

The Mind-Body of Allergic Diseases

The nature of the relationship between the mind and the body has preoccupied philosophers and physicians for centuries. In current discussions of health and disease, this subject and its implications for well-being are frequently pointed out in the media and are of great interest to the public. For example, contemporary thinking concerning the increasing prevalence of chronic inflammatory diseases (such as allergic asthma) bases itself on the assumption that psychological stress, via neuroendocrine and immunologic networks and changes in homeostasis, can influence lung function and thus expression of disease. There is indeed evidence that stress can induce attacks of asthma and may also cause asthma to develop. Unfortunately, the literature in these fields is large, complex, and often confusing.

Nonetheless, we are quickly gaining a broader understanding of some of the cellular and molecular mechanisms that mediate environmental perturbations, through stress, to cause dysregulated physiologic responses, eventuating in chronic inflammatory diseases such as allergies. Stressful stimuli early in life can have long-lasting impacts on mind-body pathways, and physiologic and pathophysiologic responses, later in life. Recent discoveries have shown that stress-related epigenetic changes and associated alterations in gene expression in early (even fetal) life can lead to long-lasting impacts on adult health and disease; such studies may identify novel therapeutic pathways and targets for control of many chronic diseases. It is becoming clear that a more thorough understanding of the nature and extent of mind-body pathways is essential if we are to develop novel and effective management strategies for allergic and other chronic diseases.

As part of a rigorous participatory process to identify fundamental gaps in our knowledge and to develop a strategic research plan, AllerGen NCE Inc., a recently funded Canadian Network of Centres of Excellence, held a workshop on the mind-body of allergic diseases in

Hamilton, Ontario, on February 14, 2007, which brought together over 25 clinicians, scientists, and trainees to learn about this exciting and rapidly advancing field and to initiate discussions that would lead to development of a strategic research plan on mind-body issues in allergic diseases. Outstanding invited speakers provided state-of-the-art presentations at the workshop, which are highlighted in this issue of the journal.

Dr. Rosalind Wright provides a most informative summary and assessment of the relationship of stress to the risk of development of childhood asthma. Dr. Firdaus Dhabhar contributes a scholarly review of the often opposing effects of acute and chronic stress on the immune system and on host defences and immunopathology. Dr. Glenda MacQueen and her colleague Dr. Ryan van Lieshout provide a comprehensive review of the role of psychological factors, including cognitive function and depressive disorders, in the expression of asthma, discussing the implications of these findings for psychological and other therapeutic interventions. Dr. Moshe Szyf and his colleague Dr. Michael Meaney supply a cutting-edge update on epigenetics and early-life events that can influence behaviour and health and disease later in life.

We are most enthusiastic about the excellence of these written reviews and are pleased that the journal is making these internationally available to practicing allergists, scientists, and others. The contributions by the speakers at the workshop were instrumental in fostering the beginnings of programmatic research activities in the mind-body field for AllerGen NCE Inc. Moreover, the reviews provide important information, a tool for reflection, and a stimulus for research and development that in the future will greatly benefit those with allergic and other inflammatory diseases.

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