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Pediatrics is concerned with the health-welfare of young people up to an arbitrary age limit of about twelve years. Although responsibility for health advice, prevention, treatment and management after this period usually devolves upon others, much of the health-welfare beyond childhood is determined largely by what occurs during the pediatric period. This is especially true in relation to dental health.

*Lesions Originate Early.* A large part of the damaging, and ultimately destructive caries lesions of any given tooth originate within two or three years from the time it erupts into the mouth. Effective preventive measures must be applied before these lesions begin. Treating or filling cavities in a child's teeth does not prevent them. All too often it does not prevent further advancement of such lesions, neither does it prevent the formation of new lesions.

The lesions of the other important disease affecting the teeth—periodontoclasia—the early stages of which consist largely of marginal gingivitis, also originate and are active within two or three years from the time a given tooth erupts into the mouth. Later, some receding of the gums and advancing pyorrhea pockets, mostly between the teeth, are present. These early stage periodontoclasia lesions usually are not recognized as such. Notably their serious significance is not realized by the subject, nor by others. However, they do constitute, in fact, the early stages of progressive, infectious, pathological processes, usually of long duration, which never end until the involved tooth is removed or is finally exfoliated. Treatment, by applications or by operative procedures, of the lesions of this disease, at whatever stage, does not prevent them. Neither does it prevent (although it may retard) further advancement of existing lesions; nor does it prevent formation of new lesions.

*Personal Oral Hygiene.* Whether new caries or periodontoclasia lesions develop, or whether existing lesions advance further, depends almost entirely upon the personal oral hygiene habits and

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methods of the individual. The right method not only prevents lesions before they occur, but it also prevents or greatly deters advancement of existing lesions.

The first permanent teeth to erupt—the four first permanent molars—usually come at six to seven years of age. Decay of temporary teeth, and gingivitis about them, should be prevented, but it is absolutely essential, for the dental welfare of the child, and later of the adult, that permanent teeth should be prevented from decaying or having pyorrhea lesions about them. This can be accomplished by application of the correct method of personal oral hygiene—it cannot be accomplished otherwise. Unfortunately, these facts are not as yet well-known.

Most of the permanent teeth erupt and are in place by twelve or thirteen years of age. Most children, at this age, already have incipient caries lesions in several of their teeth, and many have advanced stage lesions (cavities) also. In addition, they have more or less early stage, but surely advancing, periodontoclasia lesions.

*Responsibility Rests Upon Parents.* This condition results, almost entirely, from previous inadequate, inappropriate and ineffective personal oral hygiene practices. The parents do not know, or have neglected, the method of oral hygiene which must be followed by everyone to maintain cleanliness and dental health. The responsibility rests directly upon the parents and no one else. To permit a normal child to develop even one caries lesion, or one pyorrhea lesion, is a reflection upon the parental care and the personal oral cleanliness practices in the home.

*Opportunity For Pediatricians.* The purpose of this paper is to direct attention to the very great importance of maintaining effective personal oral hygiene during the pediatric period. It is hoped that many more of those responsible for advice and guidance, relative to the general health of children, will recognize their opportunities in this regard and will actively promote the dental health and well-being of the children in whom they are directly interested. The pediatrician who knows the correct method of personal oral hygiene necessary to prevent the principal diseases of the teeth in children, has a wonderful opportunity to favorably influence the health, welfare and happiness in this regard throughout life, of

those children whose parents depend upon him for advice and guidance. The opportunity for good is very great.

*Local Lack of Cleanliness Essential Etiological Condition.* The lesions of both caries and periodontoclasia crigrate only at certain protected areas where bacterial film (called plaque) and decomposing food accumulate, and are retained. They do not originate at locations which are kept clean by functional friction or otherwise. Other factors which may influence the incidence and activity of these diseases are not sufficient, in themselves, to cause lesions at locations which are kept clean. Local lack of cleanliness, therefore, is the essential etiological condition. It is a fundamental fact that "a clean tooth does not decay"; "periodontoclasia does not occur about a clean tooth." It is evident, therefore, that maintenance of a high degree of cleanliness at these vulnerable locations is necessary for prevention of these diseases.

*Microscopic Information Necessary.* An effective method of cleaning the teeth, and of maintaining the necessary degree of cleanliness, must be based upon the nature of the unclean conditions to be counteracted or minimized, and on the location, sizes, shapes, etc., of the areas and spaces to be cleaned.

These diseases are caused by microscopic organisms. The lesions, at first, are microscopic in extent, and advance microscopically; the tissues involved are composed of microscopic elements and the destructive processes are microchemical. Any method of cleaning the teeth effectively must be based upon correct information as to the local etiological conditions; and this can be derived only through microscopic research and study.

*An Effective Method.* Thus, and from the published work of others, I have acquired the necessary information, and have designed and described<sup>1</sup> an effective method of personal oral hygiene based upon the essential local etiological conditions in these diseases. By this method, but in no other way now known, the maximum degree of oral cleanliness and dental health can be maintained. This method is different from, and in important particulars is the opposite of, methods generally followed. The teeth must be cleaned right with the right kind of both toothbrush and dental floss every night before retiring. The considerations upon which the method is based and the method itself have been described in

detail in the paper referred to above, and in other publications. They need not be repeated here.

*Each Person Must Be Taught.* Oral cleanliness is largely an individual and personal matter. Each person must be taught the right method by someone who knows and understands the conditions, and knows how to teach it to others. He would be following the method himself. It would be a rule in his own home that no one retires at night with retained decomposing food material and other conditions of uncleanness about his teeth.

*Only One Effective Method Now Known.* There is only one effective method of personal oral hygiene now known. The almost universal prevalence and ultimate destructiveness of both caries and periodontoclasia confirm the ineffectiveness of all other methods in general use heretofore. Although some changes or improvements may be indicated by future research and experience, it is certain that, for the present at least, this exact method must be known and followed faithfully, to adequately maintain oral cleanliness and dental health. In the light of the facts which we now know as to the essential local etiological conditions in these diseases, it is obvious that any neglect or departure from this exact method would lessen the effectiveness to the full extent of such neglect or departure. Under these circumstances, each person who wishes to maintain his or her own oral cleanliness and dental health, and each one who has responsibility for the oral cleanliness and dental health of young children must be taught and then follow and apply this method.

The need is for trained teachers who know and can successfully teach the method to others. They must know and understand the local etiological conditions in these diseases and how they can be controlled. After short periods of instruction and experience, practicing dentists are able successfully to teach this method of personal oral hygiene to a good proportion of their patients in connection with their treatment and restorative services. The need is for many more to have the necessary information and to be prepared to teach this effective method to those who wish to follow it.

*Application To Children.* Parents who know and follow this method are then, and only then, able to bring the full benefit of it to their children. It should be a rule in the home that preparation

for retirement at night must include cleaning the teeth properly. In most instances this can be done well enough with the toothbrush followed by rinsing to protect the deciduous teeth from caries lesions. From the time the child is two or three years of age his teeth should be cleaned properly by the parent. The young child cannot brush his teeth effectively. It must be done for him by someone who knows how it should be done.

It is vital that the occlusal surfaces of the grinder teeth be thoroughly cleansed. This is accomplished by applying the bristles of the brush directly and firmly to these surfaces and making short back and forth movements so as to dig out and remove microscopic (and sometimes macroscopic) material lodged and retained in the pit and fissure depressions which are present on the occlusal surfaces. The teeth in each quadrant must be cleaned in this way.

At the same time the buccal, labial and lingual surfaces of all the teeth should be brushed. Here, too, the bristles of the right kind of brush should be directed into the sulci between the teeth. The same short stroke motion is most effective in digging out material from these locations and cleaning the surfaces of the teeth. Brushing should be followed by rinsing the mouth. By perseverance, the child can be taught, in time, to rinse his teeth well after brushing. Vigorous rinsing is an important part of the oral hygiene procedure for all people.

After the first permanent molars have erupted and attained their normal occlusal level then the right kind of dental floss must be passed between them and the contacting deciduous molars. It is only necessary to pass the floss through the contact area and back out. This insures against proximal caries lesions. It is not necessary for the young child to carry the floss into the gingival crevices as must be done by older children and by all adults to clean the teeth within the gingival crevices. As other permanent teeth come in, the floss must be passed between them and any other teeth with which they are in contact.

*Parent Must Clean Child's Teeth For Him Until He Can Do It Himself.* The parent must clean the child's teeth for him until such time as he himself can do it effectively. At what age and when any given child can learn and be allowed to take over this procedure will vary considerably, depending largely upon his ability and will-

ingness to acquire the necessary manual dexterity, and upon the parents' ability, and patience, to train him.

#### SUMMARY

Many of the lesions of the two principal diseases of the teeth originate during early childhood.

Local lack of cleanliness and poor oral hygiene are essential for the origination and advancement of the lesions. Prevention or minimizing of these conditions is necessary to prevent the diseases.

An effective method of personal oral hygiene is now known, based upon accurate information as to the microscopic conditions at the vulnerable locations. Practical application of this method to young children is discussed.

#### REFERENCE

1. Bass, C. C.: An Effective Method of Personal Oral Hygiene. *J. Louisiana State M. Soc.*, 106:57-73; 100-112, 1954.