Guide to Consistent Diagnosis of Cerebral Visual Impairment (CVI)

- CVI has two main elements:
  1. difficulty in ‘basic’ visual processing
     (visual acuity/clarity, field of vision, eye movements)
  2. difficulty in higher visual processing – features are often grouped under two broad terms but individual children will not necessarily exhibit all features in each group.

  - Dorsal stream function:
    - simultaneous visual perception
    - movement perception
    - visually guided movement
    - visual attention particularly in the lower field and division of attention
  - Ventral stream function:
    - visual memory/recognition
    - route finding/orientation

Some children will have disorders of both basic and higher visual processing.

- To make a diagnosis of cerebral visual impairment in terms of higher visual processing, other causes of the features presented require to be identified/excluded to ensure appropriate treatment and support. History taking alone is not sufficient but must be accompanied by appropriate examination and neurodevelopmental assessment. Questionnaires/patient inventories may be used to aid history taking but are not diagnostic.

- All assessments for CVI require a multidisciplinary approach to ensure a robust diagnosis – higher visual processing requires input from a neurodevelopmental paediatrician in addition to eyecare professionals – a team approach is required to meet all the required competencies.

- There are generally 2 routes to diagnosis, either through the eye clinic or the neurodevelopmental clinic, both of which are reflected in the attached pathway.

- The diagnosis, for those with higher visual processing dysfunction, should be made by a professional who has an understanding of, and information on, both the child’s visual abilities and his/her overall development and skills.

Skills and Competencies Required

**Basic Visual Processing**
- Assessment of visual behaviour
- Measurement of distance visual acuity - ability to use all standard paediatric charts
- Measurement of near visual acuity – ability to use all standard paediatric charts
- Assessment of visual fields – using behavioural methods and formal measures
- Knowledge of age related norms for tests applied
- Assessment of eye movement – including abnormal movements, pursuit and saccades
- Dilated (cycloplegic) and undilated refraction
- Ocular and fundus examination
- Knowledge of normal visual and general development
- Knowledge of additional investigations required and ability to ensure ocular/optic nerve/psychological causes excluded
- Ability to explain the diagnosis of CVI to patients and professionals, its impact and to outline strategies to improve function
- Knowledge of how to access support services

**Higher Visual Processing** - all above plus
- Ability to undertake a full neurodevelopmental assessment including cognition, motor skills, communication and attention.
- Ability to take a detailed visual history in order to identify and demonstrate difficulties in specific areas of visual processing, having excluded other causes.
- Ability to substantiate reports suggestive of visual processing difficulties by use of standardised and non-standardised tests.
- Ability to put any visual processing difficulties identified into the context of the whole child, differentiating between specific visual processing difficulties/cerebral visual impairment and global processing difficulties that include vision.