Fumedica Medizintechnik GmbH
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FUMEDICA – sternal wires and magnetic resonance imaging (MRI)

Dear Sir or Madam,

The wire material used in all the stainless steel sternal wires manufactured and distributed by FUMEDICA must meet very strict quality guidelines and requirements.

DIN ISO 5832-1 Part 1, stainless steel is the definitive standard in this area of the surgical implant field.

Our stainless steel sternal wires are manufactured from AISI 316 LVM, a non-rusting stainless steel, material number 1.4441. (AISI stands for American Iron and Steel Institute). Because of its composition (17.0 to 19.0% chromium; 13.0 to 15.0% nickel) the alloy is austenitic and therefore non-magnetic.

The material we use, AISI 316 LVM, is thus anti-magnetic and hence normally presents no problems when used in magnetic resonance imaging (MRI).
Local heating can occur and image artifacts can also be formed around the wires during MRI scans because of the proportion of iron still contained in stainless steel. This is, however, ultimately dependent on the type of MRI used and the field intensity and duration set. It is advisable to seek clarification from the manufacturer of the MRI device about the settings to be selected.

The effects caused by iron can be avoided by using titanium wires. Titanium is, however, significantly softer and more brittle than stainless steel, thus making it less tensile.