

## Poster Presentation

### *“Correlation of Mandibular Lateral Translation (MLT) in symmetrical mandibular movements in condylography and MRI examination”*

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Keywords: TMJ, Condylographie, MRI, Internal derangement

#### Abstract:

**Hypothesis:** The occurrence of Mandibular Lateral Translation (delta Y - MLT) in symmetrical mandibular movements is an indicator of an „Internal Derangement“ of the TMJ.

**Aim(s) of the study:** a) The aim of the study is to find evidence that the occurrence of Mandibular Lateral Translation (delta Y - MLT) in symmetrical mandibular movements (sym. = Open/Close; Protrusion/ Retrusion) during 3 dimensional condylographic TMJ tracing is an indicator for an internal derangement in the TMJ and to achieve a definition of a threshold value of delta-Y condylar deviation as an indicator for a pathological intra-articular finding.

**Material and methods:** A patient group of 112 TMJs (n=56 patients) were examined by standardized interview (anamnesis), clinical functional examination, true hinge axis condylography (incl.delta-y) and Magnetic Resonance Imaging (MRI) of the TMJ. 12 healthy volunteers (24 TMJs) were used as a control group (n=12).

**Results:** The patient's sample all showed pathological displacements of the TMJ(s) („Internal derangement) according to Kobs's classification (SHIP 2003). According to this classification the whole control group showed no pathological findings in the MRI examination. There was a significant difference between the patient's group and the control group in the evaluation of the condylographic tracings in terms of a Mandibular Lateral Translation (MLT / delta-Y) in symmetrical mandibular movements. The patient's group uniformly displayed an average MLT value 0,91mm in open/close-movements and an average MLT value of 0,77mm in protrusion/retrusion movements, whereas the control group showed significantly lower mean deviation values on Y-axis (open/close-movement: 0,51mm; protrusion/retrusion-movement: 0,49mm). This resulted in a receiver operating characteristics (ROC) – curve for the open/close-movement of ROC=0,671mm and for the protrusion/retrusion-movement of ROC=0,702mm.

**Conclusion(s):** The occurrence of transversal, condylar displacement in symmetrical mandibular movements (O/C and (P/R) is a strong indicator of temporo-mandibular disorder (TMD) by the definition of articular "Internal Derangement". These findings confirm leastwise the existence of a loosening of the capsular and condylar ligaments. The deviation of condylar movement in a quantity of 0,6 - 0,75 mm indicates a limitation of the functional joint space and an „Internal Derangement“ of the TMJ(s) and is in concordance with the values found in the recent literature.