

## LETTER TO THE EDITOR

### References:

1. Wesley D, Cox H F. Modeling total cholesterol as predictor of mortality: the low-cholesterol paradox. *J Insur Med.* 2011;42:62–75.
2. Fulks M, Stout R L, Dolan V. Association of cholesterol, LDL, HDL, Cholesterol/HDL and triglyceride with all-cause mortality in life insurance applicants. *J Insur Med.* 2009;41:244–253.

To the Editor:

We enjoyed and learned much from Dr. Wesley's article on the use of modeling for associating test values and mortality risk,<sup>1</sup> and agree with his cautions regarding the blind acceptance of Cox hazard ratios. We need to make a small correction in his description of our work<sup>2</sup> on cholesterol referenced on page 73. Regarding our finding of a U-shaped mortality curve for total cholesterol, he references our use of "Cox regressions were ... no model details were given." We regret that we did not make it more clear that this result (and the other lipid results in our paper unless specifically stated) did not make use of any modeling tool.

Our published results are based simply on mortality rates calculated from deaths/lives and not on modeling, nor are these rates smoothed in any way. Using mortality rates

removes the concerns Dr. Wesley notes about modeling. However, using mortality rates as a metric requires a much larger data set (which we have) than NHANES to allow use of a narrow range of durations (10–14 years for 1993–97) and use of multiple population splits (sex and age 60) so that the distribution of values and mortality patterns based on cholesterol vary minimally within the subgroups. This homogeneity was confirmed (but not shown) through analysis by decade of age and smoking status as well as by sex. Using mortality rates instead of a model to measure mortality does require some grouping of results into value bands, but eliminates the mismatch likely in mathematical models especially at the extremes, which for low cholesterol (like many other tests) is precisely the focus of concern.

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