



# Introduction

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**M**ore than 150 million men worldwide experience some form of erectile dysfunction (ED). About half of all men between the ages of 40 and 70 find it difficult to have an erection or maintain one long enough to have satisfactory sex. Erectile dysfunction may signal the presence of life-threatening disorders such as coronary artery disease or type 2 diabetes mellitus (DM). Early counseling and appropriate treatment for cardiovascular disease (CVD) and diabetes can dramatically reduce the disability and death associated with these conditions. A man in the early stages of CVD may develop ED long before he experiences classic cardiovascular symptoms, such as chest pain, because

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the arteries supplying his penis are much smaller than those in his heart. Any disruption of blood flow caused by endothelial dysfunction, smooth muscle responsiveness, or arteriosclerotic plaque may affect erection potential.

Today's medical practitioners have at their disposal a vast armamentarium of new drugs, delivery methods, and combination therapies with which to help male patients achieve and maintain satisfying erections. Within this arena, no treatment has met with greater clinical success than the phosphodiesterase type 5 (PDE-5) inhibitors. Phosphodiesterase type 5 inhibitor therapy does not increase the risk of a cardiovascular event in the aver-

age patient with ED. Patients who do have significant CVD often have symptoms which may leave the physician asking, 'is it safe for my patient to have sex and use a PDE-5 inhibitor?' The Second Princeton Consensus Conference on Sexual Dysfunction and Cardiac Risk produced a best-practice guideline which outlines assessment and management of the patient with significant CVD who desires ED therapy.<sup>1</sup> Phosphodiesterase type 5 inhibitors have efficacy rates ranging from 40% to 70% depending on the severity of vascular ED. For the clinician, an appreciation of the individual patient's risk factors for ED (atherosclerosis, DM, metabolic syndrome, hypertension, hyperlipidemia, and smoking) is essential to good counseling about both male sexual health and heart health. Living with ED or treating it is often referred to as a "lifestyle choice" or "quality-of-life" therapy. It is essential for clinicians to understand, however, that ED is a medical condition, and failure to recognize ED leads to missed opportunities to identify men at risk for symptomatic heart disease. Contemporary studies show that modification of 'lifestyle' may improve erectile function and simultaneously reduce the risk of developing symptomatic heart disease. In a health screening project conducted in Vienna among about 3,000 men aged 46 years and older, men with moderate or severe ED experienced a 65% increase in their Framingham 10-year relative risk of coronary artery disease compared with men who did not have ED.<sup>2</sup> It has been said that the acronym ED stands for all of the following: erectile dysfunction, endothelial dysfunction, early detection of heart disease, and, if these conditions are overlooked, early death.

The overall lifetime prevalence of major depression is estimated at 16% in the general population, and minor depression affects an estimated 10% of the population aged 15 to 54 years of age.<sup>3</sup> The nature of the relationship between depression and ED is complex and remains unclear. Some investigators believe that the onset of ED causes some men to become (Continued on page 11)

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depressed. Others believe that current or past depression causes sexual dysfunction, including low sexual desire and ED itself. Depression and erectile dysfunction are highly prevalent among men, and the conditions coexist and interact in ways that remain unclear. Data from the Massachusetts Male Aging Study show that among men aged 40 to 70 years, the overall prevalence of mild, moderate, and severe ED is 52%.<sup>4</sup> The prevalence of severe, or complete, ED is estimated at 10% in the same group. Compared to men who are not depressed, men with major depression are approximately twice as likely as others to have ED. Diminished libido and reduced sexual activity overall have been associated with depression, as well.

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This supplement describes the epidemiologic relationships among ED, CVD, DM, and depression. It reviews new clinical data identifying ED as a harbinger of symptomatic coronary heart disease. This supplement reviews new clinical data on lifestyle or risk modification which independently or coupled with pharmacotherapy may improve men's sexual and heart health. It also provides the practicing clinician with a clear understanding of the pharmacology of the three PDE-5 inhibitors in clinical use today: sildenafil, tadalafil, and vardenafil. Going beyond pharmacokinetics, this supplement also discusses the clinical efficacy and safety of PDE-5 inhibitors and suggests ways to optimize therapeutic response and patient adherence.

## References

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