

BOOK REVIEW



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Aroused: The history of hormones and how they control just about everything

Epstein, Randi Hutter, MD,

MPH. W. W. Norton and Company. 2018. \$16.95 (paperback), \$12.99 (e-book)

A central and beguiling theme of *Aroused: The History of Hormones and How They Control Just About Everything* is interconnectedness. Dr. Epstein's infectious enthusiasm for endocrinology and its history makes use of this theme in several ways. First, and perhaps most salient to a human biology audience, Epstein celebrates the endocrine system's integral role in the essential processes of life, from growth and reproduction to senescence, parental care, and metabolism. The book is composed of short chapters, each framed by a historical anecdote and peopled with researchers, patients, and snake oil peddlers rendered as vividly as minor characters in Dickens. Epstein addresses a wide array of topics across these chapters: thyroid function, the identification of hormones as a class of physiologically active glandular secretions, the role of growth hormone in height, sex differentiation, menopause, male reproductive aging, contemporary controversy surrounding oxytocin, the endocrine side of gender transitioning, and appetite dysregulation. Though the chapters are discrete and can for the most part be read independently, the physiological stories they tell weave together. They underscore relationships among parts of the endocrine system and gesture toward connections to the nervous and immune systems as well.

Just as a hormone with a starring role in one chapter frequently makes a cameo in another, so too do the researchers, historical and contemporary, whose stories jostle for prominence with those of their discoveries. Rather than a linear narrative of individual knowledge production, Epstein hints at a sprawling but intimate intellectual genealogy. In her telling, chance encounters between a scientist and a student house painter, a frustrated stenographer and an admissions committee, or a young physician and a charismatic lecturer lead to collaboration, debate, hypothesis testing, and novel understandings of human endocrine function. They also create lineages with loyalties to particular ways of addressing questions.

These lineages and their interaction with social and intellectual mores—that is, the socio-historical context of endocrinological research and clinical practice—form the third axis of interconnectedness in *Aroused*. Epstein probes the

limits of the acceptable in research and medicine. One particularly gripping case concerns the public outcry around vivisection in endocrine research in Great Britain. A second addresses the horror of discovery that children treated with cadaver-derived human growth hormone were exposed to the degenerative and terminal Creutzfeldt–Jakob disease. The book is also alert to the shifting norms of publics confronted with endocrine pathology. From the treatment of people with thyroid or pituitary disorders as circus freaks to the use of synthetic hormones to help people align their bodies with their gender identities, Epstein understands that hormone research and manipulation are and always will be embedded in shared ideas about what constitutes “normal.” In her exploration of the risks and benefits of hormone replacement therapy for menopausal women and for aging men, she enters the liminal zone in which patients, clinicians, and researchers struggle to define “normal” together.

The same traits that make this book a tempting choice for an undergraduate course on hormones and behavior—its combination of popularizing, informing, surveying, and offering critical insight—also signal the reasons why an instructor will want to provide students with guidance, structure, and context. The book's case studies seem chosen not only to engage but also to provoke or titillate, in the spirit of Mary Roach's *Stiff: The Curious Lives of Human Cadavers*. Even as Epstein points out the inappropriateness of gawping, the reader is invited to gawp. Questions of gender/sex, race, and power around who produces and controls knowledge lie largely outside the scope of the book. Contemporary endocrine controversies with identity valence, such as the international debate over the levels of naturally occurring testosterone acceptable in woman athletes, underscore the urgency of these conversations.

A second way in which the text could benefit from supplementation is in a systematic tracking of the hormones and glands it discusses and a schematic representation of the endocrine system in which to organize them. Though there are notes and an index, *Aroused* does not offer any tools for constructing an integrated picture of the complex physiology

that it describes. Without assistance, a reader encountering the material for the first time may struggle to understand how the pieces fit together.

Anthropologists and others interested in evolution and biocultural variation will note that examples are drawn exclusively from developed, Western populations. Claims about how women experience menopause and how testosterone changes in men over the life course, for instance, treat one set of symptoms and age-related changes as universal across populations. This choice makes sense for a text that traces the history of a discipline founded and developed in a small number of wealthy nations, the same nations in which patients are most likely to benefit from innovations—and, sometimes, to suffer the consequences of premature enthusiasm—in endocrine medicine. The Western, medical focus, however, inflects the perspective in *Aroused* in another way: the book focuses on the what endocrine disorders can tell us about nonpathological endocrine function. It is less interested in the reciprocal relationships among endocrine function and environments, both proximate and developmental. Given all that behavioral and social neuroendocrinology reveal about the contingent nature of hormonal states, and all that reproductive ecology offers about the

responsiveness of the endocrine system to energy availability, any syllabus including this book will want to incorporate additional resources focused on ecology and development.

In sum, *Aroused* provides an engaging and nimble introduction to the history of basic and clinical endocrinology. Despite some lacunae, it is likely to arouse the curiosity of readers new to the endocrine system.

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