



MR - Testing

Ensure MR-safety and MR-compatibility of your products during development and for certification

GyroTools offers support in experimental MR-testing and numerical analysis during the entire development cycle and for CE- and FDA-certification.

- **MR safety:**

Active and passive implants and devices may cause safety risks in the MR environment. They may be attracted or aligned by the strong magnetic field, the RF and the gradient fields may heat up the surrounding tissue and may induce currents, and implant may produce image artifacts.

Authorities are asking more and more for detailed safety evaluation for all kinds of implants.

In addition to in-vitro testing, numerical simulations may provide important additional information to get approval.

• MR safety tests:

Safety evaluation of implants in the MR environment includes:

- displacement force
- torque effects
- heating effects due to the RF field
- image artifacts
- Numerical simulation of SAR, temperature, and electromagnetic field distributions

According to the standards:

- ASTM F2052
- ASTM F2213
- ASTM F2182
- ASTM F2119
- ISO/TS 10974

• Further support:

- R&D support for new products operating in and/or on-body in the MR environment (e.g. implants, coils, wireless communication systems, etc.)
- Consulting during the development cycle

