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Nota di contenuto	1. Introduction -- Section 1: Basic Science of Free Radical Biology in ENT -- 2. Free radicals and oxidative stress: Basic concepts and misconceptions -- 3. A Question of Balance: Free Radicals and Cochlear Homeostasis -- 4. Antioxidants and their effect on stress-induced pathology in the inner ear -- Section 2: Epidemiology of Hearing Loss -- 5. Role of free radicals in hearing loss due to heavy metals -- 6. The role of nutrition in healthy hearing: human evidence -- Section 3: Oxidative Stress and Noise-Induced Hearing Loss -- 7. Basic mechanisms underlying noise-induced hearing loss -- 8. Oxidative stress in noise-induced hearing loss -- 9. Strategies for evaluating antioxidant efficacy in clinical trials assessing prevention of noise-induced hearing loss -- Section 4: Oxidative Stress and Drug-Induced Hearing Loss -- 10. Aminoglycoside-induced oxidative stress: pathways and protection -- 11. Hearing loss after cis-platin: oxidative stress pathways and potential for protection -- 12. Assessment of interventions to prevent drug-induced hearing loss (DIHL) -- Section 5: Oxidative Stress and Age-Related Hearing Loss -- 13. Age-related hearing loss: biochemical pathways and molecular targets -- 14. Genetics and age-related hearing loss -- 15. Mechanisms of age-

related hearing loss -- 16. Interventions to prevent age-related hearing loss -- Section 6. Hereditary Hearing Loss -- 17. Genes and hearing loss: relationship to oxidative stress and free radical formation -- 18. Strategies for the treatment of hereditary hearing loss -- Section 7: Cochlear Implants, Radiation, Trauma and Other Stress Factors -- 19. Loss of Residual Hearing Initiated by Cochlear Implantation: Role of Inflammation-Initiated Cell -- 20. Role of oxidative stress in sudden hearing loss and Meniere's disease -- Section 8: Head and Neck -- 21. Role of free radicals in head and neck pathology -- 22. Free radicals and sleep apnea -- 23. Free radicals in nasal and paranasal disease -- 24. Conclusion.

Sommario/riassunto

This comprehensive volume examines the current state of free radical biology and its impact on otology, laryngology, and head and neck function. The chapters collectively highlight the interrelationship of basic and translational studies in each area, define the challenges to translation, and identify the existing basic issues that demand investigation as well as the opportunities for novel intervention to prevent and treat ENT pathology and impairment. In each chapter, or in some cases pairs of chapters, the author(s) have included or married issues of basic research with translational challenges and research, thus defining the pathway by which new basic insights may lead to interventions to prevent or treat impairment. The final chapter of this book reflects a meeting of all the contributors, culminating in a discussion and "white paper" that identifies the challenges to the field and defines the studies and collaborations that may lead to improved understanding of free radical biology in ENT and, subsequently, new interventions to medically treat ENT pathology.