Innovation pathways of nervous system that send

Business, Industries

Innovation of transportand industry have led to provocative motion environments, to cars, trains, funfair rides, aircraft, andsimulators. 1 Thus Motion sickness is a common problem in peopletravelling by train, airplane, boat and especially cars. Also people experiencemotion sickness from virtual reality, displays and also smart phones. 2Susceptibility to motion sickness is higher in individuals suffering from spatial disorientation(35. 05%), migraine (26.

31%), gastrointestinal disorders (26. 82%) and those whomore sensitive to unpleasant odors (24. 64%). Females (27. 3%) are moresusceptible to motion sickness than males(16. 8%). 6 Initial symptomsis discomfort in stomach, followed by nausea. With rapid worsening of symptomsthere can be salivation changes, dizziness, retching and sopite related symptoms.

3, 4The primary functionsof the vestibular system are spatial orientation, maintenance of balance, andstabilizing of vision through vestibular–ocular reflexes. 15Motion issensed by the brain through three different pathways of nervous system that sendsignals coming from inner ear(sensing motion, acceleration, gravity), theeyes(vision), and the deeper tissues of body surface(proprioceptors). When thereis an unintentional movement of the body, the brain responds to unfamiliarmotion stimuli which are transmitted to vestibular nuclei. This unfamiliarmotion stimuli is sensed by vestibular labyrinth, the eyes and proprioceptorsand travel to vestibular nuclei, then through cerebellum to vomiting centrelocated in the parvicellular formation of medulla oblongata, this conflictamong the brain and the three pathways

lead to motion sickness. 16Currently the “ neural mismatch theory” states that motion sickness canoriginate from within a single sensory system (e. g.

, canal-otolithinteraction), or between two or more sensory systems (e. g. visual-vestibularinteraction). 19, 20 As the vestibular system plays a crucial role in the inducement ofmotion sickness, vestibular habituation exercises will help reduced motionsickness. Repetitive vestibular stimulation can therefore cause changes inVestibulo-Ocular Reflex (VOR) and at the same time a reduction in sensitivityto motion sickness. 30 Habituation exercisesare based on the mechanism that repeated exposure to a provocative stimulus(e. g. head movements) will lead to a reduction of the motion-provoked symptoms.

32These exercises cause a habituation effectcharacterized by decreased sensitivity and duration of symptoms canoccur in as quickly as 2 weeks but can take as long as 6 months. 31Effects of breathing strategy have explored by number of experts. Paul Lehrer aleading researcher in area of relaxation training showed that breathingapproach can be quite successful in in reducing physiologic activation of thesympathetic nervous systems.

33A commonly used DiagnosticCriteria for Identifying the Severity of acute motion sickness and theDiagnostic Scale, referred to as Motion Sickness Assessment Questionnaire whichis a reliable method for scoring overall motion sickness with the use of foursubscales is used in this study for rating these symptoms of motion and todifferentiate motion sickness symptoms along four dimensions: gastrointestinal, central, peripheral, and sopite-

related. 36 Motion sickness affects nearly all people whotravel by land, sea, or air, little documentation exists regarding preventionand management. Repeated recurrence of sickness is not desirable or practicalto daily living. Limited evidence is available for Controlled breathing andvisual-vestibular habituation training for motion sickness that won’t provokethe undesirable symptoms and can last for upwards of a year. Thus aim of thisstudy was to help determine the effectiveness of visual vestibular habituationand controlled breathing for motion sickness. The research questions were: Isvisual-vestibular habituation and controlled breathing effective for motionsickness? Will there be any difference in severity of motion sickness whentreated with visual vestibular habituation and controlled breathing for motionsickness?