



Pediatric Solutions

Objective Visual Function Testing

Electrodiagnostics

From infants to adolescents

Electrophysiology can accurately characterize the phenotype of inherited retinal diseases (IRDs).

Children who receive early diagnoses benefit from access to family counseling, accommodations, and may qualify for clinical trials.



Evaluate children with:

- ✓ Suspected night blindness
- ✓ Congenital nystagmus
- ✓ Abnormal fundus exams
- ✓ Poor vision or visual delays
- ✓ Cases of retinal hemorrhage
- ✓ Retinopathy of prematurity



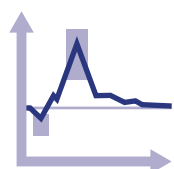
Pediatric ERG/VEP

A full retinal and optic nerve
evaluation done in just 10 minutes

The Great Ormond Street Hospital (GOSH)⁵ in London produced an innovative, abridged ERG/VEP test that skips a formal dark adaptation, saving time while preserving diagnostic accuracy.



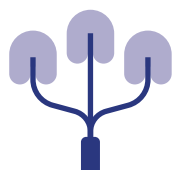
Watch the
webinar on
GOSH testing



Includes
reference data



No dilation
required



Skin
Electrodes



No anesthesia
required

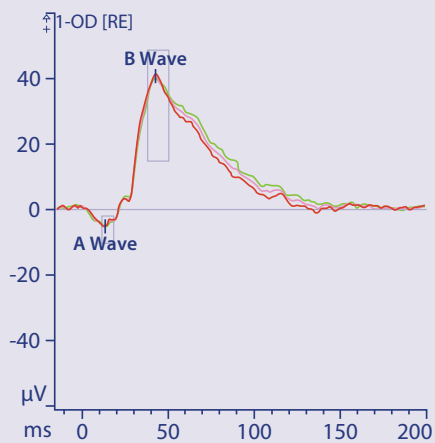


Binocular
Recording

Results from GOSH ERG

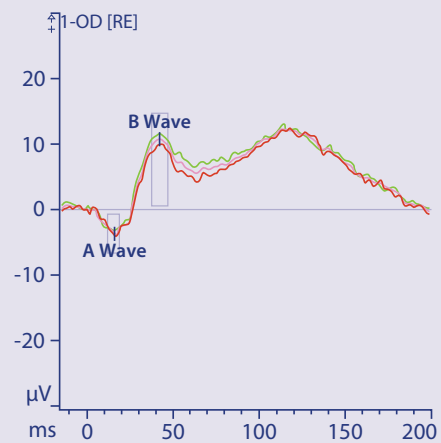
1

Scotopic white:
mixed rod/cone



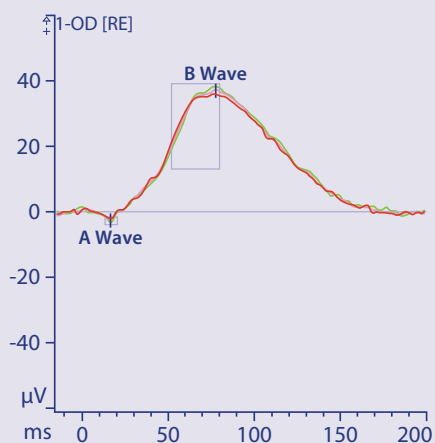
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Scotopic red:
cone



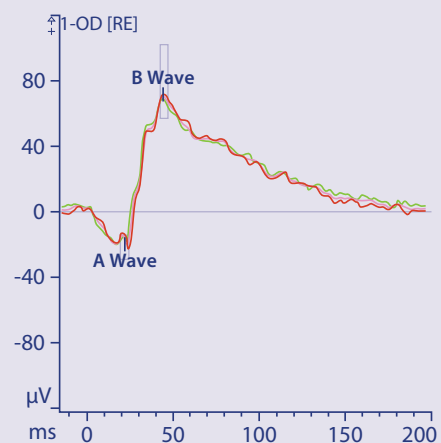
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Scotopic blue:
rod



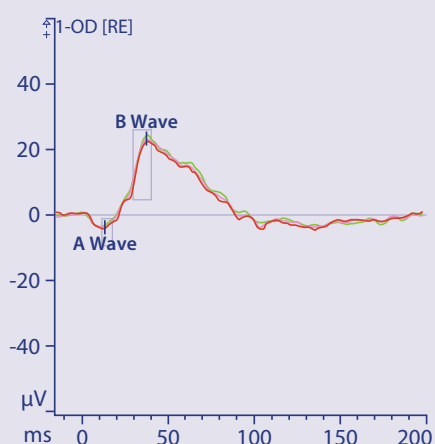
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Scotopic white:
rod



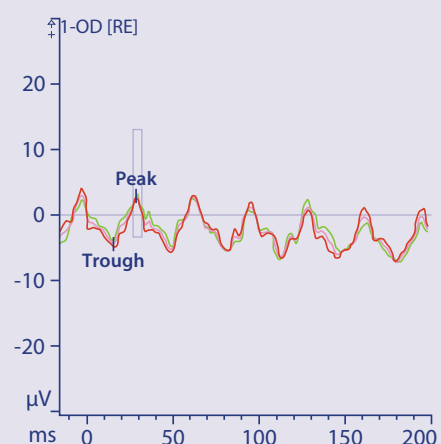
5

Photopic white:
cone



6

Photopic white
flicker:
cone



Assess visual acuity objectively

An automated method for assessing visual acuity using VEP techniques

Stepwise Sweep VEP

Designed for young, non-fixating children, the Sweep VEP utilizes a checkerboard stimulus to present progressively smaller check sizes. This technique is adopted from the Royal Hospital for Children in Glasgow¹²³⁴.

Evaluate children with:

- ✓ Unexplained vision loss
- ✓ Functional vision loss
- ✓ Difficulty fixating
- ✓ Cortical visual impairment (CVI)

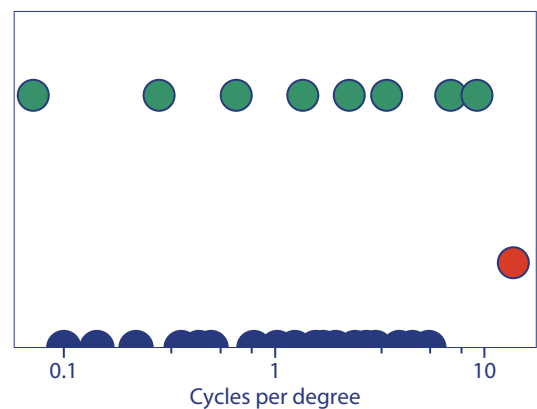
Example test results

VEP Result	Subject	Normal Ref
Best CPD	9.15	16.9
Recorded Steps	9	
Significant Steps	8	
Eye Correction Used	Yes	

Acuity Estimate	Subject	Normal Ref
Snellen 20ft	20/37	20/20
97.5% Confidence	20/73	

Symbols

- Significant
- Not Significant
- Borderline
- Not Recorded



Test takes
1-2 minutes
per eye

Age-matched
normative
reference data

Easy-to-interpret
report in
Snellen Acuity

Ranges from
20/20 to 20/2000
(6/6 to 6/600)

A complete pediatric electrodiagnostic system



ColorFlash

- Pediatric stimulator includes attention-getting animal sounds
- Handheld for testing at a distance
- Binocular testing

Full-field Electroretinogram (ERG)	✓
Photopic Negative Response (PhNR)	✓
Flash Visually Evoked Potentials (VEP)	✓
Extended ISCEV	✓
Full-field Stimulus Test (FST)	✓



Display Monitor With Luminous Intelligence

- Pattern testing for seated patients
- Artifact-free testing
- Binocular testing

Multifocal ERG (mfERG)	✓
Pattern ERG (PERG)	✓
Pattern VEP	✓
Sweep VEP	✓
Ring ERG	✓



Watch the webinar
on Stepwise
Sweep VEP



All visual stimulators perform
ISCEV standard tests

The industry leader. Decades of experience,
thousands of installations.

- ✓ Most experienced customer support team in the industry
- ✓ Hundreds of peer-reviewed papers published using our systems
- ✓ Extensive world-wide network of leading experts operating Diagnosys systems

Selected References

1. Bradnam M, Mackay A, Hamilton R. The circular T-squared statistic and SNR measurement are complementary for fast objective detection of steady-state visual evoked potentials (VEPs). IET Digital Library (2002) 3-3.
2. Mackay A, Bradnam M, Hamilton R. Rapid detection of threshold VEPs. Clinical Neurophysiology (2003) 114:1009-1020.
3. Mackay A, Hamilton R, Bradnam M. Faster and more sensitive VEP recording in children. Documenta Ophthalmologica (2003) 107: 251-259.
4. Mackay A, Bradnam M, Hamilton R, Elliot A, Dutton G. Real-time acuity assessment using VEPs: development and validation of the step VEP technique. Investigative Ophthalmology (2008) 49: 438.
5. Marmoy OR, Moinuddin M, Thompson DA. An alternative electroretinography protocol for children: a study of diagnostic agreement and accuracy relative to ISCEV standard electroretinograms. Acta Ophthalmologica (2022) 100:322-330.

ORDERING INFORMATION

D382: ColorFlash

D370-6: Glasgow ssVEP on 24" monitor

Available with both E3 Tabletop (D315) and Profile cart-based system (D310).

PLEASE CONTACT US

if you would like more information on Diagnosys products.

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