

## NORMAL SACCADIC RESPONSE USING VIDEO HEAD IMPULSE TEST (vHIT) IN HEALTHY YOUNG ADULTS

**Nurul Amira Omar**<sup>1</sup>, Saiful Adli Jamaluddin<sup>1</sup>

<sup>1</sup>Department of Audiology and Speech-Language Pathology, Kulliyah of Allied Health Sciences, International Islamic University Malaysia(IIUM), Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang.

### ABSTRACT

**Introduction:** Vertigo and dizziness are common symptoms reported in audiology and ENT clinics. One of the objective assessments includes the video head impulse test (vHIT) where gain & velocity responses of eye movements relative to the head movements were recorded using an infrared camera.

**Method:** Thirty normal hearing subjects age between 18 to 25 years old participated in this study. Exclusion factors include those with a history of head or neck injury and vertigo. At least ten Lateral, Left Anterior Right Posterior (LARP), and Right Anterior Left Posterior (RALP) responses were recorded for each participant by making small unpredictable head movements.

**Results:** The average velocity gain for Lateral responses at 40ms, 60ms and 80ms were  $1.08 \pm 0.004$ ,  $1.06 \pm 0.001$  and  $1.05 \pm 0.001$  respectively. The LARP average velocity regression were 1.08 for Left Anterior and 1.09 for Right Posterior, with an average gain asymmetry of 4.75%. The RALP average velocity regression were 1.15 for Right Anterior and 1.13 for Left Posterior, with an average gain asymmetry of 4.2%. One sample t-test was conducted to compare Lateral responses to a previous study by Mossman et al. 2015. There were significant differences in velocity gain at 60ms and 80ms between studies where,  $t(39) = 11.17$ ,  $p < 0.01$  and  $t(39) = 8.04$ ,  $p < 0.01$  respectively.

**Conclusions:** This indicates the importance of establishing norms for clinics as various factors could affect the results such as techniques used and equipment differences. This normative value will help clinicians in making informed decisions and improve referral rates.

**Keywords:** Video Head Impulse Test, vestibulo-ocular reflex, semicircular canal, saccades, vertigo, vestibular

**Corresponding author:** Nurul Amira Omar ([amira5900@gmail.com](mailto:amira5900@gmail.com))