The Visual Behaviour (ViBe) Matrix

The ViBe matrix is a novel tool combining qualitative and quantitive methods to allow the recording of visual responses in children with visual impairment and complex needs. It is intended for use in children who are unable to engage with traditional acuity testing methods, to provide a structure through which to capture visual function in order to facilitate diagnosis, and monitor progress or response to interventions. The ViBe Matrix can be used during observation of the child in their environment, either passively or during interaction with visual stimuli.

The ViBe Matrix comprises descriptors of visual behaviours in three domains (visual awareness/attention, simultaneous perception/field and motor response). A non-linear score of 0-4 can be attributed for each domain and for overall impression of visual function, where broadly 0=no visual awareness; 1= visual awareness; 2=visual attention; 3= visual detection/location; 4= visual /recognition understanding). To achieve a score in each domain the patient need not demonstrate all the visual behaviours described; rather experience professionals can gain a general impression of the child's function from observation of responses.

OVERALL IMPRESSION	
0 PRE-VISUAL AWARENESS	Patient has no/very limited visual awareness
1 VISUAL AWARENESS	Patient has visual awareness but very limited visual attention
2 VISUAL ATTENTION	Patient has good visual awarness and attentio with very limited location/detection
3 VISUAL LOCATION/DETECTION	patient has good visual attention, loction and detection but no or limited understanding or recognition
VISUAL UNDERSTANDING/ 4 RECOGNITION	patient has good attention, location, detectior understanding and/or recognition.

Level	See It - awareness &attention	Find It - fixation & field	Use It - motor response
0	Visual awareness* fleeting or not directly linked to a stimulus	Roving eye movements, no purposeful attempt at fixation	Blink in response to a bright light in close proximity in a dark room
1	Shows awareness* of a bright light or large object (face, ball) held in close proximity	Delayed fixation on an object, fixation lasts <3seconds "light gazing" in the direction of ceiling lights or window. Visual awareness* is restricted to central or a small area of visual field (sometimes noted by gazing or scanning into that area).	'Stilling' of sensory self-stimulation in response to a visual stimulus
2	Sphere of visual attention* present at less than 1m; unable to detect new objects beyond 1m. Visual attention* shown briefly (eg fixation, tracking, stilling) in response to an audio or visual stimulus Vision appears more 'off' than 'on'	Fixation is quick and held for >3 seconds Visual attention* is reduced in a specific area of visual field (eg inferior, right) as compared with remainder of field. Unable to track objects Visual fixation between two objects is very delayed, variable or inaccurate.	Upper limb motor response is markedly delayed >5s and/or gross
3	Sphere of visual attention* extends beyond 1m and used to locate new objects Vision appears more 'on' than 'off' Visual attention* (eg fixation, tracking, stilling) shown in response to a silent stimulus and remains on to detect new stimuli	Visual attention* appears equal in all areas of visual field Tracking of objects is hesitant, jerky or intermittent Visual fixation is slightly delayed or inaccurate when moving from one object to a new object presented in another area of accessible visual field	Intentionally changes head/eye position to maximise area of best visual attention* Upper limb motor response is slightly delayed <5s and/or inaccurate Moves head to locate an object rather than using ocular movement/fixation
4	Sphere of visual attention* extends beyond 2m and used to locate new objects Visual attention* appears to be on all the time	Moving objects are tracked smoothly Visual fixation shifts promptly from one object to a new object presented in another area of accessible visual field	Upper limb motor response is immediate Upper limb motor response is accurate Able to name, sign, match or indicate recognition of object