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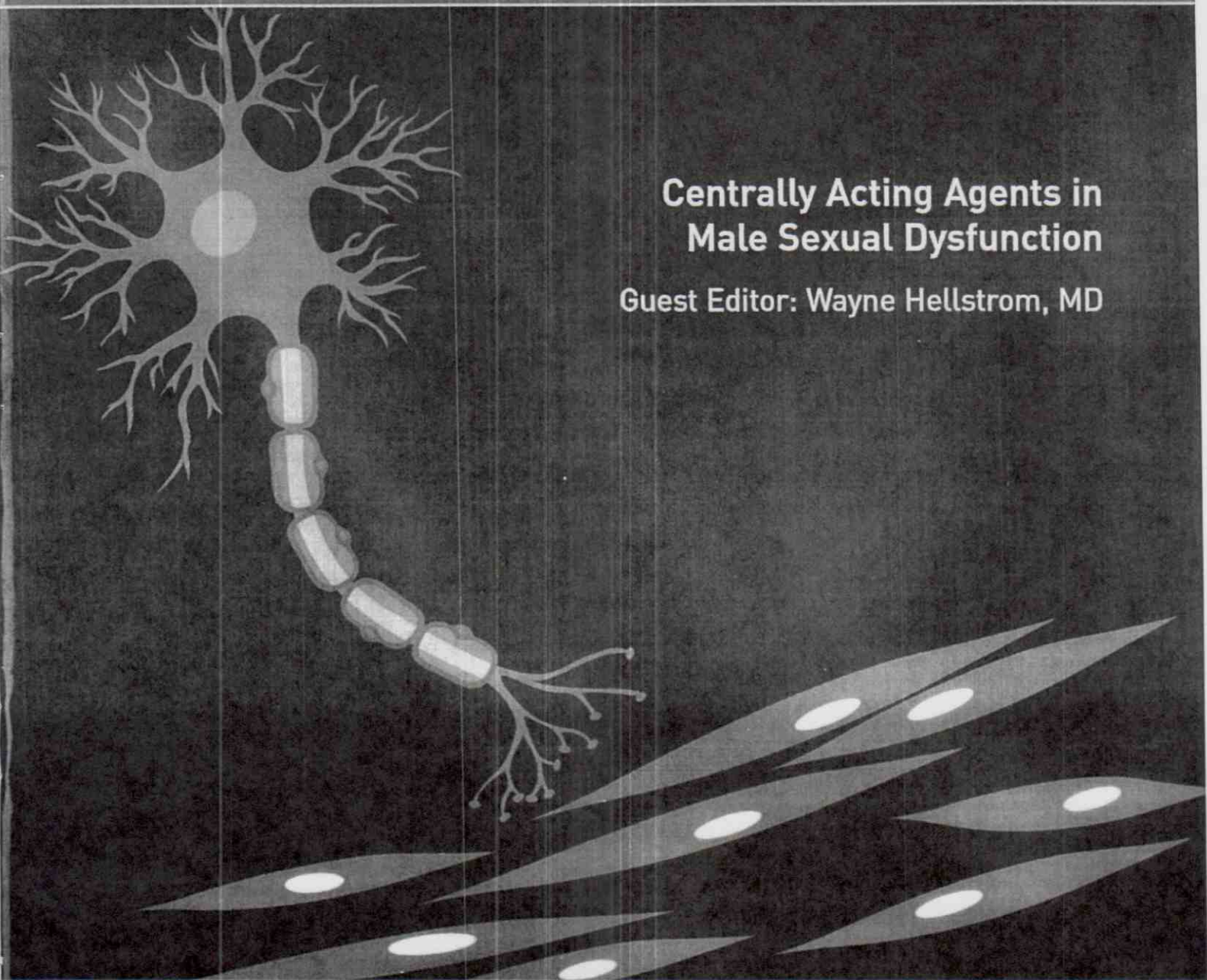
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**Centrally Acting Agents in  
Male Sexual Dysfunction**

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# Epidemiology and pathophysiology of male sexual dysfunction

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Male sexual dysfunction (MSD) is a common disorder associated with a wide range of physical and psychological conditions. Erectile dysfunction, the most commonly studied aspect of MSD, is common and increases with age and with certain comorbid conditions. The pathophysiology of ED and other forms of MSD can be traced to a variety of etiologies, including vascular, hormonal, psychiatric, iatrogenic and potentially neurobiological causes.

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## Introduction

Male sexual dysfunction (MSD) is a common disorder that appears to be a consequence of a wide range of physical and psychological conditions. In the medical community, much of the current focus is on end-organ function of the penis, which highlights the currently available treatment options, including phosphodiesterase-5 (PDE-5) inhibitors and alprostadil.<sup>1</sup> Hypogonadism and the relative contributions of testosterone to the male sexual cycle of desire and arousal have also been extensively studied. While these investigations have greatly enhanced our understanding of both normal and abnormal sexual response, much work remains to be done, including investigations of the role of the central nervous system (CNS) in sexual response. Broadening our understanding of the male sexual response may open up new opportunities for appropriate intervention.

## Definitions

The Second International Consultation on Sexual Medicine defined disorders of sexual function in men include erectile dysfunction (ED), orgasm/ejaculation disorders, priapism and Peyronie's disease.<sup>2</sup> These definitions perhaps overemphasize the end-organ process, but highlight the relatively straightforward approach to management of MSD; that is to say, assuring that the penis works to the

patient's satisfaction. ED is further classified by the etiology of the dysfunction such as vasculogenic, psychogenic and neurogenic ED; although in many cases the etiology is considered mixed.

## Epidemiology of MSD

The Massachusetts Male Aging Study (MMAS) provided data on the prevalence and incidence of ED in a population of US men. The MMAS was a cross-sectional, population-based multidisciplinary survey of health in normally aging men (aged 40–70 years) conducted from 1986 to 1989.<sup>3</sup> The MMAS continues to be a rich resource for ongoing research into correlates of male sexual dysfunction.

The original report from the MMAS data divided men with self-reported ED into three broad categories of severity: minimal, moderate and complete. According to this classification scheme, 51% of respondents reported at least some ED, with prevalence of 'complete' ED increasing threefold from the youngest age group to the oldest. ED was also found to be associated with a variety of chronic conditions and their treatments, including heart disease, hypertension and diabetes; cigarette smoking among men with heart disease and hypertension was also associated with a higher risk of any ED. ED was also associated with psychological conditions of anger and depression. Higher testosterone (dehydroepiandrosterone), higher HDL cholesterol and a 'dominant personality' index were all inversely correlated with ED.

Men enrolled in the MMAS were followed longitudinally with results published in 2000 based on a mean of 8.8 years of follow-up.<sup>4</sup> Not unexpectedly, the annual incidence rate of ED increased with each decade of age to a high of 46.4 cases per 1000 man-years (Table 1). The age-adjusted risk

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