

Outokumpu Oyj

Cancer risk study among stainless steel employees

Category: People
Sub-category: Workplace improvement

Challenge

Workers in the stainless steel industry are exposed to classified carcinogens such as hexavalent chromium, nickel compounds, asbestos, crystalline silica, polycyclic aromatic hydrocarbons and ionising radiation. These substances have been defined as carcinogens by the World Health Organisation's International Agency for Research on Cancer (IARC)

While stainless steel has been produced for more than 100 years, there are no published studies or data on the incidence of cancer in the industry's workers. Employees in the stainless steel industry have raised legitimate concerns about their potential increased risk of cancer caused by occupational exposure.

There have been suspicions about the increased risk of cancer among the general public living in the vicinity of a stainless steel production facility. Similar concerns have led to the partial closure of one carbon steel plant in Europe.

Action

Outokumpu agreed to carry out a study of the rate of cancer amongst workers in the Finnish stainless steel industry with the Finnish Cancer Registry (part of the Finnish National Institute for Health and Welfare).

The study group comprised people employed at the Kemi chromite mine and the Tornio ferrochrome and stainless steel mills during the period 1967 to 2004. The group was identified from the company's employment records. An extensive search of population registers traced the correct personal identity code (PIC), possible emigration date and vital status of all but nine (0.1%) 8,146 members of the group. The main group was divided into sub-groups according to their production departments.

Using the PIC as a key, the country-wide Finnish Cancer registry was searched. Cancer incidence rates among the general population of the same region were used as a comparison.

Detailed exposure data covering the whole production chain had been published earlier in peer-reviewed scientific publications.

Outcome

The results of the cancer study were good. The overall incidence of cancer among employees was similar to the general population in the same region. The risk of lung cancer risk was actually lower among the stainless steel industry employees.

An article 'Cancer incidence among Finnish ferrochromium and stainless steel production workers in 1967-2011' was published in the British Medical Journal in November 2013. A PDF of the article can be downloaded from the following link: <http://bmjopen.bmj.com/content/3/11/e003819.full.pdf+html>

The results of the study have been openly communicated to Outokumpu's own employees and to the general public through local and regional media. The information has been well received.

Because the results have been published in a peer-reviewed publication, they can be applied globally to any stainless steel production facility where occupational exposure is at similar levels.

The research project concluded that: "Occupational exposure in the modern stainless steel industry does not increase the risk of cancer among production workers."