

Book review

Understanding oxygen stress in the degenerative brain

Oxidative stress and age-related neurodegeneration

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All living organisms can suffer from oxidative damage, and the ageing process could accelerate this undesirable feature. The brain is particularly sensitive to oxidative stress, and it is therefore not surprising that increased level of biomarkers associated with oxidative damage are detected in several age-related neurodegenerative diseases. However, accumulating evidence suggests that in most of these disorders, oxidative stress is a consequence, and not a primary cause of the disease process.

This handy reference attempts to present a brief but up-to-date development on the causes and consequences of oxidative stress during neuronal ageing and in various age-related neurodegenerative diseases. Majority of the featured articles are on Alzheimer's disease (AD) since it is most common in the aged population. This book is particularly relevant because it is written *by* scientists actively working on age-related pathology triggered by oxidative stress in the central nervous system (CNS) *for* students and scholars in this exciting field of biomedical research.

Each chapter begins with a concise introduction and the remaining pages are well-organized into logical sub-paragraphs. An extensive list of references is given at the end of all chapters, thereby providing the readers useful supplementary information to individual chapter. Most of them are recent manuscripts published within the last 5 years, and the older references are included because of their historical importance and relevance to current ideas.

Each chapter can serve as an independent introduction to the topic statement and their concise nature will be useful to the information "overloaded" scientists. Research on neurodegenerative diseases generally involves experimenting with clinical samples, in particular, post-mortem brain tissues. The opening chapter by Butterfield and colleagues address an important issue using post-mortem brain tissues. Their emphasis of a short post-mortem interval (p.m.i.) is important to minimize undesirable biochemical changes taking place thereby generating artifact readings. Other chapters also described the use of alternative experimental models such as *Drosophila* and *Caenorhabditis elegans* for AD. While these models may not truly mimic some phenotypic features found in transgenic models, they can be useful for research into the cellular biology of specific diseases.

As expected, this handy book cannot showcase all the research areas in this exciting field. The editors have done a balancing job in featuring the molecular, cellular, and nutritional biology of these age-related neurodegenerative diseases. I have no reservation in recommending this book not only to the novices but also to the established scientists wanting an up-to-date and handy reference to their chosen research field.

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