

The Radioactive Remedy

Each year, hundreds of desperate patients seek relief from extreme pain in Montana's retired uranium mines.

MADELEINE THOMAS · JAN 7, 2016

Most of the visitors at the [Free Enterprise Health Mine](#) in Boulder, Montana, are in severe pain. They drift about the waiting room clutching coffee cups, hands afflicted with the telltale signs of arthritis—the knobby knuckles, the gnarled and crooked fingers. It's mostly quiet, save for occasional talk of an ongoing elk hunt and the modest hum of the old Otis elevator, the gateway to the mine tunnel some 85 feet below.

The Free Enterprise—a lavender building slapped on a hillside less than two miles outside of town—is a former uranium mine. Uranium eventually decays into radon: a colorless, odorless, radioactive gas. A few hundred patrons visit the facility each year simply to sit here and breathe it in. They come from far corners of the country, desperately seeking relief from whatever ails them.

In the mainstream medical community, radon is perhaps best known for its ties to lung cancer. The gas emits radioactive particles which, when inhaled, can damage the lungs, even at very low exposures. Practitioners of radon therapy, like those at the Free Enterprise, believe low-dose radiation exposure has profound therapeutic benefits, including relief from chronic pain. The Environmental Protection Agency recommends that radon levels higher than four picocuries per liter of air (pCi/L) should be remediated. At the Free Enterprise, radon levels average about 1700 pCi/L, but fluctuate anywhere between 700 and 2,200 pCi/L.

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In the United States, radon therapy remains largely under-researched and unaccepted by modern medicine. There are only four health mines in the entire country, all of them located in a southwestern sliver of Montana between Boulder and Basin, both nondescript old mining towns. In parts of Europe, Japan, and Russia, on the other hand, taking a dip in radon-rich hot springs is a centuries-old practice, one sanctioned by national health care, covered by insurance, and prescribed by doctors. Given the obvious paradox radon therapy presents, how does a patient justify the risks?

By the time clients walk through the door, Free Enterprise manager Patricia Lewis explains, some are experiencing the kind of pain that makes suicide look like an attractive option. “Like a bullet in my head—that kind of pain,” she says. Lewis has close-cropped graying hair and blue-green eyes. She is hearty yet stern, and maintains a careful emotional distance from her clients. Her grandfather, Wade, founded the health mine in the early 1950s, the first in Montana. “We are a last resort. I’ve heard it so many times: ‘I cannot continue to live like this.’”

The city of Boulder—population 1,100—rests in the valley below the Free Enterprise, cradled by the dusty purple slopes of the Elkhorn Mountains. Main Street is flanked by an old lunchroom or two, a pizza joint, and a couple of spit-and-sawdust dives, including the defunct Raghorn Saloon (as advertised, “Any rack’ll do”). That health mines still draw hundreds of visitors each year is testament to their allure. There’s virtually no other reason to visit Boulder.

Studies on low-dose radiation exposure suggest that cell damage prompts compensatory processes that stimulate cell repair, decrease free radicals, and activate proteins that prevent inflammation. Whether the specific types of radioactive particles emitted by radon have these same effects is still under-researched. Some studies have found that a host of inflammatory rheumatic diseases may benefit from exposure to radon, including ankylosing spondylitis—a type of arthritis that can cause the vertebrae to fuse together—fibromyalgia, rheumatoid arthritis, and degenerative joint conditions like arthrosis. Mine visitors often claim that a few visits each year reduces their pain enough that they can rely less heavily on prescription medicine. Others turn to radon because they cannot stand the side effects of their medication, or because they have found that nothing else works for them.

Lewis seems unfazed by her daily exposure to radon. “If I can’t sit in my own stew...” she says, shrugging. As she trails off, an elderly woman limping on a cane hobbles into the Radon Room. Designed for those too claustrophobic to travel below ground to the original uranium mine, it pumps in radon gas.

Soon after Lewis’ grandfather, a mining engineer, opened the Free Enterprise Uranium Mine for commercial purposes, a woman visiting the mine noticed her bursitis—a condition in which the fluid-filled sacs that cushion bones, tendons, and muscles near joints become inflamed—rapidly improved. News spread fast. By 1952, there were more than a dozen health mines in the area, drawing more than 100,000 people in two years. Today, only three other health mines remain.

Forty-six-year-old Rayna Duenas visits the [Earth Angel Health Mine](#) several times a year, but she drinks radon water from a free spigot outside the mine daily. She lives in Basin, a town of less than 250 people, just south of Boulder. In addition to her knack for catching cheating boyfriends in her psychic visions, Duenas offers psychic readings, massage, and a plethora of other services, including alchemical reiki, oxygen therapy, infrared therapy, and dichroic glass energy work.

Wiccan, witch, voodoo high priestess; the rumors circulated quickly among local residents when Duenas first moved to Basin from Seattle a decade ago. If it weren't for her proximity to the health mines, she wouldn't have stayed in Montana this long. The mines have provided relief from her multiple sclerosis; if she couldn't access them, she says, she would be wheelchair bound. "It was the radon that allowed me to start working again," she says. "I couldn't do my healing, I couldn't do my dancing, I couldn't do nothing. I mean, I was living, but I wasn't living the life that I wanted to."

Duenas still has bad days—mornings when she's stuck in bed, or her legs give out, or her short-term memory is hazy. She says health mines help sufferers of chronic pain find hope again. "The thing with people that have pain is they're survivors," Duenas says. "You tell your brain, 'I'm going to get up, my feet are going to hit the floor, and I'm going to continue walking.' People think people are weak when they have pain. But those are some of the strongest people that have more drive and determination to fix themselves."

[Barbra Erickson](#), a professor of anthropology at California State University–Fullerton who has studied health mines for nearly a decade, has always been intrigued by how sick visitors manage to summon the courage to go there. "I went there expecting it to be a bunch of crazy people, and I came away with a completely different idea," Erickson says. She found that clients re-adjust their explanatory models—the behavioral processes that allow us to understand illness—when considering radon. "You just start believing it because you hear from so many other people who seem like very rational, intelligent, educated people," she says.

Still, radiation exposure is a hard sell. Lewis says business at the Free Enterprise has dropped to a tenth of its peak in the late 1980s. Her break-even point is about 300 clients. She hopes for 200 this year. "As time goes by, drugs are better, but they're not perfect," she says. "There's a segment of the population that doesn't respond to that. Or don't want to."

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