



### **Low testosterone linked to long-term risk of death in relatively healthy adult men**

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**T**his study is another major report linking deficiency of testosterone in relatively healthy men with increased death from all causes, over time. “We have followed these men for an average of 18 years and our study strongly suggests that the association between testosterone levels and death is not simply due to some acute illness,” said Gail Laughlin, Ph.D., assistant professor and study author.

In the study, Laughlin and co-workers looked at death, no matter the cause, in nearly 800 men, ages 50 to 91 years, who were living in California since 1970. At the beginning of the 1980s, almost one-third of these men had suboptimal blood testosterone levels for men their age.

The group with low testosterone levels had a 33 percent greater risk of death during the next 18 years than the men with higher testosterone. This difference was not explained by smoking, drinking, physical activity level or pre-existing diseases (such as diabetes or heart disease). Men with low testosterone were more likely to have elevated markers of inflammation, called inflammatory cytokines, which contribute to many diseases. Men with low testosterone were also shown to be three times more likely to have a waist measurement more than 40 inches, low HDL (good) cholesterol, high triglycerides (levels of fat in the blood), high blood pressure or high blood glucose (blood sugar).

This study is further confirmation of previous studies that demonstrate an increased risk of morbidity and mortality with low or low normal testosterone:

- In a study of male veterans, low serum testosterone levels were shown to increase the risk of death in the next few years by 88%, according to a report in the *Archives of Internal Medicine*.
- In an earlier study, Dr. Molly M. Shores and colleagues from the University of Washington showed an increase in 6-month mortality among men with low testosterone levels.
- Another study published in a 2006 edition of the *Archives of Internal Medicine* involved 858 male veterans who were at least 40 years of age, prostate cancer-free, and had repeated testosterone levels taken between 1994 and 1999 and were followed for an average of 4.3 years. It was found that men with low or low normal testosterone had a 23-75% increased risk of dying.