

impairment can be addressed through counselling and providing information, as well as through anxiety management programmes and attendance at memory groups. Referral to self help and support groups may lead to a reduction in anxiety. Specific problems can be helped through environmental restructuring, external aids, internal strategies (mnemonics) and rehearsal and study techniques.

In the future, it may be possible to treat memory impairment with drugs, although pharmacological treatment is, at present, rather disappointing as far as memory is concerned. If this situation changes it is likely that a combination of pharmacological and psychological treatments will be needed to derive maximum benefit. In the immediate future, advances are more likely to come from improvements in: (a) environmental design to reduce the load on memory; (b) the design of external aids and computerized technology to provide easier to use compensations; and (c) approaches to learning to help people use their compensatory systems more efficiently.

#### GUEST LECTURES, 3: DYSPHASIA

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#### MANAGEMENT AND REHABILITATION OF DYSPHASIA

Associated with a rapid increase in research, significant advances in therapy for dysphasia have occurred over the last two decades. Both direct therapy with the patient and indirect management through others have benefited from the development of techniques of investigation derived from cognitive neuropsychology and sociolinguistics, which offer principled bases for targeting intervention for individuals. Both disciplines have brought a new rigour and objectivity to intervention in dysphasia. Single case studies of efficacy, applying cognitive neuropsychological methodology, have supported the implications from animal studies that functional recovery from brain damage may occur following intensive and prolonged stimulation and may continue for several months and years beyond the period of "spontaneous recovery". Management has also incorporated greater use of volunteer helpers working under supervision, and is developing the use of computerized therapy programs. These changes in the approach to intervention have occurred in association with counter influences which dilute service provision for dysphasia, such as the diversion of attention to the short-term needs of dysphagia, rather than to the persistent deterioration in quality of life social which can accompany inadequately managed dysphasias.

#### TOPIC SESSION 4: HEAD INJURY

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#### MODERN ASPECTS IN REHABILITATION OF PATIENTS WITH BRAIN INJURY

An impact on the skull causes, in most instances, brain damage, frequently accompanied by whiplash injury. The type and severity of brain injury depend on the direction and intensity of the impact on the skull. In a high percentage of brain injuries, in particular after traffic accidents, multiple forces act on the brain. A useful system for localizing the impact on the skull has been introduced by Spatz. It was modified by E.Th.Mayer and later by F. Gerstenbrand.

The reconstruction of the force acting on the skull, an accurate clinical neurological examination, immediate cerebral MRI or cerebral CT and neurophysiological examinations permit assessment of the damage already in the acute stage with a view to primary traumatic lesion and secondary traumatic injury. A new classification based on comparison of clinical data, neuroimaging findings and neuropathological knowledge is helpful for the diagnostic evaluation of traumatic brain damage. We differentiate between linear external brain injury with coup and contre-coup lesion, linear internal brain injury, subdivided into upper and lower internal brain injury and rotation trauma. Contrary to the diagnostic system of brain contusion and concussion, we differentiate four categories of brain injury: severity 1-4. In addition we establish a topical diagnosis (frontal brain lesions, parietal brain lesions, etc.). Category 4—severest brain injury—includes cases with complications (such as brain oedema, haematoma, etc.) and the subsequent acute midbrain and acute bulbar brain syndrome as well as cases with traumatic apallic syndrome. This new system permits rapid detailed diagnosis of brain injury and its sequelae and early establishment of a prognosis. Diagnosis must also include the possibility of a whiplash injury of the cervical spine.

Every patient with brain injury, independent of the severity of brain damage, is entitled to modern rehabilitation. This must start at hour "1" (early rehabilitation) with the purpose of avoiding complications and having a better basis for an individual rehabilitation programme.

The new diagnostic system facilitates the establishment of the individual rehabilitation programme, which is an absolute necessity. Brain damage causes deficits ranging from motor and sensory symptoms to disorders of higher cerebral functions (aphasia, etc.) and highest brain functions (cognitive disorders). These deficits must be assessed using electrophysiological and neuroimaging techniques as well as neuropsychological scales and test batteries so that they can be taken into account in the rehabilitation programme. In any case, the programme needs continuous adjustment and modification, for which regular check ups are required.