

Letter to the Editor

Anything But Beryllium: The Beryllium Industry's Corruption of Safety Information

To The Editor:

Beryllium manufacturers have long recognized the relationship between marketing, compensation claims and fear of Be toxicity. In response, they sponsored researchers who manipulated and influenced medical literature to minimize the consequences of Be exposure to workers and members of the community. This dates back to the 1940s, when the Atomic Energy Council (AEC) Advisory Board on Medicine and Biology established the following policy: "If specific locations or activities of the Atomic Energy Commission and/or its contractors are closely associated with statements and information which would invite or tend to encourage claims against the Atomic Energy Commission or its contractors, such portions of articles to be published should be reworded or deleted" [AEC memo, 1947].

Brush Wellman, the major producer of Be in the United States and the primary funding source for Beryllium Industries Scientific Advisory Committee (BISAC), held contracts with the AEC [Memorandum of Visit to AEC Office, 1948]. In more recent years, BISAC's response to the study by Sanderson et al. [2001] revealing an elevated mortality rate from lung cancer in a beryllium plant in Reading, PA [Deubner et al., 2001] is another example of this effort.

BISAC public response in this case suggested that confounding could have been the cause of the high lung cancer rates at the Be plant in Reading [Deubner et al., 2001]. However, BISAC internal correspondence indicates that they fabricated the "occupational confounder" argument years before NIOSH studies were completed in order to preempt, and thus, invalidate any positive findings. While the thorough examination of possible confounders in a cancer study is appropriate, the fabrication of confounders to explain

adverse epidemiological findings is, at best, public relations, at worst it is a deliberate falsification. It is certainly not honest science.

In 1994, BISAC met to discuss a strategy to refute NIOSH's emerging research on the carcinogenicity of beryllium. BISAC was especially concerned because a new epidemiologic study had noted an unusually high rate of lung cancer at a major Be processing plant in Lorain, OH [BISAC memo, 1994]. In an effort to disparage NIOSH research, Dr. Trichopoulos of BISAC suggested using the same approach that the magenta industry had employed when faced with a similar problem, "based on the findings of IARC, who found that the *processing* of magenta, rather than magenta per se was carcinogenic, we might be able to offer a similar argument for Lorain" (emphasis in original) [BISAC memo, 1994]. Individuals at the meeting explored this idea, proposing: "We should review the IARC monograph on magenta to look for clues as to how the arguments were framed. It would be most helpful if we could identify industry representatives who were involved in those deliberations" [BISAC memo, 1994].

Following the magenta model, they planned to show that Be processing methods at this plant, and not simply a higher worker exposure to Be, was responsible for the excess cancer. They generated the argument that an acid mist exposure unique to the Lorain plant could be a confounder [BISAC memo, 1994]. In 1995, BISAC members, Dr. Trichopoulos, Brian MacMahon, and Martin Powers prepared a report integrating this theory [MacMahon et al., 1995]. They later published their report in the *Journal of Occupational and Environmental Medicine* after altering one of the concluding sentences. The draft stated, "It is evident that *the process and circumstances* at the Lorain plant were apparently carcinogenic to humans," whereas the effect of "beryllium and beryllium compounds was **probably** confounded by sulfuric acid mist and vapors" (Emphasis added); MacMahon et al. [1995] omitted the word probably from the published version [BISAC, 1997].

In their response to Sanderson et al.'s [2001] study on the lung cancer at the Reading plant, BISAC again raised the issue of acid process confounding: "the paper should address the suspicion that confounding by acid mists and vapors was responsible, at least in part, for the alleged association

¹Disclosure: David Egilman has been retained by plaintiff lawyers to serve as an expert witness in beryllium litigation. Sarah Bagley and Shannon Connolly are research assistants to Dr. Egilman.

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between beryllium exposure and lung cancer risk” [Deubner et al., 2001]. This statement contradicts the findings of their 1997 publication in which BISAC stated that Lorain was the “only” plant that used an acid process. BISAC’s suggestion that these fictitious exposures constituted possible confounders at Reading, PA was part of their well-orchestrated PR campaign designed to curtail the medical community’s concern over Be health effects [Gulick, 1987].

Brush Wellman has consulted with Hill and Knowlton, a large PR firm, to manage their “health problem.” Hill and Knowlton explained BISAC’s strategy to selectively use “only objective information that was supportive” of their positions to lobby media and Congress. Hill and Knowlton proudly describe how similar programs had been used by the asbestos, dioxin, lead, and vinyl chloride producers [Hill and Knowlton memo, 1989]. Brush Wellman had already adopted similar strategies and planting in the medical literature papers to refute positive studies about the effects of Be exposure. They recruited prominent scientists to sign studies written by Brush Wellman personnel who “would do the work”:

“The present NIOSH study is at least one more year away from completion and the full acceptance of its outcome, whether positive or negative, might easily take another year. Meanwhile, the infamous Mancuso, Wagoner and Infante studies continue to be quoted as positive evidence. For that reason, a summarized review of these papers, which would point out their shortcomings and submit the reviewing author’s opinion to peer review, could be very effective in counter acting this. It would also provide useful information for the book. Preferably, the primary authors should be Dr. MacMahon and Dr. Roth. However, most of the work on this paper would have to be done by Brush Wellman.” [Gulick, 1987].

This paper was published in the *Journal of Occupational Medicine* and signed by Dr. MacMahon. Its actual authorship is at best ambiguous [MacMahon, 1994].

For over half a century, the beryllium (Be) industry has manipulated data and systematically obscured the facts about the dangers of Be exposure. Workers have suffered the consequences of a coordinated effort between industry, lawyers, public relations firms, and “scientists” to conceal and

misdirect the flow of information about Be’s toxicity. The tradition of prioritizing production and financial interests at the expense of creating legitimate safety policies continues and is exacerbated by attempts of industry scientists to discredit legitimate science concerning Be toxicity.

Sincerely

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REFERENCES

- Beryllium Scientific Advisory Committee. 1997. Is beryllium carcinogenic in humans? March, 1997. *J Occup Med* 39(3):205–208.
- BISAC memo. 1994. What was unique about the processing of beryllium materials in the Brush–Lorain plant? January 31, 1994. Brush Wellman Document ME002625.
- Correspondence from Hill and Knowlton to James E. Gulick, Brush Wellman. February 21, 1989. Brush Wellman Document RD 006550 and RD 006554.
- Deubner DC, Lockey JL, Kotin P, Powers MB, Miller F, Rogers AE, Trichopoulos D. 2001. Re: Lung cancer case-control study of beryllium workers. Sanderson WT, Ward EM, Steenland K, Petersen MR. *Am J Ind Med* 2001. 39:133–144. *Am J Ind Med* 40:284–285.
- MacMahon B. 1994. The epidemiological evidence on the carcinogenicity of beryllium in humans. *J Occup Med* 36(1):15–22.
- MacMahon B, Powers MB, Trichopoulos D. 1995. Is beryllium carcinogenic in humans? Draft Report. December 19, 1995. Brush Wellman Document 005246-005258.
- Memo to Advisory Board on Medicine and Biology from the Atomic Energy Council. October 8, 1947. Brush Wellman Document ORCY006066.
- Memo to Gulick JE from Martin B. Powers and Otto P. Preuss. January 23, 1987. Subject: Proposed program of filling need for new and accurate beryllium health and safety literature. Brush Wellman Document TW103757-TW103758.
- Memorandum of Visit to AEC Office. New York, September 30, 1948. Brush Wellman Document BF 0011652.
- Sanderson WT, Ward EM, Steenland K, Petersen MR. 2001. Lung cancer case-control study of beryllium workers. *Am J Ind Med* 39:133–144.