

Spinal Implant Testing



What Is Spinal Implant Testing?

Spinal implant testing evaluates the **effectiveness and durability of spinal implants** to ensure they are suitable for medical use. Spinal implant testing involves a series of different assessments that test how an implant responds to **mechanical loads, tension, compression, and torsion**.

Spinal implant testing is crucial since implants need to be able to withstand **real-life conditions** where the spine is put through different pressures. Since spinal implants are vital for **correcting deformities** and **stabilising the spine**, guaranteeing their durability and robustness is paramount.

What Spinal Implant Testing Services Do We Offer?

[Applus+ Laboratories](#) conducts the rigorous **spinal implants testing** required to make sure they meet international standards for **spine correction** and **vertebral support**. In our laboratories, spinal implants are tested both statically and dynamically for different loading scenarios.

What Ranges and Standards Are Involved in Our Spinal Implant Testing?

Spinal implants are tested for **three testing ranges: spinal fixators (screw-rod system), fusion implants, artificial discs**. These ranges are covered by the following standards that simulate what a spinal implant will go through during its lifetime.

- **ASTM F1717**

We test for the mechanical performance of spinal implant assemblies in a vertebrectomy model, covering static, fatigue, and torsional strength.

- **ASTM F2077**
We evaluate the mechanical performance of intervertebral body fusion devices under static and dynamic loading conditions.
- **ASTM F2267**
We measure the axial compressive strength and subsidence behaviour in the bone of intervertebral body fusion devices.
- **ASTM F2193**
We also measure and report the mechanical characteristics of spinal fixation devices, including screws, rods, connectors, and their assemblies.

What Are the Benefits of Spinal Implant Testing?

Due to the spine's importance for **overall mobility, structural stability,** and the **protection of the central nervous system,** complying with standards is incredibly important and spinal implant testing can help **improve [materials](#)** and structure to get the implant to market as quickly as possible.

Improving Safety and Efficiency for Spinal Implants

With the introduction of **more innovative materials** for implants, conducting thorough spinal implant testing is an essential step to ensure that these materials are both safe and **in line with regulatory standards.** These rigorous assessments help in evaluating the safety and efficacy of materials, fostering innovation while ensuring that **safer products are provided to patients.**

Compliance with International Standards for Spinal Implants

Adhering to international standards facilitates **wider [market access](#)** for your spinal implants, significantly **speeding up the development-to-market process** for international expansion. Since these standards are **internationally recognised,** compliance strengthens your standing in the global marketplace.

Why Choose Applus+ Laboratories for Spinal Implant Testing?

Choosing Applus+ Laboratories for your spinal implant testing means you're collaborating with **a leader in medical device testing solutions.**

Our services adhere to the **highest quality standards,** conforming to ASTM and ISO requirements, guaranteeing precision and dependability in your spinal implant products. With our **extensive testing capabilities** and **dedication to customer service,** we are your ideal partner for comprehensive spinal implant testing.



Applus+ Laboratories aims to serve as your **all-in-one solution** for [medical device testing](#), providing a complete spectrum of services that help accelerate your product's market entry. We offer:

- Test plans definitions
- Prototypes manufacturing
- Testing across the full product lifecycle
- Product and process qualification, including batch release testing
- Contract Manufacturing Organisation (CMO) services

Operating in multiple countries, we deliver our testing services globally, ensuring you receive top-tier spinal implant testing wherever you are located.

Let Applus+ Laboratories be your **trusted partner in spinal implant testing**. We are ready to support your projects with our expert services and seasoned advice.