**S1 Appendix: Statistical appendix.**

Piecewise linear regression is a form of regression that allows multiple linear models to be fit to the non-linear data for different ranges of *x*. Breakpoints or inflections are the values of *x* where the slope of the linear function changes. The value of the breakpoint may be known before the analysis, but typically it is unknown and must be estimated before the analysis. Although the regression function at the breakpoint may be discontinuous, a model can have a function that is continuous at all points, including the breakpoints in piecewise regression. However, joinpoint regression is different from temporal trends models like piecewise regression, because it has the constraint of continuity at the change-points and the choice of the number of joinpoints and their locations is estimated within the model.[1-4] A distinguishing characteristic of this model is that the minimum and the maximum number of joinpoints allowed is arbitrarily set before the analysis while the final number of joinpoint(s) is not fixed a priori, as in a classical piecewise regression model, but established based on a statistical criterion. The analysis was implemented in the Joinpoint Regression Program (V4.1.1, National Cancer Institute).[5, 6]

**References**

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