

Dental Care for the Handicapped

SUMMARY

The family physician/pediatrician who sees the newborn handicapped infant is the health-care professional who can best influence the parent concerning the general health-care needs of the child. The realization that dental disease is preventable and need not further compromise the child's health is of major importance. Too often dental care is not considered important until an emergency arises, and then panic follows. This paper will delineate some of the basic principles involved in providing dental treatment for the disabled and the importance of an early referral so that a sound preventive program can be instituted. This approach will minimize the need for emergency visits and will help to establish a solid rapport with the parents/guardian and the handicapped child. (*Can Fam Physician* 1989; 35:369-374.)

Key words: dental care, handicapped, children

RÉSUMÉ

Le médecin de famille/pédiatre qui constate un handicap chez le nouveau-né devient le professionnel de la santé le mieux placé pour influencer les parents concernant les soins de santé généraux que nécessitera l'enfant. Il est important de réaliser qu'il est possible de prévenir les maladies dentaires et que celles-ci ne devraient pas compromettre l'état de santé de l'enfant. Trop souvent, les soins dentaires ne sont pas jugés importants jusqu'à ce qu'il survienne une urgence susceptible d'engendrer la panique. Cet article décrit certains principes de base pour le traitement dentaire des enfants handicapés et souligne l'importance d'une consultation précoce afin d'établir un programme de prévention efficace. Cette approche minimisera les visites d'urgence et contribuera à établir une relation solide entre les parents ou le gardien et l'enfant handicapé.

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THE PAST QUARTER century has seen a dramatic change in attitudes towards the handicapped. This change has had its genesis in the fact that as a society in the industrialized part of the world we have come to realize and accept that all men are born neither equal nor perfect. Handicapped persons are found in

every race and creed, and from every social, educational, and economic background. It is the responsibility of a civilized society to provide each of its citizens with the opportunity of developing to his or her maximum potential.¹⁻⁴

In order to achieve this utopic concept, all people must be given the opportunities and facilities for complete health care among the many community services available. With respect to the handicapped, the last 15 years have been a period of increased movement towards their normalization, decentralization, and integration into society. Much has been written about them and many dramas have been acted on the screen and stage. As a result the stigma of being handicapped or of having a handicapped child is gradually being erased.

Total health care for an individual implies that oral health be included, and yet dental treatment is still per-

haps the most significant, single, unmet health need of the handicapped, in spite of an abundance of dental literature on their dental care needs.^{3,5,6}

It has been estimated that between 1% and 3% of the population is handicapped. Many handicapped persons have not received any dental care, others only as an afterthought, and still others on an emergency basis only.

Many reasons have been offered for this apparent apathy, some of which I shall outline below:^{7,8}

- Dentists have been reluctant to treat the handicapped in their private offices;
- Dentists have not been educated to manage the handicapped as part of their dental education;
- There is a lack of factual information about the dental needs of the handicapped;
- Cost has always been used as an excuse for the lack of treatment;
- There has been poor communica-

tion in this matter among members of the health professions.

Some of the foregoing situations have been partially or totally addressed by the dental profession, the dental faculties, and the governments in many areas. Many concerns still remain, however, which are for the most part beyond the profession's control.^{5,6,9} For example, dental health is still a low priority, and parents and guardians are still more concerned with the primary major medical or social problems of handicapped children than with their dental health. In addition, there is still no co-ordinated effort among all health-care professionals to promote dental health for all persons. It always amazes us to see a person receiving medical attention and yet never visiting a dentist. We realize that many people are referred to the dentist by physicians, nurses, and other health-care personnel, yet never keep appointments. Such a situation in today's society constitutes neglect/abuse, and appropriate measures can be taken. Many handicapped persons are already at risk, and dental neglect will just compound the problem.

Historically, the majority of handicapped persons were institutionalized for a lifetime, and so society did not have to bear the responsibility for their care. This is not so today: since an increasing number of handicapped persons are living in society, we must make provision for their dental care. In order to meet this demand, all of us must have a clear understanding of just what the major problems are in

handicapped children, as well as adults.^{7,10}

Children

Patient control

Understanding of the medical problems relating to handicapped children may require minimal alterations in treatment methods. The first consideration, of course, is some greater expression of empathy with the parents. They must be made to feel at ease with the medical-dental handling of the child, since many parents become extremely over-protective.

As far as the child is concerned, he/she is treated as an individual with related problems who may require more firmness in handling; that firmness should be exercised in a strict but gentle manner. The child should not be forced; often even the initial examination must be done in stages, since a child eight years of age, for instance, may only have the development of a two- or three-year-old.

Caries

First and foremost, the importance of diet and oral hygiene must be stressed to avoid caries (Figure 1).¹⁰ In addition, the child must be on systemic fluoride if the local water supply is not fluoridated. Dentists are often confronted with a three- or four-year-old handicapped youngster with rampant tooth decay. Ideally, we believe that all extensive work for very young developmentally handicapped children should be done in a hospital,

under a general anesthetic, particularly if behaviour management is a problem.

When this initial part of treatment is completed, the patient is integrated into the routine office program of prevention. In this way, initial visits to the dental office are not traumatic and are therefore acceptable. With other handicapped youngsters of the same age group, except in extreme cases of management, the object is to teach the patient oral hygiene during the dental procedure. All the requirements of sound restorative practice should and can be employed, just as they would be for other children in the practice. It is the parents' responsibility to bring the child to the dental office, and above all, to co-operate with the dental team in the delivery of dental treatment.

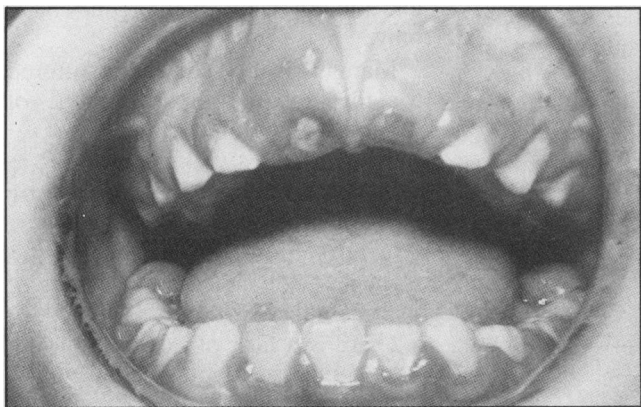
Gingival disorders

The cause of most gingival disorders in handicapped children is poor oral hygiene (Figure 2) and/or the effect of drugs used in their general treatment for convulsive disorders, such as sodium dilantin. Although gingival surgery may be indicated in extreme cases, it cannot and should not be carried out unless a program of optimal oral hygiene has been firmly established. For some patients, the electric tooth brush is a valuable aid. In drug-induced gingival conditions, after consultation with the physician, drug alternatives may be used that have minimal effect on the gingival tissue.

Trauma

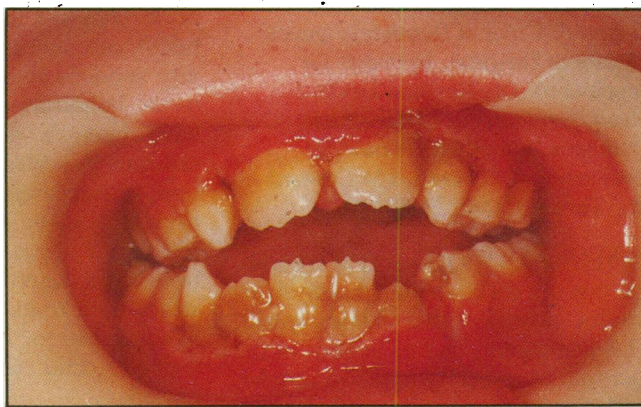
Because the muscle co-ordination

Figure 1
Poor Oral Hygiene



Poor oral hygiene in the mouth of a Down syndrome child whose maxillary central incisors have decayed and broken off.

Figure 2
Very Severe Gingivitis



Extremely poor oral hygiene in a Down syndrome child in whom gingival disease has become very severe: acute, necrotic, ulcerative, gingivitis.

of many handicapped children is poor, they are prone to falling and fracturing their anterior permanent teeth (Figures 3 and 4). The normal practice of root-canal therapy, if necessary, and of pin, acid etch, or crown restoration should be employed in order to preserve these injured teeth. Although a fixed replacement prosthesis is a possibility, in many cases this is not practical, and the level of patient co-operation may not permit a removable prosthetic appliance. In these cases, every effort should be made to preserve the natural tooth or teeth. The foregoing applies to the permanent dentition. In the primary dentition, the same guidelines used for trauma in normal children may be followed; however, because of the co-operation factor, extraction procedures may be considered more frequently.

Orthodontics

Many handicapped children have orthodontic problems because of skeletal or muscle abnormalities. Habits, the most common of which are mouth-breathing and tongue-thrusting, that are physiological as distinct from the usual thumb or finger-sucking that are referred to as "psychological" or "environmental", usually produce dental arch malformations. Tooth-size/arch-size discrepancies, including congenitally missing teeth and abnormal exfoliation and eruption patterns of primary and permanent teeth, can produce poor alignment and improper occlusion and function.

Obviously, the patient's ability to

co-operate is important in the treatment of a severe skeletal malocclusion. Hence many of these conditions go untreated. Many compromises can be achieved, however, in the area of guiding the developing occlusion for children with tooth-size/arch-size disharmony or abnormal exfoliation and eruption patterns (Figures 5 and 6).

Often a well-timed extraction program will produce an acceptable occlusion without any other therapy or with the additional use of a very simple appliance. For this reason, it is necessary to evaluate the dental development at an early stage so that a long-range program can be formulated and explained to the parents.

Adults

Patient management

In the adult, patient management is often more difficult and may necessitate the use of a general anesthetic. This is particularly true of patients who require major restorative work over many appointments, which may increase management problems.

Caries

Sometimes the sheer volume of untreated caries is discouraging (Figure 7). Every effort within reason must be made, however, to preserve the dentition, since it may be impossible for the individual to wear a prosthesis.

Oral hygiene and gingival disease

The result of poor oral hygiene manifests itself as a severe gingivitis and periodontitis which, when un-

treated, result in premature loss of natural teeth.¹⁰ For the adult who is looking toward social integration, this condition becomes a liability in terms of appearance and acceptability.

Conditions Requiring Dental-Medical Co-operation

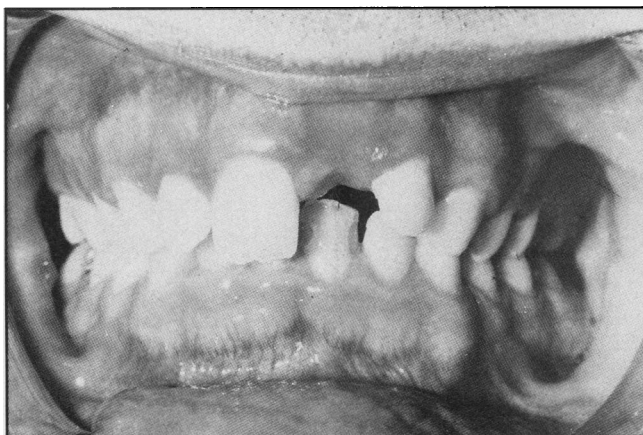
The following examples will serve to categorize many of the conditions that dentists deal with and to illustrate the levels of co-operation and interaction that must be achieved between members of the health-care professions.

Mental retardation

This condition is both a social and a biological problem. In general terms, it is the inability of an individual to develop intellectually and so keep pace with his/her peer group. The etiologies of mental retardation are many, and the degree of retardation may be difficult to predict initially, since so much of an individual's potential is stimulated by the environment.

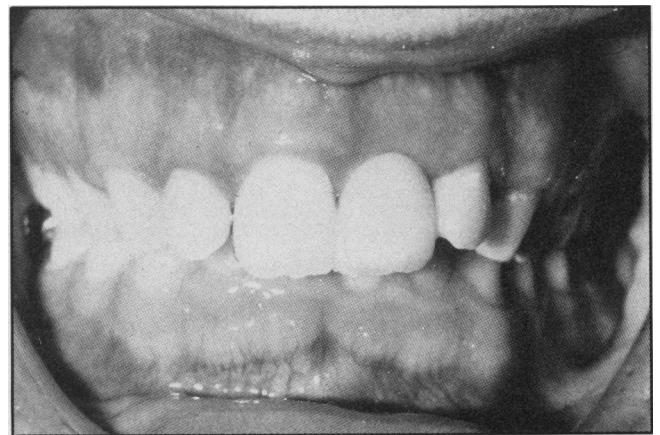
From the dental aspect, questions concerning the individual's behaviour pattern, communicative skills, medications, any co-existing medical problems (e.g., convulsive disorder, heart defect) and an individual's ability to care for him/herself are all important, and the dentist should discuss them with the person's parent/guardian and physician. Behaviour modification will be an important aspect of dental treatment. The "show, tell, do" method of instruction may be appli-

Figure 3
Loss of a Front Tooth



Loss of a front tooth in an epileptic teenage boy through an accident.

Figure 4
Replacement of Front Tooth



Replacement of that front tooth with a simple acid-etch bridge.

cable, with or without sedation techniques and general anesthetic. Physical restraints may be used only with consent and are not recommended as an adjunct to dental care.

In conditions such as Down syndrome, there are several specific dental characteristics, some of which are:

- underdeveloped maxilla and large mandible;
- delayed eruption;
- microdontia;
- congenitally missing teeth;
- low caries rate and a higher incidence of periodontal disease (although there are exceptions);
- marked abrasion from bruxism.

Most Down patients are easily managed, especially when young, and can be trained to accept dental treatment. Because many have cardio-vas-

cular defects, antibiotic coverage is mandatory prior to dental treatment and after consultation with the physician/cardiologist.

Cerebral palsy

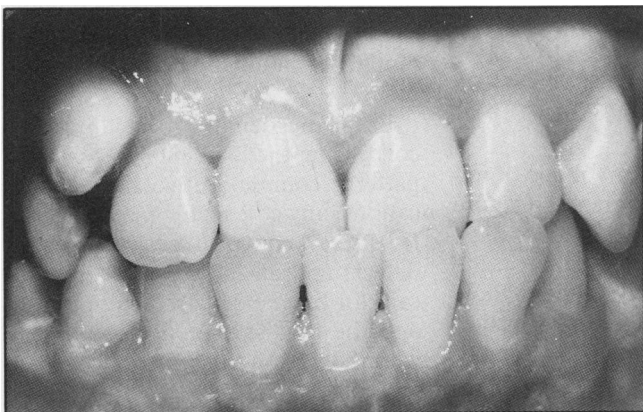
Because cerebral palsy affects that area of the brain which controls the voluntary musculature, it may manifest in a severe or mild form, affecting the lower extremities (paraplegic), upper and lower extremities unilaterally (hemiplegic), three extremities (triplegic), and all extremities (quadriplegic). The extent of the physical disability and its manifestations will certainly influence patient management, communication, and self-care. Dental care for these persons is vital because loss of teeth will further compromise treatment, esthetics, speech, and mastication.

Patient management is of prime importance, and must take into account just what an individual can do as distinct from what he/she would like to do (e.g., be co-operative).

The oral problems that most often manifest are enamel hypoplasia in the primary teeth; malocclusions such as an open bite caused by tongue position, severe abrasion; higher incidence of caries because of poor swallowing, difficulty in brushing teeth, saliva drool, and periodontal disease (Figure 8). All of these problems are both treatable and controllable with regular dental care.

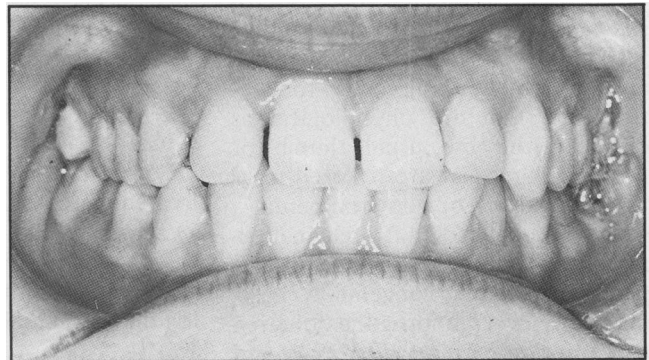
Home care for these individuals is extremely important. It may involve stricter diet control (carbohydrate) and use of floss wands, electric tooth-

Figure 5
Anterior Cross-Bite



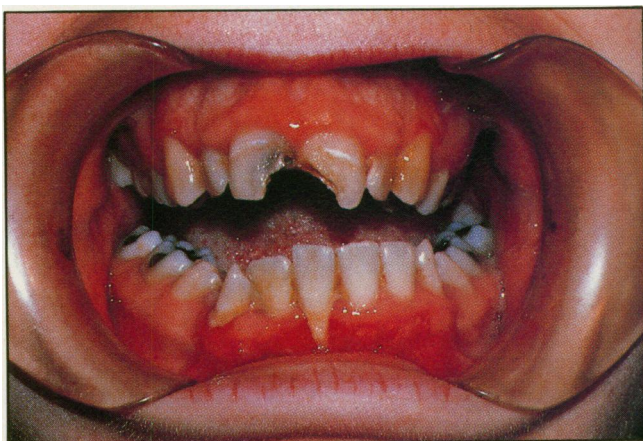
Anterior cross-bite in a Down syndrome teenage girl.

Figure 6
Correction of Anterior Cross-Bite



The cross-bite was corrected through compromise treatment: extraction of the mal-positioned canine tooth.

Figure 7
Lack of Dental Care



Untreated caries, malocclusion, and gingival disease in a teenage developmentally retarded girl.

Figure 8
Malocclusion and Gingival Disease



Malocclusion and gingival disease in a teenage boy with cerebral palsy.

brushing, and home-administered fluoride.

Epilepsy

This disorder causes a transient alteration in brain function that is characterized clinically by the sudden onset of a seizure which may be of a motor, sensory, or psychic type.

The dental management of epileptic patients, like that of medically compromised patients, must begin with a thorough patient history and consultation with the patient's physician. The type of seizure activity, amount of medication, frequency of seizures, and date of last seizure must be documented. Since stress often precipitates a seizure, some form of conscious sedation may be applicable. The dental appointment should be kept as short as possible.

The most serious dental conse-

quence in patients with convulsive disorders is iatrogenic, resulting from the use of sodium dilantin (phenytoin) to treat gingival tissue overgrowth (i.e., gingival hyperplasia) (Figures 9a and 9b). Other anticonvulsant drugs, such as mysoline, are now being used and they are found to have less effect on the gingiva.

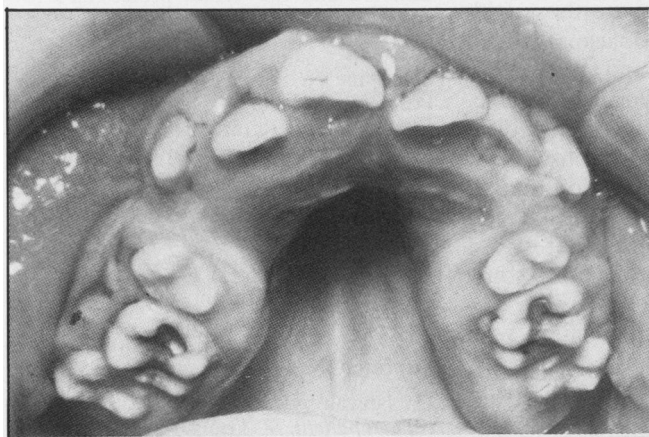
Optimal oral hygiene must be practised in order to reduce or control the gingival hyperplasia. Surgical excision is the treatment of choice to remove excessive gingival overgrowth. Oral splints of many types have been found to be of little use in this regard.

Physically handicapping conditions

Physical handicaps may be classified as those which are genetic/congenital in origin, or those which are acquired. In the context of this paper, it is impossible to discuss all of

these conditions. It is important, however, that a complete medical history be obtained, and that consultation with the physician be carried out. For those diseases that affect the musculoskeletal system, such as rheumatoid and juvenile rheumatoid arthritis (Still's disease), scoliosis, muscular dystrophy, and osteogenesis imperfecta, the proper positioning of the patient in the dental chair will be important to avoid exacerbating pain or causing trauma. Sometimes, in severe cases, patients are better treated in their own wheelchairs. The realization that joints, including the temporomandibular joints, can easily be dislocated, if stressed beyond their limit, is of the utmost importance (Figure 10). In addition, a knowledge of the medication and nature of the rehabilitation program may promote such adjustments as redesigning a

Figures 9a and 9b
Severe Gingival Overgrowth

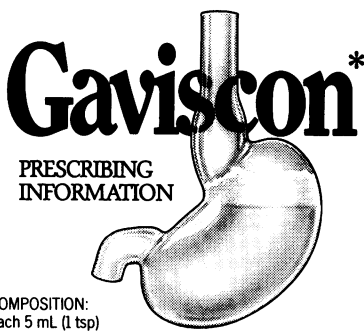


Severe gingival overgrowth in a young patient being treated with sodium dilantin for epilepsy.

Figure 10
Transferring Patient from Wheelchair to Dental Chair



Dental students are taught a method of patient transfer from wheelchair to the dental chair during a clinic session on dental care for the disabled.



COMPOSITION:
Each 5 mL (1 tsp) of GAVISCON liquid contains sodium alginate, 250 mg; aluminum hydroxide, 100 mg.
Each GAVISCON tablet contains alginic acid, 200 mg; aluminum hydroxide, 80 mg; magnesium trisilicate, 20 mg.

INDICATIONS: For symptomatic treatment of heartburn and oesophagitis associated with gastric acid reflux. This often accompanies ineffective lower oesophageal sphincter tone as in hiatus hernia, or pregnancy and nasogastric intubation.

DOSAGE: Adults: 10 to 20 mL (2 to 4 tsp) of GAVISCON Liquid, or 2 to 4 GAVISCON tablets, 1 to 4 times daily, after meals and on retiring.

ACTION: GAVISCON liquid or GAVISCON tablets, when chewed, produce a viscous, demulcent antacid foam which floats on the stomach contents serving as a protective barrier for the oesophagus against reflux of gastric contents. The alkaline foam readily flows into the oesophagus during reflux, aiding in the neutralization of refluxed gastric acids. Gaviscon also effectively reduces the frequency of reflux episodes.

ADMINISTRATION: GAVISCON liquid may be followed by a sip of water, if desired. GAVISCON tablets must be chewed thoroughly, and may be followed by a drink of water or milk if desired.

CONTRAINDICATIONS: There are no specific contraindications for GAVISCON LIQUID and GAVISCON FOAMTABS. See "Precautions" below.

PRECAUTIONS: Each 5 mL of GAVISCON liquid contains approximately 30 mg and each GAVISCON tablet contains approximately 22 mg of Na⁺ which should be noted for patients on severely restricted sodium diets. The divalent cations of magnesium and aluminum interfere with the absorption of tetracycline, iron and phosphate. In addition, oral magnesium may accumulate in the plasma of patients with impaired renal function. Each 5 mL of GAVISCON liquid contains 20 mg of sodium cyclamate, an artificial sweetener. Each GAVISCON tablet contains 1.2 g of sucrose which is equivalent to 4.7 calories.

ADVERSE EFFECTS: Nausea, vomiting, eructation, flatulence.

OVERDOSAGE: Should overdosage occur, gastric distention may result and is best treated conservatively.

PRESENTATION: GAVISCON LIQUID is a light tan-coloured, pleasantly flavoured suspension supplied in plastic bottles of 340 mL. GAVISCON FOAMTABS are round creamy-white butterscotch flavoured tablets with the name "GAVISCON" imprinted on one side and the letter "W" imprinted on the opposite side. Supplied in plastic bottles of 36 and 100 tablets.

STORAGE PRECAUTIONS: GAVISCON liquid should be stored in a cool place. GAVISCON tablets should be stored in a dry place.

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tooth brush for easy use and the choice of drug adjunctives to treatment.

Of those diseases that affect the neuromuscular system, cerebral palsy is the one most often observed and diagnosed in children. It is a permanent disability. Since we have already discussed this condition, we shall make only a few comments concerning the cerebrovascular accident (CVA) patient, and patient's with Parkinson's disease and multiple sclerosis. In all cases, the dental appointments should be of short duration and the patient's anxiety should be eliminated if possible, or at least minimized. Because depression is a common sequela in all of these conditions, the dental practitioner should maintain a positive approach to the dental problems and encourage the individuals to maintain optimal hygiene.

In patients with multiple sclerosis, any oral infection should be eliminated, since episodic attacks of the disease are sometimes coincident with infection.

Patients with disorders of hearing and sight who are otherwise normal do not present any problems with respect to active treatment, once a rapport has been established with the dentist. In order to achieve this rapport, the dentist must spend extra time in developing means of communication. Once a good working relationship has been achieved, dental appointments can proceed on a normal basis.

Another group of individuals who are often classified as handicapped are actually medically compromised in one or several areas, and their oral health requires careful consideration. Among these persons are those with blood dyscrasias, neoplasma, diabetes, cardiovascular and respiratory diseases, and neurological dysfunction. In all cases, a complete medical history is mandatory for treatment planning, as is the realization that all persons can and should receive dental care so that their health is not placed at further risk. Treatment for some persons will be carried out in a private office or in a hospital clinic, with a conventional approach; for others, treatment under general anesthesia in a hospital setting may be the best arrangement.

Within the confines of this article, it is not possible to discuss all of the

manifestations of dental treatment nor the patient types that may be classified as disabled. Rather, we have tried to focus attention on the oral health needs of all persons who are disabled so that they are not further compromised in their quest for a healthier and better quality of life. ■

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