Massive epidemiologic evidence involving millions of people from at least 34 scientific studies consistently demonstrates a U-shaped curve involving sleep duration and mortality. In these studies, the lowest mortality risk is associated with seven hours of sleep, and the risks associated with eight or more hours of sleep is greater than the risks associated with less than seven hours of sleep. Further, the significance of short sleep has generally decreased or disappeared after controlling for factors known to be associated with mortality (i.e., psychosocial stress, smoking, alcohol use, physical inactivity). In contrast, sleeping eight or more hours is associated with elevated mortality risk even after controlling for smoking and similar factors. This is because short sleep duration does not reflect sleep loss per se. Rather, it is strongly influenced by demographic, behavioral, and mental health variables including smoking, sedentary lifestyle, excessive alcohol use, and emotional distress rather than choice of sleep duration. Moreover, a recent large study reported recently that mortality risk does not significantly vary according to sleep duration after prospective controlling for baseline health and concluded that previous findings suggesting a relationship between sleep duration and mortality could be affected by residual confounding by poor preexisting health.

New research reported in the journal Sleep suggests that a J-shaped curve characterizes the relationship between sleep duration and mortality risk. In this J-shaped curve, the lowest mortality risk is once again associated with seven hours of sleep. Although sleeping less or more than seven hours was associated increased mortality risk relative to seven hours, eight hours of sleep was associated with greater risk than six hours, and nine hours of sleep was associated with greater mortality risk than five hours of sleep. This J-shaped curve has now been found in six large epidemiologic studies. In support of this finding, a meta-analysis involving over two-million people from 23 prospective studies reported that the risk of total mortality was increased by 10-12% among those with shorter sleep durations and 23-30% among those with longer sleep durations. Thus, the relationship between sleep duration and mortality is represented by a J-curve, with the greatest mortality risk (HR in the figure below) associated with long sleep durations: