

Oxidative Stress in Applied Basic Research and Clinical Practice

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Donald Armstrong

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All books in this series illustrate point-of-care testing and critically evaluate the potential of antioxidant supplementation in various medical disorders associated with oxidative stress. Future volumes will be updated as warranted by emerging new technology, or from studies reporting clinical trials.

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Studies on Periodontal Disease

 Humana Press

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Preface

Oxidant stress plays an important role in a wide range of tissue pathologies, such as neurodegenerative disease, carcinogenesis, aging, and periodontal disease. Periodontal disease is one of the most prevalent diseases suffered by humans, although the reported prevalence varies according to diagnostic criteria. Periodontal disease is a chronic inflammatory disease characterized by gingival bleeding, periodontal pocket formation, connective tissue destruction, and alveolar bone resorption leading to tooth loss. Oxidative stress is involved in the initiation and progression of periodontal disease, and various studies have reported that levels of oxidative stress markers and oxidative damage in periodontal disease are greater than that in healthy controls. Furthermore, recent studies have demonstrated a relationship between periodontitis and systemic diseases, such as coronary heart disease, atherosclerosis, and diabetes. With regard to the mechanisms, oxidative stress and an altered inflammatory process are involved.

The chapters of this book widely cover the evidence for the relationship between oxidative stress and periodontal disease. Furthermore, the chapters provide possible mechanisms linking periodontal disease and systemic disease. The contributors are recognized experts in the field of oxidative stress and dentistry. We believe that this book will therefore prove to be useful for researchers in periodontology.

Finally, I would like to thank the coeditors and contributors for their kind assistance with the project.

Okayama, Japan

Daisuke Ekuni

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