

## How Nature Heals: Why East Bay Doctors Are Prescribing The Outdoors To People Of Color

Doctors and experts also say there are too many barriers for communities of color to access parks.

By Kathleen Richards @KathORichards



Photo By Sam Zide

An East Bay physician prescribed an outdoors adventure in Alameda to Ana Muñoz and her daughters, Anahi and Raquel, earlier this month.

Ana Muñoz was having trouble sleeping. It was 2015, and she was living in a shelter with her two daughters after leaving an unhealthy relationship. Having immigrated from Mexico City a couple years earlier, Muñoz didn't have a job, or any family or friends nearby. She didn't understand the legal process.

And, to complicate matters further, her eldest daughter, Anahi, who's now 13, was preparing to have surgery. That's when Muñoz got help from an unexpected source: her daughter's pediatrician.

The prescription? Nature.

Every month for the past three years, pediatrician Nooshin Razani and her UCSF Benioff Children's Hospital Oakland colleagues have taken a group of patients and their families on a park outing, part of a program called Stay Healthy in Nature Everyday, or SHINE. It's a collaborative effort between the hospital and the East Bay Regional Park District that aims to both improve the health of patients and their families while also encouraging awareness and usage of the green spaces in their backyard.

Muñoz said SHINE helped her reconnect with nature. "I forgot about what I enjoyed when I was a little one," the 43-year-old said. Now, being in a park makes her feel "confident" and "optimistic," she explained — and she loves seeing her daughters smiling, jumping, and running.

"I take that moment to forget everything," Muñoz said on a recent Saturday, before a SHINE outing to Crab Cove in Alameda. "To see the green hills, to feel the fresh air — that makes me relaxed."

There is scientific evidence to back up her experience. Razani says more than 400 studies have been conducted on the health benefits of nature, showing how it does everything from decrease stress levels to lower rates of chronic diseases. Even just living near green spaces has been associated with lower mortality rates.

In the last decade or so, park-prescription programs have spread worldwide in response to this mounting scientific evidence. Razani and her colleagues hope to add to it, having completed a first-ever trial that looks at how park prescriptions can impact stress and social isolation, the results of which are expected to be published soon.

"Communities should be immersed in nature. Nature should be like air," Razani argued.

An obstacle, however, is that access to nature isn't always equal. While people of color have the most to gain from being outdoors — because they suffer from higher rates of chronic disease than whites — their communities disproportionately lack green space or properly maintained, safe parks. Studies have also shown that the way parks are managed tends to alienate communities of color.

A 2007 report called "Access to Parkland: Environmental Justice at East Bay Parks" noted that, while the East Bay park district manages vast acreage in Alameda and Contra Costa counties — now more than 120,000 acres — the majority of this land is located in the hills, which are surrounded by affluent residents, and whose users tend to reflect those primarily white communities.

Could access to parks, or lack thereof, be responsible for health disparities? For Oakland residents, depending on your race and the ZIP code you live in, there can be as much as a 15-year difference in lifespan, according to a 2014 report by the Alameda County Public Health Department.

"Nature has the potential to be a low-cost, readily available resource for preventing and treating chronic illness, health inequity, and other things," Razani said. (The SHINE programs costs \$20,000 per year, paid for by the park district's foundation.) And it's not just the patients who would benefit. With skyrocketing health-care costs, and the bulk of health-care spending going to treat chronic medical conditions, park prescriptions make a lot of sense — and could change doctors, too.

Yes, social determinants such as poverty, racism, and discrimination contribute to health disparities, according to the Centers for Disease Control and Prevention. But it's also entirely possible that the lack of parks and trees in certain areas of the East Bay is in and of itself contributing to making people sick.

## Science Of The Outdoors

We don't spend nearly as much time in nature as we should. According to the U.S. Environmental Protection Agency, the average American spends just 7 percent of their life outdoors.

This sedentary lifestyle coincides with skyrocketing rates of obesity and chronic illnesses such as heart disease, cancer, and type-2 diabetes. The the Centers for Disease Control and Prevention says half of American adults have a chronic disease, and one-quarter of them have two or more. And, as mentioned before, people of color are more likely to be sick. For example, Black people are 40 percent more likely than whites to have high blood pressure, and suffer from a 77 percent higher rate of diabetes. Hispanics and Asians also have higher rates of diabetes than whites (66 and 18 percent, respectively).

At the same time, we know more than ever that nature improves health, even when we're physically inactive in it. Even as far back as 1984, a study by Roger Ulrich showed that patients recuperating from the same procedure in a hospital improved at a faster rate, and required fewer painkillers, when they had a view of a tree compared to those who had a view of a wall.

Razani described the vivid change that our bodies undergo when we interact with nature — specifically, when we enter tree cover. “Within minutes your breath rate is lower, your heart rate is slower, and your blood pressure decreases and then it plateaus,” she explained to a group of park and health agencies during a presentation at the Health Outdoors Forum last September. “You sweat less. Within 15 to 20 minutes you perform better on cognitive tests. Your concentration is what they call restored or reset. Children with ADHD have improved attention spans. Stress hormones are reduced, inflammatory markers are reduced, and glucose levels go down.”

And that's not all. Exposure to nature is also associated with experiences of awe, which is defined as “a perception of fear and pleasure at the same time, and is correlated with the development of empathy, and with focus going from internal rumination to external, and has the long-term consequence of decreased anxiety and depression,” Razani continued.

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A study at UC Berkeley, which has yet to be published, has found that “nature-inspired curiosity” (incurred while whitewater rafting for one week) eased symptoms of PTSD among student veterans by as much as 30 percent. And research participants who reported feeling a greater sense of awe also said their relationships with family and friends improved.

Trees don't even have to be alive to have a healing effect; according to a study published in the International Journal of Environmental Research and Public Health in 2015, just looking at photos of green spaces can help people recover from stress.

What is nature doing to us? While the exact mechanism is not fully understood, we do know that plants and trees give off phytoncides, airborne compounds that have antibacterial and antifungal properties.

They help plants fight off pests and diseases, and when we breathe them in they appear to help boost our white blood cells, which are responsible for immune functioning. A 2007 study in Japan monitored the level of so-called “natural killer” cells, a type of white blood cell, in men who took two-hour walks in a forest over two days. The result: a 50-percent spike in natural-killer cell activity.

The fact that we only spend 7 percent of our time outdoors, then, has significant consequences for our physical and mental health. In his 2005 book *Last Child in the Woods*, author Richard Louv used the term “nature deficit disorder” to describe the human cost of alienation from nature. He says several factors have contributed to our lack of time spent outdoors, such as the excessive use of electronic devices, poor urban planning, disappearing open spaces, a failure by the education system to place importance on the natural world, increased traffic, and even parental fear of outdoor spaces.

Another major issue is that “doctors don’t think about parks as an ingredient in health,” according to Robert Zarr, a pediatrician at Unity Health Care in Washington, D.C. “It’s so focused on surgery. There’s very little focus on public health.”



*Photo By Sam Zide*

According to Dr. Nooshin Razani, exposure to natural settings like the ocean and mountains reduces stress and the risk of suffering from a chronic disease.

For Razani, nature is more than just a public health intervention: It’s personal.

“I think my journey has been one of coming to terms with pain,” she said on a recent Thursday morning, walking on the Mills College campus.

She described how she was born in the United States, but moved to Iran when she was very young. This exposed her to village life filled with loving family members, as well as to a culture that is very nature-based.

But when she moved back to the United States at age 6, around the time of the Iran hostage crisis, she found herself straddling two worlds. “Looking for something common led me to look at the Earth,” she said. “When you are thinking, ‘Where do I belong?’ and ‘Which is my home?’ I think my conclusion was, ‘The whole thing is my home.’ I belong to the whole thing.”

A trip to Yosemite in the fifth grade and subsequent school outings nurtured her commitment to the natural world. In an interview with the Children in Nature Collaborative, she spoke of how “these early experiences provided a reservoir, a relationship with nature that helped sustain me through some of the traumas in life.”

About ten years ago, Razani experienced another trauma: Her brother died in the Iraq War. Once again, she sought healing through nature. “There was a period of time where all I could think about was planting trees and just trying to create resilience,” she said.

In a TEDx talk she gave last year, Razani talked about the intense loneliness she experienced as a mother, because it made her miss her family — aunts, grandmother, mother, and cousins — in Iran. “I felt so uprooted,” she said.

In her career, Razani gravitated toward infectious diseases, which was another connection to nature. She saw how malaria and other vector-borne illnesses were related to a disruption of the way human beings should be living. And through her kids, she understood how children have a natural affinity to nature. “For them, the barrier between inside and outside is less distinct,” she said.

She became a fellow in academic pediatrics at UCSF with a focus on nature and public health, and in 2009 was trained as a “nature champion” by the U.S. Bureau of Fish and Wildlife and the National Environmental Education Foundation, which instructs pediatric health-care providers around the country to prescribe nature and help other clinicians to do the same.

As part of her fellowship, Razani started a pilot park-prescription program in Bayview-Hunters Point, and helped found a Bay Area-wide collaborative called Healthy Parks Healthy People: Bay Area with other parks and public health agencies.

In 2012, the East Bay Regional Park District approached UCSF Benioff Children’s Hospital Oakland about a potential partnership. Even though she was trained as a “nature champion,” Razani was skeptical of the park district’s idea. “Our response was a little bit, not negative, but we thought the concept was a little bit naive,” she said. “Because really getting people into nature, the problem is not that a doctor has never told them to do it. The problem is that they don’t have nature access, or they’re excluded from the outdoors because of racism.”

Carol Johnson, assistant general manager of public affairs for EBRPD, admitted she was unaware of the severity of the challenges facing the hospital’s low-income patients. “It was eye-opening for us to not have an understanding [that] sometimes people have to make a choice of whether they’re going to eat or take a bus to a medical appointment,” she said. “That floored us.”

At the hospital’s primary care clinic, more than 90 percent of the 12,000 patients are on Medi-Cal, meaning they are at or near the poverty line, according to the hospital’s communications director, Melinda Krigel. They come from diverse backgrounds as well: 12 languages are represented in the clinic.

It took a couple years for park officials and hospital staff to come up with a park-prescription program that would address barriers of race, income, and language. For starters, images and maps of parks were brought into the clinic. Razani asked park officials to provide transportation, food, and programming for the monthly park outings, and to allow the patients to bring their entire families.

“The program that has developed is one that’s really trying to get at those root causes of why people are not in nature,” Razani explained. It’s also one of the more unique park-prescription programs in that hospital staff actually accompany the patients to the parks. To date, Razani and her staff, including SHINE coordinator Maoya Alqassari, have taken patients and their families on 45 trips to parks around Oakland and the East Bay, the equivalent of about 900 total park visits. At an outing to Alameda’s Crab Cove earlier this month, Razani brought her family along, as well.

Razani hopes her study, which looked at the impact of the outings on both the child and the parent, will not only dispel myths about people of color and the outdoors, but also highlight a shortcoming in the current nature research world — the fact that most of the studies have been conducted on young white men.

“When you’re really talking about clinical medicine, you have to think about all the messy things that go into life,” she said. “And our system is a highly inequitable system, and it’s hard to get people the treatments, even if they’re proven to be correct.”

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Robert Zarr, a pediatrician at Unity Health Care in Washington, D.C., and leader of DC Park Prescription, which has trained some 300 health-care providers to prescribe nature to kids, says it’s important for doctors to have a relationship with their patients. “It’s all based on trust,” he said.

His program allows doctors to search for and prescribe a local park activity directly within a patient’s medical record. Zarr says the doctor and patient devise a treatment plan, say, play basketball for half an hour on Saturday evenings. “I write that down and hold them to that,” he explained. Then, he schedules a follow-up appointment in a month or two. “It’s another tool in our toolkit to help people be active and, even simpler than that, be outside,” he said.

Like the park-prescription program at the children’s hospital in Oakland, the program at Unity Health Care overwhelmingly serves low-income communities of color. While Zarr said prescribing parks isn’t limited to this demographic, “the people we serve are most likely to benefit from parks and have the most to gain.”

Zarr thinks park prescriptions should be expanding as quickly as possible, as they have the potential to be a sea change not just for patients, but also for the doctors and clinicians dispensing them.

“Medicine is in a rut,” he said. “We’re over-proceduralizing and over-medicating. You see that fatigue in the physicians themselves. They’re overworked and burnt out, so by changing what we do, we actually change who we are.”

### Unequal Access

Go to a national or state park on any given day, and you’re likely to see a lot of white faces. According to a survey conducted by the National Park Service in 2009, just 7 percent of park visitors are African-American, 9 percent are Hispanic, 3 percent are Asian, and 1 percent are American Indian or Alaskan.

Is it because people of color are less interested in the outdoors? According to research, the answer is no.

Nina Roberts, a professor at San Francisco State University in the department of recreation, parks and tourism, says that communities of color report significant barriers to visiting parks and public lands.

They cite reasons such as feeling unwelcome, having trouble reading signs, and lacking transportation or money to pay for fees.

There's also the matter of historical context. "Looking at the history of African-Americans, they didn't spend time in the outdoors and in the wilderness for refuge and peace of mind and sanity and stress relief," Roberts said. "It was a very different reason why they spent time in the outdoors."

Among African-Americans who don't visit parks, 16 percent cite safety as the reason, according to the aforementioned 2009 study. For Hispanics, that number is 24 percent. That compares to only 5 percent of whites.

Roberts said the "traditional Eurocentric structure" of park management may alienate communities of color. "They have a way of designing parks, a way of using parks and maintaining them without being inclusive of communities they're trying to serve," she said. "So communities see that — they can read between the lines and understand whether they are welcome there or not."

At three SHINE outings, most of the parents interviewed had not been park visitors previously. They said proximity, lack of time, and lack of knowledge were some of the factors.

Golden Gate University School of Law professor Paul Stanton Kibel, who authored the 2007 report "Access to Parkland," says people living in East Bay flatland neighborhoods may also lack cars to get to parks in the hills.

EBRPD spokesperson Carol Johnson did not provide data on park user demographics, however, she said park visitors have become more diverse in the past decade, both because of the growing immigrant population in the Bay Area and because the park district has improved its outreach to those communities.

Razani thinks it would help if park staff were more diverse themselves. "People working in parks would serve communities better if they're from those communities, if they look like those communities, if they speak the languages communities speak, and if parks are very clearly designated hate-free zones because the world is mean, and it's only getting meaner," she said.

In recent years, there has been a movement by underrepresented groups in the outdoors to increase their visibility, including through nonprofits (Outdoor Afro, Latino Outdoors), hiking groups (Hiking Every Available Trail, or H.E.A.T.), books (Black and Brown Faces in Wild Places), media projects (TrailPosse.com), and social media accounts (@unlikelyhikers, @melaninbasecamp, @brownpeoplecamping). They are telling their own stories of connecting with nature, and advocating for greater diversity in parks at the same time.

The National Park Service has recognized the need to appeal to a broader base of park users. And last year's centennial celebration offered an opportunity to restate their commitment to creating a more inclusive environment.

"The next 100 years, we figured out that what we need to do is connect all people to these 400-plus special places that we've been charged to care for," Aaron Roth, former interim general superintendent of Golden Gate National Recreation Area, said at last year's Health Outdoors Forum. "This is not necessarily a new idea, but we've now understood that it's the most important thing to do in the next century of stewardship."

Nevertheless, by all measures, the park-prescription program at UCSF Benioff Children's Hospital Oakland has been a success. While Razani waits for her study to be published, she is already working on raising funds (with the help of the Sierra Club) for a study on teen girls, depression, anxiety, and wilderness outings. REI also gave UCSF Benioff Children's Hospital Oakland \$200,000 to support its new Center for Nature and Health, which opened last April.

Razani acknowledges that nature can't replace basic needs, such as having proper rest, nutrition, shelter, and access to quality medical care. But she says it's an important part of healing. She hopes the children at her clinic can develop a close bond with nature, and she also recognizes the difficulty of that prospect when many of them are disenfranchised and marginalized.

At the outing to Crab Cove earlier this month, there was a mother newly arrived from Sudan who didn't speak much English, a mother who was looking for activities for her autistic foster son, and a mother, Ana Muñoz, who was just happy to see the smiles on her daughters' faces.

Muñoz now has full custody of her kids and a five-year restraining order against her former partner. She's waiting to gain legal residency so she can move to Florida, where she has relatives. In the meantime, she has found a job cleaning houses and facilitates a women's group.

Most importantly, she says she's not afraid anymore.

After eating lunch and getting a quick tour from a park naturalist, the diverse group of about 40 parents and children headed down to the mud flats, where Razani helped Muñoz's daughter, four-year-old Raquel, take off her socks and shoes so she could run around barefoot.

"This is my favorite part," Razani said to Muñoz, as the children began scrambling down the beach toward the water. "It's freedom, right?"

It wasn't clear if she meant freedom for the children, or for the parents. Maybe it was both.

"Yes, it's freedom," Muñoz responded, smiling.

Then Raquel took off running toward the other children, toward the ocean.



Photo By Sam Zide

Raquel Muñoz at Crab Cove in Alameda.