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Some aspects of dental health in young adult Indian vegetarians

A pilot study

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The effect of a vegetarian diet on oral health status could be manifold, but reports have so far mainly appeared from within Western populations. This study reports the oral health status of southeast Indian vegetarians, obtained by means of a questionnaire, clinical examination, and study cast evaluations. The material comprised 30 vegetarians and 25 sex- and age-matched non-vegetarian controls. Comparison between the samples included dietary and oral hygiene habits, health-related variables, caries prevalence, and dentoalveolar characteristics. The questionnaire showed significantly less consumption of between-meal sweets and more widespread use of a soft toothbrush by the vegetarians. The vegetarians had a significantly higher degree of tooth wear than the non-vegetarians, but no difference in the degree of wear between women and men in either group was found. The vegetarians had a significantly higher tendency towards crowding in the maxillary arch, numerically higher DMFT, and greater number of cervical buccal defects than the controls. The results of this study suggest that the Indian vegetarian diet may produce certain effects on the oral health, associations that need to be studied further. □ *Craniofacial morphology; dental caries; dental occlusion; lacto-vegetarian diet; tooth attrition; tooth erosion*

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Vegetarianism is the practice of eating only foods derived from plants and avoiding all animal flesh, including red meat, poultry, and fish, and, sometimes, dairy products. Vegetarians are classified into different categories, defined by the relative acceptability of animal products. Lacto-ovo vegetarians consume milk, cheese, eggs, and sometimes honey, whereas lacto-vegetarians only consume dairy products in addition to vegetables. 'Pure' vegetarians (vegans) consume no animal products at all. People may become vegetarians because of various religious, philosophical, and ethical beliefs or even ecologic reasons (1).

Whereas harsh environmental conditions and the use of the teeth in the preparation of coarse and abrasive foods were commonplace in earlier populations (2), later and modern societies have in this respect undergone a drastic transformation (3); the 'mechanization' brought about by the transition to hand-held tools and changes in food preparation techniques are believed to be the main factors contributing to the reduction in tooth size (4) and to the modification of the lower part of the face during evolution (5). In addition, the changes in dietary habits and increased refinement of food have also contributed to the sharp decrease in the severity of tooth wear in recent generations, which in earlier populations was widespread and extensive (6, 7). The human craniofacial skeleton in both modern and primitive man has also been found to be a continually changing and developing entity throughout the lifetime of the individual (2, 8). The masticatory-functional hypothesis currently

seems to offer the most credible model by which such occlusal and craniofacial changes may be explained (6, 9-11). It is therefore reasonable to assume that the consumption of a vegetarian diet may involve different functional demands, which could affect the development of the craniofacial skeleton.

The processing of food and altered dietary composition (for example, increased sugar intake) in modern society has definitely played a major role with regard to the high prevalence of dental caries seen in recent population groups. It has been found that the diet of Western vegetarians turned out to be beneficial for oral health, as reflected by a higher number of teeth present, improved caries status, and lower frequency of between-meal snacks and sugar consumption than in controls (12, 13). It has also been found that vegetarian food is beneficial to the periodontal status in long-term vegetarians (13) but not in short-term vegetarians (12). Such a positive effect of a vegetarian diet on periodontal health could possibly be ascribed to a lower consumption of sugar (13, 14). However, an increased prevalence of dental erosion has been found in Western vegetarians (12).

Hinduism is by far the largest religion in India (~80% of the population), and its traditions extend back around 4000 years. The Brahmins and Jains constitute an important sect among the Hindus; they believe that the killing and eating of animals violates the ethical precept of 'ahimsa', or non-violence, but the consumption of dairy products is accepted. Thus, a large