

3D-printed implants personalize spine surgery for better outcomes

At [Mayo Clinic](#), [spine surgery](#) is becoming increasingly personalized — and the planning begins long before a patient enters the operating room.

Using detailed imaging and computer-assisted planning, surgeons can map out a procedure and, for some patients, create a 3D-printed titanium implant designed to fit their individual anatomy.

[Joshua Bakhsheshian, M.D., M.H.A.](#), a neurosurgeon at Mayo Clinic in Arizona, says the technology allows surgeons to personalize an operation to a patient's anatomy and spinal alignment, leading to better outcomes.

[Reporter] reports in this Mayo Clinic Minute.

Video	Audio
Joshua Bakhsheshian, M.D. Neurosurgery Mayo Clinic	"This is a 3D titanium spinal implant."
Reporter	And it's not one-size-fits-all. These implants can be customized to a patient's anatomy and the alignment their spine needs.
Dr. Bakhsheshian	"The benefit of these is they're custom fitted for each particular patient."
Reporter	That customization starts before surgery, using detailed imaging and computer modeling to plan the procedure and design the implant.
Dr. Bakhsheshian	"Modern day spine surgery requires a lot of planning beforehand, and the operation is actually done before you actually get to the operating room. And this allows to again to custom fitted to the patient restore their specific alignment and ultimately have better outcomes.
Reporter	This personalized approach gives surgeons more control over fit and alignment and, for some patients, may help make surgery safer.
Dr. Bakhsheshian	"Patients tend to recover faster, and they're able to return to their level of activity ultimately resulting in better outcomes."
Reporter	For Mayo Clinic News Network, I'm [Reporter].