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Patient's determination spurs recovery from a serious spine infection and surgery

Paul Hutton's recovery from a serious spine infection shows that patients are a vital part of medical care.

By: **Tyler Smith (https://www.uchealth.org/today/author/smiths3/)**
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The spinal column is a series of 33 connected bones, or vertebrae, that work in unison to support the body and allow it to move freely. Each bone is a distinct entity with a larger responsibility for the success of the whole.

That's an anatomical fundamental for **Dr. CJ Kleck (https://www.uchealth.org/provider/cj-kleck--md-orthopedic-spine-surgery/)**, chief of **Spine (https://www.uchealth.org/services/back-neck-and-spine-care/)** for the **Department of Orthopedic Surgery at the University of Colorado School of Medicine (http://www.ucdenver.edu/academics/colleges/medicalschool/departments/Orthopaedics/Pages/Orthopedics.aspx)**. Kleck, who practices at **UCHealth University of Colorado Hospital (https://www.uchealth.org/locations/uchealth-university-of-colorado-hospital-uch/)** on the **Anschutz Medical Campus (https://www.uchealth.org/locations/uchealth-at-university-of-colorado-anschutz-medical-campus/)**, sees patients day in and day out whose vertebrae no longer function as a team because of injury, deformity or misalignment.

As a surgeon, Kleck corrects those problems with the help of rods, screws, plates, cages, bone grafts and other tools of his trade. His patients can't recover their health without his skills. But Kleck emphasizes that he is but one part of a multidisciplinary care team whose individual skills unite to meet the goal of improving patients' lives. Kleck's colleagues include **nurses (https://www.uchealth.org/about/nursing-at-uchealth/)**, **physical and occupational therapists (https://www.uchealth.org/services/rehabilitation/)**, **pharmacists (https://www.uchealth.org/services/pharmacy/)**, **infectious disease (https://www.uchealth.org/services/infectious-**

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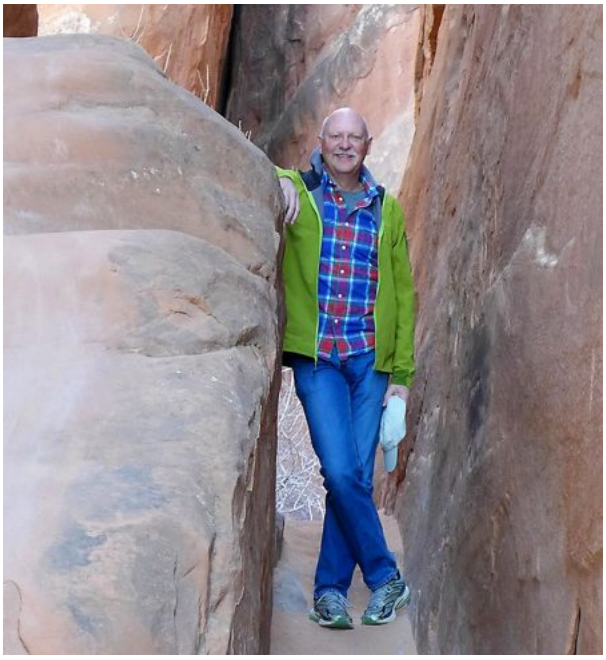

Paul Hutton hikes in Arches National Park in Utah in 2016, shortly before a spine infection made him seriously ill. Photo courtesy of Paul Hutton.

diseases/) and **wound care (https://www.uchealth.org/services/wound-care/)** specialists, **nutritionists (https://www.uchealth.org/services/nutrition-services/)**, and more, depending on the individual case.

"I tell patients I turn from surgeon to cheerleader after I get done with surgery. I can't do anything else to make them better," Kleck said.

Without the contributions of patients themselves, however, the efforts of all team members frequently fall short. Patients must commit to their physical therapy regimen, take their medications, follow their diet plans, attend their follow-up appointments and other necessities if they are to get back to spending days filled with satisfaction rather than disappointment and frustration.

"Patients are probably the single greatest factor in their outcomes in the long run," Kleck said. "Patients who don't want to do well don't do well."

CU Chief of Spine Dr. CJ Kleck led the surgery Hutton required to repair two thoracic vertebrae that collapsed because of the infection. Photo by UCHealth.

Paul Hutton got plenty of help from Kleck and other providers for a serious spine problem, but his successful recovery included a healthy dose of self-reliance and motivation. He needed all of it to overcome a sudden, mysterious ordeal.

Unforeseen ailment: spine infection

The trouble began in 2016 a couple of weeks after Hutton, an architect from Sedalia, returned from a business trip to China. He felt ill, with odd and persistent pain that after months settled in his lower back. His abdomen ached day and night. A visit to his chiropractor produced no answers. After seeing his internist, Hutton got an X-ray that showed to his shock that the 10th and 11th vertebrae of his thoracic spine – the middle portion – had degenerated. He had no idea why and has never learned the cause.

After hearing the X-ray findings, Hutton checked into a Denver-area hospital, where he spent a week undergoing "every kind of test you can imagine." Eventually a sample from the affected vertebrae revealed a serious bacterial infection. The hospital's infectious disease specialists identified the culprit as an organism belonging to a group called **nontuberculous mycobacteria (NTM) (https://www.cdc.gov/hai/organisms/nontuberculous-mycobacteria.html)** that exist in the soil, air and water and can enter the body through breathing or via openings in the skin. They can then travel through the bloodstream, **colonize in particular areas (https://www.uchealth.org/today/aggressive-surgery-turns-the-tide-on-ntm-infection/)** – like the spine – and wreak havoc.

Bacterial battle

The hospital referred Hutton to National Jewish Health (NJH), whose Division of Mycobacterial and Respiratory Infections specializes in treating NTMs. Hutton met at NJH with infectious disease specialist Dr. Wendi Drummond, who initiated a combination of antibiotics: four oral antibiotics and one intravenous. A multidrug attack is necessary to combat NTMs, which are tenacious opponents, said Drummond, who now practices in Portland, Oregon.

"No single drug is so strongly bactericidal that it can effectively kill it," she said.

After six months of treatment and antibiotic management, however, Hutton was still battling the infection. He suffered through chills and fever, and Drummond had to discontinue one of the oral antibiotics because it caused a type of nerve damage called **peripheral neuropathy (https://www.ninds.nih.gov/Disorders/Patient-Caregiver-**

Education/Fact-Sheets/Peripheral-Neuropathy-Fact-Sheet#3208_3). She referred Hutton to Kleck, recognizing that "he was very much a surgical case and that he couldn't be treated with antibiotics alone."

Spinal solution

Kleck found that the infection had eroded the two thoracic vertebrae to the point that they had collapsed and compressed the spinal cord. With that news, Hutton agreed to surgery he knew would be life-changing. But the infection had made his situation untenable. "There was no real decision to make other than the one that we did," he said.

The surgical strategy, which Kleck and his team carefully explained to Hutton, included **Dr. Michael Weyant (https://www.uchealth.org/provider/michael-weyant--md-thoracic-and-cardiac-surgery/)**, an associate professor of Surgery with the CU School of Medicine's **Division of Cardiothoracic Surgery (https://medschool.cuanschutz.edu/surgery/faculty-and-staff/faculty-directories/faculty-directory)**. Weyant opened Hutton's chest cavity, collapsed his left lung and removed a rib. That gave Kleck a route to the two infected thoracic vertebrae.

Kleck removed the diseased bone, inserted a device called a cage, which widened the space between the two vertebrae, and secured the cage with titanium screws and rods. Bone from Hutton's rib cage supplied grafts designed to grow and eventually fuse the two vertebrae and stabilize the spine. As a guard against infection, Kleck also implanted antibiotic beads, which slowly release medication in a specific area.

Hutton spent a week at UCHealth University of Colorado Hospital, divided between the Surgical Trauma Intensive Care Unit and the **Orthopedics Unit (https://www.uchealth.org/services/orthopedics/)**, with a team of providers carefully monitoring him. There was short-term pain, Hutton said, not as much in the back as on the left side, where he had to adjust to the missing rib and lingering effects of the collapsed lung.

He took three months off from work, covered by short-term disability, but was hardly idle. In fact, Hutton's participation in his own care had begun before the surgery. He dedicated himself to hitting at least 10,000 steps per day and to build good muscle tone so as to have a head start on recovery.

"For me, my big thing was movement," he said. "One of the keys was to go into surgery as strong and as fit as I could."

Back on track

After Kleck's surgical repairs, Hutton firmly committed to his prescribed thrice-weekly physical therapy regimen with providers in Centennial. He methodically improved his range of motion, flexibility and posture and paid close attention to the position of his spine as he walked, moved, sat and reclined.

Kleck said he sees plenty of patients committed to getting back to physical activity following surgery, but Hutton showed his determination in a new way. He used his Fitbit to record his weekly step totals and sent the results regularly to Kleck. The count steadily climbed, and one year post-surgery, Hutton had walked 4 million steps. By the end of the second year, he'd increased the number to a pain-free 4.7 million – nearly 13,000 a day.

"He's one of the first patients that has gotten that actively involved in his own care," Kleck said. The steady progress reinforced a message that Kleck, PTs and others give spine surgery patients: recovery will be slow at first but will accelerate with steady effort and commitment.

"The Fitbit data went right along with what we tell patients and is confirmation of what they can do and where they can be," Kleck said.

More than two years after the surgery, Hutton is healthy and pain-free, in large part because of his commitment to his own recovery. Photo courtesy of Paul Hutton.

Maintaining vigilance

Hutton continued his antibiotic treatment for many months following the surgery, and received approval to stop taking the antibiotics last summer. However, Hutton continues to get regular bloodwork to detect a recurrence as early as possible.

Two years after surgery, though, Hutton has no physical restrictions and his prognosis excellent. He's back to biking and is even entertaining what he admits is a "pipe dream" of participating in the Senior Games in 2021 as a runner (he competed in track in school).

"I'm tempted to consider it and maybe give it a try," he said. "We all have dreams."

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Tyler Smith has been a health care writer, with a focus on hospitals, since 1996. He served as a writer and editor for the Marketing and Communications team at University of Colorado Hospital and UCHealth from 2007 to 2017. More recently, he has reported for and contributed stories to the University of Colorado School of Medicine, the Colorado School of Public Health and the Colorado Bioscience Association.

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