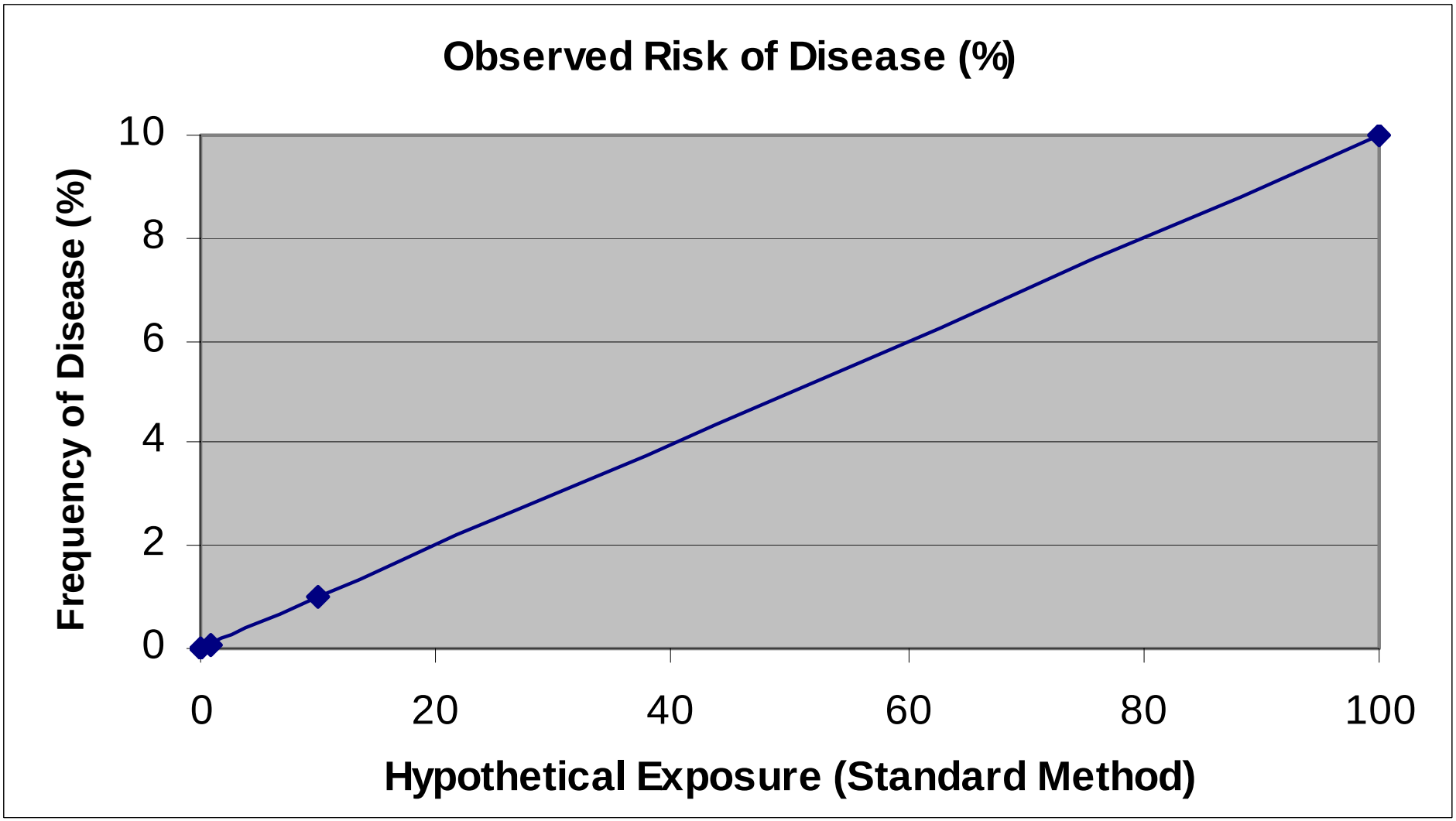
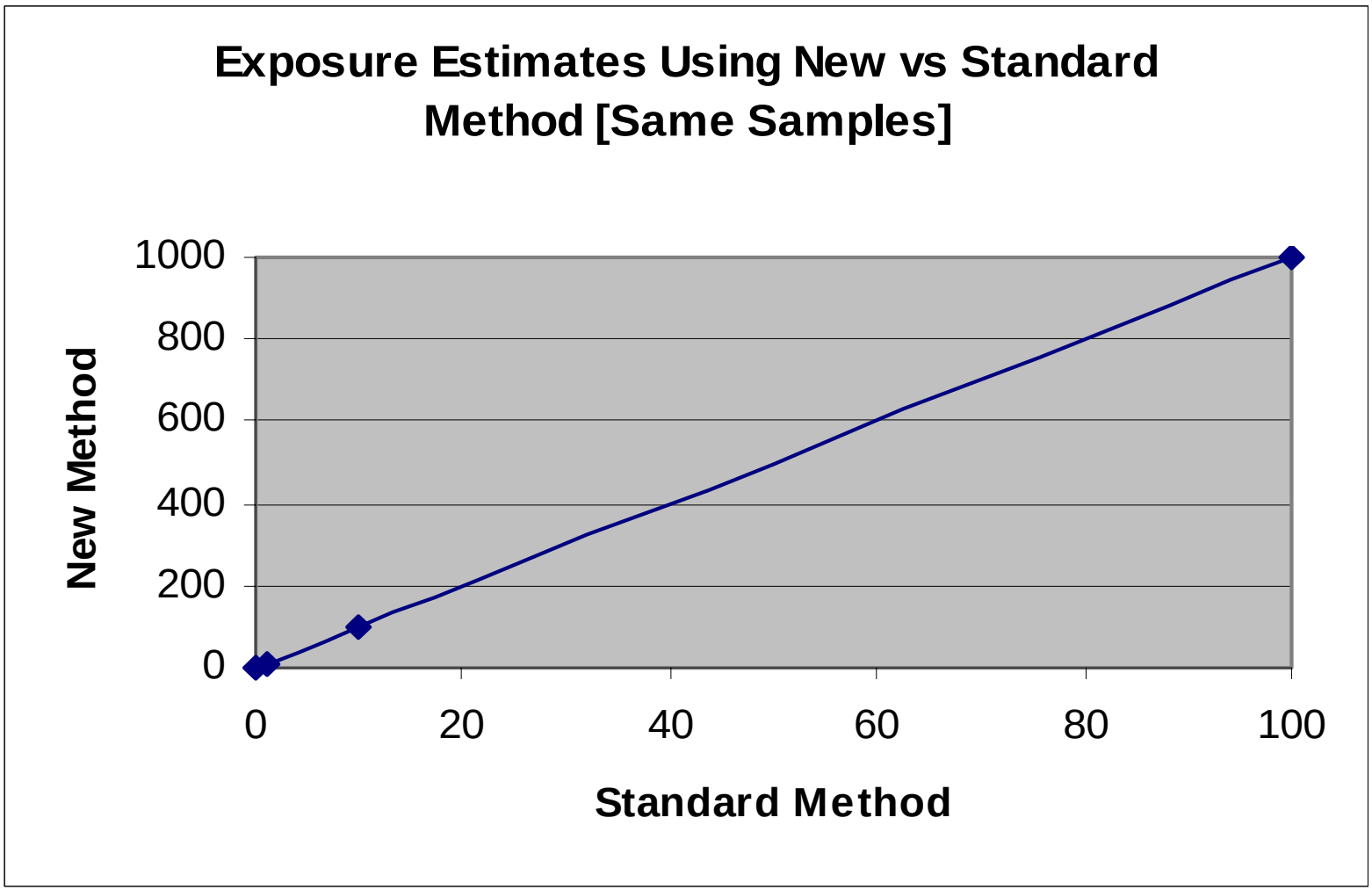
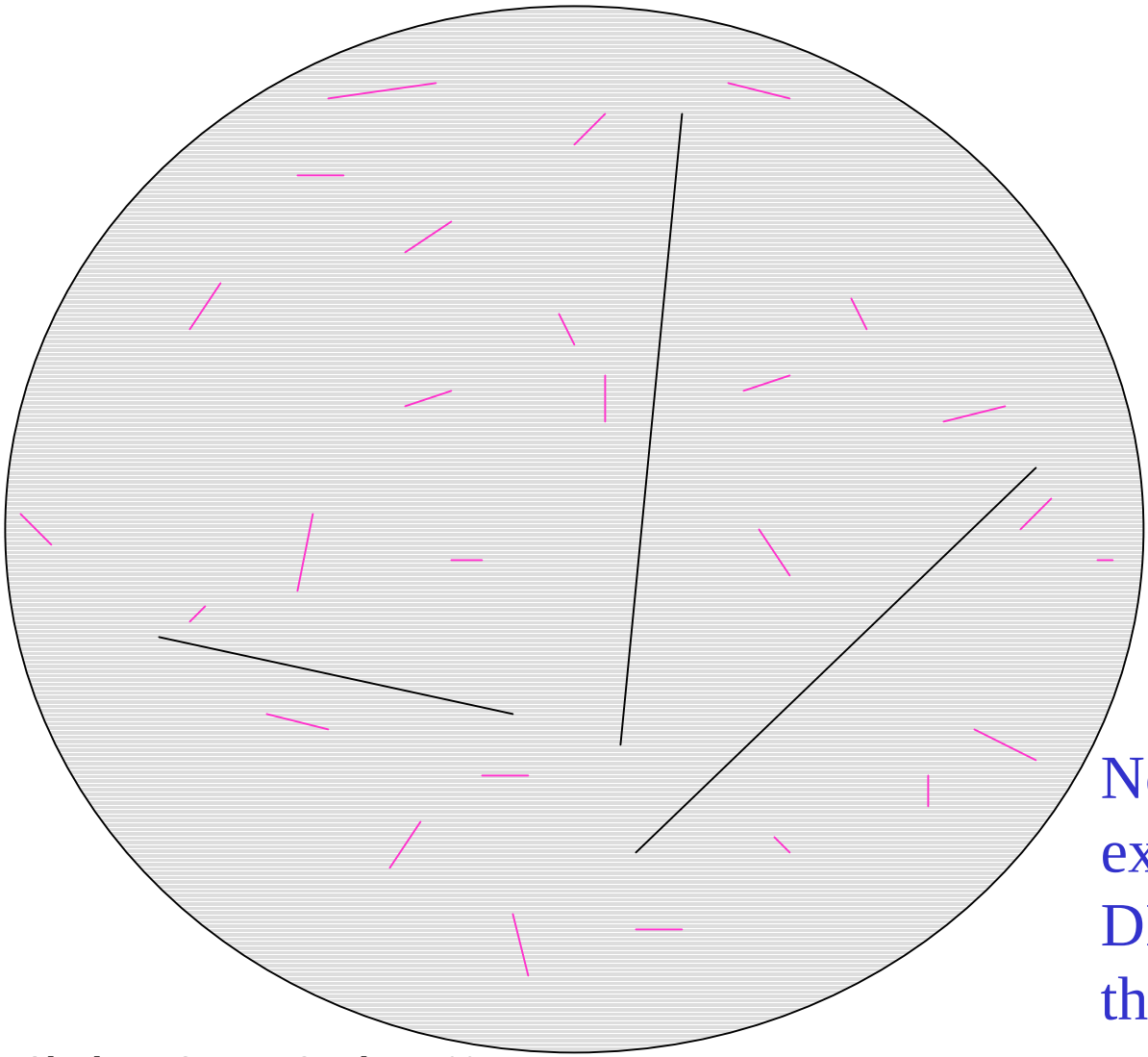
Asbestos Fiber Risk Assessment: Demonstration of the Fallacy of Assuming Constant Dose-Risk Relationship with Changing Fiber Measurement Methods!



Assume New Fiber-Counting Method Finds 10X as many Fibers as Standard Method



Examination of Hypothetical Archived Sample Filter from study used to establish standard dose-response relationship: Fiber Count using STANDARD vs. NEW Method

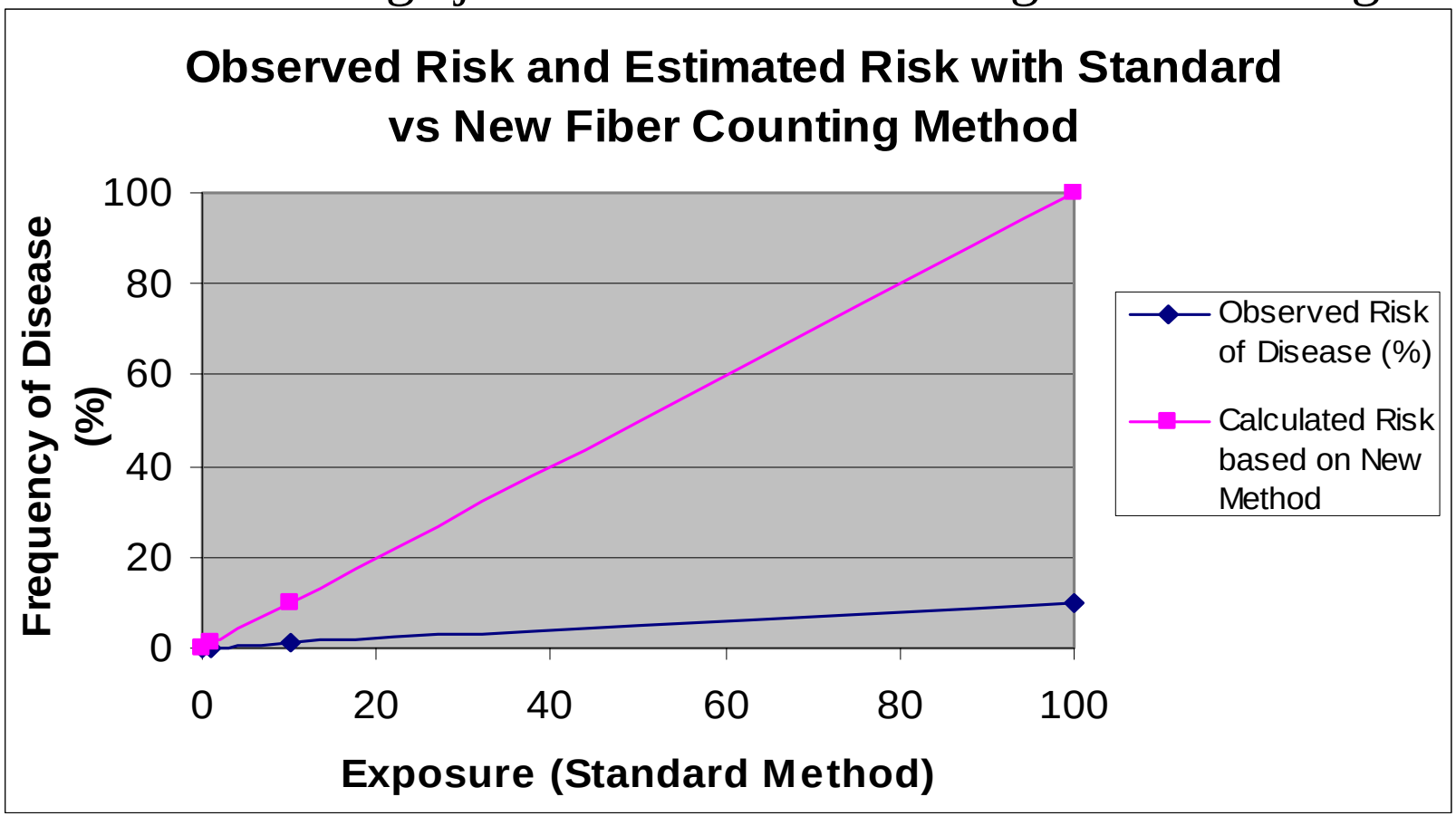


3 Fibers counted with Standard Method

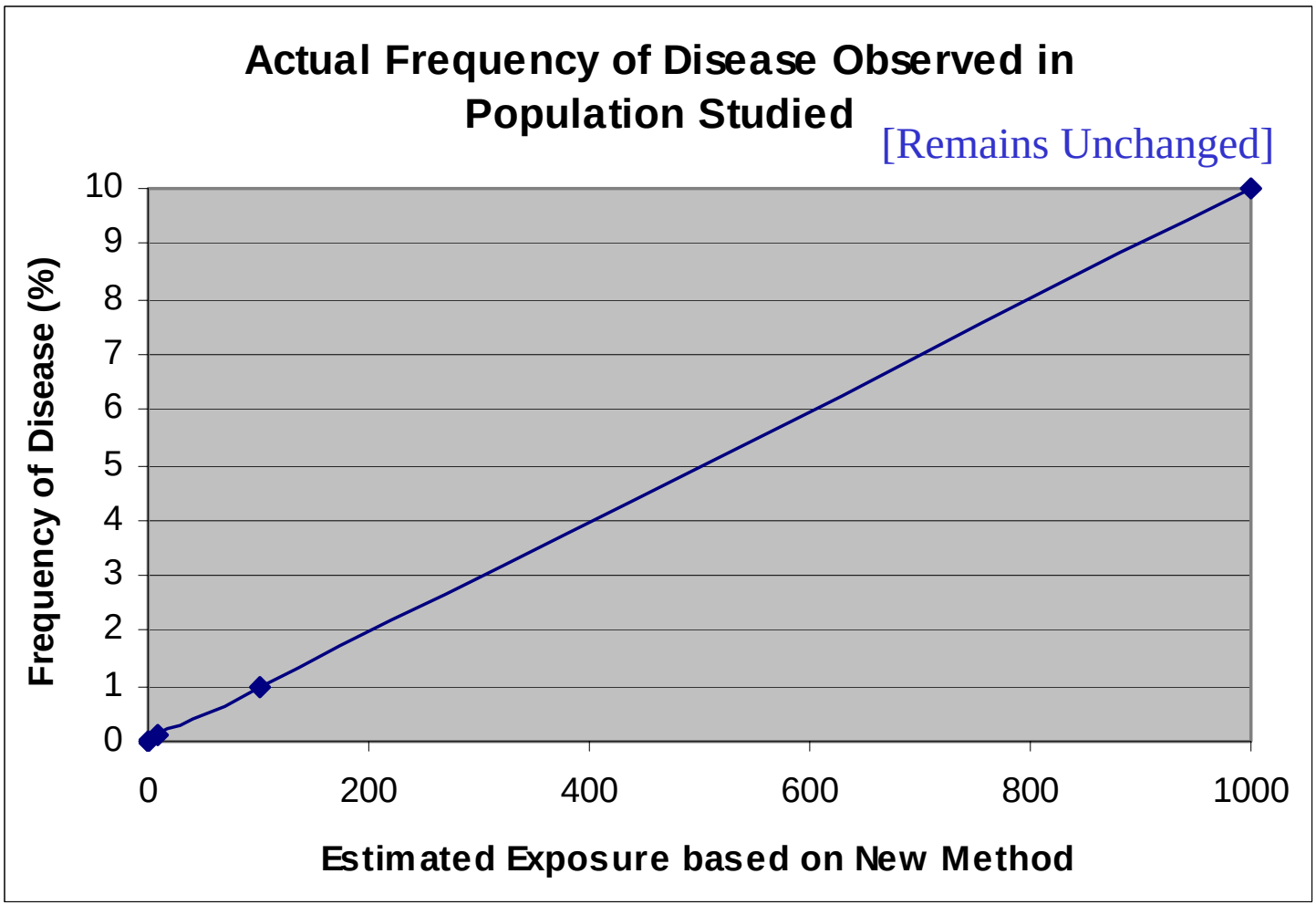
30 Fibers counted with NEW Method

Note: SAME filter, SAME exposure to person, but DIFFERENT Count!! Does this imply different RISK??

Applying the standard dose-response (risk) relationship to a New Measurement of an Archived Sample would lead to Ridiculous conclusion that Frequency of Cancer would increase from 10% to 100% --- but the original risk estimate was based on observations of a population followed until death [so, in reality, the frequency of the cancer would not change just because the counting method changed!]



New Dose-Response Relationship which would be observed if New Method of Exposure Measurement is Applied to Archived Samples which were used in original Study.



[10x higher than Standard Method]

==> Changing the sensitivity of the Method for measurement of Exposure is OK, BUT then a new Dose-Response determination has to be made. It is NOT rational to use the old, STANDARD, Dose-Response Formula with a different, NEW, Exposure Method Measurement.