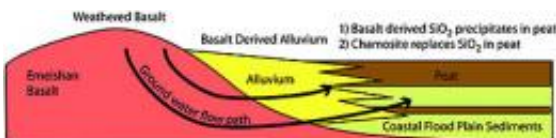


Ancient Volcanic Eruptions Still Taking Lives

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Acid rain from volcanic eruptions is thought to have eroded silicon dioxides from rocks, subsequently tainting peat bogs and the coal that formed from the bogs, over millions of years

(PhysOrg.com) -- A cancer epidemic under way in southeast China may have been initiated by a string of Siberian volcanoes that spewed ash across the Earth 250 million years ago, according to a study published in the journal *Environmental Science and Technology*.

Nonsmoking women in the Xuan Wei County, Yunnan Province, China suffer from the world's highest known rate of [lung cancer](#), and Geosciences Research Professor Robert Finkelman, one of the study's co-authors, said researchers believe the answer is in the coal that women in the province use for heating and cooking.

“Peak lung cancer mortality in women in one specific area of China—Xuan Wei—has been reported at 400 deaths per 100,000 people, which is nearly 20 times the mortality levels in the rest of China,” Finkelman said.

The extraordinarily high rate of lung cancer and the constant use of coal by women for heating and cooking led geoscientists to study the native coal from area mines.

“We discovered that the regional coal that formed after the Permo-Triassic times, about 250 million years ago, was very high in [silicon dioxide](#), which has been linked to cancer in recent studies,” Finkelman said.

The team concluded that volcanoes in Siberia erupted for 5 million years, blasting acidic gasses and particulates into the atmosphere, which cooked into a toxic soup of [acid rain](#). The acidic rain decimated life on Earth and eroded area rocks, freeing up silica, which washed into surrounding peat bogs. Over millions of years, the Xuan Wei peat bogs converted into coal fields, becoming the source of the tainted coal.

“We think the [cancer](#) risk comes from burning the coal, not from harvesting it,” Finkelman said. “There is probably a linkage between the gasses being mobilized by the burning coal and the very fine-grained silica particulates that are rafted up by these gasses.”

More information: pubs.acs.org/doi/abs/10.1021%2Fes902033j

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