

Sparring with  
an invisible  
opponent

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Sparring with an invisible opponent

Martial arts expert battles rare and difficult cancer  
with the help of a team of Mayo experts

By anyone's standards, Greg Nelson is tough.

Nelson, the founder, owner and head coach at the Minnesota Martial Arts Academy in Minneapolis, is one of the top martial artists in the world. He's also a former gymnast and collegiate wrestler. He expects a great deal from his body, and is familiar with the aches and pains that come with intense training and competition.

But in the spring of 2002, Nelson began experiencing pain unlike any he'd known before. It started in his back and eventually moved down his body.

"I was taking pain medication, but it didn't do anything to relieve my symptoms," says Nelson. "And I was incredibly run down. I was preparing for a jujitsu competition, and would have to stop and rest during my training sessions. My father was in the hospital at the time, and I was so tired that I would park my car and sleep in the ramp before going in to visit him."

Nelson's physician ran him through a battery of tests. On Memorial Day 2002, a CAT scan revealed that Nelson had stage IV non-Hodgkin's lymphoma. The cancer had spread to his liver and spleen.

The news was a shock, but Nelson was relieved to finally have an opponent to fight. He immediately started a six-month course of chemotherapy, and was overjoyed when his back pain disappeared. After his fifth month of chemotherapy, tests revealed that his cancer had gone into remission.

Nelson thought he'd wrestled another opponent into submission. But he would soon learn his battle with cancer was only beginning. A new pain emerged. And finding the cause this time was even more difficult. Coming up with a diagnosis would take a great deal of detective work by a team of Mayo Clinic specialists.

Unraveling a mystery

When the new pain emerged, it moved down Nelson's body, and his muscles began to weaken. The 38-year-old, who just a year earlier had been winning gold medals in international jujitsu competitions, came to rely on a cane to help him walk. At home Nelson would drop to the floor and crawl from room to room rather than walk on legs throbbing with pain.

When Nelson's pain began to spread and intensify, he was referred to Mayo Clinic for more specialized testing. He and his family initially stayed with relatives in Rochester, but Nelson's pain became so debilitating that he was admitted to the hospital.

"Greg had such severe pain that we sent him to the intensive-care unit to be sedated and monitored," says Joseph Colgan, M.D., a Mayo Clinic hematologist. "His was probably the worst pain syndrome I've ever seen."

While Nelson's wife, Vee, their children, Nina and Gunnar, and Nelson's mother waited at his bedside, a team of Mayo Clinic physicians worked feverishly to determine the cause of his pain.

"Because of Mr. Nelson's symptoms, we knew there was neurological involvement," says Brian O'Neill, M.D., a Mayo Clinic neurologist. "Right away we began running tests and examining Mr. Nelson to determine whether the involvement was related to his cancer or was caused by something else, such as an infection."

Initial testing showed no evidence of active lymphoma.

"When our standard testing failed to provide us with a cause for Mr. Nelson's pain, we were stuck," says Dr. O'Neill. "It's at that point Mr. Nelson benefited from being at Mayo. Our approach to care meant we were able to spend enough time with Mr. Nelson to carefully analyze the problem. We had access to state-of-the-art technology to help in our diagnosis. And we were able to bring together a team of specialists to work together on finding a solution to the problem. Without that, I don't believe Mr. Nelson would have survived."

During one of the team's discussions, they decided to biopsy Nelson's sural nerve (a nerve in the leg typically sampled because it has no motor fibers). After the biopsy came back negative,

a team member suggested using a new, high-powered MRI machine to scan Nelson's nerve for the presence of cancer. The scan revealed a faint abnormality in Nelson's upper sciatic nerve. It would take a biopsy to determine whether the abnormality was cancer; however, this nerve has important motor fibers and there was a significant risk from exploring the nerve.

"Very few people dare to do this type of surgery because it's very dangerous," says Dr. O'Neill. "If something goes wrong, the patient could be paralyzed."

Robert Spinner, M.D., a Mayo Clinic neurosurgeon specially trained in peripheral-nerve surgery, carefully removed a small portion of



Greg Nelson with his daughter, Nina, and son, Gunnar.



**A difficult-to-diagnose cancer brought Greg Nelson to his knees, literally. He's now back on his feet and coaching through his determination, the support of his family, and the help of a team of Mayo experts.**  
*(Photos by Randy Ziegler)*

Nelson's sciatic nerve for testing. The results came back positive for cancer. On Christmas Eve, physicians were finally able to tell Nelson what was causing his pain: a rare disease called neurolymphomatosis.

It's a disease as uncommon as it is hard to pronounce.

"I have only seen one other person with this disease in my entire career," says Dr. O'Neill. "There are only 33 examples of this in medical literature."

Difficult to diagnose, challenging to treat

Since neurolymphomatosis is so rare, Nelson's physicians had little related experience to draw from when determining treatment.

"It was difficult to decide how to treat the cancer," says Irene Ghobrial, M.D., a Mayo Clinic hematologist. "It was a hard position to be in as a physician. Greg is young, has a young family and was ready to fight. We wanted to do whatever we could to help him, but we weren't sure exactly what treatment he would respond to."

Since Dr. Colgan had never treated a patient with neurolymphomatosis, he drew from his experience treating other types of cancer to determine a treatment plan for Nelson.

"When you have a relapsed large-cell lymphoma such as Greg's,

your best treatment option is a stem-cell transplant," says Dr. Colgan.

Before a stem-cell transplant, patients must respond to chemotherapy. Nelson failed to improve after starting his first chemotherapy regimen. So his physicians tried a different approach, and a second set of chemotherapy medications proved effective.

But that was only the first step in the battle plan. After completing chemotherapy, he then underwent the stem-cell transplant. Nelson — and his physicians — were unsure how much to hope for.

"I was the first person with this type of cancer that they had brought to treatment at Mayo," says Nelson. "No one knew what to expect."

Nelson's stem-cell transplant took place on Memorial Day, exactly one year after his initial diagnosis. The procedure was completed successfully.

"After the stem-cell transplant, Greg's wife called to tell me that he was walking," says Dr. Ghobrial. "It's been amazing to watch his recovery."

Nelson spent the summer building up strength in his legs. For months he used a walker to support him, and he still depends on a cane if he expects to be on his feet for a long period of time.

"My next goal is to walk without the cane," says Nelson. "Every week I'm able to do a little more."

Follow-up tests have revealed

that Nelson is cancer-free. And that's something he doesn't take for granted.

"When you get things taken away from you, you really appreciate them if you get them back," says Nelson. "I lost my ability to walk. Now I feel blessed to be able to do something as simple as mow my own lawn."

While Nelson continues to spend time at his training center, and has even begun coaching again, he no longer works 12-hour days. Instead, he takes his daughter to the bus stop each morning and picks her up at the end of her school day. He plays with his son, something he was unable to do for much of Gunnar's young life.

"When I was in the hospital, I would pray to God to let me live to see my children grow up," says Nelson. "I prayed for enough physical ability to play with my kids. If I get back my ability to train, that will be icing on the cake."

And that just might happen. "We really don't know what Greg's recovery will be like," says Dr. Colgan. "But nothing would surprise me with Greg. He's a very determined man. And he never gave up hope. People with aggressive lymphomas need to know that there is reason to be hopeful. These cancers can be cured." ■

— Nicole Brekke Sisk