Suppression Head Impulse Paradigm (SHIMP)

SHIMP test provides additional information about the vestibulo-ocular reflex system and is especially useful in patients with bilateral loss

Purpose:

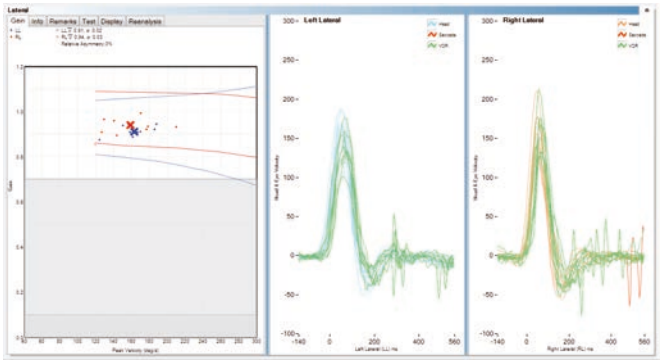
Identify if vestibular residual function is present. It also is a "covert saccade killer" for unilateral losses.

How is it different than head impulse test?

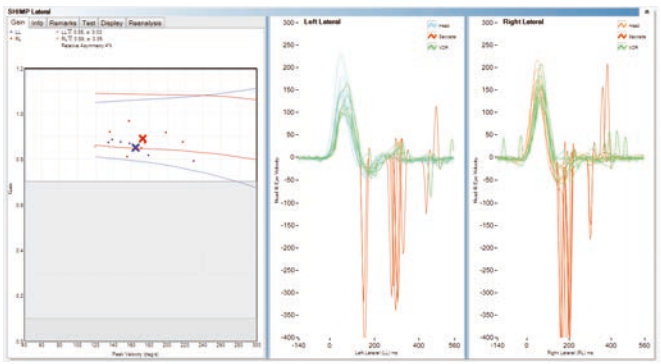
Head impulse uses an earth fixed target and SHIMP uses a head fixed target.

*"Detecting residual vestibular function in patients with vestibular loss is of great clinical importance for vestibular rehabilitation, as it may help patients in compensating for their vestibular deficit by triggering early catch-up saccades."**

Within Normal Limits

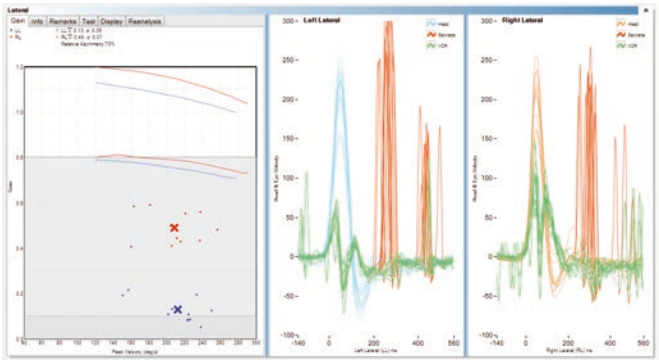


vHIT – gain within normal limits and none to very few catch-up saccades

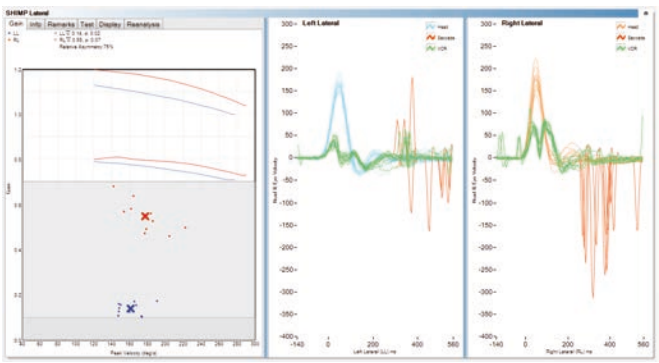


SHIMP – gain within normal limits and downward anti-compensatory saccades with large amplitudes

Bilateral Vestibular Loss



vHIT – abnormal gain and presence of covert or overt catch-up saccades



SHIMP – abnormal gain on both sides – if anti-compensatory saccades are present it is a sign of residual vestibular function (right side has vestibular function, left side is questionable)

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Understanding Bilateral Loss:

Rare
- 0.6 to 4% of patients

Symptoms
- Gaze instability with rapid head movements
- Oscillopsia
- Imbalance and unsteadiness
- Worsens in the dark

Causes
- Ototoxic Drugs
- Infection such as Meningitis
- Congenital disorders
- Autoimmune disorders
- Degenerative disorders
- Co-occurrence with cerebellar ataxia (CANVAS & Superficial Siderosis)

Interpretation:

For bilateral loss – is it paralysis or paresis?
Catch-up Saccades present indicates vestibular function No catch-up saccades present indicates vestibular loss

References

*) MacDougall HG, McGarvie LA, Halmagyi GM, Rogers SJ, Manzari L, Burgess AM, Curthoys IS, Weber KP. A new saccadic indicator of peripheral vestibular function based on the video head impulse test. Neurology 2016, Jul 26; 87(4):410-8. doi:10.1212/WNL.0000000000002827. Epub 2016 Jun 1

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Mantokoudis G, Schubert MC, Tehrani AS, Wang AL, Agrawal Y. Early adaptation and compensation of clinical vestibular responses after unilateral vestibular deaffrentation surgery. Clinic Neurotol 2014(35):148-154.

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