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## **Foreword**

Ever since its appearance on mother Earth, the human race has had to protect itself from the adverse effects of the surrounding environment. Unfortunately, starting with the industrial revolution, if not before, mankind has begun to consistently mistreat the environment, which has reciprocated in exposing the offenders to new dangers. Being in permanent interaction with the environment, our skin, more than any other organ, is affected by the environment. Increased exposure to UV radiation, industrial pollution, and climatic determinants are but a few examples of modern environmental insults that mercilessly attack the skin. But the term 'environment' is not limited to our physical surrounding. The modern emotionally stressful lifestyle, the excessive use of drugs, together with other exogenous factors also affect our skin. It is not surprising, therefore, that the need for a thorough investigation of environmental factors is exponentially growing, since in parallel with the mounting danger, there has been impressive scientific progress in understanding and combating these harmful effects.

The interaction between the skin and the environment presents a fascinating and challenging research subject. Such research is needed in order to better understand the pathogenesis and the disease process and to develop new therapeutic strategies and preventive measures. Interactions between genetic risk factors and environmental triggers are involved in skin aging and skin carcinogenesis, as well as in psoriasis, atopic dermatitis and autoimmune diseases.

In the last years, a substantial body of work has been created by the use of novel technologies to investigate skin responses to environmental stimuli. Such techniques allow researchers to investigate the interplay among environmental and genomic elements in skin cell biology, to decipher the biochemical steps

undertaken in the process, and also to study the genetic factors underlying variations in skin response to environmental factors. Just a few months ago, an innovative study identified a gene implicated in the pathogenesis of vitiligo and other autoimmune diseases associated with it.

Recent research, covered in the following chapters, is roughly divided into five overlapping subjects, each involving both clinical and investigational data: (1) aging of the skin and UV carcinogenesis; (2) external factors, other than UV, in skin carcinogenesis; (3) external factors in skin diseases with genetic and other predisposing factors; (4) skin and the nervous system, including stress, itch and more, and finally (5) work-related skin diseases. Due to space limitation we chose to cover subjects that were less discussed in the past and thus certain diseases, including bullous diseases, were left out. Hopefully these will be covered in a further publication.

I hope that this book will not only provide good coverage of the state-of-the-art of research, ranging from epidemiology to molecular biology, but also prompt further research in this challenging subject.

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