

# Asbestos use and pleural mesothelioma in Norway and Denmark: Similar populations, different stories

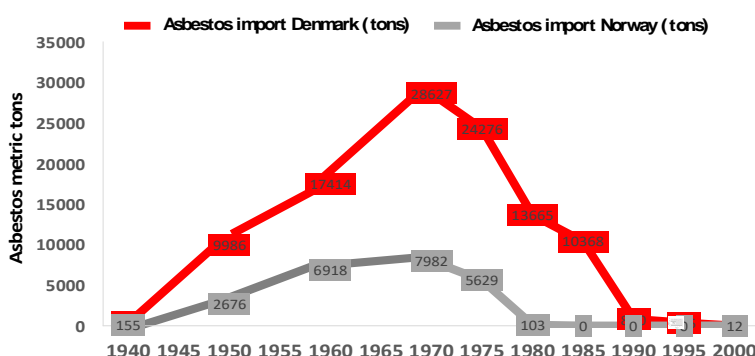


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## Background

Asbestos consumption and stop of use is tightly connected to mesothelioma incidence in society. In well-organized societies with the oldest cancer registries, as Denmark and Norway, one could trace the impact of asbestos in terms of tons and the mesothelioma incidence trend over time.

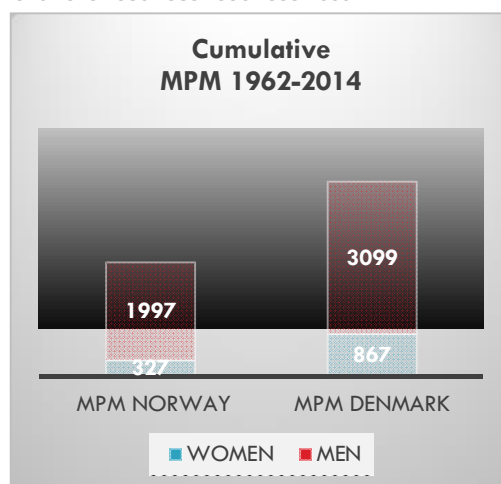


## Methods

Norway and Denmark were used as cases due to their similar societal system, similar standard of living, similar population (4-5 million) and very good and updated cancer registries. Asbestos use in metric tons from 1920-2000 and malignant pleural mesothelioma (MPM) incidence/100 000 from 1962-2014 was registered. Descriptive analysis was carried out.

## Results

Norway and Denmark both had one Eternit (asbestos cement) factory each, that was active from 1943-1978 and 1926-1986 respectively. Asbestos import peak year in both countries was in 1970 with 7900 and >28 000 metric tons respectively. The final year of asbestos use in Norway was 1978 and officially 1986 in Denmark but international statistics show asbestos import as late as 1997. Total asbestos import to Denmark was 620 000 tons asbestos, 90% was used in the Eternit factory, 90% was chrysotile. The total asbestos import in Norway is estimated to 120 000 tons, one fifth (Figure 1). The total toll of MPM in 1962-2014 was 2324 cases in Norway and 3966 cases in Denmark (1.7 times more in Denmark) and the ratio women:men was 1:6.1 and 1:3.6 respectively (2.65 times more women in Denmark). The 2010-2014 mean raw incidence rate in Norway was 2.7 and 0.4/100 000 for men and women (stable and falling) and in Denmark 3.6 and 0.7/100 000 for men and women (increasing).



## Conclusion:

The two culturally, ethnic and populationwise similar Scandinavian countries Denmark and Norway have different histories of asbestos use and different patterns of MPM incidence, where there are more patients with MPM in Denmark, and relatively more women. Denmark used 5 times more asbestos over a longer time and stopped the use 8-17 years after Norway. Norway seems to have reached a plateau of MPM in 2014, 44 years after the peak import year 1970 and 36 years after stop of use in 1978, while Denmark will reach its plateau some time between 2022-2031, but with a much higher incidence than Norway ever had. Continuous research and monitoring of asbestos related diseases in countries with up-to date registries can help understand epidemiology and demographics of mesothelioma and give strong arguments for primary prevention in countries using asbestos.

# AWARD WINNER CERTIFICATE

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Similar Populations, Different Stories (ID 750)

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