

HIGHLY ACCOMPLISHED Meet the director of UC Irvine's new art museum

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WHAT'S IT LIKE TO . . .

TAKE A VR TOUR OF YOUR BRAIN

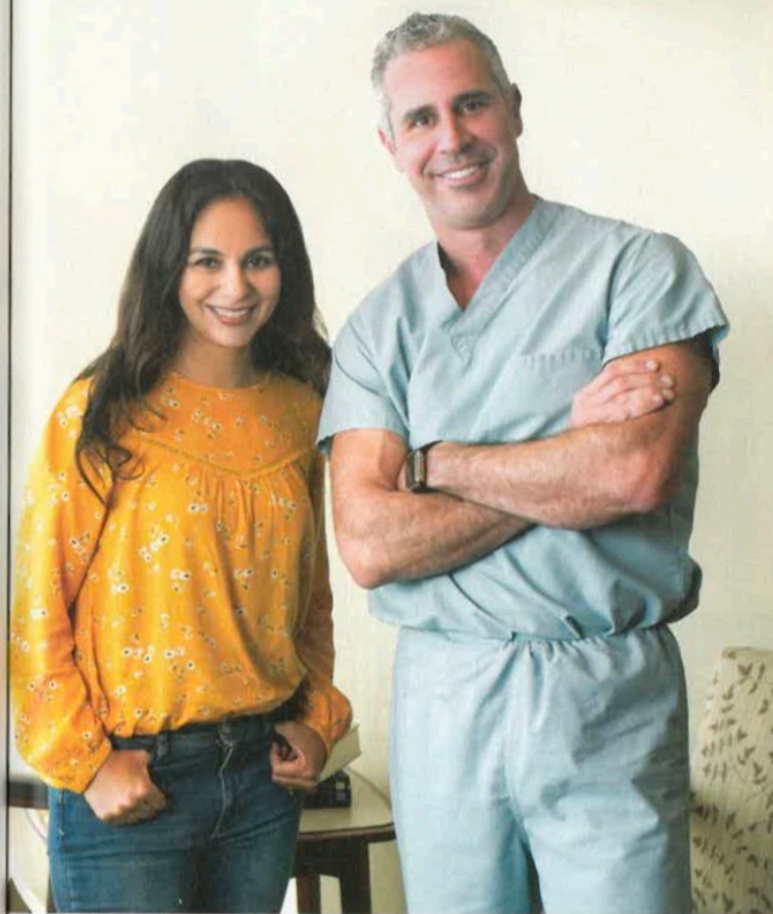
After **MEERA SAWHNEY** of Irvine was diagnosed with a tumor, neurosurgeon **ROBERT LOUIS** used a virtual reality headset to ease her anxiety and rehearse her operation.

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awhney: We were celebrating my daughter's 13th birthday at a restaurant with family and friends, and I began feeling dizzy and flustered. I went to the bathroom to splash water on my face, and I fell. When I woke up, I was in the hospital. They thought I was dehydrated. My blood pressure had stabilized; everything seemed normal after an hour or so. My mom said, "Why doesn't the doctor do a scan to make sure everything's OK?" They did a CT scan, found a mass in my head, and immediately did an MRI. A doctor came in and told me, "You have a brain tumor, it's called a meningioma. It is curable." When you hear that term—brain tumor—you're frightened.

Louis: This is often a very scary time when the patient is getting a diagnosis of a brain tumor—and add to that the fear of the unknown. The virtual reality technology takes that second part, the fear of the unknown, out of it. You bring the patient on not as a passive participant but as a member of the team in helping take care of the problem and get the problem out. Standard MRIs and CT scans are like black and white blobs and smears. They don't look like much unless you're a surgeon or a radiologist.

The VR gives us these 3D models that look like the human brain. They show the tumor glowing in green and the arteries in red and the veins in blue so we can see the relationships. It becomes intuitively obvious. My 6-year-old looks and says, "Yeah, Dad, the green thing is the bad part; you're going to take that out, right?" For the patient, it helps them to better understand what's going on, and it allows the surgeon to plan and prepare and actually rehearse for surgery.



Sawhney: It was incredible. I was experiencing actually going inside my own brain and seeing the tumor itself. I was surprised that the tumor was so large. I wasn't expecting it to be so large. But once he explained how he was going to do the whole procedure, I was comfortable with it. I was glad that we had the technology available.

Louis: What it allows is for us to put on the VR headset and fly through the brain to see where the critical blood vessels are, where the critical parts of the brain are, and be able to plan and prepare for surgery. I can do it three or four or as many times as I need to until I get it right in the virtual patient in the computer. Then, when I go in there to do surgery, there's a higher likelihood that I'll be able to do it more safely.

Sawhney: I had an amazing experience at Hoag. I had the surgery on Tuesday, and I was able to leave the hospital on Thursday.

Louis: Which is amazing for a tumor of this size. This was a big tumor with a lot of complicated anatomy, including critical blood vessels, arteries, and veins around it causing a lot of pressure. It was a testament to Meera's strength.

Sawhney: Well, thank you for that, Dr. Louis. I thought positive. I stayed strong. I had the surgery at the end of January, and by the middle of March, I was back at work. I believe things happen for a reason. I was meant to fall and hit my head. Fortunately, I was there with my family and got that scan done and was referred to Dr. Louis. I'm just grateful it all lined up. —V.T.