



nutrients



Special Issue Reprint

The Role of Selenium in Health and Disease

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This book contains ten articles covering recent advances in our understanding of the relationship between the essential micronutrient selenium and human health and disease. Taken together, these articles strengthen the evidence showing that selenium, as a constituent of selenoproteins, is central to biological stress responses and mechanisms commonly altered in most complex disorders. Relevant to public health concerns, this book also emphasizes the U-shaped dose-response relationship between selenium concentration and disease risk across diverse populations from Europe [articles 2,3,6], the Middle East and North Africa [9], and Taiwan [5]. This highlights the importance of personalized nutrition strategies targeted at individuals with increased risk of disease and low selenium intake. The mechanisms by which selenium status, selenoprotein expression, and inherited genetic variations in the selenium pathway interact to affect molecular pathways involved in disease development are explored in human cohorts [2,3,5-7], and in animal [4] and in vitro models [8]. Furthermore, some reports identified novel potential biomarkers of disease risk and prognosis within the selenium pathway that could further our understanding of many chronic diseases [2,3]. Overall, this book broadens our understanding of the role of selenium in chronic diseases, and provides new directions for future preventative approaches.



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