

Comments from SAB member Dr. Stanley Young, 8/11/2020

Young Points to Make

Section 83.3(a)(7): Estimating benefits

Almost all literature claiming health effects cause by poor air quality says that effects are on the old. The Value of a Statistical Life, VSL, should be much lower for the aged than the young. The current EPA practice is to not adjust VSL for age. The EPA practice should be reevaluated.

Section 83.3(a)(9): Health Endpoints

Evidence against poor air quality having health effects

Evidence is mounting that current air quality has any adverse health effects is mounting. Evidence for health effects is by association and, in theory, it only takes one valid negative study to overturn any number of positive association studies. See the following references:

1. Negative studies and PM2.5

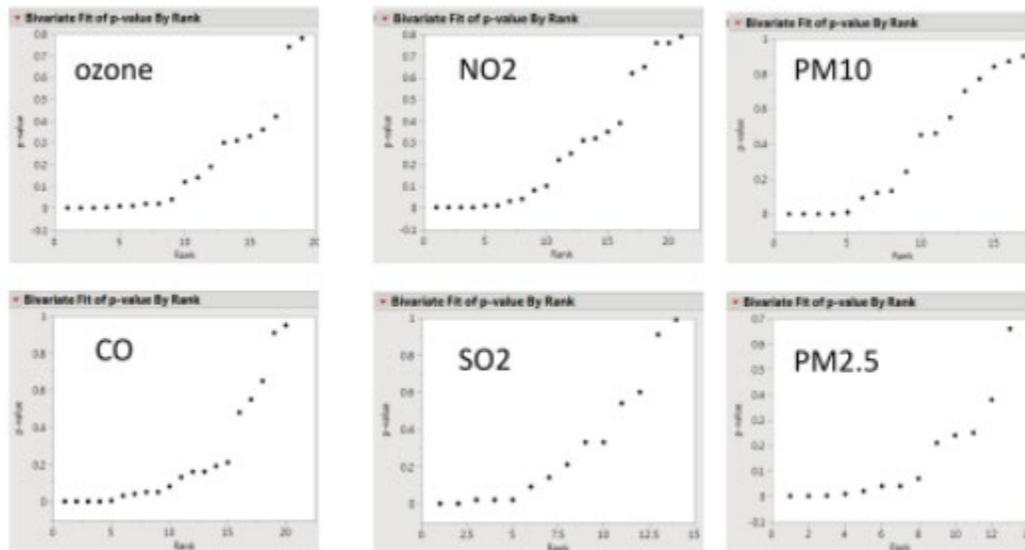
<https://junkscience.com/2018/06/negative-studies-and-pm2-5/#more-93941>

List of published papers that report no association between PM2.5 and mortality.

2. These papers call into question heart attacks, asthma and lung cancers

- a. Young SS, Kindzierski KB. 2019. Evaluation of a meta-analysis of air quality and heart attacks, a case study, Critical Reviews in Toxicology, doi:

[10.1080/10408444.2019.1576587](https://doi.org/10.1080/10408444.2019.1576587)



Each dot represents the p-value for one study. The p-values are ranked from smallest to largest and plotted against the integers. There are many non-significant studies of each air

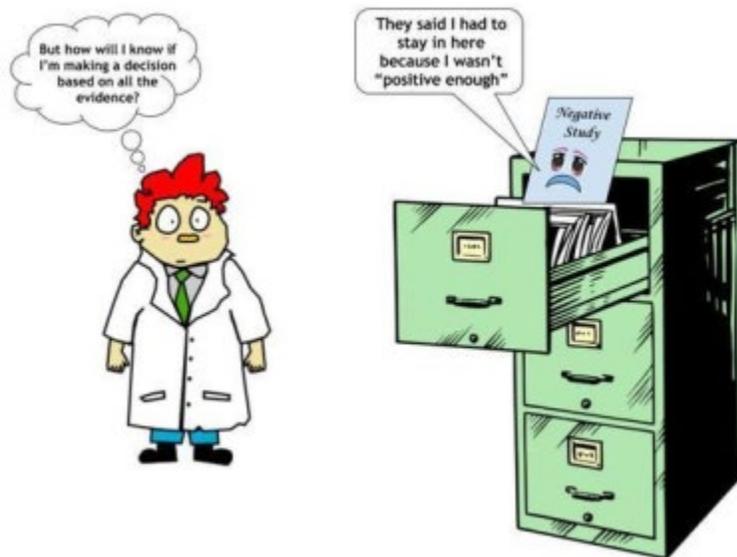
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component. Young and Kindzierski contend that the small p-values are the result of p-hacking.

Young and Kindzierski have similar figures for asthma and lung cancer.

- b. Young SS, Acharjee MK, Das K. (2018) The reliability of an environmental epidemiology meta-analysis, a case study. *Regulatory Toxicology and Pharmacology*. 102:47-52.
- c. Milloy S. 2016. Scare Pollution provides history and commentary on air quality/health effects.

3. Researchers usually do not attempt to publish negative papers. Negative studies often go into the file drawer. There is publication bias.



There is also the problem that positive papers confuse the research record by not citing negative papers.

If there are few or no health benefits to go against the considerable cost, then BCA should favor reduced air pollution efforts.

Section 83.3(a)(10): Characterizing uncertainty.

There is geographic variability in claimed air quality effects.

Greven et al. 2011 looked at the effect of PM_{2.5} on mortality across 814 locations across the US. They noted an association of PM_{2.5} with mortality across locations, but no association within locations. They put emphasis on within locations as covariates across location vary more and were the likely cause of the across location effects.

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Greven S, Dominici F, Zeger S. 2011. An approach to the estimation of chronic air pollution effects using spatio-temporal information. *Journal of the American Statistical Association* 106:396–406.

Young and Xia 2013 used data from Pope 2009 NEJM and found no effect of air quality in the western US. They also showed that income was much more important than air quality for predicting longevity. Higher income is associated with greater longevity.

Young SS, Xia JQ. 2013. Assessing geographic heterogeneity and variable importance in an air pollution data set. *Statistical Analysis and Data Mining* 6:375–386.

See also Smith et al. 2009. Smith found that there was geographic variability of ozone associated mortality.

Smith RL, Xu B, Switzer PP. 2009. Reassessing the relationship between ozone and short-term mortality in U.S. urban communities, *Inhal Toxicol* 29(S2):37–61.

Young et al. 2017 found no effect of either PM_{2.5} or ozone on all-cause, cardiovascular, or respiratory deaths in California. The eight most populated air basins were examined. Age groups were examined. All death certificates for the years 2000-2012 were available. The data was made public in 2015. Model sensitivity was examined using over 70,000 models. No one has disputed the claims of no effects in California.

Young SS, Smith RL, Lopiano KK. 2017. Air quality and acute deaths in California, 2000-2012. *Regulatory Toxicology and Pharmacology* 88:173-184.

Comment: The EPA has claimed a one size fits all for air components and health effects.

Section 83.3(a)(12): Public data

In theory, just about everyone agrees that data access is an essential part of science. One can argue that unless there is access to underlying data that a claim is not scientific. Cecil and Griffin made several points:

As an abstract principle, the sharing of research data is a noble goal and meets with little opposition. However, when data sharing is attempted in a particular circumstance, the conflicting interests of the parties can thwart the exchange. A glance at the benefits and obstacles to data sharing discussed by Hedrick (in this volume) reveals the reason: few of the benefits and most of the burdens fall to the possessor of a data set. Of course, if the person seeking the data set and the person possessing it are colleagues or if the sharing of data is seen by the possessor as beneficial, then the exchange usually takes place without difficulty. But if the possessor does not view the exchange as beneficial, discussion of data sharing can turn quickly to conflict and allegations of the rights and responsibilities of the various parties.

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This standard invites agencies to structure their relationships with research grantees and contractors in such a way that controversial or sensitive federal research records relied on by the agencies will be beyond public scrutiny. One solution to this problem may be to require agencies to take possession of research data sets they rely on in setting policy. Once the records are in the possession of the agency, the FOIA may be used to compel disclosure.

Cecil, J. S., and Griffin, E. 1985. The role of legal policies in data sharing. In *Sharing Research Data*, eds. Fienberg, S.E., Martin, M. E., Straf, Miron L. Washington, D.C.: National Academy Press. 148-98. <https://www.nap.edu/read/2033/chapter/15>.

One way that researchers gain prestige is that their work is used by others, including government agencies in setting policy. But is the claim at issue correct? For a claim to be considered scientific it needs to be subject to examination by the public or a trusted 3rd party. The researcher must give access to the data used to establish a claim in return for the prestige of establishing the claim. Succinctly: no data; it did not happen.

Additional comment on data access. Very recently the Lancet published a paper on HCQ saying it was both ineffective and caused excess deaths. Peer reviewed and editor approved. The paper claimed access to a massive observational data set. Over 100 researchers and clinicians wrote a letter to the editor pointing to many problems. The editor asked the authors for the data and they could not or would not provide it. It appears the data was fabricated. The paper was withdrawn.