*Products Requested:*

1. Two correlation matrices (i.e. with numerical correlation coefficients) – one weighted for county NHW population size, the other unweighted (what we have been doing all along).

2. Two correlation pictographs (i.e. the one in which circle color depicts the correlation’s sign and circle size depicts the correlation’s strength/magnitude) – one weighted for county NHW population size, the other unweighted.

Total of 11 variables: Melanoma Incidence, 5 UV-related, 5 medical care-related.

New Variable Labels:

|  |  |  |
| --- | --- | --- |
| **Outcome** | **UV-related** | **Medical care-related** |
| Melanoma Incidence | UV Daily Dose | Dermatologists |
|  | UV Solar Noon | Primary Care |
|  | Cloud Seasonality | Households >$50,000 |
|  | Temperature Seasonality | Median Household |
|  | Elevation | Income per capita |

*Background*: Weighting implies that some data points (in our case, counties) contribute more to the main effect (in our case, correlation coefficients) than others. In simplest terms, counties with large populations count more than those with small ones. The “weight” in this case, is the size of NHW population.

*Why are we weighting?* Honestly, because it is the more conservative approach (leads to a higher correlation on UV). We will still have the opportunity to highlight that weighting seems to matter much more to the UV-related variables (the greater NYC/southern California problem) than the medical care variables. The article “What are we weighting for?” ends with this:

**“Finally, it often is good practice to report both weighted and unweighted estimates.”**

So, why not?

*How will you do it*? Looks pretty easy:

[wtd.cors](https://www.rdocumentation.org/packages/weights/versions/1.0.1/topics/wtd.cors)

but I’d like you also to run it using

[wtd.cor](https://www.rdocumentation.org/packages/weights/versions/1.0.1/topics/wtd.cor)

which looks like the same thing, but is a more complex version with more options.

Run it with mean1=TRUE (which forces the weight to have an average value of 1) and see if you get the same result as in [wtd.cors](https://www.rdocumentation.org/packages/weights/versions/1.0.1/topics/wtd.cors)