

Bruxism: a Nutritional Problem?

IN STANDARD dental textbooks, bruxism is generally viewed as a psychic sign which, if at all resolved, requires psychotherapy. So far as can be determined, no mention is made in the dental literature of possible dietary factors in the genesis of bruxism.

Partly to explore the relationship between diet and bruxism, 91 dentists and their wives took part in a multiple testing program in Los Angeles under the auspices of the Southern California Academy of Nutritional Research and in Columbus under the aegis of the Ohio Academy of Clinical Nutrition. Each subject completed an Oral Health Index Questionnaire in which one of the questions asked is, "Do you clench or grind your teeth or are you conscious of the way your teeth fit together, awake or asleep?" Each subject also completed a simple questionnaire designed to reveal the nutrient

content of the diet. Dietary lectures were then given to the subjects.

One year later, each participant completed both questionnaires again. By this technic it was possible to relate dietary habits over a one-year period with regard to the reported history of bruxism.

Of the 94 individuals studied, 58 (Group I) reported no bruxism at either visit; 5 (Group II) indicated the development of bruxism during the one-year program; 16 subjects (Group III) described bruxism initially which had disappeared; and 15 (Group IV) were found to have bruxism at both visits.

IN ALL CASES where a significant change occurred, the change was an *increase* in a particular nutrient. For example, in Group I (no bruxism at all) a number of nutrients were significantly increased, presumably on the basis of the dietary lectures.

Thus, there was a higher intake of protein, calcium, vitamins A, B₁, B₂, niacin, C, B₆, pantothenic acid, iodine and vitamin E.

There was no significant increment of any nutrient in any one in Group II (the subjects who developed bruxism during the experimental period).

Significant increases did appear in Group III (bruxism which disappeared) in intake of calcium, vitamins A, C, pantothenic acid, iodine, and vitamin E.

Finally, vitamins A, C, iodine and vitamin E increased in Group IV (bruxism at both visits).

THE QUESTION naturally arises as to whether there are significant differences among the groups. If no nutrient increased in *any* of the groups, then obviously this nutrient cannot be ascribed a causative role in Group III (those who stopped bruxism) during the one-year period. Fat, iron, and potassium

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did not change in any of the groups.

Conversely, if a nutrient was increased in *all* groups, it cannot be regarded as causative. Vitamins A and C, iodine, and vitamin E increased in Groups I, III and IV. The nutrients which were increased in Group III and not in Group IV are, interestingly, calcium and pantothenic acid. Hence, here is at least circumstantial evidence of a possible cause for the disappearance of bruxism in Group III.

The rigidity of the skeleton in contrast to the soft tissues is clearly related to calcium metabolism. Not so well known, but of considerable significance, is the role of calcium in the regulation of many and diverse body processes. Of particular relevance to this discussion is the part played by calcium in muscle contractility and the preservation of the physiologic response of nerve tissue to stimulation.

HENCE, it is noteworthy here that bruxism, a neuromuscular problem, should vanish in parallel with an increase in calcium consumption.

Human pantothenic acid deficiency has been produced in volunteers. The symptomatology includes headache, fatigue, gastrointestinal disturbances, paresthesias and, most appropriate to this discussion, muscle cramps and impaired motor co-

ordination. Thus, it would appear to be of some note that in the subjects who stopped bruxing there was an increase in pantothenic acid intake.

It is recognized that, while the observations reported here are interesting, they are only circumstantial. In view of the magnitude of bruxism, however, it is hoped that a carefully designed and executed double-blind study of the effect of calcium, pantothenic acid and placebo supplements be instituted.

In the meantime, the private dental practitioner might find it helpful to consider dietary supplementation as a means of trying to curb bruxism among patients.

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