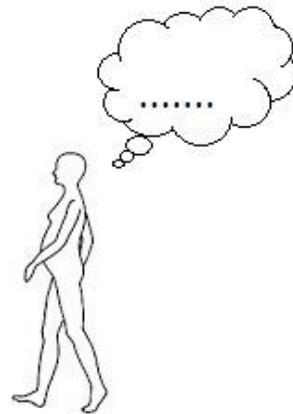
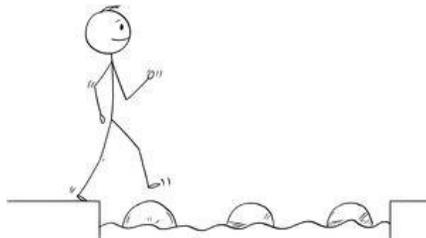
- Practice between switching from relying on vision to relying on sensation from feet
- Strategies to maintain safety i.e. night light for nighttime toileting, removing trip hazards if sensory reweighting difficult



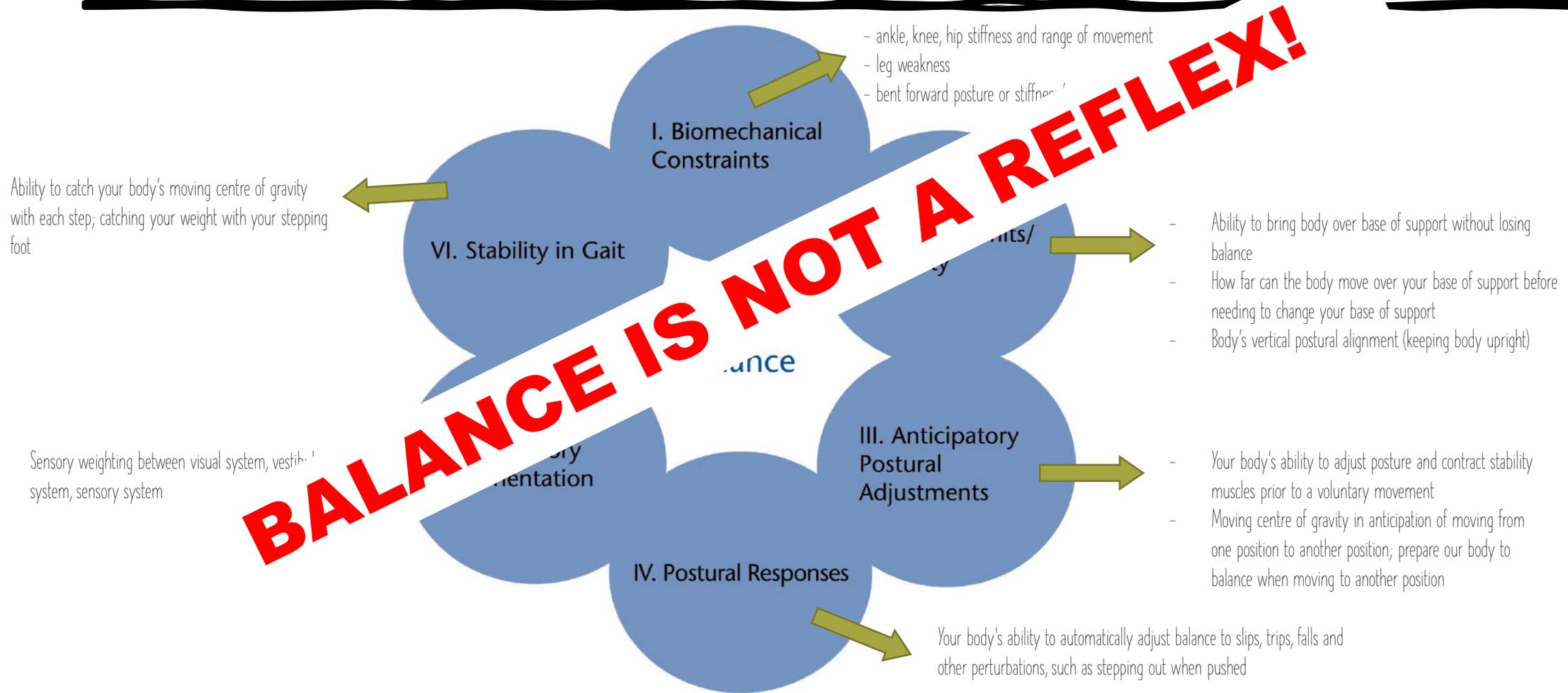
# 6. DYNAMIC GAIT STABILITY



- Changing walking speed
- Walking while turning head
- Stepping over/ navigating obstacles
- Turning
- Add in dual-task components



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# SUMMARY

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- There are many reasons why we fall. Although balance is a contributing factor, it is not the only reason we fall!
- Although not all falls risk factors are modifiable, we can try to reduce and modify as many risk factors as possible.  
*You can't 100% prevent falls*, but you can reduce the risks associated with falls.
- Some falls are unpredictable and inevitable, and can happen to anyone regardless of how physically fit you are



# QUESTIONS??

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