

Mayfield skull clamp



The Mayfield [Headrest](#) and [Skull Clamp](#) System are the most common and widely used neurosurgical [instruments](#) in the world today. Designed to firmly hold a patient's head to the [operating table](#) during craniotomy drilling and delicate surgery, they are manufactured and sold by [Integra](#) LifeSciences, and they account for 90% of all headrest and skull clamp systems sold in the world.

The story began decades ago when Dr. Frank H. Mayfield went for his routine dental checkup. Dr. Mayfield was settled into a dentist's chair, the back of his head comfortably positioned in the leather headrest, when the idea struck him. Why not develop a headrest for patients who undergo brain surgery in the operating room?

That brainstorm led Dr. Mayfield straight to his longtime colleague, George Kees, a medical illustrator with whom he had developed the Mayfield clip and clip applier.

Together, Dr. Mayfield and Mr. Kees created a new innovation: the Mayfield Horseshoe and General Purpose Headrests. The padded devices, which debuted in 1967, brought a new level of sophistication to brain surgery by cradling and stabilizing the head off the end of the operating table and allowing the surgeon better access during surgery.



For the next decade the technology reigned as the ideal way to hold the head while the surgeon opened the skull with a flexible wire saw, known as a Gigli saw. When the 1970s brought the advent of microsurgery and the use of microscopes, however, changes were in store. Surgical incisions and the "field" in which surgeons operated became smaller, and the Gigli saw was replaced by tools (craniotomes) that enabled the drilling of small holes in the skull. In this arena, the Mayfield Horseshoe Headrest by itself was no longer enough to keep the head perfectly still, and it was eclipsed by a newer device – the skull clamp.

The initial invention, the Gardner skull clamp, was sound in concept but lacking in engineering finesse. Almost at once Dr. Mayfield and Mr. Keys began experimenting with a new design. They collaborated with other partners in Dr. Mayfield's practice, and as they worked and re-worked their device they sent prototypes – and requests for feedback – to neurosurgeons all over the world.

After several design iterations, the famous Mayfield three-pin skull clamp was born.

Complications

see [Head Fixation Device complications](#).

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