From Miracle Mineral to Global Crisis: The Legacy and Ongoing Battle Against Asbestos
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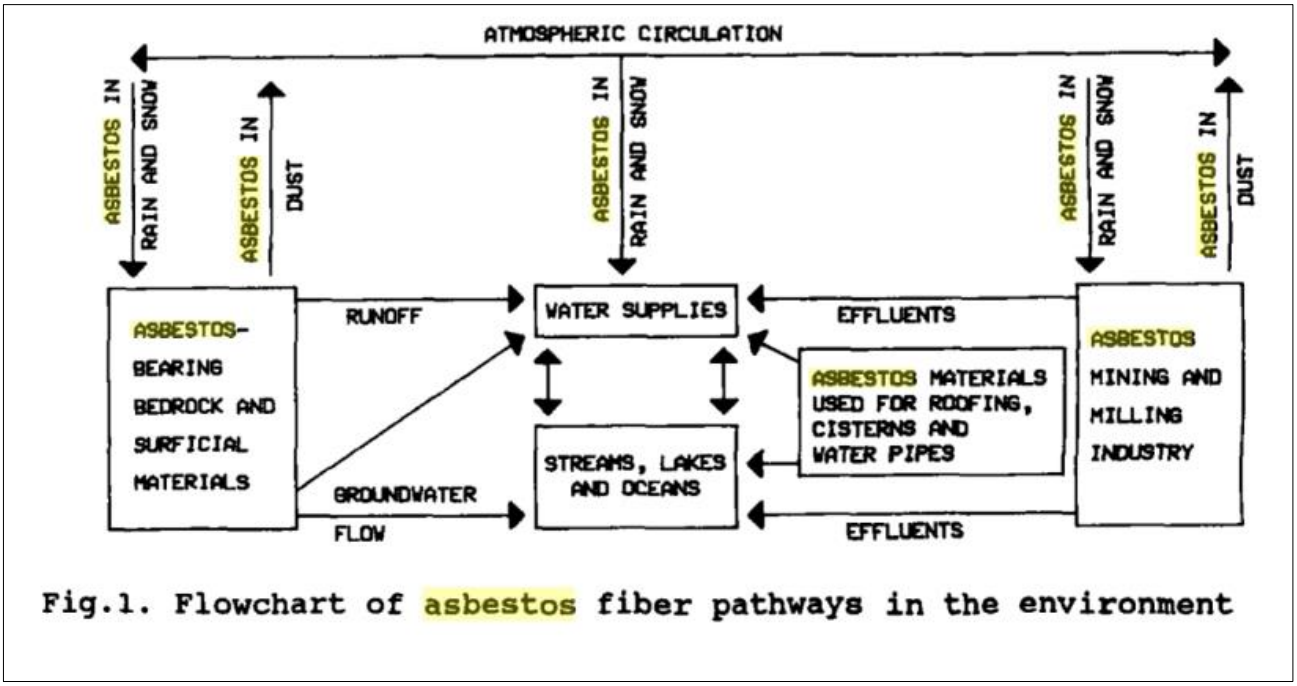
"All you really need to know about the root causes, the cover-ups, and the human impact of occupational cancer you can learn from the example of asbestos. It also tells you everything you need know about the reality of our economic system, what it values and what it fails to protect. It teaches about the collusion between government and industry. It addresses the issue of so-called 'junk science' and how the powers-that-be control information and public health policy. It reveals the hidden injuries of class .... And it drives home the old axiom of working-class history-that everything you get in this society you must fight for."

Jim Brophy, 'Carcinogens at Work' presentation at Conference on Everyday Carcinogens: Stopping Cancer Before It Starts, McMaster University, Hamilton, Ontario, 27 March 1999

Asbestos belongs to a group of mineral silicates that crystallize into fibrous structures resembling fine threads. Broadly, asbestos compounds are categorized into two main mineralogical groups: serpentine and amphibole. Known for their impressive tensile strength, high heat resistance, remarkable durability, and unique length-to-width ratios, asbestos minerals have historically been regarded as commercially invaluable. These properties led to their extensive use across various industries and applications (Schreier, 1989).



Flowchart of asbestos fibers pathways in the environment (Schreier, 1989)

Asbestos research, particularly its occurrence and environmental impact, has been notably complex and time-intensive. The mineralogy of asbestos compounds is inherently intricate, as the fibers originate from structural defects within the minerals themselves. The widespread biological harm caused by asbestos stems from these microscopic fibers infiltrating various elements of the natural environment, leading to far-reaching ecological and health consequences (Schreier, 1989).

The use of asbestos dates to ancient civilizations. Archaeological findings reveal its presence in pottery, textiles, and insulation materials from the time of the Egyptians, who valued its anti-decay properties in burial rituals. The Greeks also adopted asbestos, particularly in clothing, for its fireproof qualities.

Australia has played a significant role in the global asbestos market, emerging as both a leading producer and consumer during the 20th century. Beginning in the Industrial Revolution, asbestos use expanded into building materials and ship construction. Companies such as the Australian Blue Asbestos Company and James Hardie Industries dominated asbestos mining and production, particularly during and after the Second World War (Thong, 2024).

Despite its historical utility, the recognition of asbestos-related health risks, such as mesothelioma and asbestosis, has led to widespread regulation and bans in many countries, including Australia. Additionally, the damage asbestos has perpetrated in the environment through mining and poor disposal methods has resulted in extensive soil and water contamination. This shift underscores the complex legacy of asbestos: a material once celebrated for its strength and resilience, now synonymous with significant health hazards.

The irony of the asbestos crisis lies in the fact that all illnesses and deaths attributed to asbestos exposure and use are entirely preventable. While successful transitions to safer substitute materials have already begun, asbestos cement products alone still account for over 85% of global consumption. In approximately 100 countries, asbestos-containing pipes and sheets are supplied as low-cost building materials despite the availability of readily accessible alternatives.

For example, ductile iron pipe, high-density polyethylene pipe, and metal-wire–reinforced concrete pipe can easily replace asbestos-containing pipes. Similarly, roofing materials such as lightweight concrete tiles can be manufactured and applied even in remote locations using locally sourced plant fibers, including jute, hemp, sisal, palm nut, coconut coir, and wood pulp. Additional alternatives include galvanized iron roofing and clay tiles. Fiber-cement flat and corrugated sheet products made from polyvinyl alcohol fibers and cellulose fibers also serve as viable substitutes for interior building walls and ceilings. These sustainable and safer options demonstrate the feasibility of eliminating asbestos in construction materials globally (LaDou et al., 2010).

More than 20 years ago, asbestos was unanimously classified as a dangerous human carcinogen by major health authorities, including the U.S. Environmental Protection Agency (1986), the International Agency for Research on Cancer (1977) of the World Health Organization, and the U.S. National Toxicology Program (1980). Scientific research has consistently confirmed that any exposure to asbestos—regardless of the form—is highly hazardous, with a significant risk of developing mesothelioma at any stage of life (LaDou et al., 2010).

Today, all forms of asbestos are banned in 52 countries, with ongoing efforts to replace it with safer alternatives. Despite these measures, asbestos continues to feature prominently in global trade. Chrysotile asbestos, in particular, accounts for more than 95% of all asbestos still in use worldwide, often under the guise of being a “controlled” material (LaDou et al., 2010). This persistent usage highlights the challenges in eradicating asbestos from industries where its properties remain sought after. The seeding of literature with ‘strategic science’ has further aggravated the complex relationship between scientific and legal communities within the asbestos industry, fostering ongoing scepticism and perpetuating the illusion of a debate over asbestos safety. This scepticism enables the continued application and use of asbestos.

The Perrin Conferences on Asbestos and Mesothelioma in May 2010 revealed how plaintiff and defence lawyers sponsor scientists to "discuss" asbestos issues. This sponsorship creates opportunities to challenge established scientific findings, thereby hindering policy progression and intervention. Additionally, the World Trade Organization has endorsed the evaluation that the “controlled use” of asbestos is a fallacy, reinforcing efforts by individual countries to advance their national agendas in removing asbestos and addressing its consequential diseases.

On a broader scale, international agreements like the Rotterdam Convention of 2005 play a critical role in regulating the global trade of dangerous chemicals that are banned or heavily restricted. Enacted in 2004, the Convention now includes 131 nations as active Parties. Its primary aim is to protect developing countries and nations undergoing economic transitions from the importation of hazardous materials and chemicals, fostering a safer and more sustainable global trade framework (LaDou et al., 2010).

This said, the article *Global Asbestos Disaster* (Furuya et al., 2018) provided vital insights that have supported the revival of the International Labor Organization/World Health Organization Joint Program on Asbestos-Related Diseases. The findings highlighted that current measures to eliminate the ongoing "epidemiological disaster" of asbestos exposure and to prevent future cases are overwhelmingly insufficient in most parts of the world. To address this crisis, a comprehensive overhaul of policies is needed, including the total prohibition of asbestos mining and use, as well as the effective control and management of existing asbestos-containing materials. Substantial investment and commitment are essential to ensure these efforts succeed.

In Australia, significant regulatory milestones have shaped the journey towards the total ban on asbestos use, reuse, and sales, which was officially implemented in 2003. This transformative process began in 1983 with the introduction of occupational exposure standards. These standards were specifically designed to reduce worker risks by mandating stricter health and safety procedures in workplaces where asbestos was present (Thong, 2024).

In 1989, Australia took a pivotal step forward by banning new uses of asbestos. This marked the beginning of a more formal and comprehensive approach toward nationwide prohibition. The gradual tightening of regulations reflected a growing awareness of asbestos' devastating health impacts and the need for decisive action to protect both workers and the broader community.

Today, ongoing monitoring and stringent enforcement mechanisms ensure compliance with the asbestos ban across the nation. Authorities continue to focus on eliminating legacy asbestos risks in older buildings and infrastructure, as well as preventing illegal imports of asbestos-containing materials. These efforts underscore Australia's commitment to mitigating the lasting dangers of asbestos exposure and maintaining public health and safety (Thong, 2024).

The global asbestos crisis underscores a profound paradox: a material once celebrated for its remarkable properties has become a harbinger of preventable illnesses and environmental damage. Despite overwhelming scientific evidence and widespread regulatory advancements, asbestos remains entrenched in global trade and industries, perpetuating harm in vulnerable communities. The continued use of asbestos, driven by misinformation and economic interests, highlights the urgent need for stronger international cooperation, policy reform, and investment in safer alternatives. Australia's journey from a leading asbestos producer to a global advocate for its total ban demonstrates the potential for progress when science, policy, and public health align. However, the work is far from complete. A global commitment to eradicating asbestos use, managing existing materials responsibly, and prioritizing public health over profit is essential to ending this preventable crisis and safeguarding future generations.

References

Furuya, S., Chimed-Ochir, O., Takahashi, K., David, A., & Takala, J. (2018). Global Asbestos Disaster. *International Journal of Environmental Research and Public Health*, *15*(5). MDPI. https://doi.org/10.3390/ijerph15051000

LaDou, J., Castleman, B., Frank, A., Gochfeld, M., Greenberg, M., Huff, J., Joshi, T. K., Landrigan, P. J., Lemen, R., Myers, J., Soffritti, M., Soskolne, C. L., Takahashi, K., Teitelbaum, D., Terracini, B., & Watterson, A. (2010). The Case for a Global Ban on Asbestos. *Environmental Health Perspectives*, *118*(7), 897–901. EHP Publishing. https://doi.org/10.1289/ehp.1002285

Schreier, H. (1989). *Asbestos in the Natural Environment*. Elsevier Publishing Company Inc. https://books.google.com.au/books?hl=en&lr=&id=N8mTLizDGowC&oi=fnd&pg=PP1&dq=asbestos&ots=d_7wrBCTRv&sig=PHSf-2mWTkbypSp9Mdk5FXWJugo&redir_esc=y#v=onepage&q=asbestos&f=false. Figure "Flowchart of asbestos fibers pathways in the environment."

Thong, S. (2024, June 12). *The History of Asbestos Use: From Discovery to Ban*. Total Asbestos Removal Brisbane; Total Asbestos Removal Brisbane. https://total-asbestos.com.au/history-of-asbestos-use/