Radium dial workers: Radium as a health tonic, useful tool and deadly metal during the early 20th century

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In early 1920’s New Jersey USA, young, previously able bodied women began dying. Doctors were perplexed as to the cause and the realization that all these women worked at the same Orange New Jersey dial painting plant helped little in the way of explaining their gruesome symptoms. Their jaws and teeth would ache constantly; prompting tooth extraction, but the resultant open wound would not heal, eventually ulcerate and lead to necrosis of the entire lower jaw. In time, the jaw would disintegrate and need to be removed. Other common ailments observed in these young women included severe anemia, arthritic-like joint pain and spontaneous fracturing of the arms and legs.

At the dial painting plant the women meticulously applied radium-activated luminous paint to the dials of watches and clocks so that they could be seen in the dark. In order to be as detailed as possible the women created a fine brush point by placing the brush between their lips and twirling it. In doing so, the women consumed some of the paint and the constituent radium. It was eventually determined that the radium accumulated in the bones, marking fifty young factory girls for painful, lingering, but without warning began to bombard and destroy teeth, jaws, and fingers. The radioactivity set loose by the minute fragments of radium dust that the women breathed would find its way into their bones, marking them for the development of radium-induced osteosarcoma, a highly aggressive form of bone cancer.

The cause of the women’s ailments was hotly debated at the time. The sickness caused by radium did not occur immediately and most of the women no longer worked as dial painters when the physical manifestations began to show. The radium industry was wary of taking the blame for what could be dangerous why didn’t they take measures to prevent excessive exposure and ingestion? Once scientists and those in the radium industry knew that radium could be dangerous why didn’t they take measures to prevent excessive exposure and ingestion?

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References