

SCIENTIFIC ARTICLES

by

Charles C. Bass, M.D.

John G. Menville, M.D.

1

Some Important Facts Relative to Personal Oral Hygiene

CHARLES C. BASS, M.D., Sc.D. (Hon.), LL.D. (Hon.), F.A.C.P.*

Omicron Associate

New Orleans, Louisiana



I DEEPLY appreciate the invitation to contribute an article for publication in the spring number of the PHI CHI QUARTERLY. Phi Chi is one of the foremost, long-established, national medical fraternities of this country, and is worthy of their best efforts, on the part of its members. It has been my honor and privilege to be a member for a great many years, although not very active, I admit.

During the past several years, I

*Professor of Experimental Medicine, Emeritus and Dean Emeritus, Tulane University School of Medicine.

have devoted myself to intensive research and study of the cause and prevention of the loss of teeth. By practical application of information that has been established previously by the work of others, together with further information which my work has secured, the two diseases—caries and periodontoclasia—from which almost all loss of teeth results, are now entirely preventable. Not only are the lesions of these diseases preventable but, for the most part, further advancement of lesions that already exist also may be prevented.

It can be asserted without reservation that for all practical pur-

Reprinted from the PHI CHI QUARTERLY for March, 1953

poses, any person, at any age, can begin and maintain his or her teeth without further deterioration or loss during the remainder of life. Obviously whatever damage as has already occurred cannot be prevented. Treatment, repairs and substitutions for such damage occupies the attention and is the principal source of income of the large, highly specialized profession—dentists and auxiliary personnel. Measures for prevention of such damage must be applied before it occurs. Therefore, since much damage due to these diseases occurs during the first half of the average life span, the earlier in life effective measures for prevention are applied, the greater the total benefit.

In my research I have employed technics and methods which my long medical laboratory experience has enabled me to use. Correct information and fundamental facts as to the essential local etiological conditions in caries and in periodontoclasia have been secured and successful methods for their practical application for prevention have been devised and specified. Much of this information has appeared in a number of publications 1-10. In this paper an effort will be made to present briefly some of the more important facts relative to oral hygiene—information by which, but not without, a high state of dental health can be maintained throughout life.

Both caries and periodontoclasia are local diseases caused and promoted by conditions that exist at the locations where the lesions originate. Measures for successful prevention of these diseases must provide for effective prevention or minimizing of these local etiological conditions.

Correct information (not merely opinions) as to what these conditions are is necessary. The causative organisms are microscopic, the pathological process originates and advances microscopically, the tissues involved are composed of microscopic elements and the lesions themselves, at first, are only microscopic in extent. Therefore, correct information about these conditions must be based upon microscopic research. Opinions and ideas not conforming to these facts, which can be established only by microscopic work, are confusing, often entirely erroneous.

A hundred years of clinical observation and treatment of caries and periodontoclasia has failed to establish successful prevention. This statement is substantiated by the fact that, at the present time, practically all adults and many younger people have already sustained more or less damage from caries, and that periodontoclasia is practically universal among adults. Many authorities believe that periodontoclasia is responsible for the loss of more teeth than is caries. This means, I submit, that such preventive measures as have been taken, upon advice from whatever source, are, at best, only partially effective. The great need is for a method to be known whereby these diseases can be entirely prevented and then for the information to be available to those who appreciate the importance of oral cleanliness and dental health, and wish to maintain them.

Not all people now fully appreciate the value of their teeth. There is the greatest confusion, erroneous beliefs and lack of correct information about the diseases of the teeth. Many think of dental decay and

ultimate loss as just one of the usual developments to be expected to occur during life. If people could realize that these diseases and their consequences result entirely from their own poor hygiene and uncleanliness, which only they themselves can control, much more effort would be put forth to maintain oral cleanliness.

Now that an entirely effective method of personal oral hygiene is known, more and more people learn how, and do, maintain clean mouths and thereby dental health. It is to be expected, in the years to come, that fewer people will go through life displaying the evidence of their past and present neglect or ignorance of personal cleanliness. Unclean, decaying, patched up, missing, or poor substitutes for the natural teeth eternally advertise to others the effects of one's personal habits of uncleanliness. Every time one smiles, or laughs, or talks, or sings—every time one opens his mouth for any purpose—the defects of the teeth may be seen. Any deviation from normal is more or less noticeable.

Whatever the condition and appearance of the front teeth which may be seen at a glance, the impairment and unclean conditions of the back teeth are usually much worse. In fact, a great many who ordinarily appear to have good healthy teeth, when examined more carefully are found to have already sustained much damage of their back teeth.

In addition to preserving the teeth there is another impelling reason for effective personal oral hygiene; that is the foul odor of

the breath from unclean mouths. While one is not entirely conscious of his own bad breath, those who are closely associated with him are. A foul repulsive breath is a bad handicap and a bad recommendation for anyone whose activities bring him in close association with others. That is especially so when those with whom he would be intimately associated, themselves have clean mouths and therefore are sensitive to the uncleanliness of others. It is unpleasant, to say the least, for anyone to impose upon his associates the foul odors from decomposing food material and from the suppurating (sometimes sloughing) lesions around his teeth. This is the more inexcusable since we now know that it is due to personal uncleanliness and can be prevented by the right method of personal oral hygiene.

Caries lesions originate only at locations on the teeth at which heavy bacterial film (microscopic) can grow and accumulate, and where food material may be retained and may decompose, over considerable periods of time. These locations are mainly in the natural grooves and fissures on the occlusal surfaces of the grinders and in the embrasures between the teeth. All caries lesions develop beneath such thick bacterial film pads and never on exposed surfaces which are constantly or frequently cleaned by functional friction, or otherwise. To prevent caries therefore it is necessary to prevent or minimize the accumulation of such bacterial material and to remove, at suitable intervals, food material from such areas; in other words, to clean the

teeth effectively at appropriate intervals.

Almost all caries damage occurs at night during sleep. If the teeth are properly cleaned at night before retiring, there follows a long period during which there is only limited growth of bacteria; and there is no decomposition of food material, because there is none there to decompose. A clean tooth does not decay. Harmful growth of bacteria and decomposition of food does not occur during the following day before time to clean the teeth again the next night. This method is essential for prevention of caries.

The lesion of periodontoclasia begins by extension—growth—of the bacterial film on the surface of the tooth, into the gingival crevice or normal space between the gum and the tooth. Irritation and inflammation result from this foreign material, which tends to increase and to extend deeper and deeper into the crevice. As the disease advances, which results from the encroachment of the increasing foreign material on the tooth, the periodontal tissues are gradually destroyed and the gums recede. Usually the inflammation is further promoted by the formation of hard calculus on the tooth within the crevice and by pressure of food particles packed and retained against the soft tissue at the entrance to the crevice.

To prevent initiation of lesions and to prevent further advance of lesions that already exist the presence of the etiological foreign material on the tooth within the crevice must be prevented or minimized. Periodontoclasia does not occur about a clean tooth. The necessary

cleanliness can be maintained by cleaning the teeth within the gingival crevices at proper intervals. If they are cleaned at night before retiring there follows a long period during which rapid healing and subsidence of inflammation occurs. Little or no damage occurs during the following day before time to clean them again the next night.

Good dental health service must include removal of hard concretions and calculus from the teeth within the gingival crevices and teaching the patient how to clean his teeth effectively, which can be done only by the proper use of both toothbrush and dental floss. Each person must learn how to do this, and do it consistently.

SUMMARY

In order to maintain oral cleanliness and to prevent the initiation and further advancement of the lesions of caries and periodontoclasia, **YOU MUST CLEAN YOUR TEETH RIGHT WITH THE RIGHT KIND OF BOTH TOOTHBRUSH AND DENTAL FLOSS EVERY NIGHT BEFORE RETIRING.** It cannot be done otherwise.

REFERENCES

1. Bass, C. C.: A Demonstrable Line on Extracted Teeth Indicating the Location of the Outer Border of the Epithelial Attachment. *J. D. Res.*, 25:401, 1946.
2. Bass, C. C.: The Habitat of *Endameba Buccalis* in the Lesions of Periodontoclasia. *Proc. Soc. Exper. Biol. and Med.*, 61:9, 1947.
3. Bass, C. C. and Fullmer, H. M.: The Location of the Zone of Disintegrating Epithelial Attachment Cuticle in Relation to the Cemento-

- Enamel Junction and to the Outer Border of the Periodontal Fibers on Some Tooth Specimens. *J. D. Res.*, 27:623, 1948.
4. Bass, C. C.: The Necessary Personal Oral Hygiene for Prevention of Caries and Periodontoclasia. *New Orleans M.S.J.*, 101:52, 1948.
 5. Bass, C. C.: The Optimum Characteristics of Toothbrushes for Personal Oral Hygiene. *Dent. Items Int.*, 70:697, 1948.
 6. Bass, C. C.: The Optimum Characteristics of Dental Floss for Personal Oral Hygiene. *Dent. Items Int.*, 70:921, 1948.
 7. Bass, C. C.: The Relation of the Inner Border of the Bacterial Film on the Tooth within the Gingival Crevice, to the Zone of Disintegrating Epithelial Attachment Cuticle. *O. Surg., O. Med., O. Path.*, 2:1580, 1949.
 8. Bass, C. C.: Some Facts Which Physicians Should Know About Maintenance of Dental Health. *Bull. Tulane Medical Faculty*, 9:12, 1949.
 9. Bass, C. C.: The Relation of the Inner Border of Subgingival Calculus to the Zone of Disintegrating Epithelial Attachment Cuticle. *O. Surg., O. Med., O. Path.*, 3:1125, 1950.
 10. Bass, C. C.: A Previously Undescribed Demonstrable Pathological Condition in Exposed Cementum and the Underlying Dentin. *O. Surg., O. Med., O. Path.*, 4:641, 1951.