

Stebbing et al. (1984) also pointed out that of the five women who actually died with multiple myeloma, one was never measured, while the four who were measured had low radium intakes. However, all had worked for 40 or more weeks at their jobs, suggesting that if the malignancy was indeed a consequence of their employment, it might be a consequence not of their radium body burden but of the length of their employment, that is, of their extended period of exposure to external gamma radiation.

As of 1990, 11 cases in the files had deaths coded to ICD 203, multiple myeloma. These cases are listed in Table 14; in 6 cases the radium intakes were calculated from a radium body content measurement, while the remaining 5 were never measured.

Seven of the cases in Table 14 were first exposed by 1922. The earliest death from multiple myeloma among these cases occurred 42 years after exposure. The ^{226}Ra intakes were not high, and there was no intake of ^{228}Ra . All of these subjects worked one or more years in contact with radium. The last four individuals, all unmeasured, worked in the 1940s or early 1950s. No measured worker from this period has yet been found with a high radium intake, so these cases probably also had very little radium intake. Interestingly, the time between exposure to radium and the appearance of myelomas was somewhat shorter for this unmeasured group.

Examination of the SNOP files identified an additional six cases coded as having multiple myeloma but with deaths coded to a different cause. These cases are summarized in Table 15, along with two cases still alive at last contact. These individuals survived long periods after first exposure to radium, the minimum being 40 years. The year of diagnosis was not always known for the cases in Table 15, but in each case the first entry about malignant myeloma was only a few years before death. For the cases indicated as still living, the entries were dated in the early 1980s.

Breast Cancer

Several studies have examined deaths attributed to breast cancer among female workers in the U.S. dial painting industry. Polednak et al. (1978) examined causes of death for 634 women who entered the industry between 1915 and 1929 and whose names were obtained from employment lists or similar sources; they found 9 deaths from breast cancer when 9.45 were expected. When this cohort was restricted to those whose body content had been measured in 1954 or later, 3 deaths from breast cancer were found among the 302 women with radium intakes of less than 50 μCi