

## Case Study 7: 3 year old girl with severe developmental disability, CP, deafness and significant visual impairment

### **Report included:**

Olivia is a three year old girl with a history of kernicterus and severe dystonic four limb movement disorder. She has sensorineural hearing loss and a cochlear implant. Olivia attends a pre-school for children with learning and physical impairments.

Mum is not sure how well Olivia can see and would like more clarification on this aspect of function. Olivia is aware of faces and responsive to changing lighting conditions. She is aware of people moving past her and is aware of herself in a mirror.

### **Summary of findings**

Olivia has a **significant visual impairment** and visual responses today were significantly poorer and less consistent than would be expected from a child of her age. She has a problem with eye movements and general muscle tone affecting head and eye control. It is difficult for her to make her eyes move out to the sides and into up and down gaze. Today Olivia showed visual interest in people and faces and smiled in response to a silent smile at approximately 50cm. She was attentive to moderately large, colourful objects (approx 5cm diameter) presented in her central vision, but needed time to locate and demonstrate appreciation of these objects. Sometimes she was visually 'switched off' and made no response to stimuli.

Olivia has nystagmus (eye wobble), which was subtle today but increased on visual stimulation. She does not need spectacles.

Olivia will respond best to visual stimulation when objects are presented straight ahead and close to her. It may be useful for therapists, teachers and parents to present food, objects, and faces in this central area in order that she visually engages with them. **Large, colourful toys at close distances are likely to be most appropriate for stimulating her vision. Any material should be placed close to Olivia (within 30cm or closer), and be presented slowly so that she has time to 'find' the object with her eyes and time for her brain to process information about it.** Encouraging her to gain feedback using touch by placing her hands on objects may also help her visually locate and add meaning to what she sees.

We will arrange for a teacher for the visually impaired to contact Olivia's Mum and visit Olivia in school in due course. Olivia will benefit from multi-sensory education that does not rely on primarily on visual information. We will also refer Olivia for visual electrophysiology testing to further explore her vision and review her following this assessment.

Input from  
Vision Support  
Teacher  
indicated

### **Technical Details**

**Ocular posture:** Appears straight

**Convergence:** no response elicited

**Eye movements:** Restricted and slow eye movements. Inconsistent tracking vertically and moves head to fixate.

**Pupillary reflexes:** Pupils constrict to light in dim room illumination. No anisocoria noted, pupils round and regular.

**Eye contact:** not demonstrated today

**Visual fields:** Reaction to targets presented slightly to the right and left sides when object is close. Poor response vertically.

**Visual acuity (Binocular):** Acuity assessment attempted with Keeler and Cardiff Preferential looking cards. Responsive to at least 6/60 Cardiff card but eye movement difficulty limiting preferential looking ability. **Advise visual electrophysiology testing procedure to assess spatial acuity threshold. Procedure with both eyes open, flash and pattern threshold VEPs to assess functional response.**

Visual  
electro-  
physiology  
indicated

**Refractive error (Cycloplegic retinoscopy):** R plano/-1.50 x 160 L -0.50/-0.75 x 20

No refractive correction prescribed.

Reflexes clear.

**Ophthalmic examination:** Clear media. Optic discs appear normal, with central moderate cupping 0.3/0.4 and healthy NRR.

Seen by: AN Other, \_\_\_\_\_ Senior Optometrist

*Cc: Parents, Paediatrician, Paediatric Psychologist, Physiotherapist, Speech and Language therapist, Teacher of the Visually Impaired, pre-school teacher*