

The following abstracts, from medical journals containing literature on sexual dysfunction, were selected for their relevance to this Special Report supplement.

Myocardial Infarction and Sexual Activity

The relative risk of nonfatal myocardial infarction (MI) caused by sexual activity was determined among the general population and in patients with previous coronary disease. The relative risk and the effect of modification were determined using the case-crossover method, a new technique that quantifies the transient change in risk after exposure to a potential trigger of disease. Interviews were conducted with 1774 patients with MI in 45 US hospitals; data were gathered on possible triggers of MI immediately before the event and during the previous year. Results were presented for 858 patients who were sexually active during the year before the MI. Special attention was given to the 273 patients who had coronary artery disease before their index MI and the effect of regular exertion on risk. Among the 858 patients, 79, or 9%, reported sexual activity in the 24 hours before the MI, and 27, or 3%, reported such activity in the 2 hours before symptoms of MI began. The relative risk of MI occurring in the 2 hours after sexual activity was 2.5, and the relative risk of such activity triggering MI among those with a history of previous angina or with a previous history of MI was 2.1 and 2.9, respectively. Sexual activity appeared to be a contributor to the onset of MI in only 0.9% of cases, with regular exertion decreasing the risk.

Muller JE, Mittleman MA, Maclure M, Sherwood JB, Tofler GH, for the Determinants of Myocardial Infarction Onset Study Investigators. Triggering myocardial infarction by sexual activity: Low absolute risk and prevention by regular physical exertion. *JAMA* 1996;275:1405-1409.

Massachusetts Male Aging Study Results

Current, normative data are provided on the prevalence of impotence and its physiological and psychosocial correlates in a general population, using results from the Massachusetts Male Aging Study, a community-based, random sample, observational survey of noninstitutionalized men aged 40 to 70 years. The study was conducted from 1987 to 1989 in cities and towns near Boston, Massachusetts. Trained interviewers collected blood samples, physiological measures, sociodemographic variables, psychological indexes, and information on health status, medications, smoking, and lifestyle in the interviewees' homes. Erectile potency was characterized on the basis of a self-administered sexual activity questionnaire. A 52% combined prevalence of minimal, moderate, and complete impotence was found. The prevalence of complete impotence tripled from 5% to 15% between subjects aged 40 and 70 years, with age being the variable most strongly associated with impotence. After adjusting for age, a higher probability of impotence correlated directly with heart disease, hypertension, diabetes, associated medications and indexes of anger and depression and correlated inversely with serum dehydroepiandrosterone, high-density lipoprotein cholesterol, and an index of a dominant personality. Cigarette smoking was associated with a greater likelihood of complete impotence in men with heart disease and hypertension. Impotence is a major health concern because of its high prevalence and its association with age. It has numerous determinants, including some risk factors for vascular disease, and it may be partly the result of modifiable para-aging phenomena.

Feldman HA, Goldstein I, Hatzichristou DG, Krane RJ, McKinlay JB. Impotence and its medical and psychosocial correlates: Results from the Massachusetts Male Aging Study. *J Urol* 1994;151:54-61

Arterial Factors in Impotence

Arterial lesions are seldom cited as being a cause of impotence, even though vascular function is crucial to the mechanism of erection. Any damage to the arterial supply of the penis can result in some degree of arterial failure. The penile blood-pressure index (PBPI), the ratio of penile arterial pressure to the systolic pressure in the arm, is a useful way of assessing arterial impairment of erection. It and other tests were used to investigate the cause of impotence in men in whom four major arterial risk factors were present. The distribution of the four factors—diabetes, smoking, hyperlipidemia, and hypertension—was studied in 440 impotent men with a mean age of 46 to 48 years in whom the PBPI was measured. In 222 of the men, the organic or functional cause of impotence was sought by further tests, such as cavernosonography. Eighty percent of this subgroup of men had an organic cause of erectile impairment. Fifty-three percent of these men had evidence of an arterial lesion. Smoking (64%), diabetes (30%), and hyperlipidemia (34%) were all markedly more common in the 440 impotent men than in the general male population of a similar age. Whenever two or more arterial risk factors were present, the mean PBPI was markedly lower. The occurrence of organic impotence increased from 49% in the absence of any arterial risk factors to 100% in patients with three or four arterial risk factors. It was concluded that the increase in the frequency of impotence with age is principally related to arteriosclerotic changes in the arteries of the penis and that arterial risk factors and PBPI should be evaluated first in men who complain of impotence.

Virag R, Bouilly P, Frydman D. Is impotence an arterial disorder? *Lancet* 1985;8422:181-184.

Sildenafil and Erectile Dysfunction

The efficacy and safety of sildenafil were evaluated when it was given as needed in two sequential double-blind studies of men with ED of organic, psychogenic, or mixed causes. Five hundred thirty-two men were treated with oral sildenafil (25, 50, or 100 mg) or placebo during the 24-week dose-response study. In a 12-week, flexible dose-escalation study, 329 other men were treated with sildenafil or placebo, with the dose increased to 100 mg based on efficacy and tolerance. Following the dose-escalation study, 225 of the 329 men entered a 32-week open-label extension study. Efficacy was assessed on the basis of the International Index of Erectile Function, a patient log, and a global efficacy question. Increasing doses of sildenafil were associated with improved erectile function in the dose-response study. Among men who received 100 mg of sildenafil, the mean score for the question about achieving erections was 100% higher after treatment than at baseline (4.0 vs 2.0 of a possible score of 5). During the last 4 weeks of treatment in the dose-escalation study, 69% of all attempts at sexual intercourse were successful for men who received sildenafil compared with 22% for those who received placebo. The monthly mean number of successful attempts was 5.9 for sildenafil-treated men and 1.5 for placebo-treated men. The most common adverse effects in the dose-escalation study occurred in 6% to 18% of the men. Ninety-two percent of the men completed the extension study. Sildenafil was found to be an effective, well-tolerated treatment for men with ED.

Goldstein I, Lue TF, Padma-Nathan H, Rosen RC, Steers WD, Wicker PA, for the Sildenafil Study Group. Oral sildenafil in the treatment of erectile dysfunction. *N Engl J Med* 1998;338:1397-1404.

Treatment of Erectile Dysfunction

Management of ED has been poor in the past, because of its private aspects and mistaken perceptions of its medical importance. A condition that affects approximately 30% of all men between the ages of 40 and 70, ED occurs most frequently in men age 65 and older. Erectile dysfunction implies sexual failure and is associated with anxiety, depression, marital discord, and even violence. Less than 1% of men affected seek professional treatment because they believe that matters relating to sexual dysfunction are taboo, their problem is unique, ED is a normal result of aging, impotence is primarily a psychological problem, and treatment options are generally lacking or too invasive. Research has helped improve the understanding of ED and has led to a practical approach to its diagnosis and treatment. Most ED has an organic cause, and as a result likely causes can often be ascertained through a clinical history and physical examination. Management of ED may simply require addressing correctable risk factors, but in some instances a direct intervention may be needed. Selection of the right treatment is based on an understanding of the extent of the problem and consideration of the preferences of the patient.

Burnett AL. Erectile dysfunction: A practical approach for primary care. *Geriatrics* 1998;53:34-48.

Study of Cost Effectiveness in Health and Medicine

The Panel on Cost-Effectiveness in Health and Medicine is a nonfederal panel that has expertise in cost-effectiveness analysis (CEA), clinical medicine, ethics, and health outcomes measurement. It was convened by the United States Public Health Service (PHS) to develop consensus-based recommendations to guide the conduct of a CEA to improve the comparability and quality of studies. The panel's recommendations apply to analyses intended to guide the allocation of healthcare resources across a broad range of conditions and interventions. In this, the first of a series of three articles, the way in which this goal affects the conduct and use of analyses is examined. The ensuing articles outline methodologic and reporting recommendations, respectively. The panel reviewed the theoretical foundations of CEA, current practices, and alternative ways of measuring and assigning values to resource use and health outcomes. The panel met 11 times in a 2.5-year period with PHS staff and methodologists from federal agencies. Issues and preliminary recommendations were brought to the full panel for discussion by working groups, and draft recommendations were circulated to outside experts and federal agencies before they were finalized. The recommendations of the panel define a "reference case" CEA, which is a standard set of methods to serve as a point of comparison across studies. The reference case analysis is conducted from the societal perspective and accounts for the benefits, harms, and costs to all parties. Although the CEA does not cover every element of importance in healthcare decisions, the information it provides is critical to making informed decisions about the allocation of healthcare resources.

Russell LB, Gold MR, Siegel JE, Daniels N, Weinstein MC, for the Panel on Cost-Effectiveness in Health and Medicine. The role of cost effectiveness analysis in health and medicine. *JAMA* 1996;276:1172-1177.

Recommendations for Cost Effectiveness

This second article in a three-part series describes the basis for recommendations by the Panel on Cost-Effectiveness in Health and Medicine, concerning the reference case analysis, that is, the set of practices developed as guidelines for cost-effectiveness analyses (CEAs) that help determine societal resource allocation decisions. The panel looked at the theoretical foundations of CEA, as well as the current practices and alternative methods used in analyses. Its recommendations were developed on the basis of theory wherever possible, but they were modified by ethical and practical considerations as well as the needs of the users. During the 2.5 years the panel was developing recommendations, comments on the preliminary drafts of its working groups were sought from government methodologists, health agency officials, and academic methodologists. The methodologic recommendations by the panel included (1) components belonging to the numerator and denominator of a cost-effectiveness (C/E) ratio; (2) measurement of resource use in the numerator of a C/E ratio; (3) a valuation of the health consequences in the denominator of a C/E ratio; (4) estimates of the effectiveness of interventions; (5) incorporation of a time preference and discounting; and (6) dealing with uncertainty. The panel's recommendations are subject to the "rule of reason," which balances the burden represented by a practice with its value to a study. The quality and comparability of studies, as well as their ultimate usefulness, can be greatly improved if researchers follow the standard set of methods in CEA.

Weinstein MC, Siegel JE, Gold MR, Kamlet MS, Russell LB, for the Panel on Cost-Effectiveness in Health and Medicine. Recommendations of the Panel on Cost-Effectiveness in Health and Medicine. *JAMA* 1996;276:1253-1258.

A Plan to Improve Cost-Effectiveness Analyses

This final article in a three-part series describes recommendations of the Panel on Cost-Effectiveness in Health and Medicine regarding the reporting of cost-effectiveness analyses (CEAs) designed to improve the quality and availability of CEA reports. Members of the panel reviewed the theories underlying CEA, as well as current practices, alternative methods, published critiques of CEAs, and criticisms of general CEA methods and reporting practices. As the culmination of 2.5 years of discussion, panelists developed a set of recommendations to clarify study methods, aid analysts in providing full information, and assist in the presentation of comparable cost-effectiveness results from one study to the other. The relevance and availability of CEAs can be enhanced if researchers adhere to reporting conventions and focusing attention on providing the data needed to understand and interpret study results.

Siegel JE, Weinstein MC, Russell LB, Gold MR, for the Panel on Cost-Effectiveness in Health and Medicine. Recommendations for reporting cost-effectiveness analyses. *JAMA* 1996;276:1339-1341.

Sexual Dysfunction and Psychiatric Diagnoses

Controversy surrounds whether sexual dysfunction is a separate problem or is symptomatic of a more complex psychiatric disorder. To this point, no study devoted to this question has been reported for patients who are evaluated using the Diagnostic and Statistical Manual of Mental Disorders Volume 3 (DSM-III). To address the problem, 592 patients with a variety of sex-related complaints and their partners were evaluated at the Sexual Behaviors Unit of the Johns Hopkins Hospital over a 2-year period. Two hundred eighty-eight patients, including 223 men and 65 women, fulfilled the DSM-III criteria for psychosexual dysfunction. Among them, 30.5% of the men and 30.8% of the women were assigned concurrent axis I/II diagnoses. Those who had dual responses reported more problems with alcohol. Notwithstanding equivalent psychosocial stressors on axis IV, the patients were rated less adjusted on axis V. Dual diagnostic profiles were given for each of the psychosexual dysfunctions. Support was found for the hypothesis that whereas the majority of patients with sexual dysfunction have a separate disorder, there are others whose sexual dysfunction is only one of several conditions that require treatment.

Fagan PJ, Schmidt CW Jr, Wise TN, Derogatis LR. Sexual dysfunction and dual psychiatric diagnoses. *Compr Psychiatry* 1988;29:278-284.