PROCEEDINGS OF THE
JOINT INTERNATIONAL SYMPOSIA

Vitamin D in Prevention and Therapy and Biologic Effects of Light

Organized by

JÖRG REICHRATH[1], MICHAEL F. HOLICK[2],
MICHAEL FRIEDRICH[3] and THOMAS VOGT[1]

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[1]Department of Dermatology, Venerology and Allergology, The Saarland University Hospital, Homburg/Saar, Germany;
[2]Department of Medicine/Endocrinology, Boston Medical Center, Boston, MA, U.S.A.;
[2]Department of Gynecology, Helios Clinic Krefeld, Krefeld, Germany

Local Organizing Committee

T. Felix Fernandes
M. Preiß
J. Reichrath
R. Saternus
Th. Vogt

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Preface

The Vitamin D signaling pathway and optical radiation have been shown to exert many potent effects on human health. Impressive recent scientific progress concerning the underlying mechanisms includes the identification of new vitamin D signaling pathways that are not mediated by the classical vitamin D receptor (VDR), but by other members of the nuclear receptor family of transcription factors, such as liver X receptors (LXRs) and retinoic acid receptor-related orphan receptors (RORs). Moreover, new biologic effects of UV-B-induced vitamin D-compounds (e.g., on the microbiome), and convincing proof of the relevance of vitamin D deficiency for risk and outcome of many chronic diseases, has led to promising new strategies for the prevention and treatment of a broad variety of autoimmune, infectious, and cardio-vascular diseases, skin cancer and other malignancies. These and other important new advances in the field were extensively reported and discussed at the joint international symposia entitled "Vitamin D in Prevention and Therapy" and "Biologic effects of Light" that were held on May 4-6, 2022, in Homburg, Germany. This meeting was designed to offer scientists and clinicians a special platform to discuss the latest developments in this intriguing research area. Plenary and Keynote lectures as well as Round Table Discussions gave an update on carefully selected "hot topics" including vitamin D, skin cancer prevention, UVA radiation and cellular homeostasis. The science presented at this meeting convincingly demonstrated that analyzing the effects of ultraviolet, visible, and infrared radiation on human health and the underlying mechanisms has truly developed in recent years into a fascinating research area. Some of the relevant findings and conclusions of this meeting are published in this issue of ANTICANCER RESEARCH. It is likely that this research activity will lead to the establishment of photopharmacology/photoendocrinology as a novel approach for the prevention and treatment of a broad variety of both acute and chronic diseases, such as skin cancer and other malignancies, metabolic bone disease associated with chronic kidney disease, hypertension and cardiovascular disease, depression and neurocognitive decline and autoimmune diseases. Of particular interest were the COVID-19-pandemic and cancer, where an inverse association between 25(OH)D serum concentrations and SARS-CoV-2-infections, morbidity and mortality, and an association of vitamin D-supplementation with significantly decreased mortality rates, that presumably would reduce health care costs, were demonstrated, respectively. Concerning the COVID-19-pandemic, an inverse association between 25(OH)D serum concentrations and SARS-CoV-2-infections, morbidity and mortality was shown. In relation to cancer, several meta-analyses recently demonstrated an association of vitamin D-supplementation with significantly decreased mortality rates, that presumably would reduce health care costs. Considering the convincing scientific body of evidence and the high safety of oral supplementation and/or food fortification with vitamin D, it was concluded that there is now an urgent need to act. In many countries worldwide, health care authorities need to increase efforts to address vitamin D deficiency, e.g., via food fortification and/or supplementation with vitamin D, and/or promoting moderate UV-exposure.

Professor Dr. med. Jörg Reichrath
Department of Dermatology, The Saarland University Hospital