# SOCIAL, BEHAVIORAL, AND BIOLOGICAL FACTORS, AND SEX DIFFERENCES IN MORTALITY*

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*Few studies have examined whether sex differences in mortality are associated with different distributions of risk factors or result from the unique relationships between risk factors and mortality for men and women. We extend previous research by systematically testing a variety of factors, including health behaviors, social ties, socioeconomic status, and biological indicators of health. We employ the National Health and Nutritional Examination Survey III Linked Mortality File and use Cox proportional hazards models to examine sex differences in adult mortality in the United States. Our findings document that social and behavioral characteristics are key factors related to the sex gap in mortality. Once we control for women's lower levels of marriage, poverty, and exercise, the sex gap in mortality widens; and once we control for women's greater propensity to visit with friends and relatives, attend religious services, and abstain from smoking, the sex gap in mortality narrows. Biological factors—including indicators of inflammation and cardiovascular risk—also inform sex differences in mortality. Nevertheless, persistent sex differences in mortality remain: compared with women, men have 30% to 83% higher risks of death over the follow-up period, depending on the covariates included in the model. Although the prevalence of risk factors differs by sex, the impact of those risk factors on mortality is similar for men and women.*

Women generally live longer than men, and although research has consistently shown that the U.S. sex gap in mortality has fluctuated over time, much of the literature has overlooked important covariates and has not examined recent demographic patterns. One of the main objectives of the *Healthy People 2010* public health initiative is to eliminate health disparities, with a specific emphasis on sex differences in health (U.S. Department of Health and Human Services [U.S. DHHS] 2000). We use hazard models and a current nationally representative data set to examine numerous factors that affect sex differences in adult mortality in the United States. Specifically, we seek to explain sex differences in mortality by (1) accounting for differences in the distribution of both social and biological protective and risk factors by sex, including socioeconomic status (SES), social relationships, health behaviors, and biological indicators of health; (2) examining whether specific protective and risk factors have unique relationships with mortality among men and women; (3) determining sex differences in cause-specific mortality; and (4) estimating potential sex-specific gains with cause-elimination models.

Both sexes have experienced tremendous but uneven increases in life expectancy at birth over the past century. Between 1900 and 2005, male U.S. life expectancy rose from

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