

Surveillance Spotlight...

Relationship between Nutrition and Oral Health

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The International Centre for Oral–Systemic Health, based at the University of Manitoba’s faculty of dentistry, provides a valuable service to stakeholders in the dental community by scanning the latest research and best practices in oral–systemic medicine. The centre is proud to partner with the JCDA to provide summaries of contemporary literature and news in oral–systemic health that may affect modern dental practice. This month’s article discusses the link between nutrition and oral health.

A large body of scientific and epidemiological data suggests a continuous synergy between nutrition and the integrity of the oral cavity in health and disease.¹ Nutrition is an integral component of oral health. Poor nutrition and diet may affect the development of the oral cavity and the progression of oral diseases through altered tissue homeostasis, reduced resistance to microbial biofilms and reduced tissue repair capacity.² In the absence of other contributing factors, compromised nutritional status must be considered in patients with refractory periodontitis, poor healing response to surgical procedures, or recurrent oral disease. This is particularly true for elderly patients and patients in institutional settings.^{2–5}

The most common relationships between oral health and poor nutrition habits or deficiencies involve caries associated with frequency of sugar and carbohydrate intake; iron, vitamin B12 and folate deficiencies associated with mucosal pathology, such as recurrent aphthous ulcers and atrophic glossitis (painful burning tongue characterized by inflammation and defoliation); and *Candida albicans* infections associated with a variety of predisposing factors, including high carbohydrate diets and iron or folate deficiencies.

Furthermore, a significant body of evidence associates dietary imbalance with a variety of systemic illnesses.⁶ Thus, poor oral health may have an indirect impact on systemic health through disturbances in nutritional intake. Poor oral function due to edentulism, ill-fitting prostheses and oral disease compromises overall nutrition through altered food choices and food preparation.⁴ Ill-fitting prostheses and the potential for associated lesions and pain are of particular concern for individuals with dementia or other conditions that may prevent them from articulating their difficulties with chewing food. It is common to notice rapid weight loss in institutionalized elderly patients after placement of new prostheses that are not monitored for comfort and functional efficiency.

As masticatory efficiency becomes reduced, some people avoid foods that are difficult to chew, including stringy foods like beef or steak, crunchy foods like raw carrots, and dry, solid food like crusty bread. People with poor oral health status can, as a consequence, suffer from impaired intake of fruit and vegetables, dietary fibre and some key nutrients.

The impact of masticatory efficiency on food selection is likely to be compounded by food preparation. A person with reduced chewing capability may overcook or overprepare fresh foods (e.g., removing all skin from fruits and vegetables) to make them easier to eat. A wide range of nutrients are affected by these actions, including food constituents that are thought to be important for preventing cancer and cardiovascular disease (i.e., non-starch polysaccharides or dietary fibre) and for cellular defense and combating the effects of aging (i.e., the anti-oxidant micronutrient vitamins C and E). These nutrient intake data are supported by the outcomes of 2 large-scale cross-sectional studies linking oral health status to biochemical analyte levels for key nutrients.³

As we learn more about the links between oral health and nutrition, practitioners from all health professions must learn to provide screening, basic patient education and referral to each other as part of comprehensive patient care. The American Dietetic Association supports the integration of oral health with nutrition services, education and research.⁶ Collaboration between dietetics and dentistry is recommended for oral health promotion and disease prevention and intervention. ♦

References

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