

A BREATH OF PURE OXYGEN

Vail Integrative Medical Group's hyperbaric oxygen chamber helps patients heal in the high country

By Tracey Flower
Special to the Daily

A little more than a year ago, Alice "A.K." Schleusner, a Vail Valley real estate agent and ski instructor with Beaver Creek Children's Ski School, was out on the slopes training for a freestyle certification in the terrain park when she fell and landed on her head. She was diagnosed with a concussion. She cannot recall the details of the crash, but she said she has suffered symptoms from the concussion since it happened.

"I'm still dealing with it," Schleusner said. "Back in the end of July, basically six months post-concussion, I was still having cognitive issues, extreme fatigue and a lot of pain from my injury. It started triggering migraines, which I had never had before."

Schleusner has been a patient at Vail Integrative Medical Group for several years and, in July, was there seeking physical therapy treatment from Dr. Joel Dekanich, founder and director of the practice, for residual neck



Dr. Joel Dekanich helps Fabiola Cuestas out of the hyperbaric oxygen chamber on Wednesday in Edwards. Dekanich decided to bring hyperbaric oxygen therapy to the Vail Valley a little more than a year ago after hearing about how the treatment was helping NFL athletes recover from their training, and to help those suffering from altitude sickness.

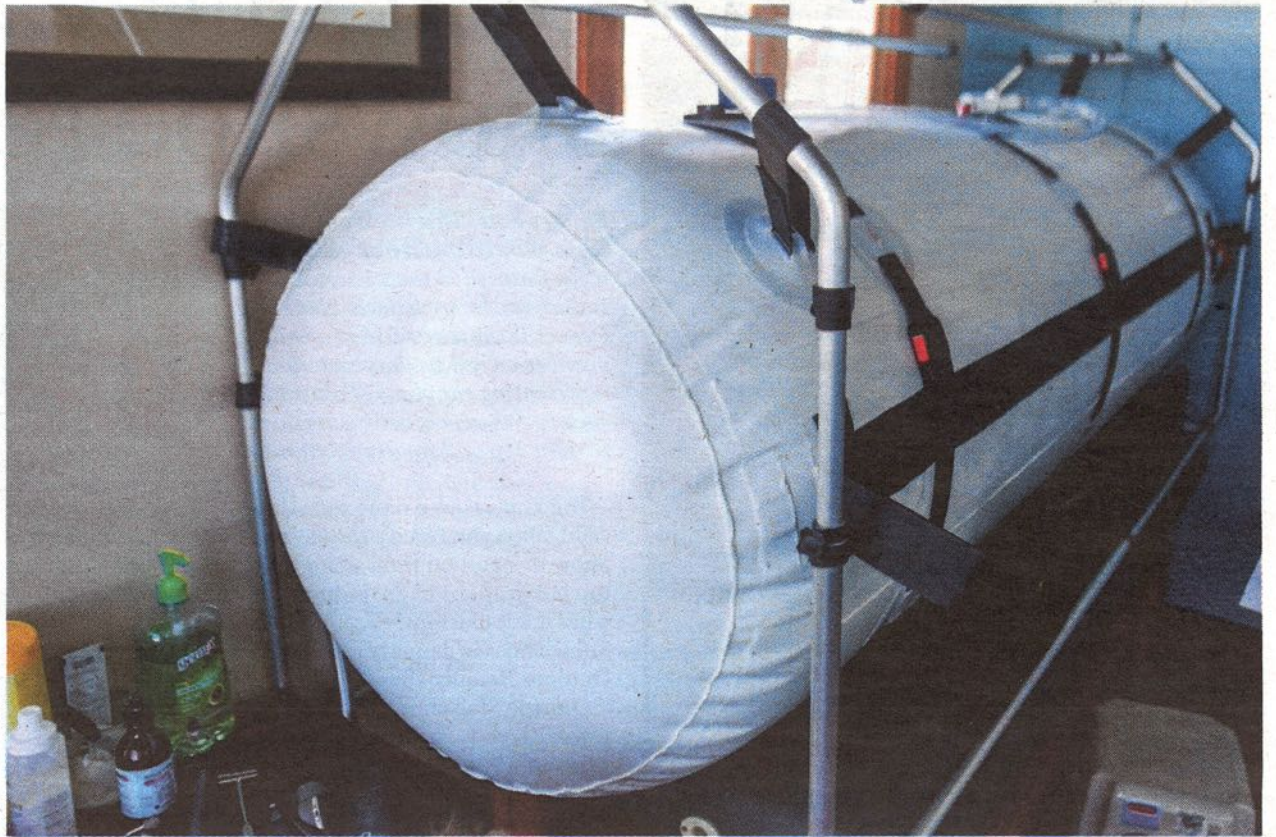
and shoulder pain she had from the accident. It was then she learned about hyperbaric oxygen therapy, a treatment where the patient breathes pure oxygen in a room or chamber where the air pressure is raised to up to three times the normal air pressure.

"I was miserable," Schleusner said. "At that point (Dekanich) was like 'what is going on with you?' He knows me, you know? He knows my energy, he knows I'm an athlete; he knows I'm always on go. And he suggested that hyperbaric oxygen therapy might be worth a try. ... At that point, I was so miserable, I was willing to try anything. But I did do my research and I found it to be safe. And, of course, I trust Dr. Joel and his staff explicitly with my health. So I decided to give it a try."

Her only regret, she said, is that she didn't do it sooner.

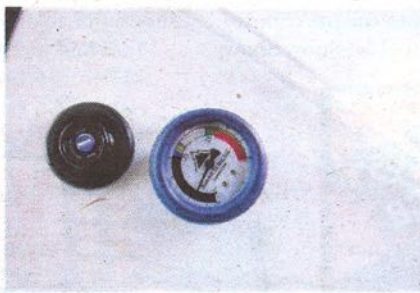
"It was the best decision ever," Schleusner said. "It's a game-changer. At that point, before the treatment, I was six months post-concussion and I didn't recognize myself. It instantly gave me not only a shot of energy but, really, hope that I was going to get better."

Dekanich said he's seen similar results from hyperbaric oxygen therapy in other patients diagnosed with concussions, though he's careful to note this is an off-label use of the therapy, meaning the Food and Drug Administration has not



PHOTOS BY CHRIS DILLMANN | CDILLMANN@VAILDAILY.COM

The hyperbaric oxygen chamber at Vail Integrative Medical Group is inflated with pressure on Wednesday in Edwards. The chamber gives patients a high dose of oxygen for a multitude of therapies.



The pressure gage shows how much pressure is being felt in the hyperbaric oxygen chamber. The hyperbaric oxygen chamber at Vail Integrative Medical Group is one of two ways in which hyperbaric oxygen therapy can be delivered. In some medical institutions, the settling is a large room, rather than an individual unit, designed to accommodate several people in which you receive oxygen through a mask or hood.

approved the therapy for the treatment of concussions.

HISTORY OF THE THERAPY

Humans can survive for a few weeks without food and for a few days without water, but none can survive longer than a few minutes without oxygen. Dekanich uses this simple fact to illustrate the power of hyperbaric oxygen therapy.

"Simply put, hyperbaric oxygen therapy is a noninvasive therapeutic treatment that delivers oxygen to cells in the body," Dekanich said. "Breathing 100 percent pure oxygen at an increased atmospheric pressure allows the body to

absorb about up to 10 times its normal supply of oxygen. This high dose of oxygen stimulates the growth of tissue, bone and blood vessels, reduces inflammation and mobilizes stem cells."

According to the Duke University Medical Center Library, the first documented use of hyperbaric therapy dates back to the mid-1600s in Europe and the first hyperbaric chamber in the United States was built in the early 1800s.

In the post-World War I era, the treatment was used by Dr. Orval Cunningham, chairman of the Department of Anesthesiology at Kansas University Medical School, to treat diabetes, arthritis and syphilis, but his work was met with skepticism from his peers in the medical community due to Cunningham's inability to substantiate his claims with clinical data.

In the 1930s, hyperbaric oxygen therapy gained wider use when the U.S. Navy began conducting research on the use of hyperbaric oxygen to treat decompression sickness — commonly known as the bends — in scuba divers.

Today, the FDA and Medicare have approved hyperbaric oxygen therapy for 13 uses, including treatment of air or gas embolism (dangerous bubbles in the bloodstream that obstruct circulation), carbon monoxide poisoning, decompression sickness and thermal burns caused by heat or fire.

In addition to the FDA-approved

HYPERBARIC OXYGEN THERAPY

Here's what you need to know if you decide to try the treatment.

Where: Vail Integrative Medical Group, 0105 Edwards Village Center, Suite A203, Edwards.

Cost: \$89 for the initial medical examination, \$125 for the hyperbaric session. Medicare and other insurance companies may cover the cost, depending on the condition being treated.

Appointments: Call 970-926-4600. Appointments can typically be scheduled within a day or two of calling, and sometimes on the same day, though an initial medical exam is required before receiving the treatment. Treatment sessions last between 60 minutes and 90 minutes.

How to prepare: Avoid wearing any jewelry, perfumes, lotions, makeup, nail polish or hair-care products (due to the increase in oxygen in the chamber, these items could be a fire hazard). Bring something to occupy your time, such as a book, cellphone or music.

More information: Go to www.vailhealth.com for more information about Vail Integrative Medical Group and hyperbaric oxygen therapy.

HYPERBARIC THERAPY

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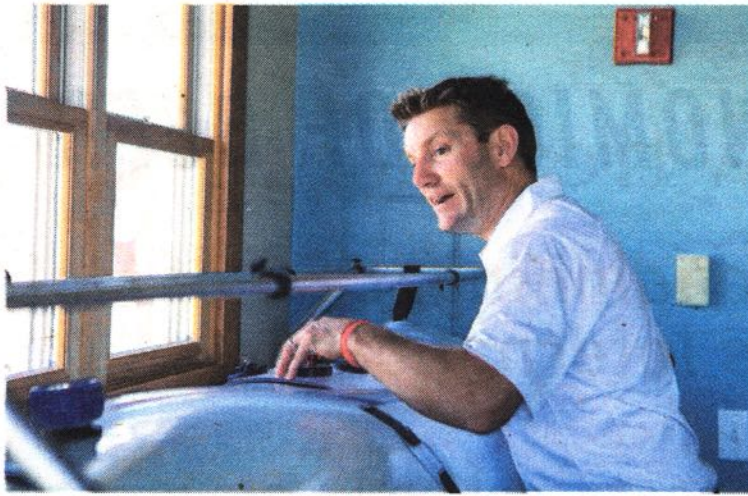
uses, there is a growing body of research, as well as anecdotal evidence, for hyperbaric therapy as a treatment option for certain off-label conditions, Dekanich said.

"There's a whole host of what we call off-label conditions, for which there might be more empirical evidence or the evidence is pointing in that direction but it's not completely peer-reviewed yet, for which hyperbaric oxygen therapy may be a viable treatment," Dekanich said. "These include various disorders like brain injuries, peripheral nerve issues, strokes and sports injuries, to name a few."

HIGH COUNTRY APPLICATIONS

Dekanich decided to bring hyperbaric oxygen therapy to his practice about a year and a half ago, after hearing from NFL athletes about how the therapy was helping them recover after tough practices.

"For the last six or seven years I've been working closely with NFL players, usually in summer in pre-season camps. ... Hyperbaric oxygen therapy is becoming more and more commonplace for a lot of these players, to help them stay healthy and to help their bodies heal and regenerate from the activities of professional football," Dekanich said. "And, again, this is more anecdotal evidence, but you've got more and more high-level



CHRIS DILLMANN | CDILLMANN@VAILDAILY.COM

Dr. Joel Dekanich checks the pressure of the hyperbaric oxygen chamber on Wednesday at the Vail Integrative Medical Group office in Edwards. Dekanich said there are many different benefits of the chamber, which gives the body a concentrated dose of oxygen.

athletes utilizing the treatment."

In addition to offering hyperbaric therapy to athletes in the Vail Valley, Dekanich also saw a value in being able to offer the therapy to visitors to the valley suffering from acute mountain sickness, also known as altitude sickness.

"A lot of our guests come to the valley from sea level and will experience common symptoms of altitude sickness, such as headache, nausea — a feeling kind of like a hangover — fatigue, things like that, and I thought it made perfect sense to bring this to the valley," Dekanich said.

In order to understand how hyperbaric oxygen therapy may help those suffering from altitude sickness, it helps to understand

what happens to our bodies when we ascend to a higher altitude.

"There is about a third less oxygen at altitude, so our bodies have to adjust to being in this low-oxygen environment" said Dr. Dennis Lipton, an internist at Vail Valley Medical Center. "We have to move more air through our lungs to extract enough oxygen, and our hearts have to pump harder to maintain adequate oxygen levels through our bodies."

Lipton explained that the best treatment for altitude sickness is to descend from altitude and that ascending slowly — gaining no more than 4,000 to 5,000 feet daily — to begin with, in addition to avoiding alcohol and staying well-hydrated for a few days

before leaving sea level, can help prevent altitude sickness.

While altitude sickness is also considered an off-label use of hyperbaric therapy, according to an article published in the *Journal of Emergency Medical Services* in June 2016 about treating sickness and edema caused by high altitude, a hyperbaric chamber can be used to help treat altitude sickness in cases where immediate descent is not possible.

"By being in the chamber we're going to lower the effects of where you're at by over 7,000 feet," Dekanich said. "So literally, we're going to take you down to sea level in as little as 10 minutes. It'll take you lower in altitude and also increase the oxygen-carrying capacity of cells simultaneously. ... It's kind of a jumpstart, so to speak. ... You're going to hyper-saturate your red blood cells with oxygen — not only that, but all the other fluids in your body, which makes it more effective than just breathing oxygen."

Dekanich said patients suffering from symptoms of altitude sickness typically see improvement in one or two 60- to 90-minute hyperbaric therapy sessions.

RISKS, SIDE EFFECTS

"Of all the medical treatments carried out in clinics and in hospitals, hyperbaric oxygen therapy treatment is one of the most benign and safe treatments when it comes to side effects," Dekanich said.

According to the FDA, patients

receiving hyperbaric oxygen therapy are at risk of suffering a side effect that can be mild, such as sinus pain, ear pressure or painful joints, or serious, such as paralysis or air embolism. Since hyperbaric chambers are oxygen-rich environments, there is also a risk of fire.

Dekanich said, in his experience, side effects tend to be few and far between. The most common side effect he sees is middle-ear barotraumas, where a patient has trouble equalizing middle-ear pressure.

"Probably the most common side effect is sometimes people have a hard time clearing their ears; it's like going on an airplane," Dekanich said. "We'll work with the patient, though, and can stop the pressure for a moment to give them a chance to clear their ears. We can also see patients who have trouble with sinus pain and, occasionally, those who may feel claustrophobic in the chamber, though we find it to be very roomy."

For Schleusner, the risk of any side effect far outweighs the gain of the treatment.

"If I had to do it all over again and I knew about hyperbaric at the time I got the concussion, I would have started it the first day," Schleusner said. "I still got great results when I did it, though. I'm a firm believer in it for treating post-traumatic brain injury or concussion. If someone I knew got diagnosed with a concussion, I'd tell them, run, don't walk, run. Get your wallet out and pay for it because it's so worth it."

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