

**MR-imaging of the TMJ: artefacts caused by dental alloys.**

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The aim of the study was to investigate the influence of dental alloys and their components on magnetic resonance imaging of the temporomandibular joint. A plaster and a water- filled acrylic resin phantom - representing the disc and the condyle of the TMJ - were used. Cylindrical crow-type samples of 13 alloys and 14 pure substances were investigated. All alloys were examined with regard to their magnetic susceptibility, using a vibrating sample magnetometer. Metallic artefacts appeared on spin-echo technique as distortions, and on gradient-echo technique signal loss could be observed. Precious alloys were shown to be diamagnetic. The non precious alloys we investigated were paramagnetic. Paramagnetic alloys with a magnetic molar-susceptibility  $C_{mol} > 2000 \times 10^{-6} \text{ cm}^3/\text{mol}$  can produce clinically relevant artefacts.

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