

# Mesothelioma Cases with Unusual Exposures

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## Background

In an occupational health clinic setting, persons with mesothelioma are seen to evaluate the work-relatedness of their medical condition. Occupational Hygienists, Occupational Nurses and Occupational Physicians review medical and work histories in an attempt to find evidence for a link between past exposures and the development of mesothelioma. The evaluation of occupational and environmental exposures can be quite detailed and complex as evidenced in the description of this case series.

## Methods

Persons with mesothelioma self-referring to a series of occupational health clinics in Ontario, Canada are interviewed in detail for possible exposures to asbestos for the purpose of determining work-relatedness. Due to the long latency period, occupational health professionals must enquire about exposures that occurred from the beginning of a patient's working career. We extracted a series of case histories of patients with unusual exposures.



## Case #1: Edna Bystander Exposure

**Presentation:** Edna, a 72 year old homemaker was diagnosed with malignant mesothelioma, epithelioid type. Her daughter asked whether her mother's condition might be considered work-related for compensation purposes, even though she had never worked in the workplace where the asbestos she inhaled had originated ("bystander exposure").

**Exposure history:** Edna did her husband's laundry and rode in the same vehicle that he drove back and forth to work, in his asbestos contaminated work clothes. Edna worked for 2 years as a personal support worker bathing and cooking for patients in their homes (no asbestos exposure). When she was much younger Edna picked tomatoes as a seasonal job (again no asbestos exposure).

**Conclusion:** Edna's asbestos exposures included exposures while laundering her husband's work clothes, riding in the same vehicle he used while wearing contaminated work clothes, and exposures in their home before he doffed his contaminated clothes after work.

**Follow-up:** Edna was not eligible for a claim to the WSIB for mesothelioma, as she did not acquire the exposure through her own work. She passed away from mesothelioma approximately 2 months after her diagnosis and 15 years after her husband died from the same disease.

**Note:** the names of the cases have been changed to preserve confidentiality.

## Case #2: Steve Asbestos in PPE



**Presentation:** Steve was diagnosed with malignant mesothelioma at age 57. A social worker at the cancer treatment centre suggested he contact the Clinic to ask for a review of his asbestos exposures for compensation purposes.

**Exposure history:** A nurse and hygienist visited Steve at home (due to his difficulty travelling) and interviewed him about his exposures. Steve had worked in a steelmaking operation for 11 years. For the first few months there he helped rebuild an open-hearth furnace; the rest of his time at the steel mill he spent working on the coke ovens. He then worked for 12 years at a rubber factory and 10 years in a metal plating plant. The union and the steel company hygienist were able to identify asbestos exposures from the gloves and aluminized coats he wore in the coke ovens.

**Conclusion:** Steve was exposed to occasional episodes of asbestos exposure particularly during the use of the aluminized coats and gloves when digging out plugged ovens. This would have been occasional work, however, the exposure would last up to about a week and along with the disturbance of the braided asbestos rope seal on the oven would have constituted periodic exposure to asbestos. Steve's work for one month tearing out and rebuilding of the open hearth furnace would have also involved asbestos exposure.

**Follow-up:** Steve passed away a few months after we visited him at his home. His condition was accepted as work-related.

## Case #4: Earl Rock Wool Exposure



**Presentation:** Earl was diagnosed with mesothelioma (mixed type) at age 50 and passed away 8 months later. His workers' compensation claim was denied because investigators could find no exposure to asbestos. His surviving spouse asked if his intensive exposure to rock wool might be associated with his development of mesothelioma.

**Exposure history:** Earl spent two years working in a plant that manufactured residential windows. His job was to rip bats of rock wool into smaller pieces and force them into the cavities around the window. It was a very dusty job.

**Literature Review:** We reviewed the literature around rock wool and mesothelioma and discovered that in animal testing rock wool (MMVF 21) is more potent in causing mesothelioma than amosite asbestos. We also discovered that IARC did not follow its own rules for weighting the evidence when it assigned rock wool a category 3. Furthermore both Canadian & French case-control studies showed that workers exposed to rock wool and asbestos had higher risks than exposure to asbestos alone

**Conclusion:** Earl's claim for workers' compensation is still pending after almost 10 years of waiting.

## Case #3: Mary Casual Exposure



**Presentation:** Mary, a 79 year old retiree was diagnosed with malignant mesothelioma, epithelioid type from a biopsy of her right sided pleural mass. She came to the clinic for help to determine if this condition was caused by her exposures while she was working.

**Exposure history:** Mary worked for 5 years in the early 1960's in the payroll office of a large insulation company that supplied and installed asbestos, fiberglass and other kinds of insulation. Her office was directly linked to the warehouse through a hallway with no intervening doors. Although she seldom went into the warehouse herself, the warehouse workers/insulators were in and out of her office throughout the day in their work clothes that were reportedly quite dusty.

From 1965 to 1979 she worked as an accountant at a fiberglass plant. Her office was directly adjacent to the production facility but was separated by a door. She rarely had to go into the facility herself but workers were in and out of the office on a regular basis. In addition to fiberglass, asbestos was used at this facility in the refractory ovens, two of which were next to her office.

Mary went on to work until her retirement in 2004 in employment that had no asbestos exposures.

**Conclusion:** Mary had significant secondary asbestos exposures while working at the insulation company as well as some exposure at the fiberglass plant.

**Follow-up:** Mary's claim for workers' compensation for mesothelioma was accepted. She passed away from mesothelioma 2 years after her diagnosis.

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