Learning Disabilities in Children with Hydrocephalus and Spina Bifida

Learning difficulties are not uncommon in children with hydrocephalus and/or spina bifida. It is important that parents be aware that their child may be at risk for learning disabilities and be prepared to take early action to assure their child the best social and academic start. Children with hydrocephalus and/or spina bifida at greatest risk of learning difficulties seem to be those with any or all of the following: a shunt, visual (ocular) problems, motor impairment in hand function, a history of even one seizure. Children with any of these risk factors are much more likely to have learning difficulties than their peers without hydrocephalus (children with spina bifida alone have learning problems consistent with the general population). These factors, plus the added interruptions in daily routine for frequent medical maintenance, predispose these children to problems both at school and during social interaction.

Learning difficulties overall are considered within two broad areas: **VERBAL** and **PERCEPTUAL** abilities. Children with hydrocephalus and spina bifida show some common difficulties in these areas.

**Verbal Abilities**

Many children go through a stage of **preservation** (repeating the same information over and over again or sticking to one specific topic) or **echolalia** (repeating back what another says rather than making an appropriate response).

**Hyperverbal communication** or "cocktail party syndrome" is very common. The child just never seems to stop talking and content, if analyzed, is usually superficial or even inappropriate to the situation. "Cocktail party syndrome" can fool teachers and adults who don't realize the chatter is often meaningless. It may mask some real learning difficulties, i.e., problems in listening to or understanding the relevant aspects of a situation.

A problem with **understanding** is common in these children and may be reflected by difficulty in answering or responding appropriately to structured questions.

**Impressive memory skills** can also fool teachers and adults. Children with learning problems can often recite lengthy tracts but if questioned on the content,
may be unable to explain the meaning or answer questions about what they have memorized.

**Poor abstract reasoning abilities** may occur and will be noticed not only on academic activities (math) but in social relationships. Subtleties of expression or social decorum are not always understood and social development may suffer. Often, the child will tend toward children younger than they who are not socially mature.

**Perceptual Difficulties**

**Visual judgment.** The child may have difficulty judging distance and direction or seeing and organizing a sequence of movements or events. There may be problems interpreting meaning from pictures, discriminating between shapes, reproducing shapes or putting puzzles together.

**Figure ground discrimination.** This is the ability to separate relevant information from a background, i.e. one figure in a picture of several items. It may underlie the difficulties of interpreting meaning from pictures, keeping within lines when coloring or finding one's place on a page.

**Spatial orientation.** The ability to assess size, distance, direction, position or quantity. There may be problems differentiating left from right, over and under, backwards or forward.

**Visual and Perceptual problems will be interrelated.** It would be unlikely that a child would have one problem without any of the others. While the description may sound somewhat over-whelming, with proper attention and understanding, many of the difficulties will be overcome.

**Remediation**

There is no fixed rule for assisting learning disabled children to cope with the pressures of school and to keep up with their peers. Some guidelines to follow are:

**Early identification.** This is most important in order for a program to be set up which will best help the child and parents. Early individual psychological assessment by an neuropsychologist, preferably one with training in developmental, educational and clinical psychology is important. Although every child is guaranteed an appropriate education under federal law, the law does not guarantee that a child will be evaluated in a way that pinpoints their strengths and weaknesses precisely, so that an optimal remedial program can be formulated, and then modified if necessary to meet available resources. As well as an initial psychological assessment, progress should be evaluated every 2-3 years.

**Individual programming** by child care workers, psychologists and teachers.

**Task analysis** or breaking an activity into small, achievable steps.
Multi-sensory approaches, that is, use of strengths (especially verbal) and allowing alternate means of expression (i.e. tape recorder).

Reducing demands so that a task can be completed, giving the child a sense of accomplishment and success rather than defeat and failure.

Motivation. Learning will not occur if motivation is not present. The child needs opportunities for observable gains and successes, personal and with his/her group of peers.

Social Development

Social development at all ages is a vital partner in academic growth. The child with hydrocephalus and/or spina bifida who has as normal a social environment as possible and who is made to feel good about themselves as an individual, will have a much easier transition into school than if he/she has been protected from the curiosity and questions of peers. The benefits of early exposure to peers is invaluable.

The recognition by parents that their child with hydrocephalus and/or spina bifida may be "at risk" for developing learning difficulties is the first step in assuring that their child is given every opportunity to develop to their fullest potential. The responsibility for knowing about and obtaining a comprehensive evaluation, one which focuses on finding the strengths and weaknesses of each individual child, most often falls upon the parents.

This Information Sheet was produced by the Hydrocephalus Association, copyright © 1997. It was adapted from papers by Janet Quintal, Psychology Department, Ontario Crippled Children's Center and Rochelle B. Wolk, Ph.D, Clinical Psychologist with specialization in developmental, educational and clinical psychology, Piedmont, California. It may be reproduced provided a full citation of source is given.

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