

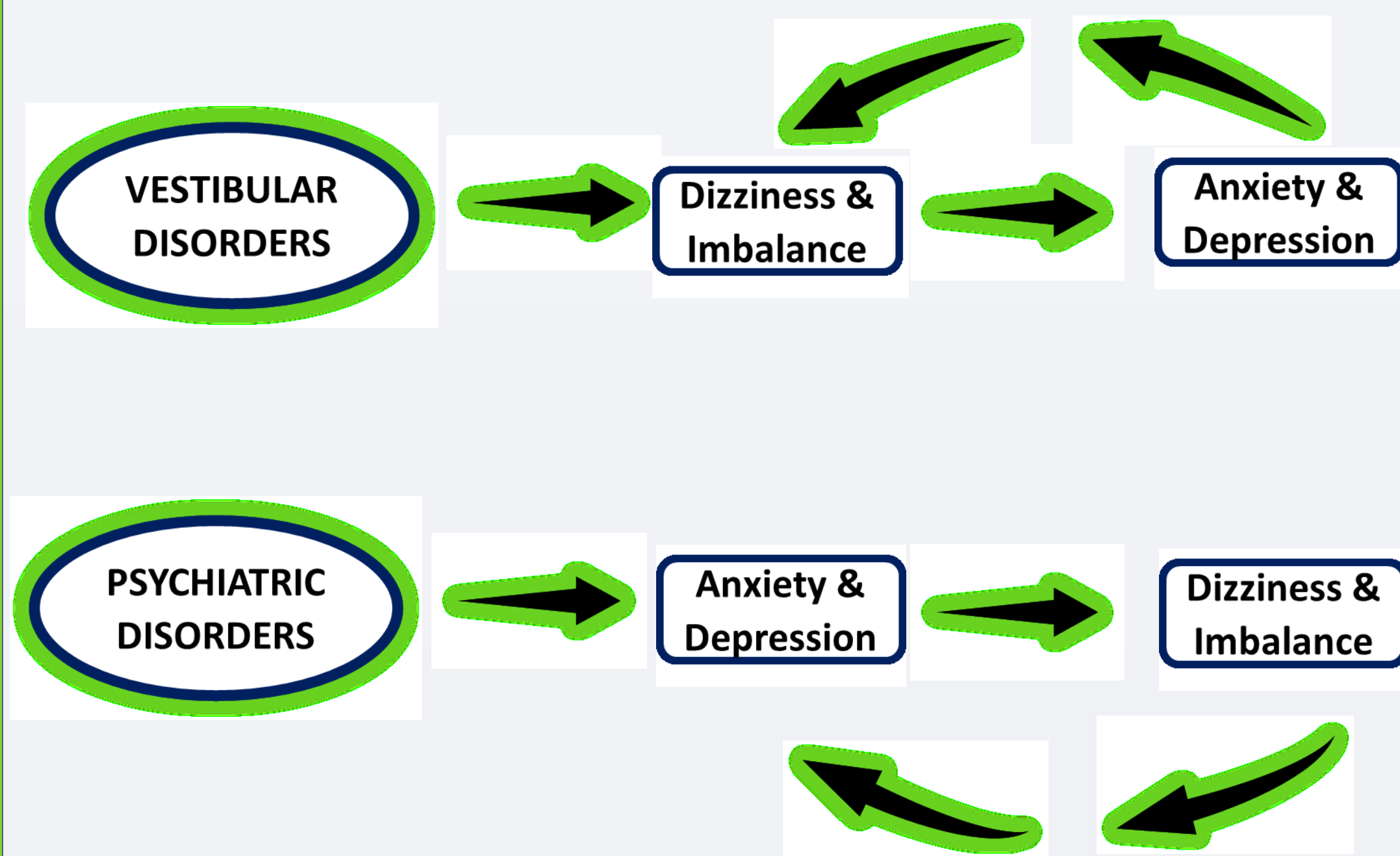
Integration of Vestibular rehabilitation with Yoga therapy theory in treating psychological and physical symptoms of vestibular disorders.

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INTRODUCTION

Patients with vestibular disorders exhibit symptoms of dizziness, imbalance, anxiety, and depression. Evidence based vestibular rehabilitation is proved to improve balance and reduce dizziness. Anxiety and depression in vestibular disorders impact the outcomes of both subjective and objective outcome measures (MacDowell et al., 2018) Components of Yoga such as Yoga pose (Asanas), Breathing (Pranayama), and Meditation (Dhyana) produce positive results in psychological and physiological symptoms of anxiety, depression and imbalance, when used in conjunction with Vestibular rehabilitation

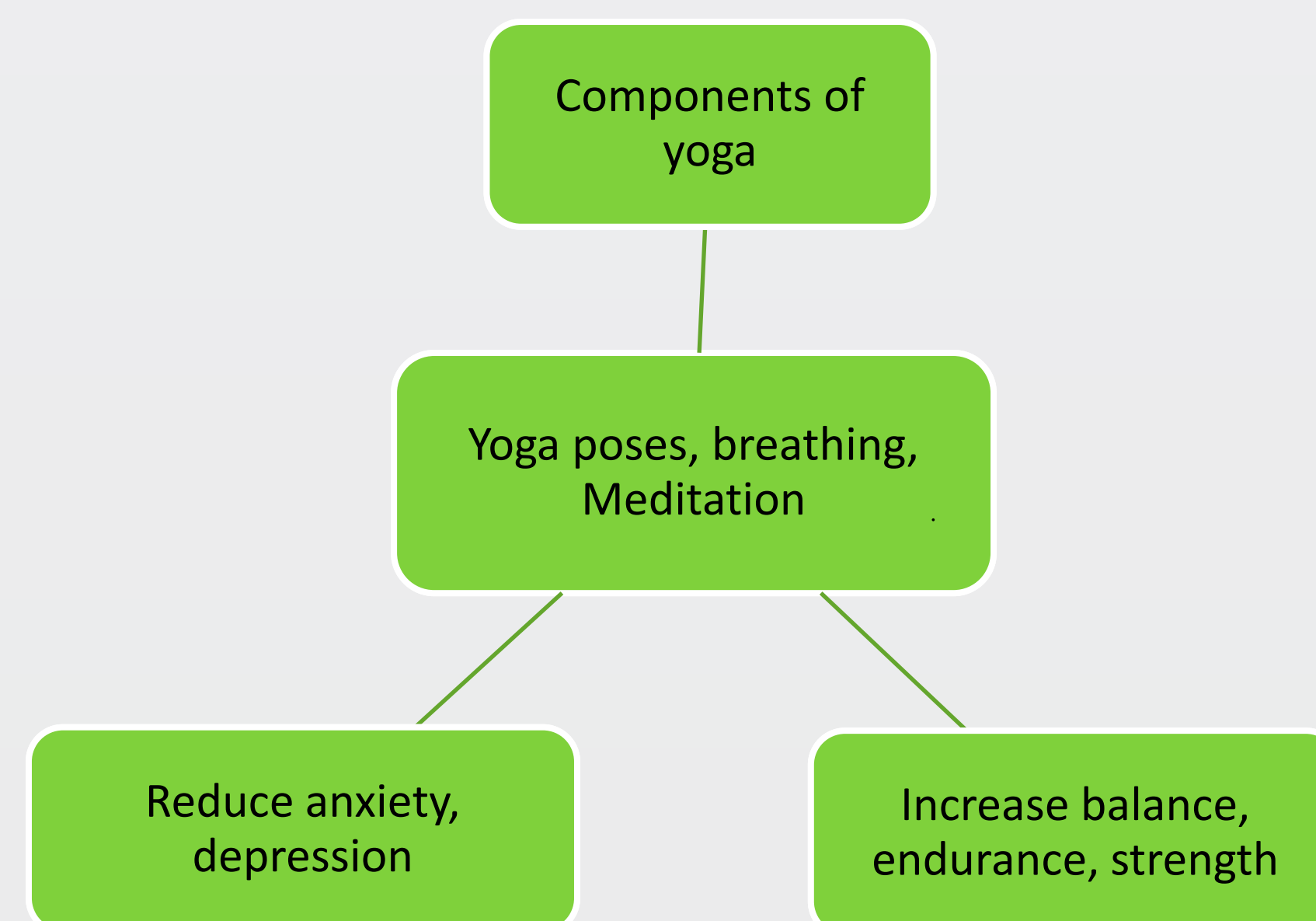


Concept of Yoga:

Yoga means "Mastery over the mind". To achieve the mastery over the mind, ancient yoga texts and traditions followed several steps like Yoga poses (asanas), Yoga breathing (Pranayama), Meditation (Dhyana). Yoga poses (Asanas) have several types - Meditative poses, Cultural Poses and Therapeutic poses. Therapeutic poses which are meant to be for 'balance' are beneficial for people with imbalance and dizziness (Ülger, Ö., & Yağlı, N. 2011). Yoga poses are physical postures which can also help to reduce depressive symptoms (Franklin, Butler & Bentley, 2018)

The second component of yoga is breathing (Pranayama) helps to reduce stress, increase endurance, reduce anxiety, relieve depression (Doria, de Vuono, Sanlorenzo, Irtelli & Mencacci, 2015) (Cramer, Lauche, Langhorst & Dobos, 2013)

The third component of yoga is Meditation, reduce anxiety and helps to calm the mind (Travis et al., 2018)

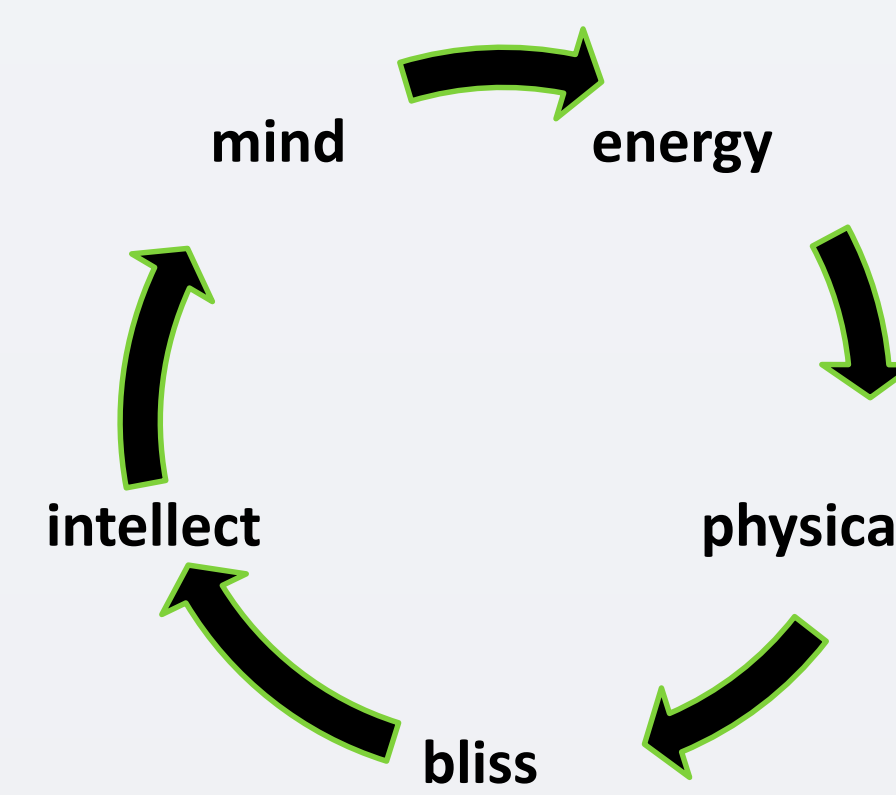


Concept of yoga in existence of human being:

In yoga tradition and ancient scriptures (Upanishads), the concept of five layered (Panchakosa) existence of human being is described (Nagarathna & Nagendra, 2004). The five layered existence of human being are

- (1) Physical level – Annamaya Kosa
- (2) Energy level- Pranamaya kosa
- (3) Mind level - Manomaya kosa
- (4) Intellect level- Vijnanamaya kosa
- (5) Bliss level- Anandamaya Kosa

According to Yoga concept the origin of disease at any above mentioned can lead to affect the other layer of existence. If an imbalance starts at mind level (anxiety, stress) which can play role in affecting the physical level (endurance, weakness, dizzy), when unattended or become chronic may lead in to affect other level of existence (Nagarathna & Nagendra, 2004).



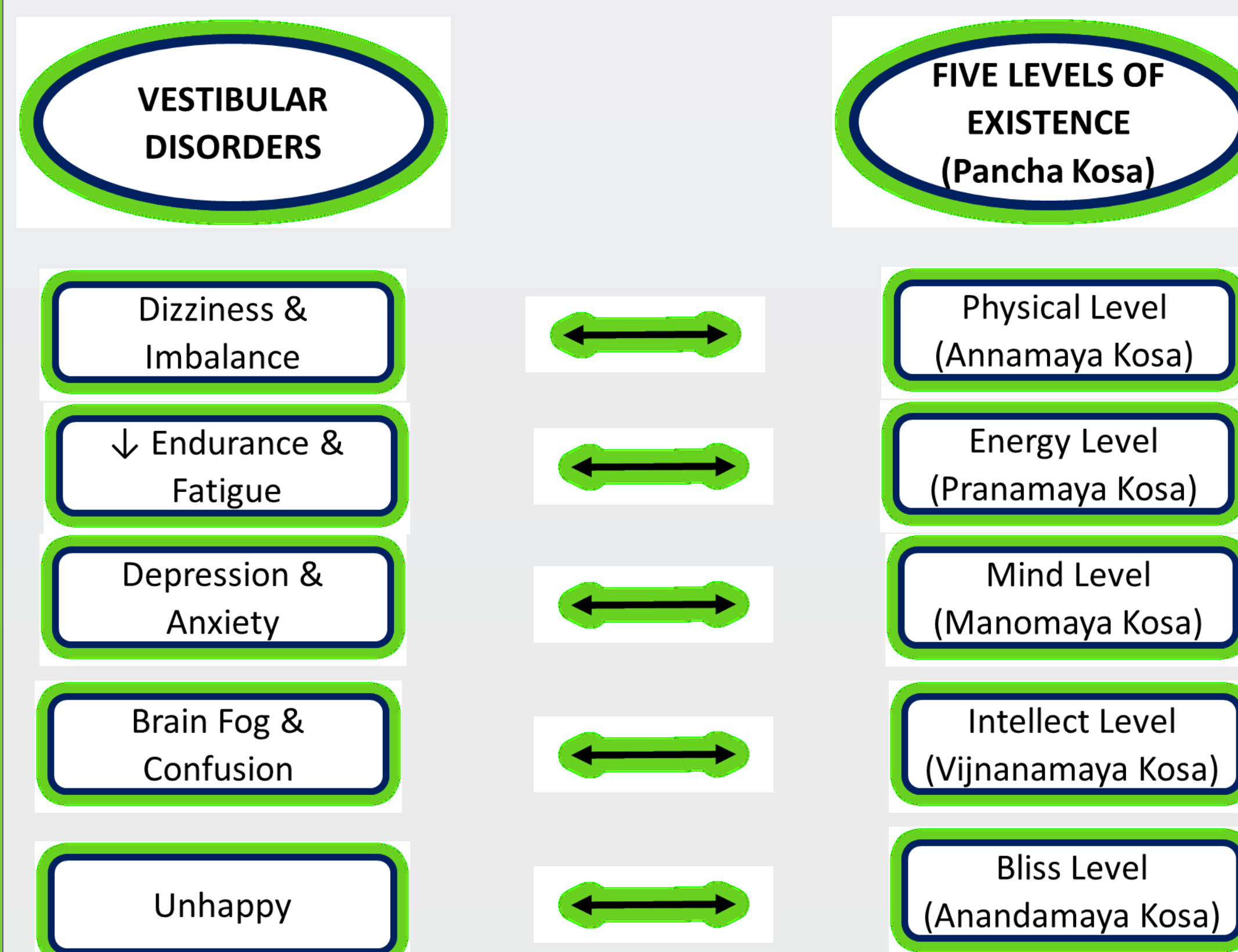
Vestibular Concept:

The human balance system is so complex, that multiple organs and psychology should work in a rhythm to maintain balance and to avoid dizziness. Three components of Vestibular system impact the balance and dizziness are Vestibulo ocular reflex (VOR), VSR (vestibular spinal reflex) VCR (Vestibular colic reflex). In addition, three Balance Strategies are described to control the balance (Herdman, S., & Clendaniel, R.2014).

- (1) Ankle strategy
- (2) Hip strategy
- (3) stepping strategy.

Patients with Vestibular disorders exhibits postural and oculomotor impairments with symptoms of dizziness and imbalance. About half of patients with dizziness/ vertigo suffer from psychological co morbidity (Lahmann et al., 2014). Also increased level of psychological distress persists with chronic dizziness and may prolong the dizzy symptoms (Roh, Kim, Kim & Son, 2018). In addition, dizziness is common in psychological disorders without physical illness (Staab, Ruckenstein & Amsterdam, 2004).

Integration of vestibular and yoga:



Integrated approach:

Physical level: Customized vestibular rehabilitation, Yoga poses (Asanas)

Energy level: Yogic breathing (Pranayama)

Mind level: Deep relaxation (conscious segmental relaxation), Meditation.

Intellect level: Patient education, Counseling

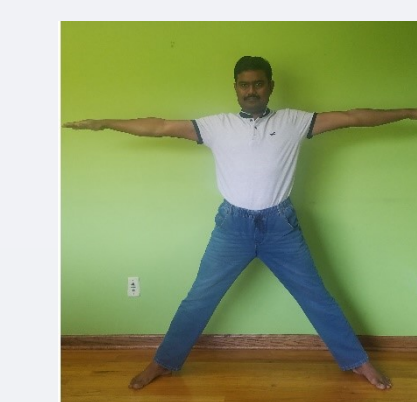
Bliss level: group activities, support group, laughing yoga.

Physical poses (Asanas)

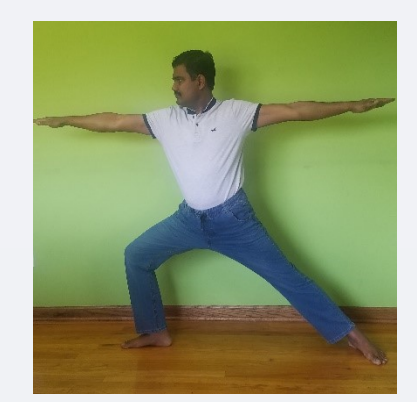
- (1) Done with eyes closed to foster Vestibular system input.
- (2) Done faster with gazing to increase central adaptation.
- (3) Maintain the pose in symptom provoking position to promote habituation.
- (4) Transition from starting position to final pose to improve ankle, hip and stepping strategy.
- (5) Movements with awareness and synchronized breathing to reduce stress.



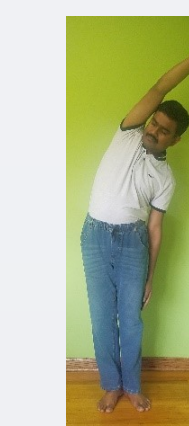
Starting position



Stepping strategy



Ankle and Hip strategy



Eyes closed to foster Vestibular input



symptom provoking position for Habituation

Conclusion:

Integrating yoga components of poses, breathing and meditation in vestibular rehabilitation could benefit both psychological and physical symptoms of vestibular disorders.

This theory is intended for more research to bring evidence that integrating yoga in vestibular rehabilitation to treat physical and psychological symptoms.

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