

Diabetes Mellitus and Oral Health

AN INTERPROFESSIONAL APPROACH

Edited by Ira B. Lamster



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*To my wife Gail, and our children and grandchildren, for
the love and balance they provide.*

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Introduction

Diabetes mellitus is a group of endocrine disorders characterized by elevated levels of glucose in blood. The underlying cause is either an absence of insulin production, a lack of responsiveness to the actions of insulin, or some combination of both. The direct and indirect consequences of diabetes are enormous, resulting in significant morbidity and mortality. Diabetes is a chronic disease, and patients are required to manage their disease for decades. This reality can have a major impact on a person's lifestyle, and achieving the normal range of blood sugar in blood requires daily vigilance.

The financial cost of caring for patients with diabetes mellitus in the United States is estimated to be nearly a quarter of a trillion dollars per year [1]. Furthermore, the personal toll on patients and their families is enormous. Complications of the disease include vision problems leading to blindness, end-stage renal disease requiring kidney transplantation, increased incidence of myocardial infarction and strokes, and poor wound healing resulting in amputation.

Diabetes mellitus is of particular importance for dental professionals:

- The prevalence of diabetes is increasing. Based on data from 2011 [2], 25.8 million people in the United States have diabetes, representing 8.3% of the population. Furthermore, now there is interest in prediabetes, a condition in which the blood glucose level is above normal but not elevated enough to be classified as diabetes. Individuals with prediabetes are at risk for development of type 2 diabetes mellitus and its

complications. It is estimated that more than 80 million adults in the United States have prediabetes [2].

Consequently, patients with dysglycemia are now, and will in the future, routinely be seen in dental offices.

- Older individuals in the United States and other developed countries are retaining their teeth, and in the future will require more dental services.
- There are a number of important oral manifestations of diabetes mellitus, including greater severity of periodontal disease, increased root caries, xerostomia, candidiasis, burning mouth syndrome, and benign parotid hypertrophy. Diabetes mellitus is the only systemic disease that is a recognized risk factor for periodontitis [3]. Because more than 25% of people with diabetes are unaware that they are affected [2], a person with undiagnosed diabetes may present to the dental office with an oral manifestation of the disease. Furthermore, because oral manifestations of diabetes are more common with poor metabolic control, an oral manifestation of diabetes may be an indication of a patient who requires medical attention to better manage his or her disease.
- There is mounting evidence that advanced periodontitis can adversely affect metabolic control in patients with diabetes [3]. Periodontal therapy provided to patients with periodontitis and diabetes has resulted in a significant decrease in the level of glycated hemoglobin.

As dental professionals consider the future of dental practice, and with the realization that an increasing number of patients with chronic diseases requiring multiple medications will be seen for dental care, an understanding of the etiology, prevalence, management, and clinical complications, including the oral complications of diabetes,

is essential. This book will address this need, and is divided into three sections. There are four chapters in the medical considerations section, including (1) etiology, (2) epidemiology, classification, risk factors, and diagnosis, (3) medical complications, and (4) treatment. There are five chapters in the dental considerations section, including (5) management of the patients with diabetes in the dental office, (6) periodontal complications of diabetes, (7) the influence of periodontal disease on metabolic control, (8) non-periodontal oral complications of diabetes, and (9) assessment of diabetes mellitus in the dental office. The final section presents six case scenarios which describe patients with diabetes who are seen in the dental office, and illustrates how management of each requires dental professionals to have a thorough understanding of diabetes mellitus and work closely with other health care providers to deliver the most appropriate care. Furthermore, medical professionals must understand the importance of the oral cavity in the context of diabetes, identify oral problems when present, and refer patients for routine care.

Finally, this book is also notable because it makes a strong case for complete dental care being dependent upon an understanding of the entire patient. Dental care for medically complex patients demands that health care providers cooperate, and diabetes provides an excellent example of the importance of interprofessional practice. The result will be improved oral health, and health, outcomes. The results will benefit both patients and providers.

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