

Hydrocephalus & Physical Abilities



Some students may have balance problems. Very commonly, Hydrocephalus can result in poor upper limb function. This is very noticeable in activities involving fine motor skills. Hand-eye co-ordination may be poor, and there is often a *weak hand-grip*. There may also be problems with *visual perception*.

The following are just some of the activities that may pose difficulties:

- using scissors and other instruments, eg compasses and protractors;
- catching a ball;
- colouring in and hand-writing;
- fastening buttons, tying laces and threading needles;
- interpreting diagrams and maps.

A number of difficulties in these areas may affect the student's self-confidence, and students with Hydrocephalus can see themselves as physically less competent than their peers. In addition, a relative lack of experience of physical activities may affect the student's understanding of important concepts, in for example physics, geography and mathematics (and may also affect performance in 'IQ' tests, where the 'verbal' score will often be much higher than the 'performance' score).

Balance

Although it is not possible to 'shadow' a student continuously during the day, care should be taken that potential risk situations (e.g. stairs, crowded corridors, throngs of children milling about in the playground) are anticipated. The degree to which students will need a 'watchful eye' kept on them in these situations will depend on how severe their perceptual and balance problems are; and how well the students themselves understand the disability and know how to take precautions. The school doctor and/or the parents can be consulted for advice.

Hand-grip and Co-Ordination

Many students with Hydrocephalus seem to have poor control of writing and drawing implements, and many are left-handed. For very young students, felt-tips are easier to manage and regular use of materials for structured play is essential. For those who are five years old and over, and who do not have spasticity in either hand, regular use of material such as Multilink has been found to be helpful. Many of the children who have been given this sort of material for use in mathematics work at home have made progress in handwriting and colouring-in. The students should be encouraged to ask for help when they need it until they can manage the materials easily and quickly themselves.

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A combination of poor hand-grip and poor hand-eye co-ordination means that students with Hydrocephalus find neat presentation more difficult to achieve than do other students.

They will also require more time to complete their written work. Some may need to be reminded to 'say' the words to themselves as they write because, if their handwriting is very slow, it may be difficult for them to maintain their train of thought. (See '*Hydrocephalus and Literacy*'). A few students may also need help to co-ordinate their oral ('out loud' or 'whispered') expressions and their written expressions.

Visual Perception

Visual perception difficulties can be common including:

Squints

The student may have a convergent or a divergent squint, which may be much more noticeable when he or she is tired, perhaps towards the end of the school day. Some may have variable squints, where certain head positions can minimise the effects of the squint. This can mean that the student will raise, or lower, his or her head in order to focus straight.

Tunnel Vision

There may only be a loss of vision in part of the visual field, but this can result in 'neglect', i.e. the student will not notice objects that are placed on that side.

Perceptual problems

Perhaps also partly because of having fewer experiences of manipulating objects and gaining experience in judging size and distant, students with Hydrocephalus often have perceptual difficulties. These may also be linked to problems with visual memory.

Perceptual problems can present themselves in several ways, eg:

Understanding of spatial relationships and orientation of objects

They may not know how to place objects in a particular relation to other objects, for example in copying Multilink constructions. Therefore, they not only need to learn the correct prepositions; they also need to practise *placing* objects beside, under, in front of, behind other objects.

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Estimation of size, depth and distance

They may have difficulty in judging the depth of steps and stairs. Some may also have problems in manoeuvring themselves in space and may bump into other students, furniture etc.

Perception of movement and speed (i.e. time and motion)

This has implications for team games, and also – more importantly – for road safety. In addition to learning to recognise different types of movement, they also need to develop a concept of time. (This may be an under-developed concept for children in upper primary and even secondary school, and it is not necessarily linked to general cognitive ability). There may be difficulty in picking out the main features in 2D representations (pictures, diagrams etc); or identifying one particular book in a bookcase or top of a desk, or in a school bag. Very young students may even have difficulty in identifying their own desks in the classroom. This requires ‘mapping’ skills and visualisation. (See ‘Hydrocephalus and Mathematics’ and ‘Hydrocephalus and Literacy’.)

Summary

Students with Hydrocephalus may appear to be more ‘clumsy’ than their peers, and their written work may look untidy. Although they may have difficulty in manipulating objects, practical activities will provide the opportunity for them to develop some of the skills they need.

It is also important that the students learn to assess progress by comparing their own present performance to their past performance. Assessments that are purely norm-referenced may lead to a sense of failure and incompetence.

Care should be taken that the activities are manageable, and recognition of even very small achievements should be given in order to boost the student’s confidence. If a rich ‘spatial’ and ‘temporal’ programme is followed in the primary school, there may be fewer problems at the secondary stage.

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Possible Implications for Individual Subjects

Physical Education

Students with Hydrocephalus will not be capable of the same standard as their peers. In P.E., other co-ordination problems besides hand-eye co-ordination may be evident. For example, these students will appreciate the music accompanying dance classes, but may find it difficult to 'absorb' the rhythm and produce smooth sequences of movement. There is a danger that in team games other students may make uncomplimentary remarks, and this may undermine self-confidence. If the ethos of the school emphasises celebration (by peers as well as teachers) of individual achievement, irrespective of how small that achievement is, the student with Hydrocephalus may develop the confidence to learn.

English and History

Written work will be more onerous for these students than for others. It is helpful if this fact can be taken into account when giving homework, and in the timing of written tests. In addition, temporal concepts usually only develop after spatial concepts, and so students with Hydrocephalus may experience difficulty in making sense of time-lines, or appreciating concepts of continuity and change.

Science and Technology

Additional help may be needed when learning to use tools. They may also need help in developing observational skills.

Mathematics and Geography

Concepts need to be understood in a physical sense before doing pencil and paper work. Estimation activities in early mathematics can be very helpful in building up a sense of competence in this area, but it is important that the activities are seen as 'fun'. Diagrams, maps, and graphs/charts may pose difficulties. There may also be problems in using instruments such as compasses and protractors.