

Guest Editorial

Need of vestibular stimulation

Vestibular history starts with the first detailed description of the bony labyrinth published by Casserini in 1610¹. The vestibular system can be divided into the vestibular apparatus and central vestibular nuclei. The vestibular apparatus is a membranous structure consisting of three semicircular canals connected at their base to utricle, saccule and endolymphatic sac.² The vestibular apparatus detects head motion and position and transduces this information to a neural signal. The vestibular nuclei are primarily concerned with maintaining the position of the head in space.

18,500 afferent and efferent connections are present in vestibular system. It is well connected with brain structures like cortex, thalamus, hypothalamus, cerebellum, basal ganglia, hippocampal formation, locus coeruleus, raphe nucleus, dorsal motor nucleus of vagus, para-brachial nucleus, peri-aqueductal gray matter and influences our activities in day to day life. There exists several methods to stimulate vestibular system, However physiological method of controlled vestibular stimulation was developed and standardized and applied in college students by Little Flower Medical Research Centre, Kerala, for the first time. In our body, the most important connection between gravitational force and nervous system is vestibular system. Fetal vestibular system is stimulated when mother is walking or rocking. After birth first six to twelve months vestibular system is most sensitive and it is the time when crawling, creeping and walking occurs. Vestibular stimulation is an effective intervention for the facilitation of spontaneous use of verbal language in developmentally delayed children. Rocking is good for adults too. Sitting in a rocking chair/ swing while watching TV or reading is relaxing, relieves pain, promotes sleep, improve immunity, prevent or delay endocrine disorders, delay brain ageing, improve cognition, balance food intake, and also improve strength and flexibility of knees.³⁻⁵

Prenatal vestibular stimulation is beneficial to both mother and child. Vestibular stimulation may speedup labor process. Rocking helps mothers to recover soon after pregnancy. When mother is walking/ rocking, fetal vestibular system will be stimulated due to cushioning effect of amniotic fluid. It was

recommended that pregnant women should start rocking from 10th week of pregnancy twice a day for 5-10 minutes to promote development of nervous system of the fetus. Vestibular stimulation influence endocrine secretions and helps for growth and development of the fetus. 82.2 percent of hospitals in United States are rocking (vestibular stimulation) the pre mature babies to improve motor movements and to make child cry less (calming effects). Vestibular stimulation has been shown to reduce apnea in premature babies and also speed up maturation of nerve cells of cerebellum.

In India most of the babies were rocked in a rhythmic fashion in a swing, popularly known as Jhoola/dhola/palna. Babies loves rocking because these movements are similar to the movements they have experiences in mother's womb. Babies who received vestibular stimulation showed advanced development of gross motor skills and reflexes.

Vestibular stimulation is beneficial to elders too. In USA clinicians were using rocking chair therapy (vestibular stimulation) for Alzheimer and Dementia patients. Vestibular stimulation has been used as a therapy for autism, autonomic dysfunction patients and to relieve back pain and to speed up healing/ recovery after surgery. It was reported that the patients who received vestibular stimulation required less medication during treatment.

In our research centre we have applied vestibular stimulation as a supplementary treatment to a hypothyroid patient and observed better improvement when compared with only treatment with only drug. The most striking feature is that she reported that her menstrual cycle was regular after vestibular stimulation. Unlike any drug, vestibular stimulation by simple means like swing can be incorporated in our routine life style. The need of vestibular stimulation can be observed from fetal life to

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elders in rocking chair. It is the need of time to identify importance of vestibular stimulation and start translational research for improving quality of life.

References

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Dr. Sai Sailesh Kumar G

Department of Physiology
Litter flower Research Center, Kerala
Co- Editor, Asian Journal of Health Sciences