

DIGITAL AXIOGRAPHY IN STOMATOGNATHIC PHYSIOTHERAPY: DIAGNOSTIC AND MONITORING TOOL FOR TMD AND ORTHOGNATHIC SURGERY PATIENTS.

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Introduction. Temporomandibular disorders (TMD) are a complex clinical problem characterized by pain, restricted mobility, and other symptoms within the temporomandibular joints (TMJ) and/or masticatory muscles. Physiotherapy plays a crucial role in conservative TMD management. Given the frequent co-occurrence of TMD symptoms in patients requiring orthognathic surgery, precise diagnosis and objective monitoring of therapeutic progress are essential for achieving optimal outcomes. Digital Axiography (DA) is a non-invasive measurement method that allows for the accurate registration of three-dimensional mandibular movements.

Methods This work is a literature review and clinical capability description using the Zebris JMA Optic digital axiograph. We analyzed available scientific literature and clinical reports concerning the utilization of Digital Axiography (DA) in TMD diagnosis and monitoring. The clinical applications of the Zebris JMA Optic device are presented, focusing on: objective diagnosis of kinematic disorders, monitoring the effects of manual therapy and exercise, and supporting interdisciplinary treatment planning (e.g., splint therapy, prosthetic, orthodontic, or orthognathic surgery treatment). Key axiographic parameters analyzed include path registration and symmetry of mandibular opening/closing, protrusion, and laterotrusion movements.

Results The application of Digital Axiography in stomatognathic physiotherapy enables the objectification and quantification of mandibular mobility and function disorders. It allows for the precise identification of kinematic abnormalities, providing clinicians with invaluable quantitative data for treatment planning and modification, which ultimately contributes to individualized therapy.

Conclusions Digital Axiography is a valuable and objective diagnostic and monitoring tool that should be an integral part of modern stomatognathic physiotherapy. The use of DA contributes to the individualization of the therapeutic process and increases the effectiveness of TMD treatment by precisely tracking changes in mandibular kinematics. This tool is particularly significant in complex interdisciplinary cases, including pre- and post-surgical monitoring of orthognathic surgery patients. Further research utilizing DA is necessary to evaluate the long-term efficacy of various physiotherapy protocols in TMD.