PART 1 THE NATURE OF THE PROBLEM - ORAL DISEASES AND THE IMPACT OF NUTRITION

Diseases caused by oral bacteria
- The mouth as a microbial habitat
- The resident oral microbiota
- Development of the oral microbiota
- Distribution of the oral microbiota
- Benefits of the resident oral microbiota
- The oral microbiota and disease
- Conclusions
- References

Viral and fungal infections of the oral cavity
- Introduction to viral infections
- Herpes virus infection
- Human papilloma virus
- Hepatitis viruses
- Human immunodeficiency virus (HIV)
- Fungal infections
- Paracoccidioidomycosis
- References

Non-infectious diseases of the oral mucosa
- Introduction
- White patches of the oral mucosa
- Oral cancer
- Swellings of the oral mucosa
- Oral ulceration
- Disorders of the salivary glands
- Oral lesions associated with systemic disease
- References

Dental erosion
- Introduction
- Diagnosis
- Risk factors
- Biological factors
- Chemical factors
- Behavioural factors
- Summary
- Acknowledgement
- References

PART 2 FOOD COMPONENTS AND ORAL HEALTH

Nutrition and its effect on oral health and disease
- Introduction
- Enamel developmental defects
- The role of diet in dental caries
- Diet and dental erosion
- The impact of nutrition on oral mucosal conditions
- The impact of nutrition on periodontal health and disease
- Diet and general health
- Conclusion
- References

**Relating breath malodour to food constituents and oral health**
- Breath malodour and its measurement
- The central paradigm for intra-oral generation by microbes
- Diet, oral health and malodour
- Salivary flow, substrate and product clearance from the mouth
- More complex model (quasi-steady states with perturbations)
- Interventions and management
- Future trends
- References

**Sugar alcohols and dental health**

- Introduction to sugars and sugar-free sweeteners
- Sugar alcohols and cariogenicity
- Xylitol efficacy in the prevention of tooth decay
- Xylitol clinical applications
- Deciphering xylitol-containing products for efficacy potential
- Key points and conclusions
- References

**Dairy products and oral health**

- Introduction
- Intake of dairy products and risk of dental caries
- Intake of dairy products and risk of periodontitis
- Future trends
- References

**Impact of food sugars and polysaccharides on dental caries**

- Fermentable carbohydrates: a key factor in the caries process
- The different carbohydrates in the diet
- Relative cariogenicity of different sugars
- Starches and dental caries
- Impact on caries from a historical perspective
- Impact in the modern era
- Cariogenic risks of foods and beverages
- Consumption frequency versus amount consumed
- Influence of fluoride on the sugars-caries relationship
- Individuals at increased risk
- Impact in the 21st century
- References

**Casein phosphopeptides in oral health**
- Introduction
- Casein phosphopeptide stabilised amorphous calcium phosphate nanocomplexes (CPP-ACP) structure
- Scientific evidence for casein phosphopeptide-amorphous calcium phosphate activity in preventing demineralisation and promoting remineralisation
- Mechanism of action
- Recommendations for clinical use
- Future trends
- Conclusions
- References

**Antioxidants and periodontal disease**

- The nature of antioxidants
- Antioxidants and periodontitis
- Micronutrients in future therapeutic approaches to periodontitis
- Sources of further information and advice
- Future trends
- References

**Anticaries and antiadhesive properties of food constituents and plant extracts and implications for oral health**

- Introduction
- Plaque-dependent oral pathologies
- Classic approaches for the prevention of tooth and gum pathologies
- Phenolic content of food and plant extracts
- Main foods and plant extracts with anticaries and antiplaque activity
- Effects of bacterial target inhibition by food and beverage components
- Mode of delivery of polyphenols to the oral cavity
- Repercussions of using natural food components for oral health
- Future trends
- Acknowledgements
- References

**Food preservatives and dental caries**

- Introduction
- Spices
- Clove
- Antibiotics
- Chelation agents
- Weak acids
- Sulfites
- Hypersensitivity
- Conclusions
- References

**Food, nutrition and oral cancer**

- Introduction
- The causes of cancer
- Food and the risk of cancer
- Vegetarian diet and oral cancer
- Animal studies
- Anti-cancer agents in plant foods: mechanisms of action
- Carcinogens in foods: additives and preparation
- Drinks and the risk of cancer
- Chemoprevention
- Prevention of second primary tumours
- Summary and conclusions
- References

Vitamin supplements and oral health

- Introduction
- Classification of vitamins
- Recommended dietary intakes
- Nutritional supplements
- Use of vitamin supplements
- Brief review of biological functions of vitamins
- Oral manifestations of vitamin deficiencies
- Conclusions
- Assessment of vitamin status
- References

Trace elements and oral health

- Introduction
- Trace element content of teeth
- Fluoride
- Iron
- Copper
- Zinc
- Selenium
- Lead
- Conclusions
- References

Alcohol and oral health

- Introduction
- Overall effect of alcohol on general health
- Systemic effects of alcohol, influencing orofacial health
- Direct effects of alcohol influencing orofacial health
- References

Malnutrition as an etiological factor in dental caries disparity

- Introduction
- Stress and depression
- Counseling caregiver about diet
- Impact of poor diet
- Model of caries disparity
- Ecological model of what people eat: tooth decay is part of a larger problem
- Family influences on taste preferences
- Food access
Tea as a functional food for oral health

- Introduction
- Anticariogenic potential of tea
- Tea and periodontal disease
- Tea and halitosis
- Tea and oral cancer
- Antimicrobial activity against fungi associated with oral infections
- Antimicrobial activity against viruses associated with oral infections
- Conclusion
- References

PART 3 TECHNOLOGY AND PRODUCT DEVELOPMENT

Probiotics and oral health

- Probiotics: the concept
- Probiotic species
- Putative mechanisms of probiotic action
- Probiotics as support therapy for systemic diseases
- Probiotic strains and oral microbiology
- Experimental and clinical studies on the effect of probiotics on oral and dental diseases
- Safety aspects
- Future trends
- Conclusion
- References

Oral gum care products

- Introduction: notes on early history; rationales for the use of oral care gums
- Oral care gums in relation to other oral care adjuvants; advantages and disadvantages
- "In sputo veritas" - gum-chewing stimulates salivation and the chemical defence of saliva
- Target groups for the administration of oral care gums
- Examples of special oral care gum products
- Clinical caries trials: school programmes
- Effect after "sugar challenge"
- Biochemical effects in short-term polyol gum use
- Gum products and remineralisation
- Public endorsement of oral care gum products
- Practical instructions for studies on oral care gums; incompatibilities among gum ingredients
- References

Novel drug delivery systems for therapeutic intervention in the oral environment

- Polymeric systems appropriate for oral drug delivery: history and background
- Oral diseases that are potential candidates for local drug delivery
- Design goals for modern oral drug delivery systems
- Actual devices based on biocompatible materials
- Use of additives to accelerate release and solubility of problematic (water-insoluble) drugs
- Maintaining and assuring stability of drugs during device manufacturing
- Future trends: multi drug devices
- Dedication
- Acknowledgements
- References

Formulating tooth-friendly beverages, confectionery and oral care products

- Introduction
- Properties of beverages which may compromise dental health
- Properties of confectionery which may compromise dental health
- Properties of oral care products which may compromise dental health
- Acids and dental erosion: approaches to, and mechanisms of, reducing acid-mediated tooth dissolution
- Sugars and dental caries: approaches to, and mechanisms of, reducing carious tooth loss
- Formulating tooth-friendly beverages
- Formulating tooth-friendly confectionery
- Formulating tooth-friendly oral care products
- Future trends
- References

Functional foods and oral health - Introduction
- Foods associated with oral diseases and disorders
- Foods which can be used to prevent and treat oral disease
- Minerals and caries
- Minerals and periodontal disease
- Minerals and tooth surface loss
- Animal products and caries
- Animal products and other oral disease
- Plant products and caries
- Plant products and periodontal disease
- Plant products and oral cancer
- Regulation of functional foods for oral health
- References