Diving injuries of the spinal cord

Diving injuries to the cervical spine and spinal cord are a serious medical problem with long-term social and economic consequences. The exact incidence of these injuries in South Africa is unknown. In the USA, it is estimated that 1,800 serious diving injuries to the spine occur annually; diving accidents are therefore a major cause of spinal cord injury. It is probable that the incidence of diving injury is much higher, since many cases of death by drowning in greater Cape Town showed that 64% of adult victims were under the influence of alcohol at the time of death. That 2 patients were paralysed during extrication from the water is also not surprising. It reflects a general lack of interest in the prevention of these injuries. Alcohol as a precipitating factor in diving injuries has been reported world-wide and South Africa is no exception. An analysis of the role of alcohol in diving injuries. After much controversy and publicity, far-reaching measures have been instituted to decrease the incidence of rugby spinal cord injuries, but no similar measures have been adopted to decrease the incidence of diving injuries. Active preventive campaigns are carried out in countries like New Zealand and Australia. Simple and inexpensive measures such as adequate and continuous sign-posting of the deep and fast-moving areas of municipal pools should immediately be instituted. The same pool should not be used for both diving and swimming. The larger problem of alcohol abuse in relation to not only motor vehicle accidents, but swimming and diving injuries, should also receive more attention and publicity. Special training of swimming pool attendants and first aid personnel in correct rescue techniques and initial management of patients with diving spinal injuries is essential. Probably, the most important

preemptive measure is education to instil an awareness of the danger of diving into shallow water. This must be instituted at school level, where the dangers can be clearly and simply explained utilising a 'look before you leap' format. South Africa has lagged behind the rest of the world in the prevention of paralysis due to rugby and diving spinal cord injuries. With regard to rugby, this omission has finally been addressed. It is high time that diving injuries attracted the same interest and effort in order to decrease the incidence of these serious injuries.

A. T. SCHER
Department of Radiology
University of Stellenbosch
Parowvallei, CP

Prevention of hearing impairment

Hearing impairment among all population groups in South Africa is as big a problem here as anywhere else in the world. In fact, of all disabilities, impaired hearing is the commonest and affects some 2 million individuals in South Africa.

For many years the major concern of health and welfare services was the treatment, education and habilitation or rehabilitation of hearing-impaired individuals. More recently, the issue of prevention was addressed anew by the South African National Council for the Deaf (SANCDD) and prevention has since been incorporated into the overall mission of the Council.

Informal observations by the SANCDD, especially among black children, indicate that many individuals suffer from some form of hearing impairment which could in many instances have been prevented. The implications of impaired hearing are far-reaching, the central problem being that of limited ability to communicate. Prevention programmes in developing countries, recently initiated by the United Nations in cooperation with the International Agency for the Prevention of Deafness, are seen as an endorsement of the Council's endeavour to develop a prevention programme closer to home.

In a study on prevention strategies commissioned by the SANCDD, it was shown that there is a lack of essential data on the aetiology and general epidemiology of hearing impairment, e.g. data on types of deafness, causes, incidences or prevalences stratified by age, sex, population group and area. Despite the absence of essential data, there is sufficient evidence to identify the major avenues for addressing the concerns underlying impaired hearing in South Africa.

Incompetence and/or neglect of elementary do's and don'ts by the public, parents, the health fraternity and industry contribute significantly to the prevalence of impaired hearing. An appropriate awareness programme is thus considered one of the most cost-effective strategies of prevention.

Some 80% of persons under the age of 20 years with seriously impaired hearing acquire the problem before the age of 3 years. Maximum use of available hearing for language development can only be effected if the problem is detected early. The majority of hearing-impaired children are detected too late to benefit adequately from early intervention. A nation-wide application of the early detection programme used in the Cape is advocated. Evaluation centres at grassroots level are seen as an essential component of an early detection programme.

Despite the existence of various acts and regulations to control the exposure of employees to noise, compliance with protection regulations is still a major concern in industry. Consequently, a comprehensive hearing conservation programme has been designed for industries. The SANCDD advocates and is distributing this. Public awareness of certain recreational risks for noise-induced hearing impairment would also assist hearing protection.

Infections associated with prenatal disease and care are still a major cause of hearing impairment. Many of these can be prevented by primary health care programmes. In some areas nearly 50% of white schoolgirls are still susceptible to rubella, which is a major cause of deafness in whites. The SANCDD has made an urgent appeal to the Department of National Health and Population Development (DNHPD) to introduce the internationally tried and tested mumps, measles and rubella vaccine for children for both sexes between the ages of 12 and 15 months. Impaired hearing is closely related to certain sexually transmitted diseases, e.g. syphilis, which is still common in certain sectors of the population. It can be successfully contained by early detection and treatment. General good prenatal and perinatal care would also contribute significantly to the prevention of mortality and morbidity, including impaired hearing.

Impaired hearing is often the consequence of childhood diseases such as measles, tuberculosis and meningitis. In many areas, measles immunisation is still not adequate. Tuberculosis is common in developing communities and is related to poor socio-economic conditions. Although immunisation against most diseases is provided free of charge, logistical problems and compliance with complete schedules are the main limiting factors. In the case of TB, some 20% of patients do not complete their schedules.

Awareness, education and training, supported by the logistical back-up and infrastructure, are areas to be addressed. The SANCDD is urging the DNHPD to consider the more effective Edmonston-Zagreb measles vaccine for children aged 6 months rather than continue using the traditional Schwarz strain.

Hearing impairment is often associated with congenital hypothyroidism. Treatment is very economical and effective provided it is started soon. Screening of newborns in South Africa is still uncommon (for cost reasons). Screening began in Pretoria on a pilot basis in 1981, and 77 000 babies had been tested by 1990. Twenty-one confirmed cases of hypothyroidism have been detected and treated. At this stage the SANCDD endorses a much larger screening programme, irrespective of who assumes financial responsibility.

Genetic factors contribute to impaired hearing in varying degrees in the different population groups. In whites and Asians, for example, approximately 35% of impaired hearing in children can be attributed to genetic factors. In blacks, genetic factors play a much smaller role and are responsible for approximately 10% of cases.