

other. Although the results obtained by this approach were similar to those from the matched pair and stratification analyses, we have not quoted them here because the underlying assumptions as to linearity did not seem justified.”(Sebastien et al. 1989a)

They compared the ratio of chrysotile exposure in millions of particles per cubic foot in miners and millers with the exposure data from textile workers in South Carolina who used Canadian fiber, with the ratio of chrysotile to tremolite in the lungs.(Sebastien et al. 1989b) They claimed that if the “mean” of these data were similar, this would support the idea that the dose estimates were correct. This is not true since a systematic error in the Canadian dose estimate would also result in similar ratios of tremolite/chrysotile. In addition the QAMA-McGill researchers selected lung cancer cases for 8% of the Charleston workers but 25% of the Quebec miners, thus introducing another systematic bias since it is likely that workers with lung cancer had higher exposures to asbestos. The selected cases from Thetford were not even representative of the Thetford cohort as the QAMA-McGill researchers noted, “high [exposure] values were over represented in necropsied cases.” (Sebastien et al. 1989a) The QAMA-McGill researchers did not count fibers less than 5 um and they only analyzed “the first five fibers seen.”

Unsurprisingly, the mean diameters and fiber lengths were similar. Unfortunately the comparison of mean ratios did not comport with their theory because the mean ratio of the particle counts between Thetford and Charleston was 11.8 and the mean chrysotile/tremolite lung fiber count ratio was 18. QAMA-McGill researchers did not report this comparison of means; instead without explanation or justification, the researchers calculated **geometric means** and compared these “means.” Geometric means are utilized to minimize the impact of outlier data points. However this is precisely the type of information the QAMA-McGill researchers claimed