

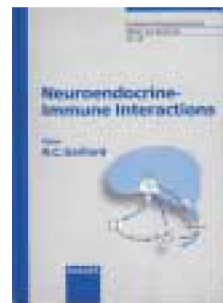
Unifying the immune and neuroendocrine systems

Neuroendocrine-Immune Interactions

edited by Rolf C. Gaillard. Karger, 2002.

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Rolf C. Gaillard, the editor of *Neuroendocrine-Immune Interactions*, brings together some of the most productive and influential investigators in this field. The chapters cover a

nice blend of basic and cutting-edge topics. Most of the authors attempt to redress the continued perception of immunologists and neuroscientists that interactions of the immune and neuroendocrine systems have little meaningful impact on the function of either system. Several of the chapters include examples from animal studies in which the neuroendocrine system clearly affects immunological end points. An additional chapter featuring recent work on the role of neuroendocrine feedback in preventing cytokine-induced shock syndrome secondary to infection would have been welcome.

A common criticism of the field is not addressed by most of the authors. David S. Jessop discusses possible reasons for the inconsistent results reported in the literature by different groups, but most of the other contributors make only passing references to this problem. The book would have been a good venue to thoroughly discuss explanations for this phenomenon, and perhaps to provide suggestions for decreasing spurious results. Issues that could have been effectively addressed by this group of authors include the use of non-physiological concentrations of neuroendocrine mediators, over-reliance on cell culture approaches and on immunological end-points of uncertain meaning (e.g. mitogen-induced lymphocyte proliferation), and the lack of necessary controls or faulty interpretation of data in many receptor-binding studies.

The book considers the interface between the nervous, endocrine and immune systems. In keeping with the editor's agenda, the authors of the various chapters have interpreted this interface as something physical, as when signaling agents from one system react with the receptors in another system and modulate its behavior. However, an interface can also be conceptualized in functional terms. Nikolai Petrovsky discussed this idea in a recent article in which he described the relationship between the body's systems as an integral entity. Unfortunately, he did not discuss this idea in his chapter, possibly because, as the editor suggests, a strictly reductionist approach is the fashion of the day. Whatever the merits of reductionism, and there are many, it masks the fact that only a global approach affords the possibility of predicting behavior. For example, infection, stress and disease are emergent manifestations that cannot be located solely in terms of the component systems of the body. In such cases, we might aspire to know something of the underlying dynamic law so that predictions might be possible, at least on a statistical basis, even though the linear concept of mechanism might be obscured. A chapter devoted to this approach would have added balance to the book.

The sequence of topics is a bit puzzling. Chapters on nitric oxide and heme oxygenase appear at the end of the book, and the excellent chapter by Catherine Rivier relating NO and CO appears early in the book. Otherwise, it is well organized and provides both a good starting point for immunologists or neuroscientists and a concise update of several topics of interest to investigators in this field. Hopefully, the book will lessen the compartmentalization in the relevant disciplines identified by Besedovsky and del Rey in their chapter, and remind investigators that the body's systems are constantly communicating and affecting each other's functions.

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