

Comments of Dr. Richard A. Lemen on EPA's Draft Risk Evaluation  
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The Draft Risk Evaluation by EPA suggests the reader draw the radical conclusion, contrary to decades of established science, that there are safe levels of exposure to asbestos, and therefore use of asbestos in the United States should be condoned.

The danger in relying on only select epidemiology studies is revealed by the growth in our historical understanding of asbestos hazards. In the early 1970s, studies estimated exposures to asbestos below 200-300 fiber/cc years were not associated with increased cancer deaths. By 1980 studies found no increased risk of lung cancer deaths below 20 fiber/cc years, a level ten times lower. By 1998, another study found exposures of 0.5-0.99 fiber/cc years produced four-fold increased risk of cancer. And in the early 2000s, yet another study found roughly an eight-fold increased risk at exposures above 0.15 fiber/cc years. These historical lessons repeatedly show we are incapable of identifying a threshold level of exposure.

The Draft excludes legacy asbestos exposures which make up by far the greatest potential for exposures to asbestos in the U.S. today? Additionally, limiting its assessment to just lung cancer and mesothelioma when there are other recognized cancers and non-malignant lung disorders still occurring in the U.S. today is a flaw.

In limiting the Draft Risk Evaluation to do a chrysotile-specific risk analysis is not realistic since, by doing so it screened out all studies in which exposures were not solely to chrysotile, ending up with only two studies to calculate the IUR. This makes no sense. Unnecessarily limiting studies, used for the IUR, increases uncertainties when expressing their

relevance to other exposure situations and because all asbestos studies have limitations (such as how exposure was measured, or death and disease was tracked) not to mention the smaller the database the greater likelihood that particularities of individual studies will drive risk calculations.

The Draft Risk Evaluation abandons the customary linear approach to dose-response analysis and applies an exponential model that agencies have never used before and has been disfavored by the consensus groups of asbestos scientists. The Draft Risk Evaluation approach calculates a risk which is **considerably lower** than the IUR used by EPA in its previous 1988 peer reviewed IRIS assessment and by other agencies like OSHA using a similar framework. This in itself is of significant concern.

The Draft Risk Evaluation suffers from the same underlying error that many now debunked risk assessments have suffered in comparing one set of exposure studies with entirely separate epidemiological studies. The universal consensus remains that there has not been shown a level of exposure below which increased risk of cancer has been identified.

In the United States, recent estimates indicate that there are still near 40,000 deaths occurring each year from exposures to asbestos much of it as a result of legacy asbestos.