Mayo Clinic Minute – What is Augmented reality spine surgery?

For millions of people, back pain is a literal pain in the back. Thankfully, most back problems can be treated conservatively, but for people with severe low back pain caused from arthritis, cancer or degeneration, spine surgery can make a huge difference in their quality of life.

Spine surgery is a big deal and not without its risks. But technology is making a difference. Innovations, like augmented reality, allow surgeons to see critical structures without creating larger incisions. Mayo Clinic resident Dr. Miles Hudson, who works with neurosurgeon Dr. Maziyar Kalini, says, "There's a lot of very vital structures that we have to move out of the way and or avoid to get these surgeries done safely. Augmented reality lets us enhance our visual senses."

Narrator:	For people with severe back pain from arthritis or degeneration, often the last option for relief is spine surgery. Now, doctors are using augmented reality to achieve less pain, with fewer complications for patients.
Narrator:	Dr. Miles Hudson, a neurosurgery resident at Mayo Clinic, explains the innovation.
MILES HUDSON, M.D. Neurosurgery Mayo Clinic	"What it truly means is augmenting or enhancing your visual senses and your visual field. And that's what the augmented reality does."
Narrator: Show Dr. Hudson looking at scans on computer screen.	By combining patient scans and MRIs, the technology allows the surgeon to see more without creating larger incisions.
MILES HUDSON, M.D. Neurosurgery Mayo Clinic	"Using those scans, our technologists can make the 3D models of the scan and then we can use the 3D models and pair that to our neuro navigation software. And then by fusing those two together, you get a navigated 3D model that we can overlay through different visual devices, such as a headset or the surgical microscope itself.
MILES HUDSON, M.D. Neurosurgery Mayo Clinic	It just helps elevate that safety to the next level by knowing where all the critical structures are and being able to actually see them through all the bone and soft tissue."
Narrator:	For the Mayo Clinic News Network, I'm Joel Streed.

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