Chris Ollis; his wife, Taylor; and their children on vacation in Hawai'i. Photo courtesy of Chris Ollis

"Genomic testing saved my life"

How a 25-year-old diagnosed with Stage IV cancer was matched with a clinical trial and targeted therapy—and, nine years later, is now a dad

CHRIS OLLIS WAS DIAGNOSED with a rare form of cancer at the age 25. At the time, he was a very active and fit deputy sheriff training to be a member of the SWAT team in San Joaquin County, California. "I was in the best shape of my life," he recalls.

Ollis found the cancer entirely by accident. He had stepped on a rusty nail and soon after began having back spasms. When a tetanus shot didn't stop the spasms, he went in for an X-ray of his back. The X-ray images revealed innumerable spots on his lungs.

His doctor prescribed antibiotics for a month, but a follow-up CT scan showed that the spots remained. A pulmonologist removed three tissue samples for biopsy, and they came back negative for cancer. Ollis and his wife were overjoyed but celebrated quietly, still feeling uneasy.

The doctor gave him two options: watch and wait, or go to Stanford University (about an hour and a half away) and have another biopsy. Because Ollis had worked in an ambulance, he had seen his fair share of adverse reactions and events and had learned to expect the unexpected. So he decided to go to Stanford for more testing.

There, he underwent a wedge resection, in which a surgeon removed a piece of his lung to obtain a larger tissue sample. He received news that the tissue was malignant, but the type was still unknown. His doctors had never seen it before.

After subsequent testing and a second opinion, Ollis learned that his cancer was a rare tumor type called myopericytoma,[1] of which only a handful of cases have ever been reported in the world.[2] Unfortunately, his providers told him there were so many tumors in his lungs, it would be impossible to remove them all. A general chemotherapy might slow blood flow to the area, curbing tumor growth, but the prognosis was poor and he was told he would live perhaps two years.

"I was 25 and I'd been told I had a terminal disease," Ollis says. "I was very negative and in a very bad headspace. I thought, 'Stage IV cancer, there's no way. What is the point?'" He knew undergoing chemo was not an easy experience. He searched for patient groups online and found the messages on them to be sad and grim. "My doctor told me that yes, there are many sad stories in those groups, but there are also happy

1. ncbi.nlm.nih.gov/pmc/articles/PMC1860256
2. ncbi.nlm.nih.gov/pmc/articles/PMC5851063

stories—you just don't hear them because those patients are out living their lives and are not on Facebook."

After Ollis began chemo, another Stanford oncologist suggested he try genomic testing. A pathologist sequenced one of his tissue samples with a large panel. The test, often called comprehensive genomic profiling, or CGP,[3] assesses hundreds of cancer-causing genes and relevant cancer biomarkers for therapy guidance. The results of the test were returned to him in a two-inch-thick report. Within this massive amount of data, the genomic profiling had identified a very rare biomarker in which two genes had fused together. Ollis's specific gene fusion is called NTRK3-EVT6. His doctor told him about a small clinical trial focused on NTRK, with very promising results.

Up to 60% of clinical trials require biomarker information in order to participate, and current clinical guidelines recommend CGP for certain cancer patients, but many patients do not have access to testing, or do not know about it. One study estimates that at any given time, thousands of cancer patients could be missing out on potentially life-changing treatments.[4]

At this point, Ollis was working and was feeling very sick due to the chemo. "I was nauseous, I had bumps all over my hands and feet, and I was so pale, I looked like a glue stick," he says.

He was skeptical of clinical trials. "Everyone uses the term 'guinea pig.' But I had no other option." He spoke to all the doctors involved in the trial and scoured the web for information. Finally, he was ready to enroll.

The NTRK clinical trial was easier than he had anticipated, and he began a targeted treatment—what today is the FDA-approved larotrectinib. Nine years after the painful back spasms and subsequent cancer diagnosis, Ollis is now 34 and has a very active life filled with hobbies like boating, camping, and fishing. "I do everything I want to do," he says. "And I am the oldest living data point that Stanford has for this type of gene fusion and treatment."

Because of the success of his therapy, he was able to resume SWAT training, which was extremely demanding, and ultimately fulfill his dream of making the team. He was even named Officer of the Year more than once. But his biggest accomplishment was starting a family. In the years since he began treatment, he had four children, now ages two to seven. Ollis has been able to tell anyone he knows who is facing cancer and a lot of uncertainty: "Genomic testing saved my life. I'm still here because of it. And now I have a family!"

He is active with the NTRKers,[5] a patient organization that offers resources and support to people with cancer driven by NTRK fusions. "We are part of a rare club," he says. "Not one of us would choose to be here, but we are—and community makes everything easier."
Ollis shares his experiences with other patients and families managing an unexpected, rare, or serious diagnosis. "I wouldn't be alive if it weren't for this clinical research. Trials are a good opportunity, and I'm happy to share my insights and hope." ◆

Chris Ollis is a patient advocate. The Illumina Global Patient Advocacy team works with patients, families, carers, and the groups that represent them in order to build evidence and advocate for the positive impact of genomics utilization. Patient advocates may be compensated for their time when sharing their stories. Their stories are a testimonial of the potential impacts and benefits genomics can have on rare disease. Ollis was not tested using an Illumina test. One person's experience is not predictive of results in all rare disease cases, which may differ based on a variety of factors. Results in other cases may vary.

3. illumina.com/areas-of-interest/cancer/ngs-in-oncology/cgp.html
4. illumina.com/company/news-center/feature-articles/missed-opportunities-for-cancer-patients.html
5. ntrkers.org